FACTORS INFLUENCING THE ADOPTION OF MOBILE APPLICATION AMONG TOURISM ORGANIZATIONS IN MALAYSIA

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DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

(4) The word count of this research report is 10, 746 words.

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LIST OF ABBREVIATIONS

AMA	Adoption of Mobile Application
TA	Technology Availability
TMS	Top Management Support
TSI	Technology Support Infrastructure
C	Cost(s)
SPR	Security and Privacy Risks
MCMC	Malaysian Communications and Multimedia Commission
TOE	Technology, Organization and Environment

PREFACE

This research project is submitted as a fulfillment of the requirement for the pursuit of the Undergraduate of Bachelor of Marketing (Hons). This research study only limited 28 weeks to accomplish. In this research project, we selected "Factors Influencing the Adoption of Mobile Application among Tourism Organization in Malaysia". The five independent variables which tested in this study are technology availability, top management support, technology support infrastructure, cost(s), and security and privacy risks. The dependent variable for this project is the adoption of mobile application among tourism organizations in Malaysia.

The numbers of mobile users are keeping increasing around the globe. In Malaysia, the adoption level of mobile application in Malaysia tourism industry is still at a marginal rate. Hence, this study is to investigate factors influencing the adoption of mobile application among tourism organization in Malaysia. Extended Technology, Organization and Environment framework will be used to study the research gap.

ABSTRACT

Today, the emergence of smart phone has brought dramatic changes to the operation of tourism organizations in Malaysia. As the global market are becoming more reliant on mobile technology, some tourism organizations are yet to reap the benefits offered by the advancement of mobile technology. Although some of the tourism organizations in Malaysia are the major adopters of mobile applications in their business operations, the variation in the degree of adoption of mobile application still exists among different tourism organizations. Hence, this research aims to determine the various factors influencing the adoption of mobile application among tourism organizations in Malaysia. In this study, the technology, organization, and environment (TOE) framework will be used to identify the three contexts that influence the adoption of mobile application among tourism organizations in Malaysia. This research is able to provide an in-depth insight on the adoption process through the technological context, organizational context and environmental context. Furthermore, two additional constructs namely cost, and security and privacy risks will be incorporated into the TOE framework. These additional constructs provide a comprehensive view on the cost of establishment and risk associated with the adoption of mobile application. In addition, this research will contribute significantly to the society as its result can be applied to the adoption of mobile application in other industries in the global economy.

CHAPTER 1: OVERVIEW OF RESEARCH

1.0 Introduction

In chapter one, the summary of the research project will be provided. This chapter is divided into six parts which are problem statement, research background, objectives, hypotheses, research questions and significance of the research study.

1.1 Research Background

Tourism is one of the largest service industries in the global market. This service industry has a significance important impact on Malaysian growth, mainly on economic perspective (Bhuiyan, Siwar, & Ismail, 2013). In the year of 2011, based on United Nation World Tourism Organization, Malaysia was rated as 9th among most visited countries in the world. It is also recognized as the 7th largest contributor in the economic sector of Malaysia in 2012 (Hrout & Mohamed, 2014). The total visitors to Malaysia have increases from approximately 6.45 million in the first quarter of 2013 to approximately 7.09 million for same period in 2014 (Malaysia Travel News, 2014).

With the explosive emergence of technologies, commerce has taken various forms (Panneerselvam, 2013). A brand new platform for business activities is created with the technological evolution which is known as mobile commerce (M-commerce), is showing the sign of success in the future (Wong, Lee, Lim, Chai, & Tan, 2012). The widespread availability of handheld mobile devices that can be connected to digital communications infrastructure has set ground for the adoption of mobile commerce (Wong, Tan, Tan, & Ooi, 2015). Mobile commerce is defined as the transaction of products, services, or information that is using the application of wireless technology, mobile devices, and data connection without the restrictions of time and space (Chan, 2012).

Lately, the mobile telecommunication has increased sharply with huge spread of mobile commerce (Wong, Tan, Loke, & Ooi, 2014). The sales of smart phone are growing dramatically in Malaysia and in the world (Hong, Teh, & Soh, 2014). Mobile technologies are predicted to create various business opportunities as it allows its adopters to benefits from the application of mobile services (Wong, Tan, Ooi, & Lin, 2015). Moreover, mobile technology is able to remove the time and distance barriers in order to improve commerce (Tan, Loke, & Ooi, 2014). The statistics published by Malaysian Communications & Multimedia Commission (MCMC) declared that approximately 38.5 million Malaysian with penetration rate of 133.3% subscribed to mobile phone (Khoo, 2012). Rakuten Malaysia CEO Masaya Ueno also stated that almost 25% of the ecommerce sites traffic is coming from mobile phone and this has proven that the mobile platform is emerging in Malaysia (On Device Research, 2014).

Mobile application is software that designed to run on mobile devices that serve the users with the similar services as those on PCs (Swanson & Taylor, 2011). Nowadays, the number of existing application for mobile phones which is known as "apps" is increasing (Bohmer, Hecht, Schoning, Kruger, & Bauer, 2011). This combination of mobile phones with applications has created a new trend in mobile phone consumer industry (Teo, Tan, Cheah, Ooi, & Yew, 2012). However, these applications must be designed in order to satisfy user's needs, favourites, and the context of use to ensure it is useful (Arhippainen & Tähti, 2003). In Malaysia, smart phone users have a good taste of mobile application. According to MCMC (2012), there are 34.6% of Malaysian is reported to download 10 to 20 apps, while 16.3% is reported to download 20 to 30 apps. Meanwhile, 7.4% downloads 30 to 40 apps, 4.2% downloads 40-50 and1.5% downloads 50 to 60 apps. Moreover, the statistic had proven that 21.2% of Malaysian is using the mobile application on daily basis and 14.9% is using apps on weekly basis. This proves that the mobile application has been used frequently in Malaysia (Suruhanjaya Komunikasi dan Multimedia Malaysia, 2012).

Most of the research studies focus on consumer perspective, but the studies focus on organizational perspective in the adoption of mobile application in tourism industry still remains limited (Martin, Lo´pez-Catala´, & Ramo´n-Jero´nimo, 2012). Organizations who adopt mobile application for their tourism services allow mobile users to use mobile devices to search for information about their services and products via wireless internet (WiFi) communication. Since mobile technology is still relatively new, there is no definite and absolute definition for mobile applications. For this research purpose, it is defined as computer program or software that can be downloaded and installed into mobile handheld devices. Although the adoption of mobile application in tourism industry represents an emerging trend, there is gap exists in the degree of adoption among tourism organizations in Malaysia.

Therefore, the aim of this research is to determine factors influencing the adoption of mobile applications among tourism organizations in Malaysia.

1.2 Problem statement

Tourism industry is undeniably one of the fastest growing sectors in Malaysia. The number of tourist arrival in Malaysia in year of 2012 was 25 million and had earned approximately 20.25 billion USD. Furthermore, the earning had increased as compare to 2012 where in 2013; Malaysia tourism industry had contributed about RM14.99 billion to the revenue of the country (P.Aruna, 2013). The country has a number of islands and historical buildings in both West and East Malaysia which has become the main attraction for tourists to visit. With these tourists' attractions, it created a number of opportunities for tourist to come visit in the country and making tourism industry as a key driver of economy in Malaysia (Othman & Rosl, 2011). The increasing availability of mobile application represent an important opportunities for many industries. According to MCMC (2012), there is approximately of 18 million 3G subscribers as per the fourth quarter in 2013 through their statistics report.

Therefore, some studies will be conducted to identify the intention of tourism organizations in Malaysia to adopt mobile apps in tourism industry.

However, there are few major challenges that restrict the tourism organizations in Malaysia from adopting mobile applications. It is very challenging for organizations to deliver great mobile experience as they need to predict their consumer's needs and wants before launching a mobile application (Hammond, 2013). The tourism organizations have to ensure that the mobile application technology available is able to match with the existing technology capabilities internally and externally (GS1, 2008). Furthermore, support from managerial personnel in the tourism organizations is necessary for the organization to adopt mobile application in Malaysia (Fitzgerald & Vynn, 2004). Moreover, the financial aspects and the potential risk associated with the adoption of mobile application must be taken into consideration (Zhu, Dong, Xu, & Kraemer, 2006).

Many research is conducted to study about the adoption of mobile application in tourism industry, however there are only a few studies about Malaysia mobile application adoption especially from organizations perspective. Tourism industry is considered as a strong contributor in the rapid growth of world economy (Alqatan, Singh, & Ahmad, 2011), this applies to Malaysia too. Therefore, the adoption of mobile application among tourism organization may trigger Malaysia's economy. Since mobile penetration rates rises, it is an opportunity for tourism organization to adopt mobile application as their promotional tools in upgrading their organization's image (Anuar, Musa, & Khalid, 2014).

1.3 Research Objective

Research objective aims to provide a clear path and focus for the researchers.

1.3.1 General Research Objective

The main purpose of this research is to investigate the factors influencing the adoption of mobile application among tourism organizations in Malaysia.

1.3.2 Specific Research Objectives

1. To investigate the relationship between technology availability and adoption of mobile application among tourism organizations in Malaysia.
2. To investigate the relationship between top management support and adoption of mobile application among tourism organizations in Malaysia.
3. To investigate the relationship between technology support infrastructure and adoption of mobile application among tourism organizations in Malaysia.
4. To investigate the relationship between cost(s) and adoption of mobile application among tourism organizations in Malaysia.
5. To investigate the relationship between security and privacy risks and adoption of mobile application among tourism organizations in Malaysia.

1.4 Research Questions

Based on our research objectives, questions that are needed to be answered upon completion of the research are as follows:

1. Does technology availability affect adoption of mobile application among tourism organizations in Malaysia?
2. Does top management support affect adoption of mobile application among tourism organizations in Malaysia?

3. Does technology support infrastructure affect adoption of mobile application among tourism organizations in Malaysia?
4. Does cost(s) affect adoption of mobile application among tourism organizations in Malaysia?
5. Does security and privacy risks affect adoption of mobile application among tourism organizations in Malaysia?

1.5 Hypothesis of Study

H1: Technology availability has a positive influence on the adoption of mobile application among tourism organizations in Malaysia.

H2: Top management support has a positive influence on the adoption of mobile application among tourism organizations in Malaysia.

H3: Technology support infrastructure has a positive influence on the adoption of mobile application among tourism organizations in Malaysia.

H4: Cost(s) has a positive influence on the adoption of mobile application among tourism organizations in Malaysia.

H5: Security and privacy risks have a positive influence on the adoption of mobile application among tourism organizations in Malaysia.

1.6 Significance of Study

The proliferation of mobile applications is contributing to the growth of tourism organization in Malaysia. Hence, this research aims to investigate the factors influencing the adoption of mobile application among tourism organizations in Malaysia. The in-depth insight on the challenges provided by the mobile application enables the tourism organization to gain extensive knowledge about the latest trend in

mobile commerce in Malaysia. Hence, the organizations are able to enhance their decision making process regarding the development of mobile application in order to fully utilize the opportunities provided by mobile commerce.

Moreover, this research is able to contribute to the continual success of the tourism sector in Malaysia. This is because this research enables the tourism organizations to gain better understanding towards the most influencing factor that affect the adoption of mobile application in Malaysia. Hence, they are able to apply these valuable knowledge in order to develop a satisfactory mobile application that is able to bring convenience to their consumers and enhance their ongoing success in tourism industry.

1.7 Conclusion

Chapter one provides a basic understanding of the study of mobile application in tourism. This chapter also provided a basic guideline for further development of this research. Further explanation of this research will be discussed in our chapter two.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The conceptual framework and the five core determinants related to the adoption of mobile application among tourism organizations in Malaysia, technology availability, top management support, technology support infrastructure, cost(s) and security and privacy risks used in proposed conceptual framework will be discussed in details in this chapter. Lastly, Chapter 2 will cover all the hypotheses formed to test the relationship between these determinants and the adoption of mobile application among tourism organizations in Malaysia.

2.1 Review of Literature

2.1.1 Mobile Application in Tourism

In old days, mobile application was in the simplest form where people used for normal function such as answering calls and setting alarm clock. However, mobile application has evolved according to the development of technology (Wong, Tan, Loke, & Ooi, 2014). Fast forward to these years, mobile application has become one of the internet-based medium that allows people to stay connected with various parties (Sim, Kong, Tan, Lee, & Teo, 2012). It is a software application that required using with a portable device that provides specific functions to the users to make their life more convenient (Li, Chen, & Shi, 2014). These mobile applications can be downloaded via various mobile application stores anytime to be used in everyday life (Song, Kim, Jones, Baker, & Chin, 2014). It can be classified by its function such as

education, entertainment and communication (Silva & Rocha, 2012). As more consumers are using mobile devices and applications as an emerging source of purchasing channel, it presents an opportunity and potential business model for tourism organizations to adopt mobile tourism services (Tan & Ooi, 2013). In tourism industry, travel mobile applications are ranked as the seventh most popular category being used (Kennedy-Eden & Gretzel, 2012). Mobile application plays a vital role in the development of tourism industry (Bethapudi, 2013). Mobile application offered a new trend in tourism industry as it can act as tourist's personal guides such as providing navigation in the form of hand-held device, easily access information about their location, and consist of multi-lingual dictionary. It also acts as an agent for the tourist in managing their schedule and reservations (Schwinger, Grun, Proll, Retschitzegger, & Schauerhuber, 2005).

2.2 Review of Relevant Theoretical Framework

2.2.1 Technology-Organization-Environment Framework

In 1990, Tornatzky and Fleisher developed TOE framework to describe the adoption process of organizations towards technological innovation (Angeles, 2013). The technological innovation process includes the technological development of an invention which leads to the introduction of the invention to the target market through diffusion and adoption (Garcia & Calantone, 2002). According to TOE framework, the intention of organizations to adopt technological innovations will be affected by technological context, organizational context and environmental context.

Technological context describes the relevant internal and external technologies which include existing practices, processes, equipment and

technologies that is available to the organization (Oliveira & Martins, 2011). Decisions regarding the adoption of technological innovations depend on what is existing and the fit between the innovations and existing technology landscape (Borgman, Bahli, Heier, & Schewski, 2012). It was stressed that any technology is referred to "knowledge-embedded tool, and "combination of social or behavioral elements and physical elements", as it is a knowledge that requires interaction between people and technology in order to understand its purpose of using, how it should be operated, and its impact (Tornatzky & Fleischer, 1990).

In organizational context, it comprises of organizational attributes that either facilitate or impede the innovation adoption (Fitzgerald & Vynn, 2004), such as size of the firm and managerial structure of top management (Tan, 2010). Besides, it refers to the resources available within the organization, including financial and human resource (David, Agboh, & Radhakrishnan, 2010). Both formal and informal linkages within and outside the organizations, decision making and internal communication process between employees, external communication with the environment, and the quality of human resource in the organization can affect the technological innovations adoption (Angeles, 2013).

In environmental context, the adoption of technological innovations of organizations is influenced by its interaction with its immediate business environment. The business environment comprises of the entities existed in the industry and the related facilitating factors in the organizations' area of operation (Awa, Ukoha, & Emecheta, 2012). For instance, the social-cultural issues, competition intensity, regulatory environment and the technology support infrastructure will bring significant impact towards the organizations' intention to adopt technology innovations in their business (Zhu, Kraemer, Xu, & Dedrick, 2004).

2.2.2 Extension of TOE Model

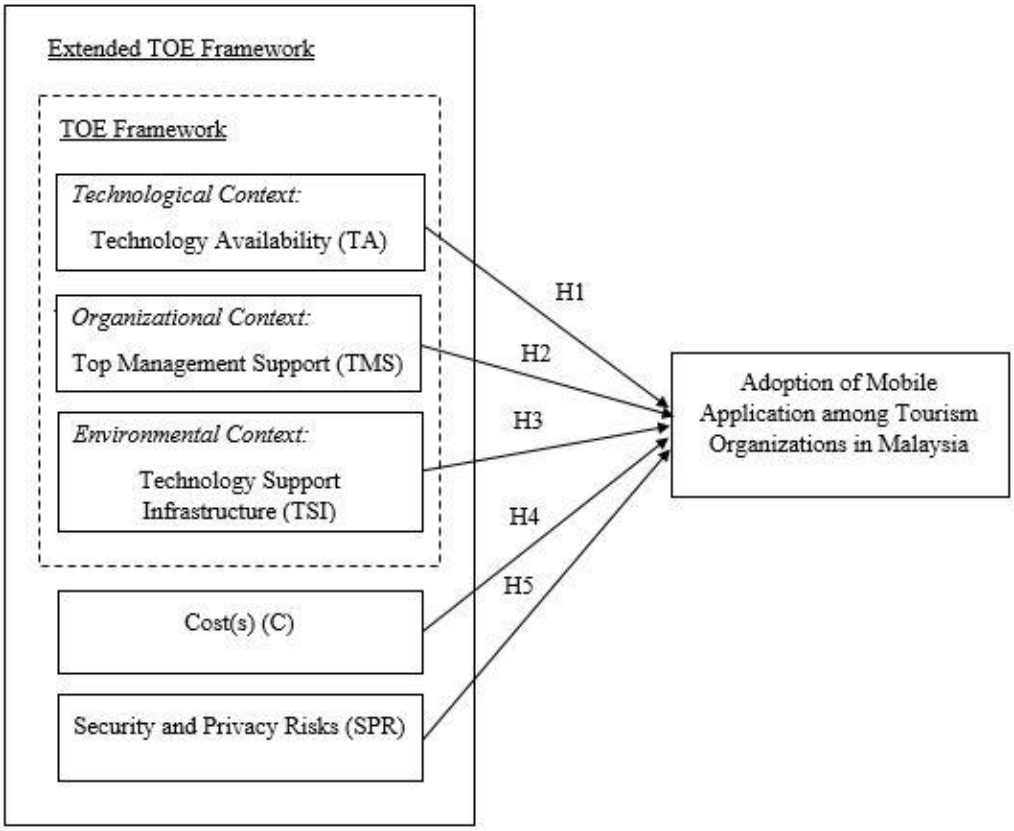
We have extended the TOE model in our research by adding two additional variables namely, cost(s) and security and privacy risks.

According to Tornatzky and Klein (1982), cost(s) of the innovations is a crucial determinant influencing the adoption and implementation of the innovations. In our research, the cost(s) refer to the expenses on the implementation of essential technologies and the substantial effort devoted by the tourism organizations which will influence them to adopt mobile application in their business transactions. Hence, it is important to include cost(s) as one of the variables in our research as it will influence the e-business usage by organizations (Zhu, Dong, Xu, & Kraemer, 2006).

Besides, according to Zhu et al. (2006), security and privacy risks deserve substantial attention as it has great influences on the e-business diffusion. Moreover, if the security and privacy risks are high, the adopters will perceive a high risk of exposing important organizational data and this will impede the adoption of mobile application among organizations (Jones, Wilikens, Morris, & Masera, 2000). Therefore, it can be proven that both cost(s) and the security and privacy risks are the key variables in our research.

2.3 Proposed Theoretical/Conceptual Framework

Figure 2.1: Theoretical Framework of Factors Influencing the Adoption of Mobile Application among Tourism Organizations in Malaysia



2.4 Hypotheses Development

2.4.1Technology Availability

Technology availability is one of the aspects influencing the adoption of mobile application of organizations in Malaysia (Rosli, Yeow, & Siew, 2012).

Technology availability refers to the technology available to an organization (Arpacı, Yardımcı, Özkan, & Türetken, 2012). It focuses on the characteristics of the technology which influences the adoption process (Yoon, 2009).

An organization ability to adopt the mobile application has a relationship to the technology availability of an organization. The complexity of the technology needed for the mobile application to function is one of the challenges faced by the company (Tarasewich, Nickerson, & Warkentin, 2001). This is because the adoption of mobile application depends on the existing technology base of an organization including the general information system capability as well as Internet specific technologies (Zhu & Kraemer, 2005). To adopt mobile application, an organization must have the availability of technology features that are able to cope with the rapid changing of mobile platforms and interfaces (Chan, 2012). Therefore, with the availability and accessibility of technologies such as information system and Internet technologies, a tourism organization in Malaysia will be able to adopt mobile application smoothly.

H1: Technology availability has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

2.4.2 Top Management Support

Top management support is defined as the extent to which the top management beliefs and support for the participation in the adoption of innovation within an organization (Grover, 1993). In fact, it is shown that top management support is considered one of the most important predictors for the adoption of technological innovation (Jeyaraj, Rottman, & Lacity, 2006). In most cases, top management often refers to chief executives officers (CEO) or owner of the organization (Ismail & Ali, 2013).

There is a positive linkage between top management support and organizational mobile technological innovation adoption (Ramdani & Atik, 2012). In organizational context, top management has substantial power to influence the entire organization to realize the importance of an innovation and to convince the members to adopt it (Mangula, Weerd, & Brinkkemper, 2014). A change can be encouraged when top management communicate and reinforce values through well-defined long-term strategic vision for the organization (Al-Qirim, 2004). The top management's intention in encouraging the adoption of mobile application undoubtedly plays a critical role in organization, especially in developing countries. In Malaysia, the high power distance culture makes most of the decision making centered on the top management (Hussin & Noor, 2005). Besides, top management can also ensure the availability of necessary resources and capabilities to successfully implement innovation. The development and adoption of mobile application requires extensive resources that can be only achieved with the strong support and commitment from top management (Jamaludin, Ahmad, & Ramayah, 2012).

H2: Top management support has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

2.4.3 Technology Support Infrastructure

Technology support infrastructure comprises of three major elements that contribute notably to the market of mobile application innovation. The labor cost is one of the factors in the environment context that is impacting the tourism organization’s intention to adopt mobile application (Levin, Levin, & Meisel, 1987). Moreover, the availability of services associated to the mobile application innovation also contributes greatly to the adoption process. Next,

the skill of the existing labor force is also one of the influential factors in the external context of TOE framework (Flynn, 1990).

The technology support infrastructure in the external context has a substantial relationship with the tourism organization's decision to adopt the mobile application. New skills and major adjustment are needed in order to adopt the new mobile application innovation, hence, the skill acquired by the labor such as their experience and knowledge will encourage tourism organizations to provide their tourism services via mobile application (Attewell, 1992). In addition, the opportunity for tourism organization to get relevant consulting and training services will increase the likability that they will adopt mobile application (Norovuori, 2012).

H3: Technology support infrastructure has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

2.4.4 Cost(s)

From the perspective of a tourism organization, costs refer to the implementation expenditures of necessary Internet technologies for the adoption of mobile application (Zhu, Dong, Xu, & Kraemer, 2006). It comprises of the cost of developing, maintaining, and upgrading the mobile applications (Kale, n.d.). Other facilitating hardware, software and employee training are also essential to ensure the consistency of the user experience (Chircu & J.Kauffman, 2000).

The cost has a significant relationship toward the adoption of mobile application among tourism organizations in Malaysia (Yang, Zhong, & Zhang, 2013). The cost incurred will impede the adoption rate of the mobile application by tourism organizations (Tornatzky & Klein, 1982). This is due

to the fact that the expenses incurred to implement technology system over the Internet will cost a significant amount of money. A larger and more sophisticated system will employ more resources and time of a tourism organization (Brdesee, 2013). Hence, cost(s) play an influential role in influencing the intention of tourism organizations to adopt mobile application.

H4: Cost(s) has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

2.4.5 Security and Privacy Risks

Security and privacy risks are another barrier that influences the adoption of mobile application among tourism organization in Malaysia. Security and privacy risks are defined in terms of system failure, security and privacy data handled by the organization (Tehrani, 2013). It takes into account that the possibility of private and confidential information or data about the organization and customers being leaked out and hacked (Daud, Kassim, Said, & Noor, 2011).

With the adoption of mobile application in organization, customer personal data may exposes into a variety of risks. Risk may occur due to organization failure to provide services when experiencing service down, virus attack and issue may arise due to the misuse of customer personal information (Rahimli, 2013). Customer personal data is private and confidential where the organization cannot expose to third-party. The hacking issues such as stealing password, and access into the organization's mobile application system to get access to the corporate secret trade and customer valuable data (Chan T. Y., 2012). In Malaysia, the organization need to have a strong management system, prevention security and methods in order to adopt mobile application

to enhance their productivity and service level in the industry (Masrek, Uzir, & Khairuddin, 2012).

H5: Security and privacy risk has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

2.5 Conclusion

In brief, the review of secondary data is presented in this chapter. Furthermore, it is able to provide a clear direction for the following chapters in order to meet research objectives.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

The method that was used to acquire related information for the purpose of our research is defined in chapter three. This includes research design, methods of data collection, research instrument, sampling design, measurement of constructs, data analysis and data processing.

3.1 Research Design

Research design is an outline that states the methods and processes used for data collection and analyze (Burns & Bush, 2009). There are two categories under the methods of data collection which are qualitative and quantitative. Research designs are divided into three categories, which are exploratory research, descriptive research, and casual research (Malhotra N. K., 2009).

3.1.1 Quantitative Research

For our research, quantitative research is being applied. This research is being applied to generalize results from a large number of samples (Babbie, 2010). Quantitative research emphasizes on collecting and analyzing numerical data with the use of mathematically based methods (Aliaga & Gunderson, 2006). This research is piloted using the descriptive research design.

3.1.2 Descriptive Research Design

This design is being applied as it is able to explain the characteristic of the population being studied and suitable for a larger population of the study's discovery (Burns & Bush, 2009). Besides, descriptive research design is adopted to define the five identified factors that stimulus the acceptance of mobile application among tourism organizations.

3.2 Data Collection Methods

The procedure of data or information gathering for the purpose of research project is called data collection. Primary data and secondary data are the two types of data collection.

3.2.1 Research Primary Data

Primary data is collected in this research for the purpose of assisting the researcher in addressing the problem and question at hand (Malhotra N. K., 2009). This data is obtained from first-hand sources by surveys (Boone & Kurtz, 2013). The primary data for this study was collected using online surveys. Surveys will be sent out to the targeted audience by email. We will be emailing the survey questionnaire to the firms in the tourism industry throughout Malaysia. After data compilation from the questionnaire, those data will be tested and analyzed through the SAS software.

3.2.2 Research Secondary Data

Any data or information that has been collected beforehand for another research purposes by other researchers is secondary data (Malhotra N. K., 2009). Secondary data is used to support our constructs in the framework. For this research, various sources are accessed for data collection process Those sources were gathered via online search engine and Universiti Tunku Abdul Rahman (UTAR) Library OPAC. Other secondary sources are reference books and electronic databases.

3.3 Sampling Design

Sampling is the selection of a subset of units from a population in order to collect information and to draw inferences about the overall population (Statistics Canada, 2003) . Sample planning is an important part to assure the precision and accuracy of the total research project (Smith & Albaum, 2012) t. It can be done by following the well-defined procedures namely, define target population, sampling frame, sampling method and sampling size (Smith & Albaum, 2004).

3.3.1 Target Population

The population which information is desired for the research is the target population (Statistics Canada, 2003). Since determining the factors influencing the adoption of mobile applications among tourism organizations in Malaysia is the core objective of this research, hence for this research, the target population is the local tourism organizations in Malaysia which may have or have no experience in adopting mobile applications in their business transactions.

3.3.2 Sampling Location and Sampling Frame

Our sample frame of this research is the local tourism organizations in Malaysia that operate in three different sectors such as accommodation, travel agency, and tourist attraction. Besides, the sampling location is set at Peninsular Malaysia. This is because most famous tourist attractions such as Genting Highlands, Langkawi Island, and the Pulau Tioman are located at Peninsular Malaysia and they are able to attract tourist from across the world (Sudipta, Sarat, & Babu, 2010). Hence, we decided to conduct this research in all the states in Peninsular Malaysia, namely Kuala Lumpur, Johor, Terengganu, Melaka and Penang.

3.3.3 Sampling Elements

The overall population of tourism organizations in Peninsular Malaysia will be our research respondents. For instance, the questionnaire is distributed to the tourism organizations which operate in the three different sectors such as accommodation, travel agency, and tourist attraction. It is proven that tourism accommodation is one of the largest sectors in the tourism industry (AECgroup, n.d.). Additionally, the International Labour Organizations defined tourism by the main sectors such as hotels and travel agencies (International Labour Organization, 2010). Furthermore, tourist attractions also emerged as important sector in tourism industry which enhances economic growth (Kweka, Morrissey, & Blake, 2001). Therefore, we decided to focus on accommodation, travel agency, and tourist attraction as the three main sectors of tourism industry in our research. Besides, the target respondents may have or have no experience in adopting mobile applications.

3.3.4 Sampling Techniques

In this research, non-probability sampling technique is adopted by involving some element of judgment (Dorherty, 1994). We employed judgmental sampling technique by distributing the questionnaires to the target tourism organizations that are representative of overall population based on our judgment (Burns & Bush, 2013).

3.3.5 Sample Size

Sample size is an essential feature in a research and it may influence the detection of significant relationship, differences or interactions (James E. Bartlett, Kotrlik, & Higgins, 2001). In this research, we have distributed 400 questionnaires to the tourism organizations in Peninsular Malaysia via email and we managed to get 175 responses, which is a good response rate for this type of research. The sample size is adopted from a similar study regarding m-business in organizational perspective (Picoto, Belanger, & Palma-dos-Reis, 2014).

3.4 Research Instrument

3.4.1 Questionnaire

Questionnaire is the main tool that was implemented in this research. Questionnaire is a mechanism of data collection in written format (Marshall, 2005). When collecting data from large numbers of the respondents, questionnaire is a very cost effective way. Questionnaire allows us to acquire

information in an organized way, depend on the variables of the research (López, Prados, & Romera, 2014).

3.4.2 Questionnaire Design

Questionnaire design plays an important role in research as the quality of research conclusions depends entirely on the quality of data which depends on questionnaire itself (Makienko & Bernard, 2012). Therefore, questionnaire for this research are adopted from previous studies that suits our research questionnaire. Furthermore, close-ended question are applied in the questionnaire where there are alternatives of response were provided, allowing respondents to pick the response that will be nearest to their own perception (Given, 2008).

In general, there are two sections in the questionnaire. Section A consists of 3 questions about demographic profile such as respondent sector in tourism industry, years working in the industry, and number of employees in the firm. The objective of this section is to collect a brief description about the respondents. Nominal scale is being applied for this questionnaire. Those questions will be categorized into one or more groups labeling the characteristics of interest.

For Section B, there are 22 questions were prepared to study the factors influencing organization to adopt mobile application. This section includes technology availability, top management support, technology support infrastructure, cost, and security and privacy risk. For this section, likert scale with 7-point is applied.

3.4.3 Pilot Test

A pilot test was conducted prior to actual data collection process in order for the researcher to test the reliability and effectiveness of the questionnaire in terms of wording, sequence, content, format, layout, and comprehensiveness (Trakulmaykee, Lim, & Trakulmaykee, 2013).

Before the distribution of questionnaire, the questionnaire was reviewed by our supervisor and minor amendments had been made on the questions. The revised questionnaire was handed out to 40 respondents and feedback was collected on how the questionnaire can be improved. The feedback gathered was that the questions are too complicated and having several grammatical errors. Adjustments have been made accordingly.

3.4.4 Data Collection

The questionnaire was distributed to respondents, which is tourism organization in Peninsular Malaysia via email method and the surveys were collected within 3 weeks after distribution. Email surveys are an inexpensive mechanism to conduct large-scale data collection without the restriction to organizations at the center of power in a society. It also provides rapid distribution and response cycles of questionnaires (Andrews, Nonnecke, & Preece, 2003). According to research, electronic data collection method, such as web and email surveys contributes to response rates that can be as high as or even higher than traditional methodology, such as postal survey. At organizational research, the average response rate falls within the benchmark of approximately 35% to 40% (Baruch & Holtom, 2008).

In total of 400 questionnaires, there is only 175 questionnaires collected are usable for the research, while the others are either incomplete or uncollectable, having a response rate of 43.75%.

3.5 Constructs Measurement

In this research, each construct was measured using 7-point Likert scale is ranged from "strongly disagree to strongly agree". Technology availability constructs was adapted from several sources, Yang, Sun, Zhang, and Wang (2015), Oliveira, Thomas, and Espadanal (2014), and Lin and Lin (2008). Top management support aspect was altered from Infinedo (2012). Technology support infrastructure construct was drawn from Lin and Lin (2008), cost constructs was adapted from Arpaci, Yardunci, Ozkan, and Turetken (2012), and the last constructs security and privacy risk was drawn from Tehrani (2014) and Lallmahamood (2007).

Table 3.1 Origin of Constructs

Constructs	**Adapted from**
Technology Availability (TA)	(Yang, Sun, Zhang, & Wang, 2015)**,** (Oliveira, Thomas, & Espadanal, 2014)**,** (Lin & Lin, 2008)
Top Management Support (TMS)	(Ifinedo, 2012)
Technology Support Infrastructure (TSI)	(Lin & Lin, 2008)
Cost (C)	(Arpaci, Yardunci, Ozkan, & Turetken, 2012)
Security and Privacy Risk (SPR)	(Tehrani, 2014)**,** (Lallmahamood, 2007)

3.5.1 Scale Management

3.5.1.1 Nominal Scale

From statistical viewpoint, nominal scale is the lowest form of measurement that is without quantitative value. It can be known as "labels" that typically used to classify into categories based on common characteristics, such as, gender, age, race, and education level (Garger, 2010). In this research, there is one question in Section A adopted nominal scale as shown in figure 3.1.

Figure 3.1 Example of Nominal Scale in Research Questionnaire

QA1: Main Section in Tourism Industry:
- ☐ Accommodation (Hotel, Resort)
- ☐ Travel Agency
- ☐ Tourist Attraction
- ☐ Other

3.5.1.2 Ordinal Scale

Ordinal scale can be used to measure "greater than" and "less than" question in a questionnaire. In ordinal scale, the important measure is the order of the values as it ranks data from the lowest to the highest, but the difference lies between the values is unknown (Stevens, 2012). Figure 3.2 shows the example of ordinal scale question.

Figure 3.2 Example of Ordinal Scale in Research Questionnaire

QA2: For how many years is your organization in this industry?
- ☐ Less than one year
- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ More than 10 years

3.5.1.3 Likert Scale

Likert scale is a method of quantitative measure that is made up of a series of Likert-type items that are combined into a single composite variable (Harry N. Boone & Boone, 2012). It can define the extent to which the respondents agree with an order of statements on an issue. In Section, Likert 7-point scale was applied: "strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree, and strongly agree". With such scale tends to balance between being enough points of discrimination while need not to maintain too many response rates (Sauro, 2010). Example of Likert scale question is shown in Table 3.2.

Table 3.2 Example of Likert Scale Question

No.	Question	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
	B2) Top Management Support (TMS)							
TMS1.	Top management in my organization is interested in adopting mobile application.	1	2	3	4	5	6	7
TMS2.	Top management in my organization considers mobile application adoption is important.	1	2	3	4	5	6	7
TMS3.	Top management in my organization has shown support for mobile application adoption.	1	2	3	4	5	6	7
TMS4.	Top management in my organization intended to adopt mobile application in the future.	1	2	3	4	5	6	7

3.6 The Processing of Data

3.6.1 Data Checking

Data was checked to identify any possible errors or problem exists in the questionnaire during pilot test such as question flow, content of question and question grammar so that fair adjustment can be made. The questionnaire is amended according to the results of pilot test before distributing to respondents.

3.6.2 Data Editing

It is a procedure used to enhance the consistency, reliability and accuracy from the data collected so that it is able to help in increasing the quality of questionnaire (Kothari, 2013).

3.6.3 Data Coding

This is a process of assigning a code to each potential response for each question from the questionnaire, normally in number (Kothari, 2013). This process enables the data key in process become easier and to ensure that the collected data is arranged in a more comprehensive format.

3.6.4 Data Transcription

Transcription of data is a way of decoding data to a software readable setup. The coded data were saved into computer from data coding, will be entered into the SAS software for the purpose of data analysis.

3.6.5 Data Cleaning

This is a method to check raw data and detect errors in order to improve the data reliability and consistency. The checking process in this stage is more extensive compared to those in data editing. Furthermore, consistency is tested through SAS software to identify data that are logically mismatched or inconsistent in which corrections may be needed.

3.7 Data Analysis

After data collection process, data analysis will be conducted. Researchers have to evaluate whether their expectations regarding the data characteristics and quality have been met. Data analysis enables researcher to detect patterns, formulate explanations, describe facts and test hypothesis (Levine & Roos, 1997). During the data analysis process, researchers have to monitor intermediate results in order to prevent pitfalls that may affect the validity of conclusions (United States General Accounting Office, 1992). SAS Enterprise Guide 5.1 is employed to perform data analysis for this research. The output generated will be presented in statistical tables, charts and diagrams for better understanding. After that, evaluation of data will be performed by logical reasoning techniques such as descriptive, inferential, and the analysis of multiple regression.

3.7.1 Descriptive Analysis of Research

Descriptive statistics summarizes the raw data in the research. With descriptive statistics, researcher is able to interpret what is or what the data shows (Trochim, n.d.). In this research, the information obtained from the analysis of frequency distribution and percentage distribution is showed in table form.

3.7.1.1 Frequency Distribution

This group the number of observations in each category on the measurement scale systematically. It enables researcher to have a look on the entire data easily by showing an overall picture of how each observations are distributed on the scale of measurement (Manikandan, 2011). For example, the frequency distribution for main sector in tourism industry showed the number of tourism organizations that operate in certain sector in an organized table form.

3.7.1.2 Central Tendency Analysis

Central tendency analysis summarizes all the information in term of its centre (Halley, 2004). This analysis includes three constructs which are arithmetic mean, median, and mode. It sums up the observations values and divides it by the numbers of observations in the research.

3.7.2 Scale Measurement of Research

3.7.2.1 Test of Reliability

This test is applied to recognize the consistency and accuracy where the constructs are being measured (Malhotra & Peterson, 2009). Reliability will gives out consistent data. Cronbach's Alpha is applied to measure the internal consistency among the various items within the test (Tavakol & Dennick, 2011). The values of accuracy for the Cronbach's Alpha coefficients are described with a scale range from 0 to 1 (Cronbach & Shavelson, 2004). The higher value of the score shows the higher the reliability of the item. Besides, the threshold of acceptable reliability coefficient is 0.6 (Sim, Tan, Wong, Ooi, & Hew, 2014), however those lower threshold are sometimes being applied for the literature purpose (Santos, 1999). The correlation of each variable in this research can be determined significantly through SAS software.

3.7.3 Inferential Analysis of Research

3.7.3.1 Validity Test

The measure of the direction and strength of linear association between two random variables is defined by Pearson correlation (Harring & Wasko, 2011). Coefficient (r) range from -1.0 to +1.0 shows the strength of relationship. Meanwhile the sign (+ or -) shows the trend of the relationship (Privitera, 2014). When the result shows 1, then it is proved that it is a perfect positive relationship; where -1.0 shows perfect negative relationship; whereas zero means no relationship exists. Following guidelines were introduced by Hair, Bush and Ortinau (2003) in order to interpret the strength of the correlations:

Table 3.3 The Range of Correlation Coefficient

Correlation Coefficient	Strength of Correlation
±0.81 - ±1.00	Very Strong
±0.61 – ±0.80	Strong
±0.41 - ±0.60	Moderate
±0.21 – ±0.40	Weak
±0.00 - ±0.20	None

In our research, the factors influencing the adoption of mobile application among tourism organizations in Malaysia are categorized as independent variables (IV), whereas adoption of mobile application among tourism organizations in Malaysia is classified as dependent variable (DV). Hence, Pearson correlation is applied to examine the significant relationship and validity between IV and DV of our research.

3.7.3.2 Multiple Regressions

Multiple linear regressions analysis is a statistical method that allows simultaneous analysis of the effect of two or more IV on the DV (Zikmund & Babin, 2003). The formula for multiple linear regressions is shown as following:

$$Y= a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5+ \ldots + b_kX_k$$

For this research study, the equation is constructed as followed:

$$AMA = a + b_1(TA) + b_2(TMS) + b_3(TSI) + b_4(C) + b_5(SPR)$$

Whereby,

AMA = Adoption of Mobile Application

a = constant

TA = Technology Availability

TMS = Top Management Support

TSI = Technology Support Infrastructure

C = Cost(s)

SPR = Security and Privacy Risk

This equation allows us to recognize the independent variables which exert the most persuasive influence on the dependent variable.

3.8 Conclusion

In brief, this chapter discusses about the research method which includes the data collection process, data processing, and analysis of research data. Therefore, this chapter serves as guidance to us in Chapter 4 for the data analysis process.

CHAPTER 4: ANALYSIS OF DATA

4.0 INTRODUCTION

The chapter 4 of our research is consists of several analyses. SAS Enterprise Guide 5.1 is being employed in our research to generate data and the results produced will be further discussed and interpreted.

4.1 Descriptive Analysis of Research

4.1.1 Demographic Profile of Research Respondents

4.1.1.1 Main Section in Tourism Industry

Table 4.1 Main Section in Tourism Industry

Section	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
Accommodation	106	106	60.57	60.57
Travel Agency	48	154	27.43	88
Tourist Attraction	21	175	12	100
Total	175		100	

Source: Developed from research

The main section of respondents in tourism industry in our survey is revealed in table 4.1. Most number of our respondents are from accommodation section

which is 60.57% followed by travel agency section which is 27.43% and tourist attraction is 12% of the total respondents.

4.1.1.2 Years in Tourism Industry

Table 4.2 Years in Tourism Industry

Year	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
Less than 1 year	9	9	5.14	5.14
1 to 5 years	54	63	30.86	36
6 to 10 years	67	130	38.29	74.29
More than 10 years	45	175	25.71	100
Total	175		100	

Source: Developed from research

Table 4.2 shows how many years of the respondent's organization in tourism industry. 38.29% of the total respondent's organization has been in this industry for 6 to 10 years; 30.86% for 1 to 5 years; 25.71% is more than 10 years; and 5.14% is less than 1 year.

4.1.1.3 Numbers of Employees

Table 4.3 Numbers of Employees in Tourism Industry

Employees	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
1 – 10	9	9	5.14	5.14
11 - 500	151	160	86.29	91.43
501 +	15	175	8.57	100
Total	175		100	

Source: Developed from research

Table 4.3 indicates the numbers of employees in the respondent's organization. Majority of our respondent's organization are made up of 11 to 500 of employees are 86.29% of the total respondents; 501 and above of employees with 8.57%; and 1 to 10 employees with 5.14%.

4.1.2 Central Tendencies Measurement of Research Constructs

Central tendency is a statistical measure used to determine a single value that represents the whole distribution. Besides, it helps in providing precise description of the entire data collected for our research (Gravatter & Wallnau, 2000). However, the measures of tendency alone are not sufficient in describing data, the extent of variability must be known (Manikandan S. , 2011). In general, one can measure the dispersion of data by using standard deviation when mean is used as the measure of central tendency (Saunders, Lewis, & Thornhill, 2009).

Table 4.4: Summary of Central Tendency for Technology Availability (TA)

Variables	Items	Mean	Standard Deviation	Ranks
TA1	My organization has a good telecommunications infrastructure.	4.7371	1.0055	1
TA2	My organization has required software platforms to run mobile application.	4.4971	1.0443	3
TA3	Mobile application adoption is compatible with my organization's information technology (IT) infrastructure.	4.4057	1.0673	4
TA4	The use of mobile application will be compatible with existing hardware and software in my organization.	4.5600	1.1119	2

Source: Developed from research

Table 4.4 illustrates the four items of technology availability (TA). TA1 ranked number one with the highest mean value of 4.7371 and its standard deviation value is 1.0055, however, TA3 has the lowest mean value of 4.4057 and its standard deviation value is 1.0673.

Table 4.5: Summary of Central Tendency for Top Management Support (TMS)

Variables	Items	Mean	Standard Deviation	Ranks
TMS1	Top management in my organization is interested in adopting mobile application.	4.5371	1.3164	2
TMS2	Top management in my organization considers mobile application adoption is important.	4.6400	1.2042	1
TMS3	Top management in my organization has shown support for mobile application adoption.	4.3086	1.0650	4
TMS4	Top management in my organization intend to adopt mobile application in the future.	4.4800	1.2027	3

Source: Developed from research

There are four items of top management support (TMS) presented in table 4.5. TMS2 has the highest mean value of 4.6400 and its standard deviation value is 1.2042, meanwhile, TMS3 has the lowest ranking as it has a mean value of 4.3086 and its standard deviation value is 1.0650.

Table 4.6: Summary of Central Tendency for Technology Support Infrastructure (TSI)

Variables	Items	Mean	Standard Deviation	Ranks
TSI1	All the employees in my organization have basic knowledge about mobile application.	4.9143	0.9934	1
TSI2	My organization hires highly specialized or knowledgeable personnel for mobile application.	4.5486	1.0810	2
TSI3	My organization is able to get relevant training services of mobile application.	4.2800	1.1226	3

Source: Developed from research

The three items of technology support infrastructure (TSI) are shown in table 4.6. TSI1 has the highest mean value of 4.9143 and its standard deviation value is 0.9934. On the other hand, the lowest mean value is 4.2800 recorded by TSI3 which has a standard deviation value of 1.1226.

Table 4.7: Summary of Central Tendency for Cost (s) (C)

Variables	Items	Mean	Standard Deviation	Ranks
C1	My organization is able to support the cost of developing mobile application.	4.2057	1.3950	2
C2	My organization is able to support the cost of maintaining mobile application.	4.0514	1.1659	4
C3	My organization is able to support the cost of upgrading mobile application.	4.1543	1.2568	3
C4	My organization is able to support the cost of training mobile application.	4.3771	1.0589	1

Source: Developed from research

Cost(s) (C) has four items as presented in table 4.7. C4 marks the highest value of mean at 4.3771 and its standard deviation value is 1.0589, at the same time, the lowest value of mean is scored by C2 at 4.0514 and it has a standard deviation value of 1.1659.

Table 4.8: Summary of Central Tendency for Security and Privacy Risks (SPR)

Variables	Items	Mean	Standard Deviation	Ranks
SPR1	My organization believes mobile application maintains the privacy of our databases.	4.1200	1.2560	4
SPR2	My organization believes mobile application maintains the confidentiality of our databases.	4.2571	1.1681	1
SPR3	My organization has anti-virus software for mobile application to safeguard clients' data.	4.2343	1.2115	3
SPR4	My organization has operating system for mobile application with security patches.	4.2457	1.1408	2

Source: Developed from research

Table 4.8 illustrates the four items of security and privacy risks (SPR). SPR2 obtained the highest mean of 4.2571 among all items and a standard deviation of 1.1681. The lowest mean is scored by SPR1 in which the mean is 4.1200 with standard deviation of 1.2560.

Table 4.9: Summary of Central Tendency for Adoption of Mobile Application (AMA)

Variables	Items	Mean	Standard Deviation	Ranks
AMA1	My organization will try to adopt mobile application.	4.8800	1.0408	2
AMA2	My organization intend to continue using mobile application in the future.	4.8857	1.0442	1
AMA3	My organization plan to continue to use mobile application frequently.	4.8457	1.1008	3

Source: Developed from research

Table 4.9 indicates the three items of adoption of mobile application (AMA). The highest ranking with highest mean of 4.8857 is scored by AMA2 with standard deviation of 1.0442 whereas the lowest ranking is obtained by AMA3 with mean value at 4.8457 and it standard deviation's value is 1.1008.

4.2 Scale Measurement of Research

4.2.1 Test of Internal Reliability

Table 4.10: Internal Reliability Test

Construct	Cronbach's Alpha	Number of Items
Technology Availability (TA)	0.8499	4
Top Management Support (TMS)	0.7836	4
Technology Support Infrastructure (TSI)	0.7995	3
Cost (C)	0.7942	4
Security and Privacy Risk (SPR)	0.7753	4
Adoption of Mobile Application (AMA)	0.7619	3

Source: Developed from the research.

Based on Table 4.10, all our independent variables and dependent variable recorded alpha coefficient value of above 0.7. For instance, Cronbach's Alpha shows 0.8499 for the 4 items of Technology Availability (TA), 0.7836 for the 4 items of Top Management Support (TMS), 0.7995 for 3 items of Technology Support Infrastructure (TSI), 0.7942 for 4 items of Cost (C), and 0.7753 for 4 items of Security and Privacy Risk (SPR). Moreover, the dependent variable, Adoption of Mobile Application (AMA) has a Cronbach's Alpha of 0.7619 for 3 items. Therefore, this has proven that all variables are reliable and consistent (Santos, 1999).

4.3 Inferential Analysis of Research

4.3.1 Analysis of Pearson Correlation

Table 4.11: Pearson Correlation Coefficient

	TA	TMS	TSI	COST	SPR	AMA
TA	1.0000	0.2065	0.2634	0.2097	0.2646	0.3174
TA		0.0061	0.0004	0.0053	0.0004	<.0001
TMS	0.2065	1.0000	0.4395	0.4461	0.6263	0.6525
TMS	0.0061		<.0001	<.0001	<.0001	<.0001
TSI	0.2634	0.4395	1.0000	0.4693	0.4195	0.5440
TSI	0.0004	<.0001		<.0001	<.0001	<.0001
COST	0.2097	0.4461	0.4693	1.0000	0.5571	0.5341
COST	0.0053	<.0001	<.0001		<.0001	<.0001
SPR	0.2647	0.6263	0.4195	0.5571	1.0000	0.6215
SPR	0.0004	<.0001	<.0001	<.0001		<.0001
AMA	0.3174	0.6525	0.5440	0.5341	0.6215	1.000
AMA	<.0001	<.0001	<.0001	<.0001	<.0001	

Source: Developed from the research.

4.3.1.1 Test of Significant

H1: Technology Availability

Table 4.11 indicates that Technology Availability and Adoption of Mobile Application has presented a correlation of r=0.31742 (p<0.0001). This result shows that Technology Availability has significant relationship with Adoption of Mobile Application among tourism organizations in Malaysia. Malhotra (2010) states that Technology Availability of 0.31742 is categorized into weak coefficient range.

H2: Top Management Support

Table 4.11 shows that Top Management Support and Adoption of Mobile Application has a correlation of r=0.65250 (p<0.0001). This result shows that Top Management Support has significant relationship with Adoption of Mobile Application among tourism organizations in Malaysia. Malhotra (2010) states that Top Management Support of 0.65250 is categorized into moderate coefficient range.

H3: Technology Support Infrastructure

Table 4.11 shows that Technology Support Infrastructure and Adoption of Mobile Application has a correlation of r=0.54397 (p<0.0001). This result shows that Technology Support Infrastructure has significant relationship with Adoption of Mobile Application among tourism organizations in Malaysia. Malhotra (2010) states that Technology Support Infrastructure of 0.54397 is categorized into moderate coefficient range.

H4: Cost(s)

Table 4.11 shows that Cost(s) and Adoption of Mobile Application has a correlation of r=0.53413 (p<0.0001). This result shows that Cost(s) has significant relationship with Adoption of Mobile Application among tourism organizations in Malaysia. Malhotra (2010) states that Cost(s) of 0.53413 is categorized into moderate coefficient range.

H5: Security and Privacy Risks

Table 4.11 shows that Security and Privacy Risks and Adoption of Mobile Application has a correlation of r=0.62153 (p<0.0001). This result shows that

Security and Privacy Risks have significant relationship with Adoption of Mobile Application among tourism organizations in Malaysia. Malhotra (2010) states that Security and Privacy Risks of 0.62153 is categorized into moderate range of coefficient.

4.3.2 Multiple Linear Regressions of Research

4.3.2.1 Strength of Relationship

Table 4.12: Model Summary

Root MSE	Dependent Mean	Coeff. Var.	R-Square	Adj. R-Square
0.63444	4.87048	13.02628	0.5788	0.5664

Source: Developed from the research

As shown in Table 4.12, the adjusted R Square (R^2) value of 0.5664. This explains that 56.64% of our research outcome is notably accounted for the examined regression line. In addition, it also indicates that there are 56.64% of variance in the Adoption of Mobile Application among Tourism Organization in Malaysia is explained by all the independent variables in our research.

Table 4.13: ANOVA

Analysis of Variance					
Source	**DF**	**Sum of Squares**	**Mean Square**	**F Value**	**Pr > F**
Model	5	93.48329	18.69666	46.45	<.0001
Error	169	68.02528	0.40252		
Corrected Total	174	161.50857			

Source: Developed from the research

Table 4.13 has shown the F value of 46.45 and its significance level (Pr>f) is <0.0001. Thus, the entire regression model which contains the five variables is able to perform well and explains the variation in the Adoption of Mobile Application among Tourism Organization in Malaysia.

Table 4.14: Coefficient

Parameter Estimates						
Variable	**DF**	**Parameter Estimate**	**Standard Error**	**t Value**	**Pr > |t|**	**Standardized Estimate**
Intercept	1	0.33497	0.37523	0.89	0.3733	0
TA	1	0.14495	0.07228	2.01	0.0465	0.10547
TMS	1	0.32466	0.06295	5.16	<.0001	0.34214
TSI	1	0.23633	0.06753	3.50	0.0006	0.20997
COST	1	0.12832	0.05698	2.25	0.0256	0.14299
SPI	1	0.18902	0.06308	3.00	0.0031	0.21157

Source: Developed from the research

According to Table 4.14, the equation is formed based on the multiple regression model:

Y = 0.33497 + 0.14495(TA) + 0.32466(TMS) + 0.23633(TSI) + 0.12832(C) + 0.18902(SPI)

Y= Adoption of Mobile Application
TA= Technology Availability
TMS= Top Management Support
C= Cost(s)
SPI= Security and Privacy Risks

4.3.2.2 Test of Significant

H1: Technology availability has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

Table 4.14 shows that technology availability has a significant value of 0.0465 and it is lower than 0.05. Hence, this proves that technology availability has significant relationship with the adoption of mobile application among tourism organizations. Therefore, H1 is supported.

Based on the above equation, the adoption of mobile application will increase by 0.14495 unit if technology availability is increased by 1 unit.

H2: Top management support has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

According to Table 4.14, top management support has obtained a significant value of <0.0001 and it is lower than 0.05. Hence, top management support has significant relationship with the adoption of mobile application among tourism organizations. Accordingly, H2 is supported.

Based on the above equation, the adoption of mobile application will increase by 0.32466 unit if technology availability is increased by 1 unit.

H3: Technology support infrastructure has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

Based on Table 4.14, technology support infrastructure has a significant value of 0.0006 which is lower than 0.05. Therefore, technology support infrastructure has a significant relationship with the adoption of mobile application among tourism organizations. Hence, H3 is supported.
Based on the above equation, the adoption of mobile application will increase by 0.23633 unit if technology support infrastructure is increased by 1 unit.

H4: Cost(s) has significant influence on the adoption of mobile application among tourism organizations in Malaysia.

Based on Table 4.14, cost(s) has a significant value of 0.0256 which is lower than 0.05. Therefore, cost(s) has significant relationship with the adoption of mobile application among tourism organizations. Hence, H4 is supported.

Based on the above equation, the adoption of mobile application will increase by 0.12832 unit if cost(s) is increased by 1 unit.

H5: Security and privacy risks have significant influence on the adoption of mobile application among tourism organizations in Malaysia.

According to Table 4.14, security and privacy risks have a significant value of 0.0031 and it is no greater than 0.05. Therefore, security and privacy risks have significant relationship with the adoption of mobile application among tourism organizations. Hence, H5 is supported.

Based on the above equation, the adoption of mobile application will increase by 0.18902 unit if security and privacy risks is increased by 1 unit.

4.4 Conclusion

Overall, this chapter has demonstrated the results of the relationship between the five variables and Adoption of Mobile Application among Tourism Organization in Malaysia. In the following chapter, we will carry out an in-depth discussion regarding the findings of our research, research implications, limitations of our research and proposed direction for future study.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS OF RESEARCH

5.0 Introduction

In this chapter, we will summarize the statistical analysis based on the previous analyzed data. Besides, this chapter will also include the major findings and implications of our study. Furthermore, limitations and recommendations are being discussed for the future study before we proceed to the conclusion.

5.1 Summary of Statistical Analyses of Research

5.1.1 Descriptive Analysis

5.1.1.1 Research Respondent's Demographic Profile

According to our respondent's demographic profile stated in the previous chapter, majority of our respondents are tourism organizations which operate in accommodation section in tourism industry. It has a significant percentage of 60.57% and it is followed by the travel agency section which represents 27.43% and tourist attraction which represents 12% of our total respondents. The high percentage of the accommodation section is due to the facts that there are 1369 hotel which offers 137952 rooms in Peninsular Malaysia (Malaysian Association of Hotel, May). In addition, accommodation has generated 16.93 billion gross values which are much higher than the 1.88 billion gross value of travel agency (The Office of Chief Statistician Malaysia,

2013). Besides, majority of the tourism organizations has been operated in this industry for 6 to 10 years with a percentage of 38.29%. Moreover, we also found that most of our respondent's organizations are made up of 11 to 500 employees with a high percentage of 86.29% as compared to the 5.14% of respondent's organizations who claimed that they have only 1 to 10 employees.

5.1.1.2 Summary of Central Tendencies Measurement

In accordance to our analysis, TA1, TMS2, TSI1, C4, SPR2 and AMA2 recorded the highest mean value while TA3, TMS3, TSI3, C2, SPR1 and AMA3 recorded the lowest mean value.

5.1.2 Scale Measurement of Research

5.1.2.1 Test of Reliability

We have applied Cronbach's Alpha to test the reliability of the 22 items that includes the five independent variables (TA, TMS, TSI, C and SPR) and one dependent variable (AMA). From the analysis, both independent variables and dependent variable are reliable. The variable that obtains the highest value in the reliability test is TA, followed by TSI, C, TMS, SPR, and AMA.

5.1.3 Inferential Analyses of Research

5.1.3.1 Pearson Correlation Coefficient

In this research, the strength of association and relationship among our six variables was analyzed through Pearson Correlation. The result indicates that all five independent variables demonstrated positive significant correlation with our dependent variable. According, the strongest positive relationship with the dependent variable (AMA) is TMS with the value of 0.6525, followed by SPR, TSI, C, and lastly TA. Moreover, all independent variables recorded a p-value score of less than 0.0001 that is lesser than 0.05. Therefore, all constructs are proven to demonstrate significant association with AMA.

5.1.3.2 Multiple Regression Analysis

Based on the results obtained, the F value of 46.45 has significant level of less than 0.0001. This explains that all the five variables are significant. All independent variable were found to have positive relationship with the dependent variable. Furthermore, the value of R^2 is 0.5664 which shows that 56.64% of the variation in the adoption of mobile application among tourism organization in Malaysia has been explained by the five independent variables. The following equation is formed based on the multiple regression model:

AMA = 0.33497 + 0.14495(TA) + 0.32466(TMS) + 0.23633(TSI) + 0.12832(C) + 0.18902(SPI)

According to the equation above, TMS has proved to exert the strongest influence on AMA while C exerts weakest influence on AMA.

5.2 Discussion of Research Major Findings

H1: Technology Availability has significant influence on the adoption of mobile application among tourism organizations in Malaysia

According to Oliveira and Martins (2011), the availability of technology has positive influence on the adoption of mobile application among organization. Besides, Picoto et al. (2014) also believed that the efficiency in adopting mobile technologies such as mobile application depends on the technology system of an organization. In other words, an organization will tend to adopt mobile application if the technology system of their organization could support the application. Another statement mentioned that with the availability of the technology system, it will be easier for the organization to adopt mobile application (Lian, Yen, & Wang, 2014). Thus, technology availability is proven as a factor to influence the adoption of mobile application.

H2: Top management support has significant influence on the adoption of mobile application among tourism organizations in Malaysia

According to recent studies, Potnis and Deosthali (2014) found top management support is one of the significant factors responsible in the adoption of mobile application. This research finding is also being supported by the existing literature on organizational adoption of mobile technologies by Gallivan, Spitler, and Koufaris (2005) who stated top management support is considered as one of the most influential determinant that affects technology adoption. It involves the top management to devote time to the technology in proportion with its cost and potential benefits (Young & Jordan, 2008). To encourage an organization to adopt mobile technology, change in the top management's perceptions is insufficient, what most needed is a level of involvement where their behaviors toward technology adoption must be changed as well (Madanayake, Gregor, & Hayes, 2009). When the leaders have a favorable attitude toward the innovation, it can accelerate its adoption (Rogers,

2003). Hence, top management support has proven as having a positive relationship with the adoption of mobile application.

H3: Technology Support Infrastructure has significant influence on the adoption of mobile application among tourism organizations in Malaysia

This hypothesis is consistent with the findings from other scholars like Tehrani (2013), who noted that technology support infrastructure is important in influencing technology adoption. According to Martin (2012), organizations will tend to adopt mobile technology when they perceive knowledgeable professionals and available external support, such as relevant training services, able to enhance organizational performance. This is also supported by empirical evidence that organizations with more knowledgeable employees of technology has higher possibility to adopt the innovation (Ettlie, 1990).

H4: Cost(s) has significant influence on the adoption of mobile application among tourism organizations in Malaysia

Our research finding is consistent with the past study conducted by other researcher which has proven that cost(s) is one of the crucial barriers that will influence the adoption of technology (Tan, Chong, Ooi, & Chong, 2010). Besides, another past research also mentioned that if the cost of adopting the technology innovations is high, the managerial attitudes towards it will be more negative (Ortbach, Brockmann, & Stieglitz, 2014). Furthermore, if the cost of developing, maintaining, upgrading and employee training are high, the adoption of the mobile application will be signification lower (Teo, Lin, & Lai, 2009). Nevertheless, in the context of our research, we found that tourism organizations will adopt mobile applications in their business transactions if they are able to support these costs.

H5: Security and Privacy Risks have significant influence on the adoption of mobile application among tourism organizations in Malaysia.

Prior research studies have found that Security and Privacy Risks have significant influence on the adoption of mobile application among tourism organizations in Malaysia (Gupta & Xu, 2010). In the adoption of mobile application, several security and privacy risks may arise (Daud, Kassim, Said, & Noor, 2011). For instance, the lost and leakage of customer information, the possibility of virus attack and account being hacked may expose customers' private information (Tan, Siah, Ooi, Hew, & Chong, 2015). A strong administrative or organizational regulation and operating systems are needed for organization to protect and minimize the security and privacy for a successful adoption of mobile application (Vasileiadis, 2014). Organizations believe that they need a good risk management system for them to adopt mobile application. This is because it is very important to keep all the information transmitted to the organization mobile application platform in private and secure (Wauyu & Maharaj, 2011). Concluding from the prior studies, security and privacy risks are one of the factor that influencing mobile application's adoption among tourism organizations in Malaysia.

5.3 Implications of the Research Study

5.3.1 Managerial Implications

This research study is a fruitful framework to facilitate mobile application adoption for tourism industry practitioners as it covers technological, organizational, and environmental conditions that managers and practitioners need to take into consideration.

In term of technological context, technology availability is proven as influencing factor for mobile application adoption. In order for an organization to adopt mobile application successfully, organizations should implement telecommunication and information technology (IT) infrastructures (including hardware and software) since the organizations have understood the importance of technology availability. Furthermore, the common standards and processes of the technology infrastructures must be planned carefully before replacing the existing business approaches with new technology infrastructures.

In term of organization context, since there is empirical finding about top management support reveals that it significantly influences mobile tourism adoption, top management can greatly enhance the receptivity to mobile application through clear and convincing communication of organizational involvement and commitment through mission and vision, goals and objectives, long term strategies, as well as allocating sufficient resources to support its adoption. It is important for top managers to make resources readily available to their employees in order to enhance the adoption of mobile application (Teo, Tan, Ooi, Hew, & Yew, 2015).

For environmental context, technology support infrastructure provides external assistance that is imperative for successful mobile application adoption. In this case, hiring mobile technology experts and external consultants can be the important sources of mobile technology knowledge and skills to an organization. Apart from that, organization can source for training services in the related field to educate the existing employees in order to familiarize with the newly adopted mobile application system.

Simultaneously, costs is found to be another crucial factor as the high costs of establishment and maintenance, costs of training IT employees can inhibit of adoption of mobile application among tourism organizations. Therefore, an

excellent financial base must be maintained in order to fully and successfully implement the sophisticated mobile software. With the well-planned budget and cost allocation, an organization will be able to adopt the mobile application more effectively.

Furthermore, security and privacy risks also play as key determinants of adoption of mobile application among tourism organizations. If the organizations have a strong protection and security system in place by implementing network access control and intrusion detection to prevent unauthorized access over organizational network that must be monitored by information technology professionals, it could play a meaningful role in facilitating the adoption.

5.3.2 Theoretical Implications

From a theoretical perspective, this study offers significant contribution to the current knowledge. The present research studies have focused on analyzing from the consumer viewpoint, whereas fewer works have addressed the acceptance of mobile application adoption from organizational perspective, especially in tourism industry. We applied and tested the established TOE framework in mobile application adoption context, and also extended the mobile by incorporating costs and security and privacy risks as additional attributes. We believe that the extended TOE can provide richer insights than TOE alone. Hence, this study will be useful for other future studies on mobile technology innovation adoption.

5.4 Limitation of Study

The primary limitation of the research is that it is conducted in Malaysia which the result conducted from research in other countries may not be the same (Wong, Lee, Lim, Chai, & Tan, 2012). Besides, the research is carried out based on limited sources of prior studies in the related field, thus, studies from other countries were adopted into this research in which the contents and results may not be suitable due to different cultures and value across countries.

Secondly, there is a limitation of variables used in this research framework while other variables may be possible to explain the adoption of mobile application among tourism organizations in Malaysia. Furthermore, in this research, only TOE framework is adopted which could be inadequate to predict the influencing factors to adopt mobile application.

In addition, the time frame in conducting this research is considerably limited and only the respondents in Peninsular Malaysia could be targeted in which the sample size may be insufficient to generalize the adoption of mobile application in entire Malaysia. Moreover, only questionnaire survey is used in this research, as a result, the opinion of our respondent opinions may be limited to the pre-set options of answer.

5.5 Recommendation for Future Studies

In the future research, the study can be further enhanced by conducting similar study in other countries. This is because comparison can be made between several countries to examine the factors influencing the organizations in tourism industry to adopt mobile application. Besides, other than these five variables in this study, other variables such as government support and perceived risks can be tested and included in the future study to examine the adoption of mobile application. Furthermore, a

longer time frame should be allocated to conduct the research so that a larger sample size can be reached and thus, able to attain better result.

Moreover, sectors other than accommodation, tourist attraction, and travel agency should be included since mobile application is new to the tourism organizations in Malaysia. Lastly, different method of collecting data can be implemented to gain better information, understanding and result for the research (Tan, Sim, Ooi, & Phusavat, 2012). Method such as interview can be used to collect data from the respondents so that the researchers are able to obtain greater information and better clarification on the data given by the respondents.

5.6 Conclusion

In short, our research project aims to examine the factors influencing the adoption of mobile application among tourism organizations in Malaysia. The model implemented in this research was an extended model of TOE model to test the adoption of mobile application among tourism organizations in Malaysia. In this research, Technology Availability, Top Management Support, Technology Support Infrastructure, Cost(s), and Security and Privacy risks have significantly influence the adoption of mobile application among tourism organizations in Malaysia. This research project is able to provide a basic understanding which is beneficial for future researchers, sectors in tourism industry, software developers as well as government who wish to enhance the tourism industry in Malaysia.

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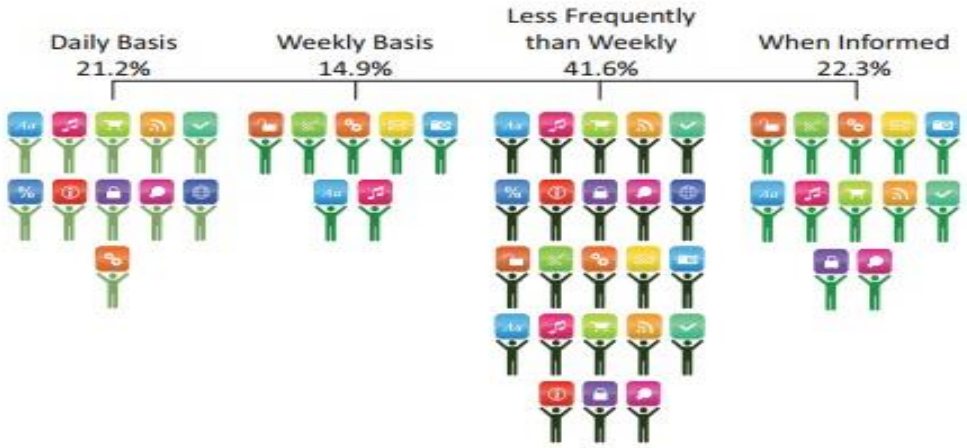
APPENDICES

Appendix 1.1 Frequency of Mobile Application Usage



Source: MCMC (2012)

Appendix 3.1 Questionnaire

Factors Influencing the Adoption of Mobile Application among Tourism Organizations in Malaysia

The purpose of this survey is concerning the factors influencing the adoption of mobile application among tourism organizations in Malaysia. Please answer all the questions to the best of your knowledge. There are no wrong responses to any of these statements. All responses are completely confidential.

Thank you for your participation.

Instructions:

1. There are **two (2)** sections in this questionnaire. Please answer **ALL** questions in **ALL** sections.
2. The contents of the questionnaire will be kept strictly confidential.
3. Completion of this form will take you approximately 10 to 15 minutes.

Section A: Demographic Profile

In this section, we are interested in your organization's background in brief. Please tick your answer and your answer will be kept strictly confidential.

QA1 :Main Section in Tourism Industry:	□ Accommodation (Hotel, Resort) □ Travel Agency □ Tourist Attraction □ Other
QA2: For how many years is your organization in this industry? :	□ Less than one year □ 1 to 5 years □ 6 to 10 years □ More than 10 years
QA3: How many employees are working in your organization? :	□ 1 – 10 Employees □ 11 – 500 Employees □ 501+ Employees

Section B: Factors that influence your organization to adopt mobile application

This section is seeking your opinion regarding to the factors that influence your organizations' intention to use mobile application. Respondents are asked to indicate the extent to which they agreed or disagreed with each statement using 7 Likert scale [(1) = strongly disagree; (2) = disagree; (3) = slightly disagree; (4) = neutral; (5) = slightly agree; (6) = agree; (7) = strongly agree] response framework. Please ***circle one number per line*** *to indicate the extent to which you agree or disagree towards the following statements and* ***tick*** *the related answer for Question 3.*

No.	Question	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
	B1) Technology Availability (TA)							
TA1.	My organization has a good telecommunications infrastructure.	1	2	3	4	5	6	7
TA2.	My organization has required software platforms to run mobile application.	1	2	3	4	5	6	7

TA3.	Mobile application adoption is compatible with my organization's information technology (IT) infrastructure.	1	2	3	4	5	6	7
TA4.	The use of mobile application will be compatible with existing hardware and software in my organization.	1	2	3	4	5	6	7

No.	Question	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
	B2) Top Management Support (TMS)							
TMS1.	Top management in my organization is interested in adopting mobile application.	1	2	3	4	5	6	7
TMS2.	Top management in my organization considers mobile application adoption is important.	1	2	3	4	5	6	7
TMS3.	Top management in my organization has shown support for mobile application adoption.	1	2	3	4	5	6	7
TMS4.	Top management in my organization intended to adopt mobile application in the future.	1	2	3	4	5	6	7

No.	Question	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	B3) Technology Support Infrastructure (TSI)							
TSI1.	All the employees in my organization have basic knowledge about mobile application.	1	2	3	4	5	6	7
TSI2.	My organization hires highly specialized or knowledgeable personnel for mobile application.	1	2	3	4	5	6	7
TSI3.	My organization is able to get relevant training services of mobile application.	1	2	3	4	5	6	7

No.	Question	Strongly disagree	Disagree	Slightly disagree	Neutral	Slightly agree	Agree	Strongly agree
	B4) Cost(s) (C)							
C1.	My organization is able to support the cost of	1	2	3	4	5	6	7

	developing mobile application.							
C2.	My organization is able to support the cost of maintaining mobile application.	1	2	3	4	5	6	7
C3.	My organization is able to support the cost of upgrading mobile application.	1	2	3	4	5	6	7
C4.	My organization is able to support the cost of training mobile application.	1	2	3	4	5	6	7

No.	Question	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	B5) Security and Privacy Risks (SPR)							
SPR1.	My organization believes mobile application maintains the privacy of our databases.	1	2	3	4	5	6	7
SPR2.	My organization believes mobile application maintains the confidentiality of our databases.	1	2	3	4	5	6	7
SPR3.	My organization has anti-virus software for mobile application to safeguard clients' data.	1	2	3	4	5	6	7
SPR4.	My organization has operating system for mobile application with security patches.	1	2	3	4	5	6	7

No.	Question	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	B6) Adoption of Mobile Application (AMA)							
AMA1.	My organization will try to adapt mobile application.	1	2	3	4	5	6	7
AMA2.	My organization intend to continue using mobile application in the future.	1	2	3	4	5	6	7
AMA3.	My organization plan to continue to use mobile application frequently	1	2	3	4	5	6	7

Thank you for your time and cooperation.

-The End-

Appendix 4.1: Demographic Analysis

Table 4.1 Main Section in Tourism Industry

Section	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
Accommodation	106	106	60.57	60.57
Travel Agency	48	154	27.43	88
Tourist Attraction	21	175	12	100
Total	175		100	

Source: Developed from research

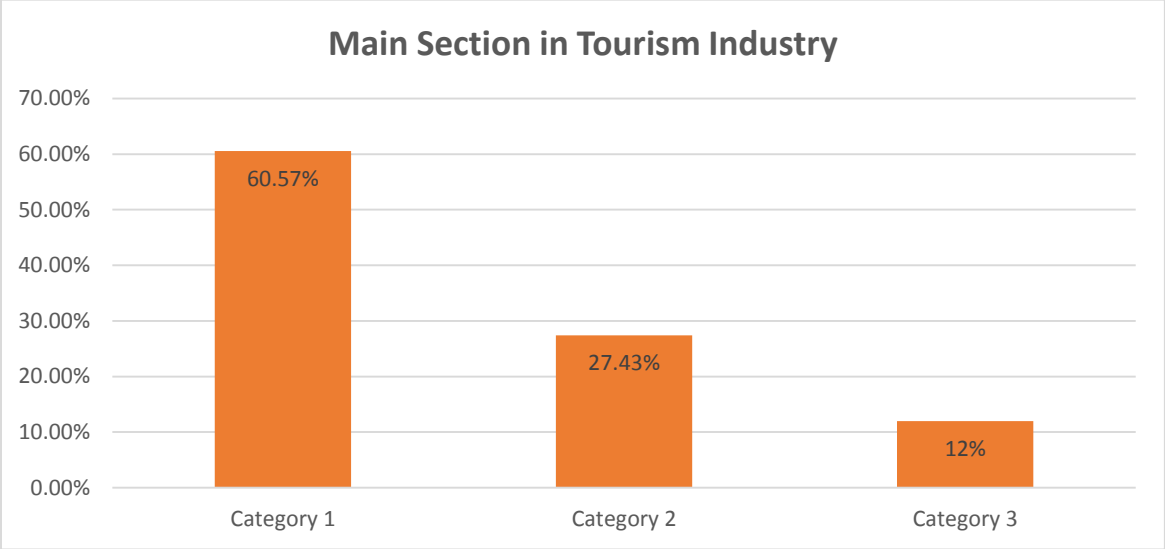


Table 4.2 Years in Tourism Industry

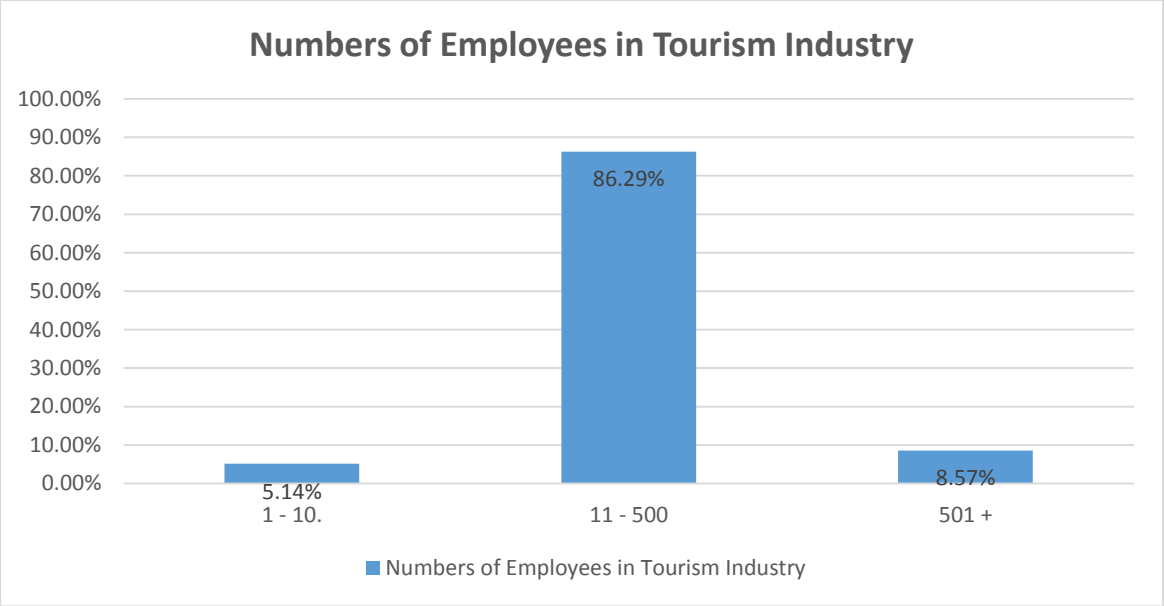
Year	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
Less than 1 year	9	9	5.14	5.14
1 to 5 years	54	63	30.86	36
6 to 10 years	67	130	38.29	74.29
More than 10 years	45	175	25.71	100
Total	175		100	

Source: Developed from research

Table 4.3 Numbers of Employees in Tourism Industry

Employees	Frequency	Cumulative Frequency	Percent (%)	Cumulative Percent (%)
1 - 10	9	9	5.14	5.14
11 - 500	151	160	86.29	91.43
501 +	15	175	8.57	100
Total	175		100	

Source: Developed from research



Appendix 4.2: Internal Consistency Analysis

Internal Consistency Analysis

The CORR Procedure

6 Variables:	Technology Availability Application	Top Management Support	Tech Support Infrastructure	Cost	Security Privacy Risk	Adoption of Mobile

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Technology Availability	175	4.55000	0.70098	796.25000	2.75000	6.50000
Top Management Support	175	4.49143	1.01529	786.00000	1.75000	7.00000
Tech Support Infrastructure	175	4.58095	0.85599	801.66667	2.33333	6.66667
Cost	175	4.19714	1.07365	734.50000	1.25000	7.00000
Security Privacy Risk	175	4.21429	1.07836	737.50000	2.00000	6.25000
Adoption of Mobile Application	175	4.87048	0.96344	852.33333	1.66667	6.66667

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.830513
Standardized	0.823888

Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables	
	Correlation with Total	Alpha	Correlation with Total	Alpha
Technology Availability	0.316741	0.849091	0.319245	0.849867
Top Management Support	0.660991	0.790312	0.647646	0.783632
Tech Support Infrastructure	0.574329	0.809080	0.573392	0.799453
Cost	0.607080	0.803248	0.598546	0.794150
Security Privacy Risk	0.699028	0.781479	0.686038	0.775252
Adoption of Mobile Application	0.751067	0.771164	0.746038	0.761877

Appendix 4.3 Pearson Correlation Analysis

Pearson Analysis

The CORR Procedure

6 Variables:	Technology Availability	Top Management Support	Tech Support Infrastructure	Cost	Security Privacy Risk	Adoption of Mobile Application

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Technology Availability	175	4.55000	0.70098	796.25000	2.75000	6.50000
Top Management Support	175	4.49143	1.01529	786.00000	1.75000	7.00000
Tech Support Infrastructure	175	4.58095	0.85599	801.66667	2.33333	6.66667
Cost	175	4.19714	1.07365	734.50000	1.25000	7.00000
Security Privacy Risk	175	4.21429	1.07836	737.50000	2.00000	6.25000
Adoption of Mobile Application	175	4.87048	0.96344	852.33333	1.66667	6.66667

Pearson Correlation Coefficients, N = 175
Prob > |r| under H0: Rho=0

	Technology Availability	Top Management Support	Tech Support Infrastructure	Cost	Security Privacy Risk	Adoption of Mobile Application
Technology Availability	1.00000	0.20652	0.26340	0.20971	0.26467	0.31742
		0.0061	0.0004	0.0053	0.0004	<.0001
Top Management Support	0.20652	1.00000	0.43946	0.44608	0.62634	0.65250
	0.0061		<.0001	<.0001	<.0001	<.0001
Tech Support Infrastructure	0.26340	0.43946	1.00000	0.46926	0.41952	0.54397
	0.0004	<.0001		<.0001	<.0001	<.0001
Cost	0.20971	0.44608	0.46926	1.00000	0.55711	0.53413
	0.0053	<.0001	<.0001		<.0001	<.0001
Security Privacy Risk	0.26467	0.62634	0.41952	0.55711	1.00000	0.62153
	0.0004	<.0001	<.0001	<.0001		<.0001
Adoption of Mobile Application	0.31742	0.65250	0.54397	0.53413	0.62153	1.00000
	<.0001	<.0001	<.0001	<.0001	<.0001	

Appendix 4.4 Mulitple Regression Analysis

Multiple Linear Regression

The REG Procedure
Model: Linear_Regression_Model
Dependent Variable: Adoption of Mobile Application

Number of Observations Read	175
Number of Observations Used	175

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	93.48329	18.69666	46.45	<.0001
Error	169	68.02528	0.40252		
Corrected Total	174	161.50857			

Root MSE	0.63444	R-Square	0.5788
Dependent Mean	4.87048	Adj R-Sq	0.5664
Coeff Var	13.02628		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Standardized Estimate
Intercept	1	0.33497	0.37523	0.89	0.3733	0
Technology Availability	1	0.14495	0.07228	2.01	0.0465	0.10547
Top Management Support	1	0.32466	0.06295	5.16	<.0001	0.34214
Tech Support Infrastructure	1	0.23633	0.06753	3.50	0.0006	0.20997
Cost	1	0.12832	0.05698	2.25	0.0256	0.14299
Security Privacy Risk	1	0.18902	0.06308	3.00	0.0031	0.21157

Appendix 5.1 Registered Hotels As At May 2014

STATISTIK PENDAFTARAN DAN PENGELASAN PREMIS PENGINAPAN PELANCONG SEHINGGA MEI 2014

A: PREMIS PENGINAPAN PELANCONG YANG TELAH DIKELASKAN

SEMENANJUNG MALAYSIA	JUMLAH PENDAFTARAN	SUDAH DIKELASKAN				JUMLAH KESELURUHAN	
		BINTANG		ORKID			
		JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK
PERLIS	29	9	687	8	166	17	853
KEDAH	102	53	7,028	18	961	71	7,989
P.PINANG	121	48	9,154	34	527	82	9,681
PERAK	188	62	6,768	62	1,485	124	8,253
SELANGOR	222	91	9,423	54	1,177	145	10,600
N.SEMBILAN	109	43	7,056	30	670	73	7,726
MELAKA	207	72	9,616	69	2,820	141	12,436
JOHOR	233	89	9,995	62	1,825	151	11,820
PAHANG	250	81	19,599	79	1,744	160	21,343
KELANTAN	126	35	2,950	49	989	84	3,939
TERENGGANU	129	51	4,742	52	1,326	103	6,068
JUMLAH	1,716	634	87,018	517	13,690	1,151	100,708
SABAH / SARAWAK	**JUMLAH PENDAFTARAN**	**SUDAH DIKELASKAN**				**JUMLAH KESELURUHAN**	
		BINTANG		ORKID			
		JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK
SABAH	386	162	18,116	122	2,769	284	20,885
SARAWAK	240	85	9,039	120	2,588	205	11,627
JUMLAH	626	247	27,155	242	5,357	489	32,512
WILAYAH PERSEKUTUAN	**JUMLAH PENDAFTARAN**	**SUDAH DIKELASKAN**				**JUMLAH KESELURUHAN**	
		BINTANG		ORKID			
		JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK	JUMLAH HOTEL	JUMLAH BILIK
KUALA LUMPUR	247	144	32,798	45	2,048	189	34,846
PUTRAJAYA	5	5	1,229	0	0	5	1,229
LABUAN	34	16	995	8	174	24	1,169
JUMLAH	286	165	35,022	53	2,222	218	37,244
JUMLAH KESELURUHAN	**2,628**	**1,046**	**149,195**	**812**	**21,269**	**1,858**	**170,464**

Source:http://www.hotels.org.my/images/pdf/hotel_statistic/registered%20hotel%20-%2005%202014.pdf