A STUDY OF MOBILE HOTEL BOOKING: A CASE OF CHINA

JIALIN (SNOW) WU

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A Study of Mobile Hotel Booking: A Case of China

Jialin (Snow) Wu

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CERTIFICATE OF ORIGINALITY

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JIALIN(SNOW) WU

Abstract

With the rapid development of e-commerce and m-commerce, practitioners in the tourism and hospitality industry are making great efforts to enlarge their online distribution channels and to establish their business in the mobile market. They are keen to have a better understanding of online bookers, including d-Bookers (who use a website for tourism purchasing via desktop) and m-Bookers (who use mobile applications for tourism purchasing via mobile devices).

The aim of this study is to develop a conceptual framework for understanding the factors affecting customer satisfaction and loyalty toward online hotel booking channels (the computer channel and the mobile channel). Chinese hotel bookers who have reserved a hotel room through a computer website or a mobile application (App) in the past 12 months were targeted for investigation. Beyond widening a cultural setting, this study builds a moderator-mediator mixed model linking perceived quality variables of online channels to customer loyalty, based on a theoretical background of the value co-creation paradigm and the framework of quality–satisfaction–loyalty. The key research constructs within the conceptual model are usability performance, functionality performance, perceived value for money, perceived value for time, customer satisfaction, and customer loyalty. Structural equation modeling, hierarchical regression, and independent samples t-test were employed for data analysis.

Collectively, the results from a sample of 431 d-Bookers (who used computer websites for hotel bookings) and the results from a sample of 401 m-Bookers (who used mobile Apps for hotel bookings) show that: (1) perceived quality factors (usability

performance and functionality performance) have significant and positive effects on customer satisfaction with online booking channels; (2) customer satisfaction has significant and positive effects on customer loyalty toward online booking channels; and (3) customer satisfaction mediates the relationships between the perceived quality variables (usability performance and functionality performance) and customer loyalty to the online booking channels.

The hotel booking behaviors of d-Bookers and m-Bookers were found to differ in several aspects. First, d-Booker and m-Booker were significantly different in their perceptions of functionality performance, usability performance, and perceived value for money. Second, the relative importance of the two perceived-quality variables (functionality performance and usability performance) in hotel bookings was distinct between d-Bookers and m-Bookers. Third, in regard to the moderation effects of the perceived value factors (perceived value for money and perceived value for time), the moderation effect was found significant for m-Bookers but not d-Bookers. Theoretical and managerial implications are drawn based on the findings of the study. Recommendations for future research are provided.

Keywords: e-Tourism; m-Tourism; hotel booking; satisfaction; loyalty; perceived quality; perceived value; value co-creation

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CHAPTER 1. INTRODUCTION

1.1 Chapter Introduction

This chapter introduces both the industry background and the academic background. On the basis of the background, the chapter identifies the research problem as well as the research gaps that need to be addressed. The research objectives are proposed accordingly. This chapter then explicates the scope of the study. Briefly, the study focuses on the hotel sector rather than on other sectors of the tourism and hospitality industry; the study investigates the hotel booking behaviors of d-Bookers (who have used a website for hotel bookings) and m-Bookers (who have used mobile applications for hotel bookings); the study targets Chinese hotel bookers who had a hotel booking experience via a website or a mobile application. The chapter ends with a description on how this study contributes theoretically and practically.

1.2 Background

The business world has entered into a new era with the rapid progress of information technology (IT). The Internet is altering the way people travel or purchase tourism products, while changing the tourism and hospitality industry dramatically. Nowadays, consumers utilize IT to search, identify, and purchase tourism products/services, and suppliers regard the Internet as an effective tool to communicate with customers and business partners (Buhalis, 2003). According to data from the Statistic Brain Research Institute, over half of the tourism-related reservations made in 2014 were made online, and annual online travel sales all over the world have been

continuously growing in recent years (Statistic Brain, 2015). The total worldwide online travel sales in 2015 was over $533 billion, and that number is estimated to increase to $762 billion by 2019 (eMarketer, 2016a).

There is no doubt that consumers are purchasing tourism products/services online more than ever. More and more travelers are finding travel information and making travel reservations through various online channels, including websites (from desktop computers or laptops) and mobile applications (Apps) from mobile devices (e.g. smartphones and tablets). Mobile technologies are providing alternatives—both to customers (in choice of product/service) and to tourism and hospitality practitioners (in choice of distribution channel) (Wang, Xiang, & Fesenmaier, 2016). In addition to the convenience of online tourism, mobile tourism brings the added benefits of enhanced flexibility and mobility (Christou, 2010). As PhoCusWright reported, the total US mobile travel bookings will reach US$75.85 billion in 2017, while the number of computer travel bookings (from a desktop or laptop) will decrease 1.6% from 2016 (eMarketer, 2017a). The dramatic growth of mobile travel booking does not necessarily mean that m-Bookers will surpass d-Bookers. On a global level, most online travel reservations are still made through computer websites. For example, less than 30% of online bookings are made via mobile devices in the US and the UK. In China, however, the rate of mobile booking is over 50%, and this number is predicted to continue increasing in 2017 (China Travel Daily, 2017). With the largest population and the highest number of Internet users in the world, China has become one of the biggest online travel markets in recent years. According to iResearch Consulting Group, total

online travel sales in China will reach US$109.4 billion in 2017, and this number is likely to become US$128.9 billion in 2018 (eMarketer, 2017b). Regarding the mobile travel market, China leads the world with a greater proportion of mobile bookings and the largest smartphone population. Furthermore, it has been shown that owing to strong support from the government, China is no longer a copycat but an innovator in the digital area (eMarketer, 2016b). Despite the increasing attention on China's online travel market, the particular preferences of Chinese customers for online purchasing are still not well understood, especially for Western tourism operators (Li, Lai, Harrill, Kline, & Wang, 2011; Wu, Law, & Liu, in press).

Rapidly advancing mobile technologies have transformed the meaning of travel as well as the behaviors of tourists. Mobile devices and the increasing popularity of wireless networks allow people to break through the limitations of time and location. Although travelers mostly make bookings through websites when using a desktop or laptop, they spend more time on mobile Apps than mobile websites when using mobile devices (Flurry, 2014). Mobile Apps, which are different from websites, can be accessed both online and offline, and they must be downloaded from online App stores. For tourism companies, Apps are a new tool for marketing distribution to reach an increasing number of mobile tourists. As a marketing tool, smartphones can be used before, during, or after trips (Okazaki, Campo, & Andreu, 2012). A well-designed App is expected to attract new customers and brand the company.

1.3 Problem Statement

In spite of the rapidly increasing online travel sales in China, the Chinese e-Tourism market cannot be regarded as healthy. Apart from Ctrip, which is the dominant OTA in China, other e-Tourism companies such as Qunar and eLong are operating at a sustained loss (China Travel Daily, 2015). Furthermore, the fierce price war launched by online travel operators in China is resulting in vicious competition and decreasing profit margins for Chinese tourism companies. As such, a critical question for Chinese e-tourism operators is: How can we win the competitive advantage and seize the market?

With the development of mobile tourism (m-Tourism) in China, abundant mobile Apps have emerged—including travel Apps, transport Apps, social Apps, and Apps to satisfy whatever the traveler needs. Among the various mobile Apps, the biggest online tourism operators—Ctrip and eLong—saw the importance of the mobile platform and developed their own mobile Apps with a design similar to the website. Among so many competitors, industry practitioners are trying their best to win more customers and greater loyalty; they compete to give the customer a better Apps experience and to ensure the efficiency and speed of mobile services (Venture Beat, 2013). It should be noted that tourists are likely to browse through multiple mobile Apps, when they purchase tourism products through their mobile devices. This brings up some questions: Facing so many choices, what factors are influencing the consumer's choice of a mobile App for travel-related booking? What will satisfy the consumer, while also building loyalty for long-term value within the m-Tourism context?

A great number of studies have demonstrated the importance of information search through the Internet for travel purposes (Wang, Park, & Fesenmaier, 2012). Nevertheless, studies that focus on online purchasing are relatively fewer, especially for m-Tourism purchasing (Kim, Chung, Lee, & Preis, 2015). *Information search* means searching for travel-related information through a computer channel or a mobile channel. *Tourism purchasing* in this study is defined as booking transactions for tourism products via websites or mobile Apps. It should be clarified that tourism purchasing can be either regarded as a *behavior* or a *decision*. Given the research objectives of investigating the factors that affect consumers' booking decisions as well as loyalty to a certain website or App, in this study, tourism purchasing and online booking is considered a decision rather than a behavior. Moreover, this study focuses mostly on online tourism booking along with loyalty, rather than on immediate booking behavior. *Loyalty* refers to the outcome of online booking experiences through a website or app and whether the booker is likely to book with the same website or App in the future.

There has been a tremendous amount of e-Tourism literature, and various review studies have emerged to provide systematic and comprehensive understanding (Law, Qi, & Buhalis, 2010). However, compared to e-Tourism, research on m-Tourism is insufficient and a systematic review of m-Tourism is needed. It is suggested that a good relationship between the customer (demand) and the operator's (supply) website enables the operator to gain long-term customer value (Wen, 2009). Among the previous e-Tourism research, there are numerous studies focusing on website quality. Important dimensions for evaluating the quality of tourism websites, such as usability and

functionality, were identified; these dimensions were shown to influence customer satisfaction and purchase intention (Bai, Law, & Wen, 2008). However, little is known on the subject of mobile App quality—particularly which factors are important dimensions for evaluating mobile App.

Previous m-Tourism studies related to tourist behavior are mostly about the adoption of mobile technologies (Kim, Park, & Morrison, 2008) and the change of tourist experience (Wang et al., 2012), while empirical evidence of tourists' purchasing behavior is limited. Some argue that the needs and behaviors of m-Tourism buyers are different from other buyers (Kim et al., 2015). A mobile buyer needs to save time and is more inclined to make travel-related bookings during the trip. Statistics indicate that 65% of same-day hotel bookings were made from mobile devices, while fewer same-day bookings were made from a desktop or laptop (Lee, Park, Chung, & Blakeney, 2012). Time and mobility may play an important role in a consumer's purchasing decision. Although recent m-Tourism research has shown that hotel guests use mobile devices as a mediator to facilitate the value co-creation process in the hotel staying experience (Morosan, 2015; Morosan & DeFranco, 2016), there is still a lack of information on m-Bookers' preferences in regard to hotel booking. Furthermore, most of the existing studies on value co-creation have investigated either the antecedents or the outcomes of value co-creation, while less research has been conducted to empirically explicate the reciprocity of the different beneficiaries in the value co-creation process (Wu et al., in press).

Recent research in relation to online tourism purchasing has investigated the impact of perceived value on satisfaction (Kim et al., 2015), but the construct value merely measures the value for money. It has been argued that the perceived value should not be measured just from the price aspect but also from the perspective of value for time (Gallarza & Saura, 2006, Yüksel, 2000). Moreover, although the framework of quality–satisfaction–loyalty has been widely researched in various studies (Gustafsson & Johnson, 2002; Helgesen et al., 2010; Olsen, 2002), there is no widespread agreement on the role of perceived value in this framework. Some researchers have indicated that perceived value mediates the relationship between perceived quality and satisfaction (Kuo, Wu, & Deng, 2009), whereas other studies suggest that perceived quality and perceived value directly affect satisfaction (Cronin, Brady, & Hult, 2000). Notably, perceived value is a dynamic construct that can be different according to the different stages of consuming (Sanchez, Callarisa, Rodriguez, & Moliner, 2006). It is suggested in e-business research that perceived value can enhance the translation process between consumer satisfaction and loyalty (Anderson & Srinivasan, 2003). However, limited information has been provided to support the moderation effect of perceived value in the transformation of customer satisfaction to loyalty. Additionally, most of the previous studies on m-Tourism are based on Western countries, and empirical evidence from China is limited.

1.4 Purpose and Objectives of the Study

In response to the above research gaps, by using data on Chinese consumers, this study aims to investigate the factors influencing the individual's choice for hotel

booking online, based on the paradigm of value co-creation and the framework of quality–satisfaction–loyalty. Specifically, the objectives of this research are:

1) to investigate the factors affecting the customer's choice between using a computer website or a mobile App to book a hotel;

2) to compare d-Bookers and m-Bookers in terms of hotel reservations;

3) to examine whether satisfaction mediates the relationship between the quality factors (usability performance and functionality performance) and customer loyalty; and

4) to examine whether perceived value factors (perceived value for money and perceived value for time) moderate the relationship between satisfaction and loyalty.

1.5 Scope of the Study

Unlike a computer website, a mobile App allows the supplier to have its presence on a customer's mobile device, while automatically keeping the customer's information on the App. For the mobile channel, a tourism company can have both a mobile website and a mobile App. However, substantial evidence shows that consumers prefer mobile Apps to mobile websites for the purchasing of products or services from mobile devices. The findings of a survey in relation to m-Tourism indicated a definite consumer preference for mobile Apps: about 37% of business travelers prefer to use Apps for travel, while only 10% of the respondents said they might choose to use a mobile website (Tourism Review, 2014). The reasons most consumers favor an App over the mobile website are obvious. First, a mobile App is much more convenient for users to

access than a mobile site because it takes just one tap to open an App, but to open a mobile website, the user must first open a browser, then type in a URL for the website. Second, personalization features included in an App can provide the customer a friendlier and more welcoming feeling. Moreover, by saving personal information such as the customer's credit card information and spending habits, the mobile App is not only appealing to customers but also to suppliers due to the advantage it offers in terms of deploying loyalty programs. For tourism industry operators, an App is more appropriate because for destinations located in places where Internet access is limited, a travel-related App can allow users to save the required information before their trip. Furthermore, tourism suppliers have greater control over their presence on a mobile device with an App than with a mobile site, thereby making it easier to achieve customer loyalty. As such, in this current study, we focus on mobile Apps rather than mobile websites in terms of the mobile channel for hotel bookings. More specifically, the term *Apps* in this study refers to mobile applications, and the term *m-Booker(s)* refers to people who make hotel bookings via Apps. The term *websites* refers only to sites accessed from desktop or laptop computers, while the term *d-Booker(s)* refers to people who book hotels via websites.

Prior research has shown that tourism purchasing through online channels happens more frequently for low-risk travel products such as flights, lodging, and car rentals (Card, Chen, & Cole, 2003). Because the hotel industry can be regarded as information-intensive and it is one of the tourism sectors most affected by IT development, the revolution brought by IT has transformed the nature of the processes, marketing

channels, and competition in the hospitality industry (Law & Jogaratnam, 2005). Hotels have largely developed electronic business in recent years, including widening their marketing channel and their distribution through mobile platforms. The existing hospitality studies, however, have only rarely investigated the factors affecting consumer satisfaction and loyalty for hotel booking Apps from the perspective of m-Bookers. In other words, what should be included in the hotel booking Apps remains unknown to industry managers. As such, among the sectors of the tourism industry, this study specifically focuses on the hotel sector, which uses widely applied mobile Apps as an essential marketing channel.

With the increasing popularity of m-Tourism, China—being the most populated country in the world—is currently one of the major online tourism markets and is likely to become the largest market in the future. Nevertheless, research on Chinese d-Bookers is limited. Although there are numerous studies on tourism growth in China, most of the existing studies regard China as the receiving country and mainly investigate Western tourists rather than Chinese tourists (Picard & Wood, 1997; Veasna, Wu, & Huang, 2013). Prior research has argued that the behavioral features, values, and expectations of individuals can differ to a great extent across different countries and cultures (Turner, Reisinger, & McQuilken, 2002). Cultural differences may influence consumers' pre-travel expectations as well as their post-trip perceptions of value (Kueh & Ho Voon, 2007; Li et al., 2011). Recent tourism studies indicate that Chinese customers do differ from Westerners in some aspects of hotel booking (Liu, Guillet, Xiao, & Law, 2014). Furthermore, a recent report has asserted that China is no longer a follower in the world,

but an active innovator, particularly in the field of digital technologies (eMarketer, 2016b). With such an innovative online market, it is expected that the preferences and requirements toward online booking platforms might be distinct from those in the Western context. As such, this study investigates the factors affecting individuals' decisions for online hotel booking, particularly in the context of China. The findings may help advance the understanding of Chinese d-Bookers and m-Bookers' behavior.

1.6 Significance of the Study

1.6.1 Theoretical Contribution

Compared to the various investigations on e-Tourism, relatively fewer efforts have been done on m-Tourism. The present study contributes to the current literature by adding new knowledge of m-Bookers. Recent research has considered how mobile technologies transform the way people travel and how hotel customers use mobile devices to facilitate their hotel experience (Morosan, 2015; Morosan & DeFranco, 2016; Wang et al., 2016). This study, however, provides empirical evidence of the use of mobile Apps for hotel bookings, by focusing on App-customer interaction rather than on hotel-customer interaction.

Previous e-Tourism studies have identified usability performance and functionality performance as the two important dimensions for evaluating website quality (Bai et al., 2008; Wang, Law, Guillet, Hung, & Fong, 2015). Little is known, however, about which factors constitute mobile App quality. This study extends the literature by investigating

the dimensions of mobile App quality and the ways in which App quality relates to customer satisfaction and loyalty.

Considering the features of mobile technologies, such as location-based services and dynamic supplier-customer interaction (Beritelli & Schuppisser, 2006; Law, Leung, & Buhalis, 2009), d-Bookers and m-Bookers are likely to be different from each other. However, little evidence of the differences between those two groups has been provided in the existing literature. This study, as such, contributes to a better understanding of the similarities and differences between d-Bookers and m-Bookers, by comparing the two.

Although value co-creation is recognized as critical in today's marketing and business fields, there is still a lack of empirical evidence (Cabiddu, Lui, & Piccoli, 2013). Recent value co-creation studies based on the e-Tourism context have predominantly investigated the antecedents and the outcomes of co-creation, while little research has explicated the reciprocity of suppliers and customers. The current study extends the existing literature by clarifying the role of suppliers (website or mobile App) and customers in co-creating value.

Furthermore, another significant contribution is to verify the interrelationships between the perceived quality factors, the perceived value factors, consumer satisfaction and loyalty in the context of online hotel booking. In the e-Tourism literature, service quality and perceived value have been regarded as important determinants of consumer satisfaction and loyalty, yet the impact roles of these constructs are still ambiguous. In addition, though there are extensive studies demonstrating the significant relationship

between satisfaction and loyalty, some studies argue that satisfaction may not bring about loyalty (Shoemaker & Lewis, 1999) and the strength of the satisfaction-loyalty link was found to vary under different situations (Levesque & McDougall, 1996). As such, this study may also help to clarify the roles of perceived quality and perceived value in the relationship between satisfaction and loyalty.

Most of the previous research measures perceived value from the dimension of value for money. However, according to the psychology literature, both money and time are the most valuable resources for individual happiness, which is regarded as one's perceived value (DeVoe & House, 2012). Moreover, time is a critical factor that cannot be ignored in the context of m-Tourism. Thus, this study also contributes to the improvement of the measurement of perceived value in e-Tourism research.

1.6.2 Practical Contribution

This study also provides several managerial implications. One of the challenging tasks that tourism and hospitality managers are facing is how to enhance customer satisfaction and loyalty in the emerging online market, thereby gaining the sustainable competitive advantage. According to the results of this study, customer satisfaction is still of great importance in obtaining long-term benefits, whether for d-Bookers or m-Bookers. The findings of this study also indicate that if website quality (or Apps quality), perceived value, and customer satisfaction can be well managed, and then customer loyalty will be built. Specifically, it is important for industry practitioners to enhance the functionality performance and usability performance of the online channels (computer

website and mobile App). Industry practitioners should pay particular attentions to clear reservation information and the use of clear language for both the computer booking channel and the mobile booking channel.

For those who are interested in entering the mobile market, this study may provide useful information on the similarities and differences between d-Bookers and m-Bookers, which can help industry practitioners to propose more appropriate strategies. M-Bookers care more about the functionality performance of an App, whereas d-Bookers care more about the usability performance. Besides reservation information, tourism and hospitality operators aiming to shift from the computer channel to the mobile channel should pay more attention to user-generated information (i.e., customer reviews). Because customer reviews have an important and powerful influence on d-Bookers and m-bookers, industry practitioners may want to consider providing easier access to online reviews and responding to customer reviews quickly.

Furthermore, another important managerial implication is that tourism and hospitality operators should be aware of the perceived value factors in mobile hotel booking, including both the value for money and the value for time. Notably, a satisfying experience of making a hotel reservation via a certain mobile App does not necessarily mean that the customer will be loyal to that App. Industry practitioners should provide high-quality service with modest prices and functionality that saves the customer time. The perceptions of good value for money and good value for time can facilitate the transformation of satisfaction to loyalty.

1.7 Chapter Summary

This chapter explains the reasons the current study is needed. With the rapid development of the Internet and mobile technology, e-commerce and m-commerce are growing at an unprecedented rate. It is critical for tourism and hospitality practitioners to have a better understanding of the behaviors of online buyers. However, the existing studies on online hotel booking have mostly focused on website quality, while fewer studies have investigated mobile App quality. Considering the features of mobile technologies, the behaviors of m-Booker and d-Booker may be different. Thus, it is important to investigate the factors influencing the customer's choice of using a website or an App to book a hotel, and it is also necessary to compare d-Bookers and m-Bookers in regard to hotel bookings. In the literature, there is a lack of widespread agreement on the interrelationships between perceived quality, perceived value, satisfaction, and loyalty. This study may contribute to the current literature by verifying the interrelationships among the constructs of interest with empirical evidence. Moreover, the chapter also indicates that this study may shed light on the reciprocity of suppliers and customers in the value co-creation process of online hotel booking.

CHAPTER 2. LITERATURE REVIEW

2.1 Chapter Introduction

This chapter begins with an overview of the previous literature relevant to the applications of IT in hospitality and tourism from the perspectives of both supply and demand. Then, the chapter goes on to review the studies focused on e-Tourism and m-Tourism, summarizing the previous work and identifying a research void. The paradigm of value co-creation and the framework of quality–satisfaction–loyalty are regarded as the theoretical underpinning for this study. Based on our review of both the research background and the theoretical background, research gaps are pointed out and the definition of each research construct is provided. Hypotheses are proposed and a conceptual framework is subsequently developed, which integrates the perceived quality factors, the perceived value factors, consumer satisfaction, and loyalty.

2.2 The conceptualization of constructs

2.2.1 IT in the Hospitality and Tourism Industry

Previous studies on IT business value involve various disciplines including information system, economics, strategy management, accounting, and marketing research (Melville, Kraemer, & Gurbaxani, 2004). The impact of IT has been widely discussed in these studies, such as enhancing productivity, reshaping social relations, reducing cost, improving profitability, and gaining competitive advantage (Hitt & Brynjolfsson, 1996; Kauffman & Kriebel, 1988).

As IT is becoming more and more important in the business environment, it is also changing the hospitality and tourism industry dramatically. From the 1980s, the hospitality industry has been undergoing profound reform because of the development in IT, providing both opportunities and challenges for all stakeholders (Buhalis & Law, 2008). Not only has the industry structure been greatly changed by IT, but the means of product distribution and customer communication have been changed as well. Fruitful research on IT applications in the hospitality and tourism industry has been conducted—involving the role of IT for marketing and distribution (Go & Williams, 1994), strategy management and competitive advantage (Mazanec, Wöber, & Zins, 2007), operation management (Connolly, Olsen, & Moore, 1998), and e-learning (Collins, Buhalis, & Peters, 2003). One of the biggest shifts for tourism suppliers is the way organizations distribute their products in the marketplace. Instead of using intermediaries as their sole marketing channel, tourism operators can distribute products through both the traditional channel (store sales) and the online channel (website or mobile Apps). A variety of OTA websites, travel search engines, and hotel websites have been springing up in China in recent years. Qunar, which is one of the leading meta search engines in China, has grown its web user base from 110.2 million in 2011 to 234.2 million in 2013, while it has grown its mobile user base from 4.3 million in 2011 to 53.8 million in 2013 (China Travel Daily, 2015). The proliferation of online travel is driving industry practitioners to rethink the business models, as well as to re-evaluate the value chains, causing extensive academic investigation and discussion (Buhalis & Law, 2008). By adopting a strategic perspective, Buhalis (1998) provided a framework for the use of IT in tourism

companies. In Buhalis's study, continuous business process re-engineering was suggested to prepare for the transformation of e-Tourism business. A study on the examination of the transactional relationships of tourism suppliers, OTAs, and meta search engines provided guidelines to industry practitioners on the choice of formal or informal agreements with their stakeholders. Moreover, OTAs seem to pay more attention to the relationships with suppliers, through which OTA operators can have a better understanding of their customers and products (Christodoulidou, Connolly, & Brewer, 2010). With the growth of online travel, e-marketing models that enable investigation into the determinants of consumer satisfaction with online tourism products/services were developed by researchers and specific website quality dimensions were identified (Nusair & Kandampully, 2008). Tourists' behavior is changing due to the advances of IT in the tourism and hospitality industry as well. Today's more knowledgeable travelers are asking for more and better information. IT development has provided a direct and dynamic platform for suppliers and buyers to interact and communicate, thus exchanging information and co-creating value. For instance, given the development of search engines, tourism websites, and online reservation systems, increasing numbers of tourists are inclined to utilize IT for their travel decision-making, rather than to accept the standardized arrangements of a package tour (Buhalis, 1998). Without regard for the physical location of the service providers or the consumers, the use of IT for tourism and hospitality allows tourists to interact with suppliers directly and dynamically. There is an apparent tendency that more and more people are utilizing electronic approaches to identify and purchase the products and

services they need, such as making reservations directly from a hotel website. Hence, it is critical to understand how tourists are adapting to the IT revolution in tourism and hospitality, and to determine how to develop effective communication strategies for satisfying tourists' increasingly varied needs. Additionally, prior research suggests that the mobile channel will play a vital role in the next 15 years, because consumers in the future may have a greater need to access information and make bookings from anywhere, rather than from a static place (Buhalis & Licata, 2002). There have been substantive studies in relation to the impact of IT development on the demand dimension, including consumer behavior and the change of consumer experience (Huang, Lurie, & Mitra, 2009; Wang et al., 2012). However, studies in relation to IT in tourism and hospitality need to evolve with the times, by expanding the scope and by diversifying the directions.

2.2.2 From E-Tourism to M-Tourism

2.2.2.1 E-Tourism

E-Tourism has emerged as a term that describes the entire range of IT applications in the tourism and hospitality industry (Buhalis & Deimezi, 2004). It reflects the digitalization of value chains in all the sectors related to tourism—such as hotels, restaurants, attractions, and airlines. Although IT adoption in the tourism field is not a recent occurrence, e-Tourism was regarded as a key area of research until the 1990s. At that time, the research community had been gradually built. For instance, the Journal of Information Technology & Tourism (JITT) established a multidisciplinary interest group of researchers who regularly published articles related to tourism and

technology. From then on, numerous studies on IT in the hospitality and tourism industry have been conducted all over the world (Law & Bai, 2006). The previous research contributions of e-Tourism can be divided into three main directions: technologies, supply, and demand.

The studies on technology development in the tourism and hospitality industry involve interoperability and ontology, multimedia, mobile and wireless technologies, web design, and analysis. Interoperability is a major technical issue that provides a realistic alternative to standardization for tourism (Stabb et al., 2002). The ontology-based e-Tourism Planner has been proposed in previous research to enable users to create an itinerary in one single application that builds on semantic web technologies (Jakkilinki, Georgievski, & Sharda, 2007). Because multimedia can enhance information richness and interactions within the tourism context, it has become one of the major topics for researchers examining the influence of IT on tourism. Multimedia systems enable visitors to search for available attractions in accordance with their preferences (Abad, Sorzabal, & Linaza, 2005). The development of mobile and wireless technologies greatly changes the world of travel. Various mobile applications and devices, such as global positioning systems, home-monitoring and remote control systems, and smartphones, are starting to be applied in the field of tourism. With the various wireless facilities, online tourism shopping is becoming more and more convenient (Singh & Kasavana, 2005). In addition, the fast popularization of mobile devices makes it possible for today's travelers to access more personalized services in line with their own preferences and needs (Langelund, 2007).

From the supply dimension, e-Tourism has brought revolutionary changes for the entire value chain as well as for strategic relationships among tourism organizations. It involves all business functions including e-commerce, e-marketing, e-business, e-finance and e-accounting, e-HRM, e-procurement, e-R&D, e-production, e-strategy, e-planning and e-management. There are plenty of studies focused on e-Tourism from the perspective of the suppliers. Some studies have demonstrated the effects of IT applications on enhancing the competitiveness of tourism enterprises, while others have explored the role of IT in entrepreneurship and firm innovation. Among all the business functions in hospitality and tourism, one of the most studied themes is e-commerce, a term which is sometimes used interchangeably with terms such as e-business or e-marketing. *E-commerce* is defined in prior research as the process of selling, buying, or exchanging products and services via the Internet (Turban, Leidner, McLean, & Wetherbe, 2008). The current study specifically focuses on e-commerce in the hotel industry, and the terms e-Tourism and m-Tourism refer to the use of online channels (computer channel and mobile channel, respectively) to facilitate and execute business transactions in the hospitality and tourism industry. Previous research has identified the critical factor for achieving strategic advantage in web tourism promotion (Doolin, Burgess, & Cooper, 2002). It is indicated that the emergence of OTAs such as Expedia and Priceline challenged the traditional tourism operators, and thereby provided integrated travel solutions and a whole range of value-added services for tourists.

The growth of online tourism marketing has dramatically shifted the business paradigm from being supply-driven to demand-driven. More and more industry

practitioners are paying greater attention than ever before to the rapidly changing consumer demands in order to gain customer loyalty and win the competitive advantage. Meanwhile, contributions to the literature on IT in tourism and hospitality management are accumulating fast. Previous research has suggested that consumer-related e-Tourism studies mainly focus on three stages of the traveler's decision-making process: the pre-trip stage, the during-trip stage, and the post-trip stage (Leung, Law, Van Hoof, & Buhalis, 2013). Although travel decision-making is one of the most studied areas in the tourism literature, IT development has brought new problems and challenges to the issue for the hospitality and tourism industry. Emerging studies are examining the particular needs of e-consumers and how customer satisfaction can be improved with IT usage.

Research on the pre-trip stage has suggested that online travelers mostly utilize the Internet as a travel planning resource, through which they search and review tourism-related information for their tourism decision makings. User-generated content (UGC) and electronic word-of-mouth (e-WOM) are considered to be the most important external information sources for online travelers, and have been widely investigated in e-tourism research. It has been shown that UGC and e-WOM can meet consumers' needs for non-commercial, detailed, and experiential information (Litvin, Goldsmith, & Pan, 2008). With the more comprehensive knowledge of tourism products provided by e-WOM, tourists have greater abilities to co-create value with tourism suppliers.

Studies on the during-trip phase have mostly focused on consumers' purchase decisions. Researchers have identified the factors affecting tourists' online purchasing behaviors, including personal factors such as skills and innovativeness (Jun, Vogt, &

MacKay, 2007; Lee, Qu, & Kim, 2007), and technology design factors such as usability and functionality of the online tourism products (Bai et al., 2008). Extensive research has demonstrated the role of social media in facilitate travel experience (Kang & Schuett, 2013; Munar & Jacobsen, 2014). It is asserted that a consumer's hotel booking decision is significantly influenced by valence, framing, and inclusion of online review ratings.

In the literature focusing on the post-trip stage, experience-sharing is one of the most studied directions. Numerous studies have investigated the psychological motivations of travelers who share their stories online. Demographic and personality factors are also argued to have critical relations with the individual's online contribution behavior. The adoption of IT applications in the hospitality and tourism industry is another important research theme in consumer-centric studies. Most of these articles examine the acceptance of IT applications based on the Technology Acceptance Model (TAM). The explanation power of TAM has been widely confirmed in e-Tourism literature. However, previous empirical research has pointed out that the relations of the constructs in TAM are inconsistent, and there is a wide variation in the predicted effects in different studies. With the development of mobile technology, the increasing need for on-the-go information and communication accompanies the changes in travelers' behavior (Xiang, Wang, O'Leary, & Fesenmaier, 2015), which is bringing about abundant research specifically focusing on m-Tourism. In the section on m-tourism, a more detailed and comprehensive review of m-Tourism studies is provided.

2.2.2.2 Online Hotel Booking

With the rapid growth of e-commerce, the online channel has become a crucial source of distribution for the hotel industry (Law, 2009). Prior research has revealed that reserving hotels is one of the most popular online booking services (Poel & Leunis, 1999). Moreover, among the online travel products/services, it has been reported in various surveys that hotel booking ranks second after purchasing airline tickets. The online hotel distribution channel attracts worldwide customers, free from time and location restrictions, thereby making suppliers less reliant on intermediaries and traditional channels (Law & Leung, 2000). With the benefits of reducing cost and widening the marketing channel, hotel booking online has been regarded as a highly effective strategy for hotel operators to compete with their competitors. It is no wonder that the majority of the hoteliers have shifted their marketing investments from offline to online. Hospitality industry practitioners have a great need to understand the determinants of customers' online booking preferences for hotels, while scholars are making great efforts to investigate the factors affecting customers' online hotel booking decisions (Chiang & Jang, 2007; Law, 2009; Casaló, Flavián, Guinalíu, & Ekinci, 2015). Liu and Zhang (2014) compared consumers' perceptions toward OTA websites and hotels' official websites. Their findings showed that OTA websites seem to be preferred among online hotel bookers, and that channel features have a stronger influence on booking channel selection decision rather than product-related factors. Furthermore, recent research has investigated customers' preferences for multiple electronic devices

when they make hotel bookings online and has found that hotel bookers use computers most often for reservations and information searches (Murphy, Chen, & Cossutta, 2016).

Due to the increasing number of choices for online hotel reservations, substantial attention has been paid to the features of the website (Casaló et al., 2015). Law and Wong (2003) showed that security, price, and user-friendly systems are the most important factors influencing customers' decision-making for booking hotels through websites. Other scholars have argued that perceived quality, trust, and perceived value significantly affect customers' online hotel purchasing intentions (Chiang & Jang, 2007). Lee and Cranage showed that pre-purchase uncertainty has a critical impact on the individual's information search behavior, thereby affecting the decision-making behind actual purchases (Lee & Cranage, 2010). The findings of a focus group study in Hong Kong revealed that price, the reliability of the channel, and word-of-mouth from friends and relatives are underlying determinants for whether consumers decide to make reservations via websites (Law & Wong, 2010). Traditional word-of-mouth has a strong impact on consumers' hotel booking decision-making, and the role of e-WOM in online hotel booking has been widely demonstrated in e-Tourism research as another significant influencing factor. Prior hospitality study indicated that, with an increase in review ratings, online bookings will also increase proportionally (Ye et al., 2011). The findings of another study suggested that customers are inclined to depend on easy-to-process information when they make hotel reservation decisions on the basis of online reviews (Sparks & Browning, 2011). Early negative information greatly impacts a consumer's booking intention, while positive information combined with numerical

ratings can help to increase the possibility of actual reservation decision. Drawing on previous studies in relation to online hotel booking, several factors have been identified to have a critical influence on consumer satisfaction and loyalty when booking online. Strong evidence demonstrates that an individual's perceived quality and perceived value of the website have a significant impact on his or her online hotel booking decision-making (Casaló et al., 2015; Wang et al., 2015). Some researchers have advocated that price is one of the most influential factors for making hotel reservations online. However, price and perceived value are often used interchangeably in the prior research. Specifically, the customer's perceived price is mostly considered as perceived value for measurement. To avoid potential confusion, the current study regards both price and "perceived value" (when it means perceived price) in previous research as the individual's perceived value for money. Similarly, some studies have examined the critical role of perceived quality from various aspects. Information quality, service quality, system quality, usability, and functionality were measured separately but most of the time interchangeably. This study, however, examines the effect of perceived quality on online bookers' satisfaction according to our comprehensive review of e-tourism and m-tourism research. *Perceived quality* in this study specifically refers to both usability performance and functionality performance of websites or mobile Apps.

2.2.2.3 Hotel Website Quality

From a traditional perspective, the image of a physical retail store has strong influence on consumers (Nevin & Houston, 1980). Because the characteristics of an online store are very different from that of a physical retail store, for an online store, it is

the website that is essential because the store's website manages its "image" (Jahng, Jain, & Ramamurthy, 2000). It is known that maintaining an effective website is vital for a business to strengthen its customer relationships and to gain a larger market segment. The importance of website evaluation has been advocated by scholars for many years. To enhance the effectiveness of a website, network limitations, demographics, and cultural factors should be taken into consideration during its design (Corfu & Kastenholz, 2005). A well-designed e-commerce website requires good performance of information quality, system quality, and service quality to satisfy the need of online consumers (Bai et al., 2008). Information quality is measured based on the level of satisfaction with the information provided by a website. System quality is measured based on the existence of some technical features (e.g. reliability, usability, adaptability, and fast response time). When comparing consumers' expectations with the actual performance, service quality and perceived quality have been usually used interchangeably (Baker & Crompton, 2000).

There are plenty of hospitality and tourism studies on how to evaluate the quality of website design. Hashim and his colleagues identified the five dimensions of website quality that have been most researched in the field of tourism and hospitality: information and process, value added, relationships, trust, and design and usability (Hashim, Murphy, & Law, 2007). The Balanced Scorecard method, which is a widely applied approach for website evaluation, is reviewed and modified by Morrison, Taylor, and Douglas (2005) for future tourism and hospitality website assessment. Despite the many theories and studies on how to evaluate website quality, consensus has not yet

been reached on which are the most important features of a tourism website. Dimensions of website quality differ with the various website evaluation studies that have been conducted (Aladwani & Palvia, 2002; Barnes & Vidgen, 2001). Chen, Clifford, and Wells (2002) identified three dimensions, while other studies identified five (Hashim et al., 2007). In recent years, some innovative approaches and evaluation frameworks have been attempted by researchers, advancing the development of hotel website evaluation studies. A modified extended Model of Internet Commerce Adoption (eMICA) technique was introduced in a qualitative study for content analysis of the features of hotel websites (Ting, Wang, Bau, & Chiang, 2013). That study's findings indicated that based on the eMICA model, Europe and Asia were the leading continents in website development, while Asian hotel websites had better features than those of the other continents. A recent study on hotel website evaluation applied the fuzzy decision-making approach to assess website performance. By integrating customers' perceptions with a hierarchical model, the researchers developed a useful fuzzy hierarchical TOPSIS model.

2.2.2.4 M-Tourism

As the Internet quickly evolved toward wireless adoption, mobile devices such as the smartphone began to provide consumers with easy access to remote services, anytime and anywhere. As the major OTAs gradually matured, significant mobile developments including social media and mobile systems emerged and grew to dominate the communication landscape (Wang, Xiang, & Fesenmaier, 2014). The

evolving success and ubiquity of mobile communication accelerated a shift from e-Tourism to m-Tourism.

The advent of the m-Tourism era means mobile technologies are influencing tourism and tourist behaviors in many ways. Nowadays, tourists are able to make informed decisions for trip planning with the help of location-based services. People use mobile devices to share travel information while traveling, especially photos and interesting stories, which makes sharing via social media increasingly prevalent. Also, the post-trip experience can be associated with the on-site experience through mobile devices.

Academic studies on m-Tourism have rapidly increased in recent years. Various aspects of the industry—such as the relationship between e-commerce and tourism, innovation services, the tourism value chain, and mobile business performance—have been examined by researchers (Salwani, Marthandan, Norzaidi, & Chong, 2009). Some studies have focused on how mobile technology is changing the way people travel. Evidence has shown that mobile devices greatly facilitate support for the tourist on the move, and suggestions have emerged for how mobile technology can be improved to be more intelligent and context-aware (Gavalas & Kenteris, 2011). It is suggested that, the more relevant the recommendation is for the tourists, the more likely it is to be adopted (Kabassi, 2010). The potential benefits of social media have been widely discussed as well. Scholars have shown that social media, with the proliferation of smartphones, are now playing a significant role in the tourism and hospitality industry, especially in areas

such as information search, decision-making, travel recommendations, and tourism promotion (Hudson & Thal, 2013; Ye et al. 2011).

Another main stream of the m-Tourism literature is the adoption of mobile technology in the tourism and hospitality industry. The dominant paradigm used to examine the adoption of mobile information services is the Technology Acceptance Model (TAM), which is developed on the basis of the theory of reasoned action (Kim et al., 2008; Peres, Correia, & Moital, 2011). Although there are many studies that have used TAM to investigate mobile apps within the tourism context, these studies have focused primarily on the general adoption and usage of mobile devices, rather than on the actual usability and functionality performance of mobile services (Wang et al., 2014). As such, little is known about how mobile devices actually support the tourist while traveling, and how involved they are in the travel planning.

There is also emerging research focusing on tourists' purchasing behaviors, examining the factors affecting consumer satisfaction and purchase intentions (Kim et al., 2015; Lee & Mills, 2010). These studies are still at an initial stage, however, and empirical studies are limited. Additionally, unlike with e-Tourism, there is lack of a comprehensive and systematic review of m-Tourism. Although the tourism literature provides substantial evidence describing the use of mobile technology in everyday life and travel, there are few theoretical explanations for these findings.

2.3 Theoretical Underpinning of the Study

2.3.1 Service-Dominant Logic and Value Co-Creation

Increasingly numerous value discussions have been evolving from the goods-dominant (G-D) logic to the service-dominant (S-D) logic over the last decade (Skålén et al., 2015). The concept of value co-creation has been proposed and developed by scholars in line with the S-D logic, which is about epistemology: how do we know what we know. The value co-creation concept has significantly challenged the traditional distinction between supply and demand (Prahalad & Ramaswamy, 2004). In the past, both the industry practitioners and academic researchers follow the G-D logic, in which suppliers are the main actors who decide the value to provide. With the rapid progress in information technologies, today's customers are more and more knowledgeable and active. They are involving into the process of value creating unprecedentedly. Recent e-Tourism research began to adopt S-D logic and the theory of value co-creation as the theoretical foundations, not just because it challenges the traditional distinction between suppliers and customers, but also because it better reflects partners' interactions and their interdependence.

In the mobile hotel booking context, mobile Internet enables travelers to co-create value by using mobile devices to complete the hotel booking process without limitations on time and place. Customers have more choices of hotel booking channels now, including various mobile apps and OTA websites. It is crucial for hospitality practitioners to enhance their knowledge of how to satisfy their online customers, and

more importantly, how to achieve customer loyalty for long-term benefits. It is particularly critical that practitioners understand customer value toward online hotel booking to determine the process in which value is co-created with hotel bookers.

G-D logic—rooted in economic science and regarded as the dominant logic for decades—views real value as the labor required to achieve "value-in-use" (Smith, 2000). Informed by G-D logic, the concept of co-production is defined as an exchange of product/service between suppliers and buyers from a company-centered view. However, G-D logic, along with co-production, has been widely criticized for its excessive focus on suppliers and its neglect of the mutual dependence of the supply and demand actors (Kristensson, Matthing, & Johansson, 2008). In the contrast, S-D logic regards the role of the firm and the customer in a more balanced way. It suggests that both the supply and demand actors are involved in the joint creation of value, and it emphasizes the collaboration between customers and firms in the value co-creation process (Payne, Storbacka, & Frow, 2008).

As an emerging theoretical perspective, S-D logic has inevitably attracted academic debate since Vargo and Lusch's (2004) original publication. In the S-D logic literature, value is always co-created with customers (Vargo & Lusch, 2008). According to the conceptualizations under S-D logic, value co-creation does not merely present co-designing and co-developing at the initial stages or co-delivering at the distribution stage, but can exist at any stage (See Figure 2.1). What is more important is the role of the customer as a co-creator, suggesting a more extended venue than a simple interaction between suppliers and buyers. With the development of S-D logic research during the

past 12 years, S-D logic continues to be further elaborated and extended (Taylor & Hunter, 2014; Vargo & Lusch, 2016). Recent S-D logic studies have broadened the perspective of firm-customer exchange by proposing a service ecosystem perspective, in which all the beneficiaries involved are resource integrators co-creating mutual value (Lusch & Vargo, 2014; Vargo & Lusch, 2016). The service-centered view in the earlier S-D logic research was inherently customer oriented and relational (Vargo & Lusch, 2008), whereas in the updated work the authors described it as inherently beneficiary oriented and relational" (Vargo & Lusch, 2016).

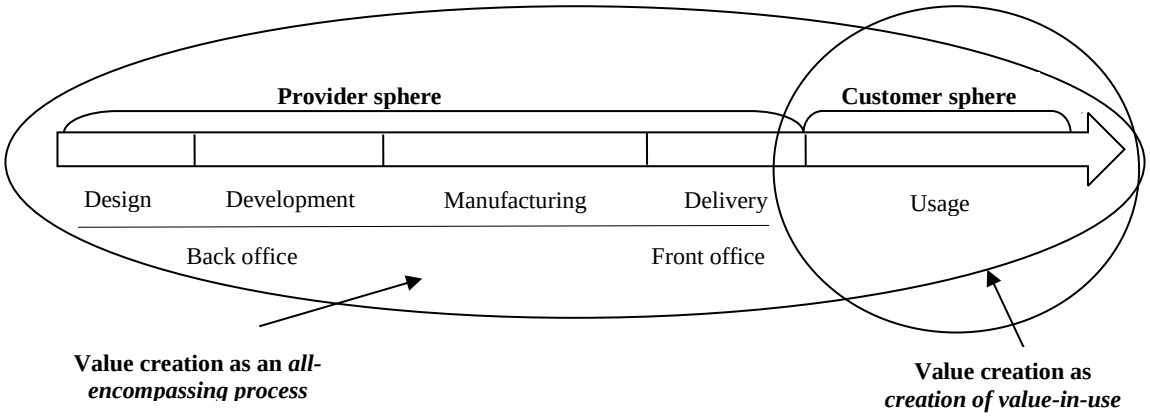


Figure 2.1. Process of value creation

Source: C. Grönroos (2011). Value co-creation in service logic: a critical analysis.

S-D logic has not been universally adopted among service marketers. Service logic, as another paradigm different from S-D logic, has been advocated by Grönroos and others (Ellway & Dean, 2016; Grönroos, 2008; Grönroos & Gummerus, 2014). S-D logic and service logic have, however, the same fundamental purpose, which is to

acknowledge the importance of service and to highlight the pre-eminent role of value assessments in consumer decision-making. However, service logic focuses attention on the perceptions of customers and the direct interactions between firms and customers (Grönroos & Gummerus, 2014), while the newest S-D logic perspective suggests a more dynamic systems orientation that includes all the beneficiaries (Vargo & Lusch, 2016). Considering the nature of this study and the above analysis, we have adopted the recent S-D logic perspective for the purposes of this research. Additionally, because context is regarded as a critical dimension of value co-creation in the S-D logic literature, and because value-in-context implies that value is interactive, relativistic, and meaning-laden in a given context (Chandler & Vargo, 2011), we have adopted the value-in-context theory in the current study. The value-in-context theory comprises a two-actor separation of value-in-use (customer-centric) and value-in-exchange (supplier-centric) within value co-creation networks (Gummesson & Mele, 2010). This study defines a value co-creation process as an ongoing process where the beneficiaries act together in an interactive way that generates value not only for the customers but also for the suppliers. To be more specific, in the context of this study, value co-creation refers to a process in which online booking channels (e.g. website or mobile App), the focal hotel booker, and other hotel bookers co-create values. For online booking channels, they pursue customer loyalty as "value-in-exchange" by providing high quality services/products as "value-in-use" to hotel bookers. For hotel bookers, quality value is what they are constantly seeking for; in the meantime, they are contributing values to online booking channels, such as economic value and customer knowledge value.

Although value co-creation has become a useful business philosophy in the marketing field (Vargo & Lusch, 2004), the existing research on value co-creation is predominantly conceptual; empirical evidence is insufficient (Cabiddu et al., 2013; Morosan, 2015). With growing research attention focused on value co-creation in the tourism and hospitality research (Cabiddu et al., 2013; Chathoth et al., 2013; Shaw et al., 2011), there have been some empirical efforts attempting to investigate the outcomes of co-creation (Mathis et al., 2016; Oliveira & Panyik, 2015) and the antecedents of co-creation (Morosan, 2015; Morosan & DeFranco, 2016).

In addition, the role of IT in value co-creation has been identified and discussed in recent studies on e-Tourism (Cabiddu et al., 2013) and m-Tourism (Morosan, 2015). OTAs for hotel reservations are just one example of this growing phenomenon, not to mention the emerging mobile channels. However, the ways in which IT enables the value co-creation process among tourism and hospitality partners remain unclear (Morosan, 2015). A cross-case study on managing value co-creation in the hotel industry provides some academic insights that include an explanation of why some hotels can successfully capture more of the value co-created in partnerships (such as obtaining more bookings through their websites), whereas others cannot (Cabiddu et al., 2013). However, empirical evidence of the reciprocity of the suppliers and customers in e-Tourism is limited. Recent research on value co-creation in the m-Tourism context has investigated how hotel guests develop co-creation intentions; in this research, the mobile device was regarded as a mediator that facilitates the customer's co-creation of value with the hotel (Morosan, 2015; Morosan & DeFranco, 2016). This, however, is still a

hotel–guest perspective; little is known about the interaction between online booking channels and the customer. In fact, online booking channels are extremely different actors from the hotel when it comes to providing services and information to customers.

Recent research has argued that equating value co-creation with the customer's active participation in the supplier's creation might be a misunderstanding. In the value co-creation process, the multiple actors often contribute to each other's well-being even without being aware (Vargo & Lusch, 2016). Previous empirical studies on value co-creation mostly regarded value co-creation as a specific variable rather than a reciprocal process (Morosan, 2015; Morosan & DeFranco, 2016). Before answering the question of how the actors co-create value in the online hotel booking context, we explicitly clarified the actors involved as well as the value for each, by adapting Grönroos' (2012) conceptual model of value co-creation in service (See Figure 2.2). Notably, as shown in Figure 2.1, there are two main perspectives on the process of value creation. They are namely "all-encompassing process" and "value-in-use process". Given the research context of online hotel booking, this study adopted the perspective of "value-in-use" rather than "all-encompassing process". To be more specific, it is the viewpoint of "value-in-context" we adopted, with which value for customers refers to value-in-use while value for suppliers refers to value-in-exchange. This also provides the underlying

premise of the development of the conceptual framework as depicted in Figure 2.2.

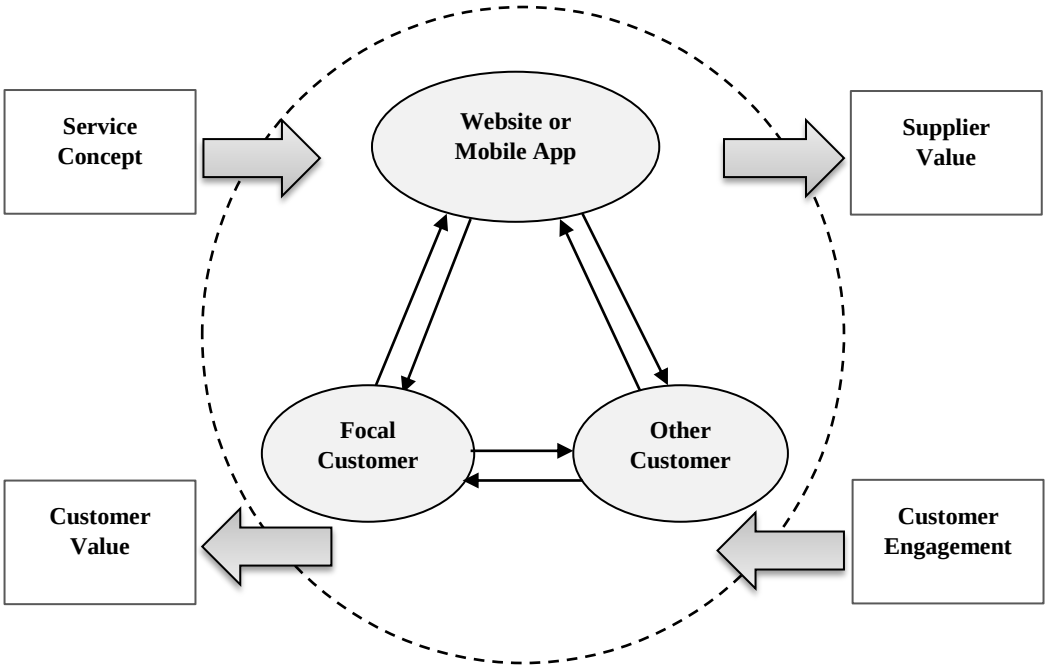


Figure 2.2 Conceptual framework of value co-creation in the online hotel booking context

As shown in Figure 2.2, the area inside the dotted circle represents the value co-creation system in which the online booking channels, the focal hotel booker, and other hotel bookers interactively create value. The value co-creation process of online hotel booking involves various activities: (1) The online booking channels(computer website or mobile App) offer resources, such as information about hotel rooms, to meet the needs of the focal hotel booker, who in turn returns value to the online channels through benefits (Gupta & Lehman, 2005); (2) When the online booking channels(computer website or mobile App) offer reservation services to hotel bookers, the feedback information from those bookers provides valuable customer knowledge to the online

channels; and (3) Comments and reviews from other hotel bookers are important reference information for the focal hotel booker in using a certain online channel.

The value co-creation process of the online suppliers is shown at the top half of the figure. Specifically, a website or a mobile App normally starts with a service concept that involves hotel-related information and the necessary functions for satisfying the hotel booker's needs; this is what the suppliers(online booking channels) provide for customers (Grönroos, 2012). The direct interactions among all the actors are depicted in the part inside the dotted circle. The end point of this flow is the supplier value, which refers to the benefits that online booking channels aim to achieve. Customer loyalty (or customer lifetime value) has been investigated in various studies as the benefit that suppliers value most (Kumar et al., 2010). That is, value for suppliers in the context of online hotel booking refers to the loyalty of hotel bookers.

As for the value co-creation process from the customer's perspective, it is presented at the bottom half of Figure 2.2. The process flows from right to left as depicted in the figure. The starting point is normally customer engagement. To be more specific, when hotel bookers need to make a hotel reservation, they firstly engage in the hotel booking process and then complete the process by interacting with online booking channels and other hotel bookers. Similarly, the area inside the dotted circle presents the interactions among the actors (online booking channels, the focal customer, and other customers). As for value for customer, in line with the arguments of S-D logic, it refers to the perceived quality performance against the service attributes, for which the customer is prepared to pay (Macdonald et al., 2011). On one hand, suppliers should

elaborately design their service concept to increase value for the customers (enhance service quality), thereby gaining value for themselves (customer loyalty). On the other hand, we know that customers constantly weigh value by balancing the value-in-use with their required sacrifices. The manner in which customers engage in value co-creation also determines the value for suppliers. That is to say, a higher perception of quality can bring about a higher level of customer loyalty. Customer engagement pushes suppliers to make improvements and speed up their processes, resulting in lowered costs and increased competitive advantage (Kumar et al., 2010). Notably, satisfaction may provide a missing link between value for customers and value for suppliers. Previous research has shown that customer satisfaction is affected by the customer's perception of the value-creation partner's contribution, while it is related to a higher/lower value for suppliers (Grissemann & Stokburger-Sauer, 2012; Wangenheim & Bayón, 2007). The above arguments show how the conceptual framework of value co-creation process can be linked to the framework of "quality-satisfaction-loyalty" in the context of online hotel booking.

2.3.2 The Framework of Quality–Satisfaction–Loyalty

The basis of the quality–satisfaction–loyalty chain is Lazarus's (1991) and Bagozzi's (1992) framework of the appraisal process–emotional reaction–coping response (see Figure 2.3). Lazarus's (1991) and Bagozzi's (1992) framework was originally used to explain how attitudes result in intentions. It has been developed and adapted in various fields, including marketing and service management (Brady &

Robertson, 2001; Lai Griffin, & Babin, 2009; Mosahab, Mahamad, & Ramayah, 2010). In the framework of the appraisal process–emotional reaction–coping response, an appraisal refers to the assessment of internal or external conditions when they apply to one's well-being (Bagozzi, 1992). Lazarus (1991) asserted that biological urges to act, subjective affect, and physiological responses may result from any functions of appraisal. These outcomes are either planned or unplanned.

When an individual achieves a goal or has a pleasant experience, this outcome-desire fulfillment experience results in emotional reactions such as satisfaction and pleasure. Under such conditions, particular intentions are likely to emerge to remain or increase the joy (Bagozzi, 1992). An example of this coping response is a tendency to be a loyal customer of an online tourism agency after a pleasant booking experience. Conversely, when a person experiences an unpleasant event, the appraisal of this experience leads to emotional reactions such as dissatisfaction and anger (Bagozzi, 1992). Here, particular intentions may emerge to take steps to cope with such an outcome-desire conflict. Accordingly, a specific coping response occurs to reduce the risk of this kind of unpleasant experience. For instance, if a traveler finds it too difficult to reserve a hotel via a mobile app, he/she tends to have the intent to not use it again. What's worse, bad e-WOM of that app could result because of this unpleasant experience.

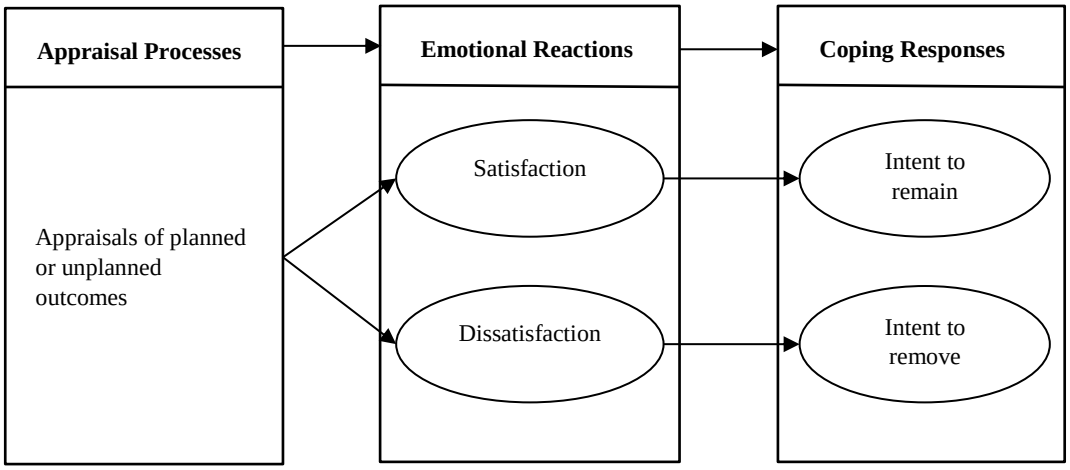


Figure 2.3 The framework of appraisal process–emotional reactions–coping response

Source: Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly, 55*(2), 178-204.

The quality–satisfaction–loyalty chain and the value–satisfaction–loyalty chain are both adapted from the framework of appraisal process–emotional reaction–coping response. The chain of quality–satisfaction–loyalty suggests that a higher cognitively-oriented service quality can result in a greater level of emotive satisfaction, which in turn drives potential loyalty (Lai et al., 2009). The value–satisfaction–loyalty chain, on the other hand, holds that it is customer-perceived value that is the primary antecedent of satisfaction and loyalty (Xu, Peak, & Prybutok, 2015). Extensive studies have investigated the links between perceived quality, perceived value, and satisfaction (Cronin et al., 2000; Lai et al., 2009). However, there is no widespread agreement on the interrelationships among these constructs. Some researchers have shown that both perceived quality and perceived value have a positive association with customer satisfaction (Cronin et al., 2000). Other researchers have asserted that perceived-quality

variables indirectly influence customer satisfaction through perceived value (Kuo et al., 2009).

The framework of quality–satisfaction–loyalty has been empirically validated across different contexts to investigate the relationships among perceived quality, customer satisfaction, and loyalty (Brady & Robertson, 2001; Lai et al., 2009). Based on the quality–satisfaction–loyalty chain, satisfaction has been widely demonstrated as an important mediator in the relationship between perceived quality and customer loyalty (Mosahab et al., 2010). In the e-tourism context, website quality was found to have a direct impact on the satisfaction level of the online customer, which in turn leads to online booking intentions (Bai et al., 2008). Recent studies have suggested that hotel websites directly influence online bookers' reservation intentions, while trust acts as a mediator of the effect of website quality on customer loyalty (Li, Peng, Jiang, & Law, 2017; Wang et al., 2015). In these studies, website quality comprises the variables of functionality performance and usability performance, which affect the online booking intentions of the hotel booker through satisfaction or trust.

2.4 Definition of Constructs

OTAs in China are now facing a severe price war. Achieving sustainable competitive advantage in the marketplace is more vital than ever before. The constructs of quality (Bai et.al, 2008; Baker, Grewal, & Parasuraman, 1994), perceived value (Grewal, Monroe, & Krishnan, 1998; Kuo et al., 2009), customer satisfaction, and loyalty (Deng, Lu, Wei, & Zhang, 2010; Taylor & Baker, 1994) are regarded as

important determinants of market performance and are gaining increasing prominence in the business and marketing literature (Parasuraman & Grewal, 2000). As implied by many of the previous studies, these constructs will continue to be critical. However, the literature on the interrelationships among the constructs is ambiguous. Due to scholars' belief in the link between customer satisfaction and company success, there are extensive satisfaction studies, while loyalty has not been investigated as thoroughly (Chi & Qu, 2008). Prior conceptual research discusses the quality–value–loyalty chain, in which perceived value is influenced by quality and in turn contributes to customer loyalty (Parasuraman & Grewal, 2000). Other empirical studies demonstrate the mediating role of satisfaction that quality and value have on loyalty (Chi & Qu, 2008). Nevertheless, a consistent understanding of perceived value and its relationships with satisfaction and loyalty remains absent. As such, drawing on insights from previous research, this study attempts to provide a clear conceptualization of how these constructs relate to each other by developing a conceptual framework to enhance the understanding of the factors affecting mobile travelers' satisfaction and loyalty. In the following sections, we define the constructs in our framework within the context of m-tourism, and we propose hypotheses.

2.4.1 Perceived Quality

Because a high level of service quality is considered to be critical for industry suppliers to compete with their competitors, there have been many studies focused on the conceptualization and measurement of service quality in terms of how it contributes

to customer satisfaction and loyalty (Cronin et al., 2000; Johnson & Fornell, 1991; Kristensen, Martensen, & Gronholdt, 1999). One of the most widely used measurements of service quality is a 45-item instrument called SERVQUAL, which was developed by Parasuraman, Zeithaml, and Berry (1988). The SERVQUAL scale's validity and reliability have been demonstrated in various contexts (Soteriou & Chase, 1998). There are five dimensions of service quality in SERVQUAL: tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988). Modifications of SERVQUAL have been conducted in different areas, including the hospitality industry (LODGESERV) (Knutson et al., 1990) and e-commerce (ESQUAL) (Parasuraman, Zeithaml, & Malhotra, 2005).

In the e-commerce research area, website quality has been widely investigated in website evaluation studies (Hsu, 2006; Kuo, 2003; Lee & Lin, 2005). It is advocated in previous studies that the image of a virtual store (e-commerce website or mobile apps) is quite different from that of a physical retail store (Jahng et al., 2000). A well-designed website leads to good customer recall and a favorable attitude toward the site. When it comes to evaluating the quality of e-commerce design, scholars have shown that system quality and information quality are the most important dimensions in the context of shopping through online channels. However, no widely preferred measurement of website quality exists.

Jeong and Lambert (2001) first proposed six potential dimensions of website quality, including information accuracy, completeness, relevancy, clarity, ease of use,

and navigation quality. Law and Ngai (2005) proposed five dimensions to evaluate website usability. The five dimensions are: general quality, language, information architecture, layout and graphics, user interface and navigation. In Yang, Cai, Zhou, and Zhou (2005)'s study on website quality, they adopted five dimensions, including: usefulness of content, adequacy of information, usability, accessibility, and perceived quality of information. In our review of these earlier studies, we note that some dimensions are consistent with the dimension of information quality, but others belong to dimensions of system quality, making it difficult to distinguish them from each other.

By examining the dimensions of connection quality, content quality, interaction quality, and contextual quality, Chae, Kim, Kim, and Ryu (2002) assessed the information quality of mobile networking services. Although some researchers have addressed the measurement of mobile website quality, few efforts have been made to examine the quality of mobile apps. In some earlier studies on e-tourism, functionality and usability have been identified as the major variables for examining website quality (Bai et al., 2008; Lu & Yeung, 1998). Functionality refers to the information richness of a website (Bai et al., 2008), whereas usability relates to the degree of ease with which users can use a website (Nielsen, 1999). The current study attempts to evaluate the service quality of mobile apps as well as computer websites, by measuring both the functionality performance and the usability performance.

2.4.1.1 Functionality Performance

In the e-Tourism literature, functionality is considered to be one of the most important dimensions of website usefulness (Leung, Law, & Lee, 2016). It refers to the content of a website, especially information about products and services offered. Jayawardhena (2004) noted that website functionality is a critical factor in determining website quality. Chung and Law (2003) found that a well-designed hotel website can not only increase sales, but is also beneficial to the hotel's reputation, if useful information is provided. As such, it can be argued that website functionality is of great significance. The website functionality directly affects visitor perceptions of the products or services (Zafiropoulos & Vrana, 2006). It also acts as a platform between tourism-related firms and their customers.

Although there are various approaches for evaluating website functionality in tourism and hospitality, two instruments in particular have been preferred by academics. The first is Chung and Law's (2003) conceptual framework of information richness in hotel websites. The second is the Balance Scorecard approach, which was developed as a useful performance instrument for tackling the major use of one-dimensional business performance indicators (Kaplan & Norton, 1996).

Many studies have confirmed that a high level of service quality is related to a high level of consumer satisfaction (Brady & Robertson, 2001; Yang, Wu, & Wang, 2009). In hospitality research, functionality has been empirically investigated as one of the dimensions of website quality to determine consumer satisfaction in the context of

mainland China (Bai et al., 2008). Despite limited evidence of whether App functionality is of great significance in m-Tourism, recent service research has suggested that informational value is one of the dimensions that mobile users value most (Larivière et al., 2013). Recent research looking at user evaluations of hotel-related mobile App has revealed that the functionality performance and usability performance of App are indispensable features (Wang et al., 2016). As such, we propose Hypothesis 1a as follows:

H1a: Functionality performance has a positive effect on consumer satisfaction in online hotel booking.

Empirical evidence has shown that the affecting factors on the user's attitudeare significantly different between mobile users and non-mobile users (Hsiao, 2013; Kamvar, Kellar, Patel, & Xu, 2009). A study on computer science showed a significant difference between the computer platform and the smartphone platform in terms of user queries (Kamvar et al., 2009), suggesting that the different users had different requirements for information. In addition, smartphone function was found to be the key influencing factor for Internet users' attitude toward the adoption of the mobile channel (Hsiao, 2013). When using a traditional website for information searching, users are more concerned with the depth and completeness of information. When using a mobile App, however, only the essential information is needed. A mobile App enables suppliers to send geo-targeted push notifications to customers and keeps gathering data from customers even when it has been inactive, whereas a website does not. As such, it is expected that in the context of online hotel booking, the perceived functionality

performance of a mobile App is likely be different from a website. Drawing on the above analysis, Hypothesis 1b is proposed as follows:

H1b*:* The perception of functionality performance when booking hotel through a computer website is different from that of booking through a mobile App.

2.4.1.2 Usability Performance

Based on prior research, usability is another critical factor affecting the performance of a website (Lu & Yeung, 1998). Usability performance refers to the design of a website, and can be assessed in terms of five factors: easy to learn, efficient to use, easy to remember, few errors, and pleasant to use (Nielsen, 1999). Purdue (2001) suggested that a poorly designed website is generally unattractive to customers. According to Cunliffe (2000), about half of a company's potential customers are lost due to poor website design.

In the tourism and hospitality literature, a number of studies have discussed website design and identified many different design features. Interest in hotel website usability can be traced back to Yeung and Law (2004), who introduced the term of website usability into the hospitality industry and who were among the first scholars to evaluate hotel websites in terms of usability. Subsequently, usability was added as an important dimension for assessing consumers' perceptions on the attributes of tourism websites (Law & Hsu, 2005). Usability has been examined as the antecedent of consumer satisfaction in the context of e-tourism (Bai et al., 2008), and its influencing factors for m-tourism have been investigated (Stienmetz et al., 2013). However, fewer studies have

been conducted to examine the impact of the usability performance of mobile Apps on consumer satisfaction. Additionally, IT-related research has demonstrated that usability performance is a crucial factor in assessing the software and applications of mobile devices (Choi & Lee, 2012). As such, we determine the role of the usability performance of mobile apps for hotel bookings within the context of Chinese customers, and we propose Hypothesis 2a as follows:

H2a: Usability performance has a positive effect on consumer satisfaction in online hotel booking.

It has been pointed out that the user interface and screen navigation of a smartphone is quite different from that of a traditional computer (Peytchev & Hill, 2010). Accessing a mobile App is much easier than accessing a website, because it requires a single tap by the user (whereas accessing a website requires the user to open a Web browser and type in a URL or do an Internet search). A mobile device can reduce the costs of obtaining information for tourists due to its convenience of use (Lee & Mills, 2010). It is suggested that mobile technologies provide the tourism and hospitality industry benefits in satisfying customer's ongoing needs. Compared to a website, a mobile App has a smaller screen but a different design for navigation. Despite its limited screen, the mobile device not only provides location-based services, but also helps tourists to track their behaviors and habits (Crew, 2016). There is no need for travelers to remember what they have done; a mobile App keeps the records they need wherever they are. Furthermore, ease of use has been demonstrated as a key consideration factor for choosing Internet platforms. It can be assumed that the perception of usability

performance of a mobile App differs from that of a website in regard to hotel reservations. On the basis of the above analysis, we propose Hypothesis 2b as follows:

H2b: The perception of usability performance when booking hotel through a computer is different from that of booking through a mobile App.

2.4.2 Loyalty and Satisfaction

The importance of customer satisfaction and loyalty has been widely demonstrated in prior studies, including in the tourism and hospitality industry (Bai et al., 2008). The marketing literature suggests that both satisfaction and loyalty are critical factors in winning market share and business competitions (Aker, 1991). Advantages such as marketing cost savings and retaining customers are gained because of brand loyalty. In the context of m-tourism, attracting new customers is considerably more expensive than it is for traditional physical stores (Lin & Wang, 2006). Besides, with the increasing choices of mobile apps in relation to hotel bookings and traveling, it is essential for industry operators to know how to satisfy their customers and how to retain them so as to ensure long-term profits. However, despite the extensive discussions of the antecedents of customer satisfaction in the virtual environment, studies that have accounted for the consequences of satisfaction (such as purchase intention and customer loyalty) within the research model are relatively few, especially in the m-Tourism literature.

2.4.2.1 Loyalty

Loyalty is not a new concept. A great amount of research efforts have been devoted to its conceptualization and its relationship with other constructs (Bowen & Shoemaker, 1998; Shoemaker & Lewis, 1999). Early studies in relation to customer loyalty mainly focus on brand loyalty, where loyalty is defined as the preferential, attitudinal, and behavioral response toward a certain brand leading to the consistent purchase of the brand over a period of time (Keller, 1993). The role of loyalty has been divided into two types, namely, behavioral loyalty and attitudinal loyalty. Behavioral loyalty has been measured by purchase frequency (Yi & Jeon, 2003). However, it has been argued by some researchers that it is difficult to distinguish between convenience of use and true commitment (Kandampully, Zhang, & Bilgihan, 2015). Attitudinal loyalty normally refers to a deeply held commitment of consumers to repurchase a preferred product/service consistently, even though there are situational influences that can lead to switch behaviors (Oliver, 1980). Because the development of Internet and mobile technologies provides a variety of immediate options for people, today's customers can switch between brand alternatives more easily than before, which means that customer loyalty is particularly important for m-Tourism. As such, this study specifically focuses on customers' attitudinal loyalty toward online hotel booking channels, where loyalty refers to the customer's favorable attitude toward a certain website or mobile App over time.

Customer loyalty is of great significance for companies in achieving long-term competitive advantage. It is suggested that customers who hold loyal attitudes toward a

certain supplier tend to have stronger intentions to repurchase and are less likely to switch (Evanschitzky et al., 2012). Owing to the importance of customer loyalty, extensive research has been conducted concerning its antecedents and consequences. Customer satisfaction (Bai et al., 2008), perceived service quality (Hyun, 2010; Lai, 2015), and commitment (Han & Jeong, 2013) are the most researched determinants of customer loyalty in the hospitality literature, while perceived value (Xie, Xiong, Chen, & Hu, 2015) and trust (Wang et al., 2015) are identified as emerging fundamental factors in predicting customer loyalty (Kandampully et al., 2015). In recent e-Tourism research, website quality has been found to influence online hotel bookers' loyalty indirectly (Wang et al., 2015). Satisfaction has been shown to have a positive and direct influence on customer loyalty and to mediate the relationships between the quality variables and loyalty (Pereira, de Fátima Salgueiro, & Rita, 2016). Despite the relatively fewer studies examining customer loyalty in the m-Tourism context, some research has been conducted that offers valuable empirical evidence (Ozturk, Bilgihan, Nusair, & Okumus, 2016).

2.4.2.2 Satisfaction

In the early literature, customer satisfaction was defined as people's evaluations of a product or service in regard to their needs and expectations (Oliver, 1980). Dissatisfied customers are more likely to switch to competitors, and the resulting negative word-of-mouth can bring long-term adverse effects for a business. The role of customer satisfaction in customer loyalty has been widely proven (Yang & Peterson, 2004).

According to the framework of quality–satisfaction–loyalty, satisfaction is a kind of emotional reaction, perceived quality comes as a result of the assessment process of services/products, and loyalty is the coping response to satisfaction (Bagozzi, 1992). Although there are many studies that have investigated the antecedents of satisfaction in the e-Tourism context, most of the previous research has evaluated tourists' attitudes toward online websites in the tourism and hospitality industry (Bai et al., 2008; Kim, Chung, & Lee, 2011). Research on mobile Apps is limited. Recent e-Tourism research has asserted that the needs and preferences of tourism purchasing through mobile devices are quite different from those of purchasing in the computer environment, due to mobile users' value placed on time and mobility (Kim et al., 2015).

Current m-Tourism research has provided empirical evidence of some factors affecting customer satisfaction for m-tourism purchasing (Kim et al., 2015). Prior studies argue that loyalty usually implies satisfaction. But satisfaction is not loyalty. In a hotel, a guest may be satisfied with the stay because the hotel has met his/her expectations, but this does not mean that the guest will repeat the experience or

recommend it to friends and relatives (Bowen & Shoemaker, 1998; Shoemaker & Lewis, 1999). Thus, the construct of loyalty is important and should be integrated into the existing m-Tourism models. Indeed, the relationship between satisfaction and loyalty has attracted great interest from scholars. It has been widely shown in prior studies that satisfaction has a positive impact on loyalty, both to the e-commerce organizations and their websites (Anderson & Srinivasan, 2003). Nevertheless, it has been pointed out that, although the relationship between these two variables seems intuitive, the strength of the relationship varies in different situations (Levesque & McDougall, 1996).

Furthermore, in the marketing literature, satisfaction has been shown to be a mediator between perceived quality performance and customer loyalty (Bai et al., 2008; Caruana, 2002; Olsen, 2002). Tourism and hospitality studies suggest that quality performance of service positively affects tourist satisfaction, and in turn that satisfaction has a positive impact on tourist loyalty (Baker & Crompton, 2000; Pereira et al., 2016). Based on an investigation in a casino context, Shi, Prentice, and He (2014) showed that customer satisfaction as a mediator indeed intervenes between service quality and customer loyalty. A recent study on mobile App revealed that satisfaction directly affects user loyalty, while perceived benefit variables indirectly affect loyalty through satisfaction (Xu et al., 2015). In the current study, we aim to examine the relationship between satisfaction and loyalty based on the context of online hotel booking, including website booking and mobile App booking. Furthermore, the mediating role of satisfaction in the associations between the perceived-quality variables (functionality

performance and usability performance) with customer loyalty is expected based on our review of the previous literature. The following hypotheses are proposed:

H3: Consumer satisfaction has a positive effect on consumer loyalty in online hotel booking.

H4: Consumer satisfaction mediates the relationship between the perceived-quality variables (functionality performance and usability performance) and consumer loyalty in online hotel booking.

2.4.3 Perceived Value

To stimulate loyalty and to be competitive, it is critical for hotel managers to have a better understanding of the values important to customers. It is also critical for hotel managers to be aware of how to co-create such value with their customers. Similarly, in the field of online hotel booking, determining consumers' perceived value for their value-in-use when they make hotel reservations through a website or mobile app is crucial. The early literature defines perceived value as the assessment of the utility of a product or service, which demonstrates a trade-off between what is received (i.e., volume, quality, and convenience) and what is given (i.e., money, time, and effort) (Zeithaml, 1988). Given the importance of perceived value in marketing, there have been tremendous research efforts studying it in great depth (Sanchez et al., 2006). Some researchers have proposed multidimensional approaches to explain perceived value by considering it both from the cognitive and affective perspectives (Grönroos, 1997). Perceived value is suggested to have two parts, namely, functional value and affective

value. *Functional value* refers to a rational assessment involving economic considerations. *Affective value* refers to the emotions that emerge through consumption (Sanchez et al., 2006).

Existing tourism studies mostly investigate perceived value as functional value that merely considers the value for money (Sanchez et al., 2006). The psychology literature indicates that money and time are two of the most valuable resources for the individual (DeVoe & House, 2012). If happiness is the most universally agreed upon goal of the human condition, then money and time should have a strong influence on happiness (Frey & Stutzer, 2002). Moreover, because saving time is particularly important in the context of m-tourism (Kim et al., 2015), value for time should be taken into consideration and tested empirically.

Perceived value is a dynamic construct that varies at different stages and in different cultures (Parasuraman, 1997; Assael, 1995). It can happen in three stages: before a purchase, at the moment of purchase, and at the post-purchase stage. Perceived value is likely to vary at the different stages. Satisfaction is considered to be a consequence of perceived value at the post-purchase stage (Kim et al., 2015; Xu et al., 2015), as is loyalty (Kim, Jeon, & Hyun, 2012). Perceived quality, on the other hand, is studied as the antecedent of perceived value (Sanchez et al., 2006). The significant associations between perceived value, satisfaction, and loyalty have been demonstrated in various studies. Recent mobile research has suggested that perceived value positively and significantly affects mobile users' satisfaction and loyalty (Xu et al., 2015), whereas

perceived value was found to mediate the relationship between perceived quality and customer loyalty (Kuo et al., 2009). Despite the extensive efforts to investigate the role of perceived value in tourism and hospitality studies, there is no widespread agreement on the interrelationships between perceived quality, perceived value, satisfaction, and loyalty (Chang & Wang, 2011). Some argued that perceived value and perceived quality are both important antecedents of customer satisfaction toward loyalty, whereas some studies have discussed the mediating role of perceived value between perceived quality and customer loyalty (Chang, Wang, & Yang, 2009; Kuo et al., 2009). Furthermore, the existing studies mostly investigated perceived value at pre-purchase stage or at the moment of purchase. Further investigation is required to explicate the relationships between perceived value and the other variables at the post-purchase stage.

2.4.3.1 Perceived Value for Money

A great number of studies have shown a positive relationship between assessed value and tourist satisfaction (Lee, Yoon, & Lee, 2007; Tam, 2004). Perceived value is considered not only to be an important antecedent of customer satisfaction, but also an influence on consumer loyalty behaviors through customer satisfaction (Lam, Shankar, Erramilli, & Murthy, 2004). It is known that the higher the quality in relation to the price paid, the greater the value perceived by customers. In hospitality research, perceived value is regarded as essential to generating customer satisfaction and loyalty (Chang, 2013; Ryu, Lee, & Kim, 2012; Siu, Zhang, Dong, & Kwan, 2013).

The measurements of perceived value in those literatures mostly emphasize on price (perceived value for money). For instance, researchers have investigated perceived value by assessing the extent to which the supplier offered good value for price and whether the experience was worth the money (Ryu et al., 2012). With the rapid development of IT and mobile devices, today's customers are better able to choose the price they are willing to pay. Therefore, online hotel reservation platforms that fail to satisfy the customer's perceived value for money are likely to lose out to competition (McCole, 2002; Ye, Li, Wang, & Law, 2014).

However, it has been argued that although price is important, it cannot be treated as the only factor in the success or failure of a business. Many industry practitioners are very concerned that hotel bookers merely care about price, which could lead to an evil cycle of price competition. In fact, Chinese OTAs are engaging in a severe price war for hotel sales in recent years. The profit margins for hotel operators are becoming smaller and smaller. Prior research has shown that price is the least important attribute when consumers shop online (Kim, Xu, & Gupta, 2012). Moreover, in the context of hotel booking in China, it is found that Chinese hotel bookers are less likely to rely on perceived value for money (Kim, Ma, & Kim, 2006). Other factors—such as website quality and satisfaction—appear to exert more impact on consumers' intentions to make online reservations. Consequently, the ability to compete on dimensions other than price will become critical, because it allows for more opportunities for OTAs to differentiate themselves among their competitors.

2.4.3.2 Perceived Value for Time

M-commerce offers instant gratification to people anytime, anywhere (Anckar & D'incau, 2002). Mobile technology enables the delivery of time-sensitive information, the value of which depends on its timely use (Tsalgatidou & Pitoura 2001). *Time saving* refers to a reduction in search costs in relation to *time spending* (Kohli, Devaraj, & Mahmood, 2004), which is defined as "taking less time for making purchases, visiting different retail stores, and browsing through alternatives" (Cho, 2004). Online merchants promote both time saving and quicker accomplishment of more tasks (Alreck, 2009). It has been shown that modern consumers constantly look for more efficient ways to do everyday activities, such as using mobile banking and online travel reservations (Kalakota & Robinson, 2001). Prior studies have also found that m-Bookers are very different from those of other bookers. They are more inclined to save time, and they most often make reservations while on the road (Kohli et al., 2004).

Compared to investigations of perceived value for money, relatively fewer efforts have been made to investigate perceived value for time. Hume and Mort (2010) measured perceived value for money and perceived value for time as a combined variable that affects customer satisfaction directly. According to the psychology literature, money is more closely related to utility, while time is more closely related to one's emotional fulfillment (Mogilner, 2010). Given that money and time are two different concepts, it is inadequate to combine them for measurement. Perceived value for time refers to customers' trade-off analysis of the cost of their time and the results they get, particularly for those who have the predisposition to regard time as a scarce resource

and to spend time rationally (Jayasankaraprasad, 2014). Naturally, for customers who lack time, the online booking platforms that offer easier accessibility and require less time will be more attractive.

2.4.3.3 The Moderating Role of Perceived Value

Anderson and Srinivasan (2003) investigated the impact of satisfaction on loyalty in the context of e-commerce. They concluded that customer satisfaction has a positive impact on loyalty, but the relationship is not as strong as was expected. Both personal factors and business factors can moderate the link of satisfaction and loyalty. Notably, perceived value in this study refers to post-purchase perceived value. As such, the valuation made by online hotel bookers should not be considered at the moment of the hotel booking decision, but rather as the online bookers' memories of the value they perceived (Sanchez et al., 2006). That is, after a satisfying or unsatisfying experience of hotel booking online, the role of perceived value variables should be investigated.

Previous studies have suggested that value has a significant moderating effect on the translation process between customer satisfaction and loyalty (Chang, Wang, & Yang, 2009). It is suggested that apart from the perceived quality factors, online business operators should consider the role of customer perceived value as well. Perceived value can contribute to encouraging customer loyalty by reducing customers' needs to seek alternative providers (Ponte, Carvajal-Trujillo, & Escobar-Rodr ǵuez, 2015). If the consumer's perceived value is low, he/she tends to switch to a competitor, thereby resulting in a decline in loyalty. In contrast, if the consumer perceives high

value toward a website or app, he/she will be more inclined to keep using that channel for hotel booking. Even satisfied customers are unlikely to patronize an e-business if they feel that they are not getting the best value for their money (Chang & Wang, 2011). Instead, they will seek out other sellers in an ongoing effort to find a better value. The relationship between satisfaction and loyalty appears strongest when customers feel that their current business vendor provides higher overall value than that offered by competitors (Chang et al., 2009).

As previously stated, there is no widespread agreement on the associations between perceived quality, perceived value, satisfaction, and loyalty. Some studies indicate that perceived value directly affects customer satisfaction and loyalty (Chang et al., 2009; Xu et al., 2015), while other researchers show that perceived value is a mediator linking perceived quality and loyalty (Kuo et al., 2009). But these studies were mainly based on pre-purchase stage or at the moment of purchase, rather than post purchase stage. The role of perceived value as a moderator also seems to be contradictory in different studies. Perceived value is found to strengthen the association between satisfaction and loyalty in Chang and Wang's (2011) study, while it is shown to weaken the effect of satisfaction on loyalty in a recent tourism study (Pilelienė & Grigaliūnaitė, 2014). Notably, perceived value for money and perceived value for time refer to the values which hotel bookers perceive at post-purchase stage. It is likely that a better perception of value for money will enhance the translation of satisfaction to loyalty for hotel bookers. In this mobile Internet era, saving-time is becoming increasingly important. As such, when considering the relationship between satisfaction and loyalty, perceive value for time is

assumed to strengthen the link of satisfaction-loyalty in online hotel booking context. On the basis of the above arguments, we propose that perceived value for money and perceived value for time affect the strength of the relationship between satisfaction and loyalty, which may advance the understanding of the satisfaction-loyalty link at the post-purchase stage:

H5a: Perceived value for money significantly moderates the relationship between satisfaction and loyalty in online hotel booking.

H6a: Perceived value for time significantly moderates the relationship between satisfaction and loyalty in online hotel booking.

The differences between computer users and mobile users have been discussed in previous studies (Law et al., 2009; Lee & Mills, 2010). Mobile business solutions are transforming the manner in which suppliers communicate with customers. Benefiting from the features of ubiquity, immediacy, and localization awareness, online buyers can purchase products and services without limitations on time and location. Mobile buyers can not only obtain their physical location, but also react in real time (Kim et al., 2015). As such, the preferences and values for mobile buyers might be different from online, non-mobile buyers.

It has been argued that time-saving is one of most important factors influencing consumers' choice of purchasing channel, especially in the "on the road" context (Kim et al., 2015). That is, the levels of time-sensitivity might be different between m-Bookers and d-Bookers. In addition, due to the mobile nature of m-tourism, perceived

value for time might be of greater importance for m-Bookers. Similarly, price—which is defined as perceived value for money in this study—is an essential element in online purchasing decision-making. Consumers compare prices among different websites and mobile Apps for hotel bookings. Given the trend in marketing through mobile channels, a great number of companies are offering more attractive discounts in the mobile channel versus the computer channel in order to gain market share. However, it is possible that people may balance the need for saving money with that for saving time while traveling. In other words, the perceived value for money and the perceived value for time are assumed to be different when people book hotels through computer websites versus through mobile Apps. On this basis, we propose the following:

H5b: The perception of value for money when booking hotel through a computer website is different from that of booking through a mobile App.

H6b: The perception of value for time when booking hotel through a computer website is different from that of through a mobile App.

Considering the above, our conceptual framework is proposed as the following:

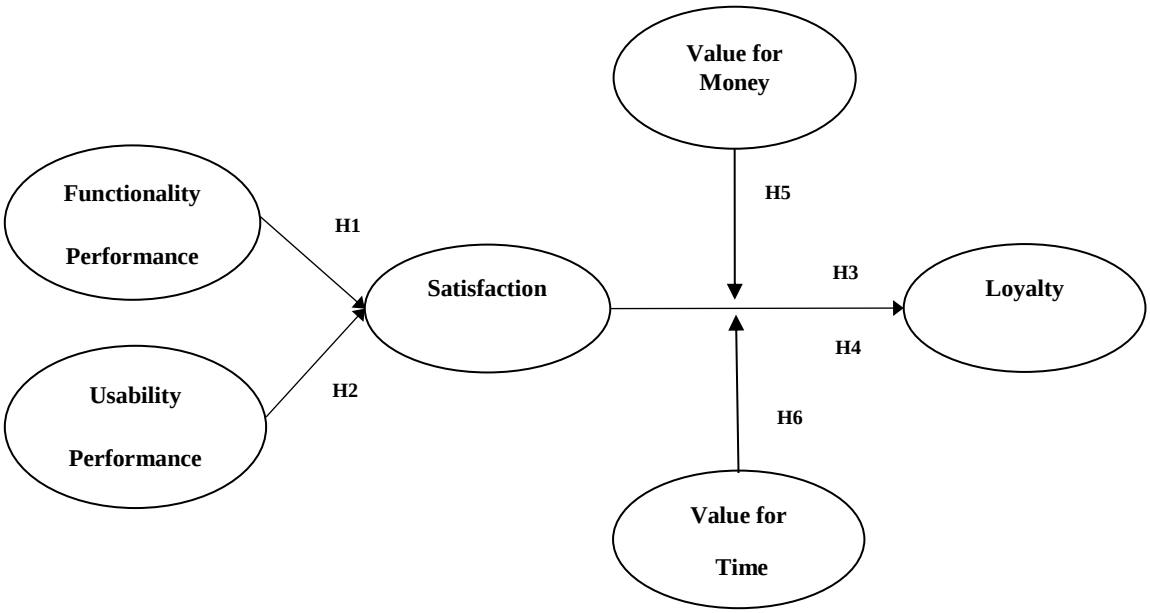


Figure 2.4 The proposed conceptual framework

2.5 Chapter Summary

This chapter reviews the previous research relevant to this study. Based on a comprehensive review of the e-Tourism and m-Tourism literature, research voids are identified and existing studies on the major constructs are summarized. After explicating the paradigm of value co-creation and the framework of quality–satisfaction–loyalty, which are the theoretical foundations of this study, the chapter presents our hypotheses and conceptual framework. Functionality performance and usability performance as perceived-quality variables are hypothesized to affect customer satisfaction, and satisfaction directly influences loyalty. Perceived value for money and perceived value for time are hypothesized to moderate the association of satisfaction and loyalty.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Chapter Introduction

This chapter describes what research methodology and methods are adopted to address the objectives of this study. After a discussion of the research paradigms, the chapter continues to introduce the research design. This study predominantly adopts a quantitative approach. The current chapter shows the development of the measurements and the process of data collection. The chapter also shows the process and results of the pre-test and the pilot test. This chapter ends with a introduction of the methods to be used for data analysis.

3.2 Nature of the Research

As Patterson (2000) expressed, methodologies are merely machinery and what is the underlying philosophy that guides the operation of that machinery is critical. Scholars must figure out the philosophies behind their methods to guide their operation (Patterson, 2000). Paradigms describe the philosophical perspectives that guide ontological, epistemological, and methodological perspectives. There has been existing knowledge on the research question of this study, but it still can be further uncovered through falsification. Thus, the current study mainly follows the post-positivism research paradigms.

Based on Robson's (2002) classification, there are four types of research purposes—exploratory, descriptive, explanatory, and improving. For each of the different research purposes, a different methodology should be adopted. As such, the

distinctions between these four types of purposes are clarified first. Exploratory study is mainly about finding out what is happening—probing new insights while generating ideas for new research. Descriptive study aims to portray a clear picture of a situation or phenomenon. For explanatory study, the main work is seeking an explanation of a phenomena, mostly but not necessarily in the form of causal relationships between variables. As for improving study, it is basically focused on improvement in some aspects of the researched problem. With reference to the research objectives, this study is more explanatory in nature because it aims to elucidate the underlying mechanism of the customer's booking decision through Internet channels. Nevertheless, both exploratory work and descriptive study are conducted to seek insights and to provide a better understanding of the current research issue.

3.3 Research Design

To achieve the objectives of this study, we mainly adopted quantitative approaches in the building of our research framework. Both quantitative approach and qualitative approach have their strengths and weaknesses. Quantitative research is more easily to summarize and analyze the data, but it requires large samples and proper statistical tools (Slevitch, 2011). With an underlying principle of generalization, quantitative research aims to provide numerical evidence of the relationships among phenomena, which normally needs to gather restricted information (Denzin & Lincoln, 1994). Differently, qualitative research does not aim to answer empirical questions, but to achieve an in-depth understanding of some important issues (Steckler, McLeroy, Goodman, Bird, & McCormick, 1992). As such, qualitative research usually involves collecting rich and

detailed information (e.g. feelings and opinions) from a small group of participants. Another major difference between quantitative and qualitative approaches is the cost of time and resources for research. If the measures of interest do not exist, it could be time-consuming to develop a valid and reliable scale in quantitative research. As for qualitative study, it may be less costly at the initial stage, but it is likely to cost a great amount of time and endeavor to transcribe and interpret the data. According to the research objectives and the nature of this study, we mainly used quantitative methods, supplemented by some qualitative analysis.

The research design process takes place in two main phases (see Figure 3.1). In Phase 1, qualitative studies including the literature review (etic perspective), and expert opinions (emic perspective) are conducted to develop the conceptual framework. The research follows the three-stage sequence endorsed by Berry (1990) to develop and verify the overall structure of the research framework, considering both the etic and emic perspectives. In Phase 2, quantitative research is carried out with revised constructs to test the hypotheses of the research model. A pilot study is conducted first to validate the measurement instrument. After the pilot test, data is collected through a cross-sectional research approach with a convenience sampling design. With the findings from the data analysis, interrelationships among the factors in the model are examined, and discussion of the results is provided.

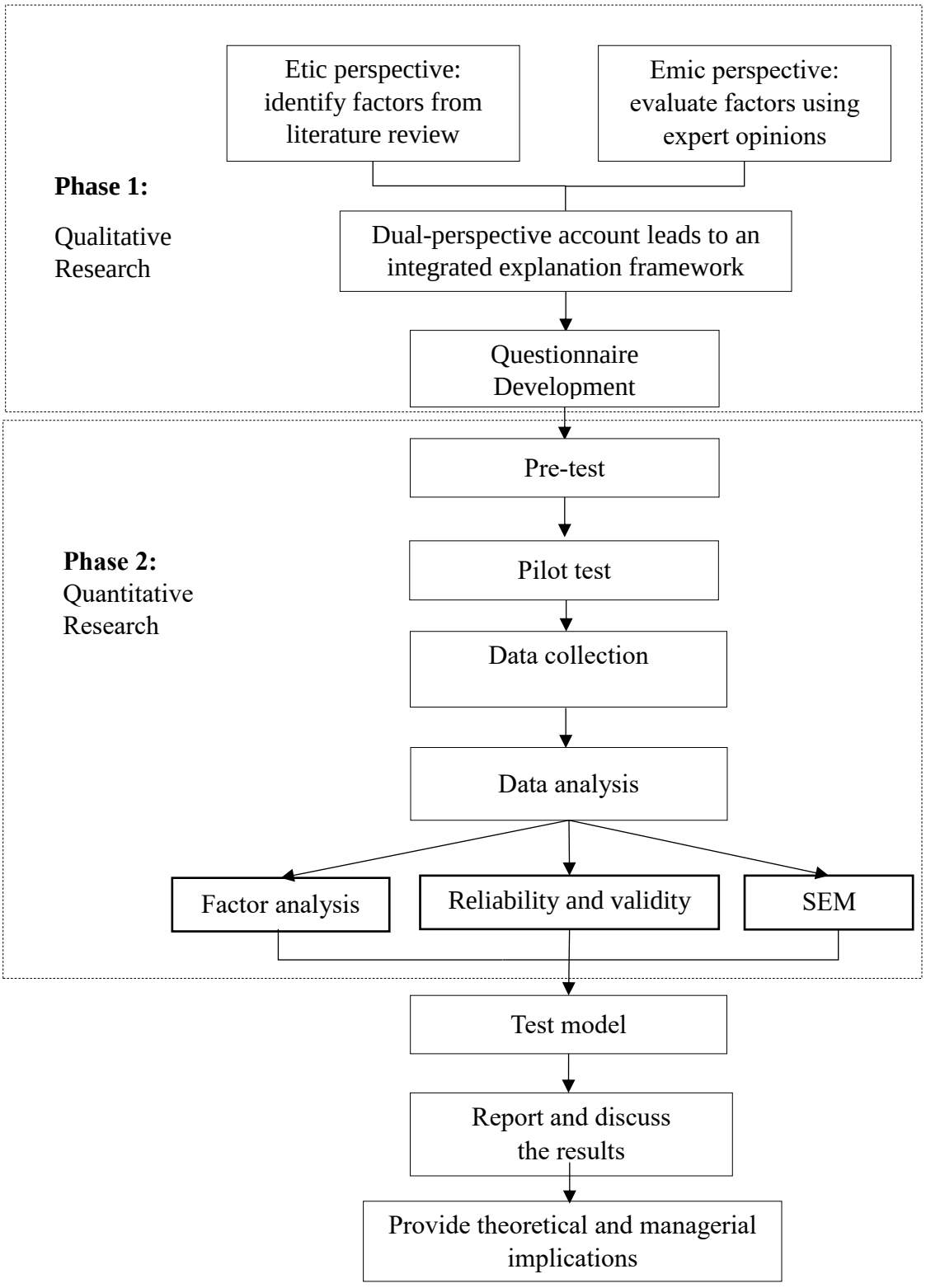


Figure 3.1: The research process

3.4 Phase1: Qualitative Research

It is suggested that integrating both the etic and emic perspectives will overcome the limitations of narrower frameworks in modeling (Morris, Leung, Ames, & Lickel, 1999). The emic perspective follows in the tradition of psychological studies of folk beliefs, while the etic perspective follows in the tradition of behaviorist psychology. A three-stage sequence endorsed by Berry (1990) is adopted to develop the explanation framework. In the first stage, the literature related to e-Tourism and m-Tourism is comprehensively reviewed, and content analysis is conducted to identify the factors affecting tourists' m-tourism purchasing. In the second stage, emic insights derived from expert opinions are used to verify and consolidate the features of the research model. In the final stage, the study constructs an explanation model based on a dual-perspective account for the quantitative approach in the later phase.

3.4.1 Literature Search

To identify the factors influencing online hotel bookers' satisfaction and loyalty, a comprehensive review of previous studies on e-Tourism and m-Tourism were conducted. First, the research commenced with a thorough search of the studies in relation to e-Tourism and m-Tourism, using keywords "e-Tourism", "online tourism", "m-Tourism" or "mobile tourism". All articles were gathered from Science Direct, EBSCOHost, and Google Scholar, which are the three largest and most popular online academic databases. After carefully reviewing the published articles, research gaps were identified by comparing and contrasting the prior studies. Because m-tourism research emerged only

in recent years and empirical studies are especially scarce—particularly in regards to mobile tourist behavior—e-Tourism research focusing on the impact factors of consumer satisfaction and loyalty were also reviewed to enrich the theoretical background. Second, each article was read carefully by the researcher to decide whether it is relevant to the current study. Any confusion emerged was discussed with the supervisors. At the end of the process of literature search, a total of 104 studies on e-Tourism and 18 studies on m-Tourism were included for content analysis.

3.4.2 Content analysis

On the basis of the studies obtained through literature search, this study adopted content analysis to analyze the concepts and relationships in previous research. Three main research directions, including technology, supply, and demand, were identified in prior studies. In terms of demand side, studies can be divided into three perspectives: pre-visit stage, the during-trip stage, and the post-trip stage. Given that quality or which can be regarded as value-in-use is the value for customers, each article on website quality or mobile app quality were read and analyzed by content. Within the total of 122 articles (104 e-Tourism and 18 m-Tourism), there were 25 studies in relation to the quality evaluation of online booking channel. According to the findings of content analysis, usability performance and functionality performance were identified as the most important dimensions which constitute website quality. The positive relationship between perceived quality variables (usability performance and functionality performance) and customer satisfaction has been substantially investigated in previous

literature. The detailed information with respect to functionality and usability as well as their associations with satisfaction and loyalty was presented in Chapter 2.

3.5 Phase 2: Quantitative Research

The quantitative research design of this study follows Churchill's (1979) approach, reflecting the positivist research paradigm. Three stages are involved: 1) Develop the survey instrument; 2) Test the survey instrument using a pre-test and a pilot study; and 3) With the data collected from the main survey, use structural equation modeling (SEM) to investigate the interrelationships among the constructs of the proposed framework.

3.5.1 Measurement Development

Based on the work of Phase 1, the results of the literature review and expert opinions are integrated to build the research model. The development of measurement scales follows a traditional guideline by Churchill (1979), an updated paradigm by Gerbing and Anderson (1988), and a practical research example in an e-tourism study by Tsang, Lai, and Law (2010). The measurement of consumer satisfaction was adapted from previous studies by Bai, Law, and Wen (2008), and Kim et al. (2015). Consumer loyalty was measured according to measurement items used in previous research on repeat purchase behavior (Pritchard, Havitz, & Howard, 1999), which has been successfully examined within the m-commerce context (Lin & Wang, 2006). The measurement of website quality (usability performance and functionality performance) was adapted from the studies conducted by Bai, Law, and Wen (2008). The items measuring perceived value for money came from Lin and Wang (2006). These items

have been successfully applied in earlier studies on e-commerce (Maroofi & Nazaripour, 2012; Yee & Faziharudean, 2010). As for perceived value for time, the measurement scale was adapted from m-tourism research conducted by Kim, Chung, Lee, and Preis (2015). It is suggested that a seven-point Likert scale is more appropriate for an online questionnaire and provides a more rigorous measurement of evaluation than a five-point Likert scale (Finstad, 2010; Russell & Bobko, 1992). Thus, a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used to measure the items in four factors: perceived value for money, perceived value for time, satisfaction, and loyalty. As for functionality performance and usability performance, another seven-point Likert scale was used, ranging from 1 (not good at all) to 7 (very good).

Based on the development of measurements, the questionnaire was designed to consist of three major parts: questions about hotel bookers' online booking experience; items that measure the perceived-quality variables (functionality and usability), perceived value variables (perceived value for money and perceived value for time), satisfaction, and loyalty; and questions designed to obtain respondents' demographic information. After the domain of the construct has been established, an initial questionnaire was developed in English. According to the English-Chinese, Chinese-English back-translation methods by Chan and Pollard (2001), the English version was translated into a Chinese (Mandarin) version. Both the translation quality and equivalence in the meaning of words between the two languages were ensured.

3.5.2 Pre-test

On the basis of literature review, the constructs and the corresponding measurements were identified, which refers to the etic perspective. In order to verify the original research instrument, a pre-test was conducted to obtain information from outside, which refers to the emic perspective. To be more specific, during the stage of pre-test, the researcher got feedback from a highly controlled sample to evaluate the appropriateness of the original instrument (Lewis, Templeton, & Byrd, 2005). The pre-test was conducted in March 2016. Four academic experts, four industry practitioners, and four hotel bookers (including two d-Bookers and two m-Bookers) who have online booking experience were invited to assess the content validity of the preliminary survey items. All the participants were asked to complete the questionnaire, and to point out any problems with the questions. Some typical issues with survey design were suggested to the participants, such as whether respondents can follow the questionnaire format, whether each question is clear and easy to understand, and whether there is any alternative form of the question that might work better. Moreover, the experts and hotel bookers were requested to assess each item based on the associated constructs. A five-point Likert scale ranging from 1 (totally inapplicable) to 5 (totally applicable) was employed for rating each item (see Appendix A). The questionnaire was then modified based on the feedback of the pre-test respondents. Table 3.1 shows the revisions made to the questionnaire items.

Table 3.1 Revisions Made to Questionnaire Items Based on the Expert Panel Review

Initial Measurement Items	Revised Measurement Items
Overall, I am satisfied with the mobile App/website	Overall, I am satisfied with the mobile App/website
Overall, I am satisfied with my experience on the mobile App/website	Overall, I am satisfied with my experience on the mobile App/website
Overall, I am satisfied with my experience on the mobile App/website	Overall, I am satisfied with my experience on the mobile App/website
I am satisfied with my decision in booking hotel through the mobile App/website[a*]	
My preference for this mobile App/website would not willingly change	My preference for this mobile App/website would not willingly change
It would be difficult to change my beliefs about this mobile App/website	It would be difficult to change my beliefs about this mobile App/website
Even if close friends recommended another mobile App/website, my preference for this App/website would not change.	Even if close friends recommended another mobile App/website, my preference for this App/website would not change.
I will buy from this mobile App/website the next time I book hotel room.	I will buy from this mobile App/website the next time I book hotel room.
I intend to keep using this mobile App/website for booking hotel.	I intend to keep using this mobile App/website for booking hotel.
The purchase information in the mobile App/website[b*]	The reservation information in the mobile App/website
The products information in the mobile App/website	The products information in the mobile App/website
The quality of information of the mobile App/website[c*]	The user-generated information in the mobile App/website
The contact information in the mobile App/website	The contact information in the mobile App/website
	The surrounding area information [d*]
The language of the mobile App/website	The language of the mobile App/website
The layout and graphics of the mobile App/website	The layout and graphics of the mobile App/website

The information architecture of the mobile App/website	The information architecture of the mobile App/website
The user interface and navigation of the mobile App/website	The user interface and navigation of the mobile App/website
The general of the mobile App/website	The general of the mobile App/website
The product in the mobile App/webiste is good value for money.	The product in the mobile App/webiste is good value for money.
Price charges in the mobile App/website are acceptable.	Price charges in the mobile App/website are acceptable.
The booking through the mobile App/website is considered to be a good buy.	The booking through the mobile App/website is considered to be a good buy.
The time spent in making this purchase from the mobile App/website is less than other ways.	The time spent in making this purchase from the mobile App/website is less than other ways.
Booking hotel rooms from the mobile App/website is a time-saving transaction.	Booking hotel rooms from the mobile App/website is a time-saving transaction.
By booking hotel rooms from the mobile App/website, I can save more time than I could by using other shopping options.	By booking hotel rooms from the mobile App/website, I can save more time than I could by using other shopping options.
Booking hotel rooms from the mobile App/website is the right choice if saving time is considered.	Booking hotel rooms from the mobile App/website is the right choice if saving time is considered.

Note: a*: This was deleted based on the results of the pre-test. b*, c*, d*: The scale of functionality was changed to an updated scale by Ip, Law, and Lee (2012) on the basis of the pre-test.

Based on the work in pre-test, both the etic and the emic perspective were considered for the validation of the constructs and the development of research framework. A total of 25 items for six constructs (functionality performance, usability performance, perceived value for money, perceived value for time, satisfaction and loyalty) were retained at current stage.

3.5.3 Pilot Test

The pilot test can been seen as a “dress rehearsal” of the instrument with a small sample. It provides the opportunity to identify potential problems with the questionnaire, such as ambiguities, biases, and missing items (Lewis, Templeton, & Byrd, 2005). Then, following modifications from the pre-test, a pilot test was conducted to further assess and refine the questionnaire.

3.5.3.1 Data Collection of Pilot Test

Since the population of this research is consumers who have experience booking hotels through the Internet, we distributed the questionnaire to people who had reserved a hotel in the previous year using either a computer or a mobile device. According to the requirements for running a factor analysis, the required ratio of measurements to observations is one measurement to at least five observations (Hair et al., 2010). Thus, the minimum sample size for this study’s pilot test was 125 measurements for a total of 25 items. The study then targeted 125 sample cases for each of the two populations (d-Bookers and m-bookers). A snowball sampling was undertaken at this stage. The pilot test was conducted in June 2016. The questionnaires were distributed via Wenjuanxing (www.sojump.com, a website like Surveymonkey), which is one of the most professional survey platforms in China. Participants who were interested in the survey could complete the questionnaire via a website link provided by Wenjuanxing, and they were also asked to recruit other potential respondents. The questionnaires were distributed until the target sample size for each population was obtained.

3.5.3.2 Data Normality of Pilot Test

Normality refers to the extent to which the survey's data distribution corresponds to a normal distribution (Hair et al., 2010). Since normality is a basic assumption of multivariate analysis, the pilot study assessed data normality using the results of skewness and kurtosis. Table 3.2 presents the normality test results of the pilot test for the d-Bookers. The absolute values of skewness of each item was less than 3 (ranging from 0.258 to 1.455), whereas the absolute value of kurtosis of each item was less 8 (ranging from 0.004 to 1.369), suggesting a normal distribution of the d-Booker data.

Table 3.2 Descriptive Statistics of the Main Constructs (d-Booker, N=125)

Items	***Min.***	***Max.***	***Mean***	***S.D.***	***Skewness***	***Kurtosis***
Satisfaction						
SAT1- with the website	1	7	5.44	1.526	-1.455	1.369
SAT2- with my experience on the website	1	7	5.28	1.532	-1.303	1.070
SAT3- met my needs	1	7	5.22	1.502	-1.072	.656
Loyalty						
LOY1- preference would not change	1	7	4.88	1.574	-.404	-.826
LOY2- difficult to change my beliefs	1	7	4.66	1.486	-.258	-.620
LOY3- even if friends recommended another website, my preference would not change	1	7	3.90	1.384	.430	-.296
LOY4- buy from this website the next time	1	7	5.03	1.414	-.632	-.129
LOY5- intend to keep using this website	1	7	5.19	1.372	-.810	.305
Functionality						
FUN1- reservation information	1	7	5.36	1.445	-1.273	1.174
FUN2- products information	1	7	5.04	1.456	-.644	-.430
FUN3- user-generated information	1	7	5.34	1.333	-1.258	1.341
FUN4- surrounding area information	1	7	5.26	1.425	-1.160	.752

FUN5- contact information	1	7	5.31	1.542	-.941	-.004
Usability						
USA1- language	1	7	5.24	1.352	-.964	.333
USA2- layout and graphics	1	7	5.11	1.375	-.772	.147
USA3- information architecture	1	7	5.18	1.388	-.631	-.258
USA4- user interface and navigation	1	7	5.10	1.405	-.634	-.411
USA5- general	1	7	5.27	1.405	-.958	.353
Perceived Value for Money						
PVM1- good value for money	1	7	5.14	1.463	-1.023	.725
PVM2- price charges are acceptable	1	7	5.38	1.401	-1.253	1.252
PVM3- considered to be a good buy	1	7	5.26	1.404	-1.034	.700
Perceived Value for Time						
PVT1- the time spent is less than other ways	1	7	4.95	1.497	-.474	-.649
PVT2- time-saving transaction	1	7	5.04	1.531	-.698	-.191
PVT3- save more time	1	7	4.97	1.475	-.541	-.306
PVT4- right choice if saving time is considered	1	7	4.96	1.467	-.615	.017

Regarding the data normality of the m-Booker data, Table 3.3 shows the results of the pilot test. The absolute values of skewness ranged from 0.098 to 1.016, whereas the absolute values of kurtosis ranged from 0.013 to 1.046. The results from the pilot study of the m-Bookers also reveal a normal distribution.

Table 3.3 Descriptive Statistics of the Main Constructs (m-Booker, N=125)

Items	*Min.*	*Max.*	*Mean*	*S.D.*	*Skewness*	*Kurtosis*
Satisfaction						
SAT1- with the website	1	7	5.09	1.596	-1.016	.053
SAT2- with my experience on the website	1	7	5.12	1.527	-.992	-.004
SAT3- met my needs	1	7	5.04	1.456	-.899	.052
Loyalty						
LOY1- preference would not change	1	7	4.70	1.704	-.540	-.943
LOY2- difficult to change my beliefs	1	7	4.38	1.570	-.354	-.839
LOY3- even if friends recommended another website, my preference would not change	1	7	4.06	1.643	.098	-1.046
LOY4- buy from this website the next time	1	7	4.89	1.498	-.814	.192
LOY5- intend to keep using this website	1	7	4.96	1.472	-.793	.084
Functionality						
FUN1- reservation information	1	7	5.03	1.373	-.856	.303
FUN2- products information	1	7	4.74	1.460	-.541	-.314
FUN3- user-generated information	1	7	4.97	1.475	-.817	.313
FUN4- surrounding area information	1	7	4.94	1.544	-.586	-.347
FUN5- contact information	1	7	5.19	1.496	-.952	.402
Usability						
USA1- language	1	7	5.10	1.439	-.995	.522
USA2- layout and graphics	1	7	4.94	1.410	-.758	.017
USA3- information architecture	1	7	4.90	1.447	-.611	-.352
USA4- user interface and navigation	1	7	4.88	1.423	-.518	-.525
USA5- general	1	7	4.91	1.414	-.694	.068
Perceived Value for Money						
PVM1- good value for money	1	7	4.85	1.470	-.784	.013
PVM2- price charges are acceptable	1	7	5.01	1.451	-1.013	.703
PVM3- considered to be a good buy	1	7	4.92	1.446	-.900	.227

Perceived Value for Time						
PVT1- the time spent is less than other ways	1	7	4.99	1.467	-.795	.156
PVT2- time-saving transaction	1	7	4.97	1.513	-.783	-.031
PVT3- save more time	1	7	4.91	1.426	-.623	-.034
PVT4- right choice if saving time is considered	1	7	4.94	1.557	-.726	-.216

3.5.3.3 Profile of the Pilot Study Respondents

Of the 125 d-Bookers who had used a computer website to reserve a hotel in the past 12 months, 79 were female and 46 were male (see Table 3.4). Most of the respondents in the pilot study were aged between 26 and 35 years (78, 62.4%). In regard to education level, more than half of the respondents held at least a bachelor's degree. Of the 125 d-Bookers, 35.2% had a monthly income of more than 15,000 RMB (US$2,265) and 32% earned between 5,000 RMB (US$755) and 10,000 RMB (US$1,510) per month.

Table 3.4 Description of Respondents in Pilot Study (d-Booker, N=125)

		Number	
Gender	Male	46	36.8%
	Female	79	63.2%
Age	16-25	28	22.4%
	26-35	78	62.4%
	36-45	14	11.2%
	46-55	5	4.0%
	56-65	0	0%
	66 or above	0	0%

Education	Secondary/high school or below	3	2.4%
	College/university	50	40.0%
	Postgraduate or above	72	57.6%
Monthly income (RMB)	≤1,000 (≈US$151)	2	1.6%
	1,001-5,000	20	16.0%
	5,001-10,000	40	32.0%
	10,001-15,000	19	15.2%
	>15,000 (≈US$2,265)	44	35.2%

Regarding the profiles of m-Bookers in the pilot study, Table 3.5 shows that male respondents accounted for 55.2% and female respondents accounted for 44.8%. Similar to the d-Bookers, the majority of the m-Bookers (89, 71.2%) were aged between 26 and 35 years. Most of the respondents had degrees of master or above (52%), and 46.4% had bachelor degrees. Of the 125 m-Bookers, 31.2% earned more than 15,000 RMB (US$2,265) per month, and 28.8% had monthly income between 5,000RMB (US$755) and 10,000RMB (US$1,510).

Table 3.5 Description of Respondents in Pilot Study (m-Booker, N=125)

		Number	
Gender	Male	69	55.2%
	Female	56	44.8%
Age	16-25	25	20.0%
	26-35	89	71.2%
	36-45	11	8.8%
	46-55	0	0%
	56-65	0	0%

	66 or above	0	0%
Education	Secondary/high school or below	2	1.6%
	College/university	58	46.4%
	Postgraduate or above	65	52.0%
Monthly income (RMB)	≤1,000 (≈US$151)	5	4.0%
	1,001-5,000	17	13.6%
	5,001-10,000	36	28.8%
	10,001-15,000	28	22.4%
	>15,000 (≈US$2,265)	39	31.2%

3.5.3.4 Reliability and Validity

One of the most important objectives of a pilot test is to fine-tune and "debug" the measurement instrument. Thus, to ensure the appropriateness of the measurements to the context of the current study, construct reliability and validity should be assessed. Before examining the reliability and validity of the constructs, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were checked at this stage to determine whether the data was appropriate to employ factor analysis.

The KMO value provides a parameter to determine whether the sampling size is adequate for assessing the strength of the relationships between constructs. Bartlett's test of sphericity checks for overall significance of all the correlations. A value of 0.7 for the KMO is adequate, and a value greater than 0.8 is considered meritorious (Kaiser, 1974). In regard to Bartlett's test of sphericity, the rule of thumb is to have a probability value less than 0.05 ($p < 0.05$). The results shown in Table 3.6 suggest that both the d-Booker data and the m-Booker data are appropriate for factor analysis. Bartlett's test of

sphericity was significant for all the constructs and the KMO value of each construct exceeded the recommended value of 0.7.

Table 3.6 KMO and Bartlett's Test of Sphericity

	Constructs	Kaiser-Meyer-Olkin (KMO)	Bartlett's Test of Sphericity		
			$\chi 2$	*df*	Sig.
Computer (N=125)	Satisfaction	0.743	459.81	3	.000
	Loyalty	0.784	475.07	10	.000
	Functionality	0.884	508.96	10	.000
	Usability	0.898	727.86	10	.000
	Perceived value for money	0.767	396.33	3	.000
	Perceived value for time	0.877	614.56	6	.000
Mobile (N=125)	Satisfaction	0.758	395.03	3	.000
	Loyalty	0.792	492.66	10	.000
	Functionality	0.862	509.37	10	.000
	Usability	0.907	754.33	10	.000
	Perceived value for money	0.770	381.05	3	.000
	Perceived value for time	0.856	727.77	6	.000

On the basis of the KMO measure and Bartlett's test of sphericity, the internal consistency of the variables and the construct validity were examined to ensure a

reliable and valid instrument. The results of the reliability test for the d-Bookers are presented in Table 3.7. The Cronbach's alpha value for the constructs of satisfaction, loyalty, functionality, usability, perceived value for money, and perceived value for time were 0.961, 0.896, 0.934, 0.963, 0.955 and 0.965, respectively. All the values exceeded the recommended value of 0.7 (Nunnally & Bernstein, 1994), suggesting the instrument had a good level of internal consistency. If the responses to the item "The content of the hotel products on the website met my needs" and the item "Even if friends recommended another website, my preference for this website would not change" were removed from the data, the Cronbach's alpha of satisfaction and loyalty would increase accordingly. It is possible these two items are not a good measurement for the corresponding construct. However, Robert (2006) suggested that if the value of item-total correlation is above the benchmark of 0.3, the item should be retained for further analysis because it still correlates to the total. As such, those two items were not eliminated.

Table 3.7: Measurement of Reliability of the Major Constructs (d-Booker, N=125)

Items	***Item-total correlation***	***Alpha if item Deleted***	***Cronbach's alpha***
Satisfaction			**0.961**
SAT1- with the website	.949	.920	
SAT2- with my experience on the website	.928	.935	
SAT3- met my needs	.877	**.973**	
Loyalty			**0.896**
LOY1- preference would not change	.784	.865	
LOY2- difficult to change my beliefs	.784	.865	
LOY3- even if friends recommended another website, my preference would not change	.547	**.914**	

LOY4- buy from this website the next time	.852	.850	
LOY5- intend to keep using this website	.771	.868	
Functionality			**0.934**
FUN1- reservation information	.865	.910	
FUN2- products information	.798	.923	
FUN3- user-generated information	.829	.918	
FUN4- surrounding area information	.820	.919	
FUN5- contact information	.813	.921	
Usability			**0.963**
USA1- language	.865	.958	
USA2- layout and graphics	.900	.953	
USA3- information architecture	.903	.952	
USA4- user interface and navigation	.894	.954	
USA5- general	.906	.951	
Perceived Value for Money			**0.955**
PVM1- good value for money	.924	.920	
PVM2- price charges are acceptable	.909	.932	
PVM3- considered to be a good buy	.883	.950	
Perceived Value for Time			**0.965**
PVT1- the time spent is less than other ways	.884	.963	
PVT2- time-saving transaction	.921	.952	
PVT3- save more time	.918	.953	
PVT4- right choice if saving time is considered	.931	.949	

Similar to the results from the pilot study of the d-Bookers, for the m-Bookers, all the Cronbach's alpha figures exceeded the benchmark of 0.7, indicating acceptable reliability of the constructs (see Table 3.8). Notably, the item "Even if friends recommended another website, my preference for this website would not change" seemed to be too sensitive for respondents, because the results revealed that if this item were deleted, the reliability of loyalty would improve. Similarly, when considering the item-total correlation index, this item was found to correlate to the total and to be

acceptable for further analysis. Thus, all the items were retained at this stage.

Table 3.8: Measurement of Reliability of the Major Constructs (m-Booker, N=125)

Items	***Item-total correlation***	***Alpha if item deleted***	***Cronbach's alpha***
Satisfaction			**0.954**
SAT1- with the website	.890	.943	
SAT2- with my experience on the website	.931	.910	
SAT3- met my needs	.890	.942	
Loyalty			**0.896**
LOY1- preference would not change	.756	.871	
LOY2- difficult to change my beliefs	.713	.879	
LOY3- even if friends recommended another website, my preference would not change	.620	**.901**	
LOY4- buy from this website the next time	.835	.853	
LOY5- intend to keep using this website	.813	.859	
Functionality			**0.933**
FUN1- reservation information	.773	.927	
FUN2- products information	.835	.916	
FUN3- user-generated information	.831	.916	
FUN4- surrounding area information	.837	.915	
FUN5- contact information	.839	.915	
Usability			**0.965**
USA1- language	.864	.962	
USA2- layout and graphics	.926	.952	
USA3- information architecture	.898	.957	
USA4- user interface and navigation	.902	.956	
USA5- general	.908	.955	
Perceived Value for Money			**0.952**
PVM1- good value for money	.915	.919	
PVM2- price charges are acceptable	.879	.946	
PVM3- considered to be a good buy	.905	.926	
Perceived Value for Time			**0.965**
PVT1- the time spent is less than other ways	.918	.953	
PVT2- time-saving transaction	.936	.948	

PVT3- save more time	.885	.963
PVT4- right choice if saving time is considered	.918	.954

To assess the construct validity, factor loadings of the items, average variance extracted (AVE), and composite reliability (CR) were examined on the basis of confirmatory factor analysis (CFA). Construct validity refers to the extent that a measurement scale reflects a construct. Both convergent validity and discriminant validity are normally used to examine construct validity. Convergent validity refers to the correlation between two items that are expected to test the same construct. According to Guadagnoli and Velicer (1988), factor loading is one the most important parameters in determining convergent validity. The absolute value of a factor loading of 0.4 is considered acceptable (Hair et al., 2010). As shown in Table 3.9, for the d-Bookers data, all the factor loadings were greater than the threshold value of 0.4, indicating a satisfactory convergent validity (Field, 2009). Using the AVE values and the CR of each construct, convergent validity and discriminant validity were further affirmed. The AVE value should be greater than 0.5 to achieve the convergent validity of the construct under investigation (Fornell & Larcker, 1981), whereas the CR value should exceed 0.7 to meet the minimum level.

Table 3.9: Confirmatory Factor Analysis (d-Bookers, N=125)

Items	***Factor loading***	***AVE***	***CR***
Satisfaction		**0.896**	**0.963**
SAT1- with the website	.981		
SAT2- with my experience on the website	.963		

SAT3- met my needs	.894		
Loyalty		**0.636**	**0.894**
LOY1- preference would not change	.749		
LOY2- difficult to change my beliefs	.745		
LOY3- even if friends recommended another website, my preference would not change	.521		
LOY4- buy from this website the next time	.967		
LOY5- intend to keep using this website	.926		
Functionality		**0.740**	**0.934**
FUN1- reservation information	.907		
FUN2- products information	.814		
FUN3- user-generated information	.868		
FUN4- surrounding area information	.840		
FUN5- contact information	.869		
Usability		**0.838**	**0.963**
USA1- language	.899		
USA2- layout and graphics	.919		
USA3- information architecture	.918		
USA4- user interface and navigation	.911		
USA5- general	.930		
Perceived Value for Money		**0.877**	**0.955**
PVM1- good value for money	.948		
PVM2- price charges are acceptable	.955		
PVM3- considered to be a good buy	.906		
Perceived Value for Time		**0.875**	**0.965**
PVT1- the time spent is less than other ways	.899		
PVT2- time-saving transaction	.946		
PVT3- save more time	.938		
PVT4- right choice if saving time is considered	.957		

The CFA results of the pilot study for d-Bookers revealed that all the AVE values were greater than the threshold of 0.5 and each CR value exceeded the recommended value of 0.7, confirming the convergent validity and discriminant validity of the constructs for the d-Bookers.

Table 3.10: Confirmatory Factor Analysis (m-Bookers, N=125)

Items	***Factor loading***	***AVE***	***CR***
Satisfaction		**0.876**	**0.955**
SAT1- with the website	.918		
SAT2- with my experience on the website	.973		
SAT3- met my needs	.916		
Loyalty		**0.626**	**0.889**
LOY1- preference would not change	.682		
LOY2- difficult to change my beliefs	.662		
LOY3- even if friends recommended another website, my preference would not change	.588		
LOY4- buy from this website the next time	.973		
LOY5- intend to keep using this website	.966		
Functionality		**0.738**	**0.934**
FUN1- reservation information	.839		
FUN2- products information	.860		
FUN3- user-generated information	.862		
FUN4- surrounding area information	.861		
FUN5- contact information	.873		
Usability		**0.847**	**0.965**
USA1- language	.901		
USA2- layout and graphics	.942		
USA3- information architecture	.913		
USA4- user interface and navigation	.910		
USA5- general	.935		
Perceived Value for Money		**0.871**	**0.953**
PVM1- good value for money	.942		
PVM2- price charges are acceptable	.919		
PVM3- considered to be a good buy	.939		
Perceived Value for Time		**0.874**	**0.965**
PVT1- the time spent is less than other ways	.937		
PVT2- time-saving transaction	.966		
PVT3- save more time	.895		
PVT4- right choice if saving time is considered	.941		

In regard to the pilot test for m-Bookers, all the factor loadings exceeded the threshold value of 0.4, suggesting an acceptable convergent validity (Field, 2009). The results from the m-Bookers show that all the values were greater than the recommended value of 0.7 for composite reliability, suggesting good validity for m-Booker data. As such, all the constructs and the corresponding items were confirmed for the main survey.

The final draft of the questionnaire consists of three major sections. The first part includes several filtering questions. The respondents were asked to specify their region of residence and whether or not they booked a hotel room via mobile devices in the past 12 months. Only those who answered "yes" were asked to continue with the questionnaire. For the d-Bookers questionnaire, the respondents were asked to indicate whether they had booked a hotel room via a computer website. Only those who selected "yes" could continue with the survey and would be asked to specify the website they used most often for hotel bookings in the previous 12 months. Similarly, the m-Booker questionnaire included the screening question "Have you ever booked a hotel room via mobile devices in the past 12 months?" Only those who answered "yes" were invited to continue with the questionnaire and to indicate the mobile app they used most often for hotel bookings. The second part of the questionnaire included 25 items that measured the six constructs: functionality performance, usability performance, perceived value for money, perceived value for time, satisfaction, and loyalty. The questions on the respondents' demographic information are included in the third part of the questionnaire.

3.5.4 Sampling and Data Collection

3.5.4.1 Population and Sampling Design

The term *research population* refers to the whole group under study as specified by the research objectives (Burns & Bush, 1995). The unit of analysis in this study is the consumer who has hotel booking experience using websites or mobile Apps in the context of China. Because one of the research objectives of this study is to compare the differences between d-Bookers and m-Bookers, both individuals who made hotel reservations through websites and individuals who made hotel reservations through mobile apps constitute the population of interest.

Probability sampling and non-probability sampling are two main sampling approaches (Churchill & Iacobucci, 2006). Although it is widely supported that probability sampling provides greater external validity for the findings of research (Sekaran, 2006; Shuttleworth, 2013), sometimes conducting probability (random) sampling is not feasible due to the nature of the population. A complete list of the entire population is required for an authentic random sampling procedure. However, in this study, it is not practical to obtain a complete list of all the online hotel bookers in China. As such, non-probability sampling is adopted in this study—specifically, convenience sampling through Internet platforms. Scholars have argued that sampling online has been increasingly employed in a number of studies, and is becoming a crucial part of the research armory for modern researchers.

3.5.4.2 Sample Size

When it comes to the issue of sample size, it is critical to consider the method for data analysis. Because this study employs SEM to examine the research hypotheses, the first priority is for sample size determination to follow the requirements of SEM. It is suggested by some researchers that adequate sample size must involve at least five cases per parameter, or ten times the largest number of formative indicators (Hair et al., 2010). Other scholars argue, however, that a sample size of at least 400 is required to avoid misspecification errors. Because there are 25 items included in the questionnaire to investigate each type of online consumer (d-Booker and m-Booker), at least 125 (i.e., 25*5) respondents are required for each cohort, which means 250 respondents in total. In order to achieve a meaningful effect size based on a population with more than 5,000 people, this study targets 400 respondents for each group.

3.5.4.3 Online Survey

Quantitative approaches have the ability to provide accurate operationalization and measurement of a specific construct, examining the strength of association between variables and the capacity for model specification and testing of research hypotheses (Castro, Kellison, Boyd, & Kopak, 2010). Survey research, which has been widely applied as a standard tool for empirical studies in the field of social science, is one of the most useful approaches to collect information by asking questions (Vehovar & Manfreda, 2008). There are three main survey methods: person-administered surveys, telephone-administered surveys, and self-administered surveys (Hair et al., 2010). The

person-administered survey allows interviewers to have face-to-face interaction with their respondents, while with the telephone-administered survey, researchers exchange questions and answers with participants over the phone. For the self-administered survey, respondents read and complete the questionnaires by themselves.

This study conducted an online survey to collect primary data for further analysis. An online survey, which is conducted through the Internet, normally belongs in the self-administered category. Although the online survey method has been criticized by researchers for its sampling limitations, it is a more appropriate method for the current study. It should be noted that there is no optimal survey approach for all situations. When it comes to the selection of survey method, information requirements, accuracy, time and cost limitations, and respondent features are all important criteria for researchers to consider (Proctor, 2005). Based on the balance of various factors such as research objectives, respondents' characteristics, and cost and time considerations, we chose the online survey as our main survey method. Moreover, the population of this study is the individual who has hotel booking experience through online channels. Prior research has shown that individuals who prefer to participate in online surveys are usually people who are more experienced in adopting Internet techniques in their daily lives. This is another important reason that choosing the online survey approach is appropriate for the current research (Ranchhod & Zhou, 2001).

The main survey was conducted online via the popular Chinese professional survey website *Wenjuanxing* (www.sojump.com, a website like Surveymonkey). The samples of this study were mainly recruited from *Wenjuanxing* members. Members of

Wenjuanxing website include individuals from all regions of China and include people engage in various occupations. Thousands of studies have employed survey service from *Wenjuanxing* website. The members will received a website link to our survey page, along with a brief introduction of the survey. Participants who were interested in the survey could complete the survey via the website or social media (WeChat). The main survey was conducted from January 2017 to February 2017.

3.6 Method of Data Analysis

After screening the data, descriptive analysis was executed by SPSS Version 22 to check general distribution of the data and the respondents' demographic characteristics. The mean score of each attribute in terms of website experience and mobile Apps experience was calculated, and a t-test was employed to determine whether there were significant differences in consumer perceptions between the two types of online bookers. Additionally, the reliability and validity of each construct in the proposed conceptual model were tested, and confirmatory factor analysis (CFA) was conducted. We applied SEM to test the proposed hypotheses, with estimation by means of Analysis of Moment Structures (AMOS 17.0).

3.6.1 Descriptive Analysis

Descriptive analysis is the most basic statistical analysis (Zikmund et al., 2012). It is mainly about describing the fundamental features of the data and summarizing the data for further interpretation (Mason & Bramble, 1989). Descriptive statistics are simple but powerful. Both the measures of central tendency (such as means) and the

measures of dispersion (such as standard deviation) were provided in this study to describe the basic properties of the data. To achieve the research objective of comparing the preferences of consumers for online hotel booking through the different channels (computer and mobile), independent sample t-tests was employed to determine whether the two groups were significantly different. Additionally, this study adopts a combination of graphical description and tabulated description to provide a clear picture of the population of interest.

3.6.2 Factor Analysis

Factor analysis is a multivariate statistical technique that helps to identify the structure of the observed variables and establish the constructs' dimensions (Stewart, 1981). It can be regarded not only as an effective data reduction tool, but also as an appropriate procedure for theory building. There are two discrete types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). In EFA, there is no need to have a specific expectation regarding the underlying factors. Even if the researchers do have some expectations regarding the constructs, the analysis should not be influenced by these. However, in CFA, researchers need to have specific expectations regarding the issues, such as the number of factors and correlations, which is more explicit and direct.

EFA and CFA must be conducted in order. First, the underlying items of the constructs will be identified by principal component analysis (PCA) in the EFA stage, then, after extracting the construct dimensions, a reliability test will be executed to

ensure the measurement quality. Reliability is defined as the extent to which a measure is free of random measurement error (Moss, 1994). Scholars assert the importance of testing reliability each time so as to assess whether a specific item is consistent with the construct and how appropriate the scales and questions are (Tharenou et al., 2007). The KMO measure of sampling adequacy and Bartlett's test of sphericity were adopted to estimate the measurement scales and to evaluate whether the patterns of correlation are compact (Field, 2009). Factor loadings were calculated to evaluate the correlations between variables and factors as well. According to Hair's et al. (2010) guidelines, whether a factor loading should be considered significantly reliable largely depends on the sample size. Specifically, if the sample size is about 100 people, exceeding 0.55 will be required for factor loading. If there are more than 350 respondents, loadings of 0.3 could be regarded as reliable. The Cronbach's alpha coefficient is typically preferred in social science for measuring the consistency of the scale. This study used Cronbach's alpha to assess the reliability of the measurement scale. Based on the generally accepted criteria, a value lower than 0.7 should be considered to drop off, while a value greater than 0.8 is considered good. If the Cronbach's alpha of an item is greater than 0.9, it means excellent consistency of the measurement scale (Field, 2009).

Next, CFA was performed to assure the identified dimensions and to evaluate the validity of the proposed research model. Validity refers to the extent to which a measure accurately represents the latent variable (Hair et al., 2010). There are several measurements for validity evaluation, including construct-related validation, criteria-related validation, and content-related validation. It is suggested that the choice of

method for examining the validity should depend on the situation, and multiple validity tests might be appropriate for a single study. In the current study, content validity was examined in the literature search/review and in the survey of expert opinions. The construct validity, involving both convergent validity and discriminant validity, was examined before evaluating the overall proposed model. Average variance extracted (AVE) was calculated for assessing convergent validity. Based on the recommended standard suggested by Fornell and Larcker (1981), AVE should be higher than 0.5 of the total variance to confirm the convergent validities of the constructs. Discriminant validity was conducted by examining whether the AVE value is greater than the squared correlation coefficient between factors (Fornell & Larcker, 1981). To assess the validity of the measurement model, the levels of goodness-of-fit were examined by several types of measures (Hair et al., 2010). Basically, a Chi-square (χ^2) test was conducted to determine the differences between the observed and estimated covariance matrices (Bryant & Satorra, 2012). Absolute fit indices such as the goodness-of-fit index (GFI) and the root mean square error of approximation (RMSEA) were tested for evaluating model fit as well.

3.6.3 Structural Equation Modeling (SEM)

SEM was adopted to test the hypotheses. SEM is a multivariate technique that has been widely applied in social science to test and estimate causal relationships using a combination of statistical data and qualitative causal assumptions (Fornell & Larcker, 1981). It can be described as a combination of both factor analysis and path analysis, which is able to examine a series of relations between exogenous variables and

endogenous variables simultaneously (Robert, 2006). SEM has several advantages. First, it has the ability to simultaneously estimate multiple relationships. Because SEM tests the model as a whole, the results derived from SEM can present the goodness-of-fit of the data to the hypothesized framework. Second, SEM enables to incorporate latent constructs in the analysis, whereas multiple regression merely analyzes the relationships between observed variables. Third, by taking measurement errors into account, SEM improves statistical estimation because of its ability to avoid the biasing effects of random measurement error. It should be noted that SEM is highly theory-driven. When specifying a hypothesized model with the relationships between constructs, a strong theoretical basis is needed for guiding the specification of the paths (directional relationships).

The measurement model and the structural equation model are the two parts that constitute SEM. The measurement model describes the measurement properties of the observed variables. It is concerned with the relationships between observed (e.g. questionnaire items) and latent variables that are to be measured. The measurement model enables to assess the reliability of the observed variables that used to measure the latent variables, while the structural model provides a direct test of the theory of interest. The structural model is able to specify the pattern of relationships between independent variables and dependent variables and allow directional predictions among the variables, which is flexible and comprehensive.

3.6.4 Methods to Test Mediation Effect

Mediation analysis implies a causal chain. The mediating effect describes how or why the independent variables affect the dependent variable (Bennett, 2000). According to Baron and Kenny (1986), mediating effects should only be tested if there is a significant direct association between an independent variable and outcome variables, otherwise there is no relationship to mediate. To test a mediating effect, a regression approach is normally employed. According to Baron and Kenny's (1986) recommendations, three regressions are involved in the procedure and the conditions found are to be assessed. First, it is determined whether the association between the independent variable and the dependent variable is significant. Second, it is determined whether the association between the independent variable and the mediator is significant. Third, it is determined whether the relation between the mediator and the dependent variable is significant. Fourth, it is determined whether the path coefficient of the direct relationship between the independent variable and the dependent variable becomes smaller when the mediator has been added into the regression model.To further confirm the significance of a mediation effect, Sobel's (1982) z-test is recommended. If the z-test is significant, then the mediated path (independent–dependent) is significantly different from the direct path.

3.6.5 Methods to Test Moderation Effect

Similar to the approaches to examine mediation effects, the general strategy of testing moderation effect is a regression approach. Specifically, if all the variables involved in the model are continuous variables, hierarchical multiple regression analysis

is usually employed (Ro, 2012). The moderation effect can be regarded as an interaction effect that represents the joint effect of the moderator and the independent variable. The interaction effect is able to explain the variance of the strength of the relationship between the independent variable and the dependent variable (Baron & Kenny, 1986). That is, the association of independent–dependent becomes stronger or weaker depending on the different levels of a moderator. At least two steps should be conducted in the procedure. First, test the independent variable and the moderator as predictors of the dependent variable in the regression model. Second, add the interaction term (independent × moderator) into the regression model to determine whether the interaction effect is significant. Furthermore, when the interaction term is added into the model, whether the change in R^2 is significant should be assessed as well to further confirm the moderation effect.

3.7 Chapter Summary

This chapter describes the methods to be used to address the research objectives of this study. It begins with an introduction of the adopted research paradigm—the post-positivism paradigm. The chapter summarizes both the features of qualitative study and quantitative study and states the rationale for why this study adopts a quantitative approach as the predominant approach. The chapter also provides detailed information of the development and validation of the study's measurements. The chapter not only introduces the process of data collection and the sampling method, but also discusses the methods for data analysis. SEM, hierarchical regression analysis, and a t-test are employed to test the research hypotheses.

CHAPTER 4. RESULTS

4.1 Chapter Introduction

The results of this study are presented in this chapter. The current chapter firstly describes the process of data screening. Then, it presents the profile of the respondents. The chapter also shows the results of T-test. Thus, the differences between d-Bookers and m-Bookers in regard to their perception of perceived quality factors and perceived value factors are identified. After discussing the assessment of measurement model and structural model, the chapter displays the findings of the interrelationships between the major constructs. Specifically, the results of hypothesis testing are presented, with the findings of mediating effect and moderating effect.

4.2 Data Screening

To ensure the appropriateness of the datasets, both the data of d-Bookers and m-Bookers were screened and cleaned before analysis.

D-Booker data: In terms of using computer website for hotel booking, 618 respondents agreed to participant the survey and 533 had booked hotel room online (either through computer website or mobile App) in the past 12 months. Among the 533 online bookers, there were 434 respondents had used computer website to reserve a hotel room.

M-Booker data: As for the questionnaire of using mobile App for hotel booking, 515 respondents agreed to participant the survey and 420 had booked hotel room online (either through computer website or mobile App) in the past 12 months. Among the 420

online bookers, there were 401 respondents had used mobile App to reserve a hotel room.

4.2.1 Consistency Check

Firstly, the consistency of the cases was checked by the following steps. For d-Booker questionnaires, one case was found that ticked "4" (4 = Neutral) for all the scale items, indicating the items might not be read carefully by that respondent. Thus, it was decided to exclude this item from the dataset. Moreover, two cases were found that completed most of the items without answering whether they had used computer website for hotel booking in the past 12 months. Therefore, they were eliminated from the dataset to ensure the consistency as well. Descriptive statistics were conducted to assess the accuracy of the extreme scores. The results showed that all the minimum and maximum scores were within a reasonable range: 1to 2 for screen questions; 1 to 7 for scale items; 1 to 2 for gender grouping; 1-6 for age grouping; 1-4 for education grouping; and 1-5 for income grouping. After checking the inconsistency of the data, 431 usable cases were remained for analyzing d-Bookers. Following the same steps, no case showed inconsistency in the m-Booker questionnaires. A total of 401 cases of m-Bookers were kept for further analysis.

4.2.2 Missing Data

According to Hair et al. (2010), statistical results can be biased by the non-random missing data and the LISTWISE deletion method is recommended to be employed for cases that report over 10% missing value. Since the researcher set a rule when using

Wenjuanxing platform (www.sojump.com, a website like Surveymonkey) that only after completing all the scale items can the respondents submit their questionnaire, there is no case with more than 10% missing value. As such, 431 computer website cases were still kept for further analysis, while 401 mobile App cases were remained.

D-Booker data: Two cases were found with missing value in Question 5 "The mobile App and the computer website I used most often for hotel booking are from the same brand (e.g. both are Ctrip)". To find out why the value was missing, the original online questionnaires were checked. It was found that each case selected "yes" for Question 3 (used computer website for hotel booking) and Question 4 (used mobile App for hotel booking), yet filled in the blanks with different brands for each question. Accordingly, the missing values in Question 5 were corrected into 2 (2="no").

M-Booker data: One case was found with missing value in Question 5 "The mobile App and the computer website I used most often for hotel booking are from the same brand (e.g. both are Ctrip)". To find out why the value was missing, the original online questionnaires were checked as well. Since from the original questionnaire, both the blanks of Question 3 and Question 4 were filled in with same brand, the missing value in Question 5 was revised into 1 (1="yes").

4.2.3 Data Normality

Normality, which is the basic assumption of multivariate analysis, is defined to be the extent to which the distribution of the data accords with a normal distribution (Hair et al., 2010). It has been argued that assessing normality is critical when employing

SEM since maximum likelihood estimation is normally distributed assumed (Kline, 2005). As such, the data normality was examined through univariate skewness and kurtosis. Skewness describes how unevenly data is distributed, while kurtosis describes how peaked or flat a distribution is (Hair et al., 2010). According to Kline (2005), absolute value for the univariate skewness which is greater than 3 can be regarded as 'extremely' skewed, whereas absolute value of the univariate kurtosis higher than 8 suggesting 'extreme' kurtosis.

Table 4.1 and Table 4.2 displays the normality test results of d-Booker data and m-Booker data respectively. The absolute value of skewness of each construct was less than 3 in both the d-Booker data (ranging from 0.265 to 1.447) and the m-Booker data (ranging from 0.061 to 1.278). On the other hand, the absolute value of kurtosis ranged from 0.038 to 2.061 in the d-Booker data, and ranged from 0.019 to 1.386 in the m-Booker data. All variables meet the recommending range for skewness (< 3.0) and kurtosis (< 8.0), demonstrating normal distributions. Table 4.1 and Table 4.2 also display the means and standard deviation for each measurement item.

Table 4.1: Descriptive Statistics of the Main Constructs (d-Booker, N=431)

Items	***Min.***	***Max.***	***Mean***	***S.D.***	***Skewness***	***Kurtosis***
Satisfaction						
SAT1- with the website	1	7	5.41	1.356	-1.421	1.503
SAT2- with my experience on the website	1	7	5.47	1.379	-1.398	1.790
SAT3- met my needs	1	7	5.32	1.467	-1.299	1.241
Loyalty						
LOY1- preference would not change	1	7	4.93	1.448	-.612	-.280

LOY2- difficult to change my beliefs	1	7	4.88	1.361	-.673	.069
LOY3-Even if friends recommended another website, my preference would not change	1	7	4.46	1.444	-.265	-.617
LOY4- buy from this website the next time	1	7	5.19	1.372	-.952	.633
LOY5- intend to keep using this website	1	7	5.27	1.352	-1.078	1.010
Functionality						
FUN1- reservation information	1	7	5.39	1.301	-1.275	1.585
FUN2- products information	1	7	5.11	1.383	-.995	.735
FUN3- user-generated information	1	7	5.30	1.376	-1.197	1.432
FUN4- surrounding area information	1	7	5.24	1.332	-1.248	1.374
FUN5- contact information	1	7	5.44	1.415	-1.224	1.092
Usability						
USA1- language	1	7	5.24	1.266	-1.143	.938
USA2- layout and graphics	1	7	5.29	1.343	-.955	.711
USA3- information architecture	1	7	5.20	1.354	-.970	.671
USA4- user interface and navigation	1	7	5.29	1.344	-1.025	.724
USA5- general	1	7	5.37	1.347	-1.229	1.225
Perceived Value for Money						
PVM1- good value for money	1	7	5.24	1.262	-1.209	1.505
PVM2- Price charges are acceptable	1	7	5.51	1.331	-1.447	2.061
PVM3- considered to be a good buy	1	7	5.28	1.357	-1.147	1.219
Perceived Value for Time						
PVT1- the time spent is less than other ways	1	7	5.06	1.324	-.735	-.038
PVT2- time-saving transaction	1	7	5.29	1.407	-1.107	.937
PVT3- save more time	1	7	5.06	1.379	-.790	.354
PVT4- right choice if saving time is considered	1	7	5.24	1.359	-.948	.541

Table 4.2: Descriptive Statistics of the Main Constructs (m-Booker, N=401)

Items	*Min.*	*Max.*	*Mean*	*S.D.*	*Skewness*	*Kurtosis*
Satisfaction						
SAT1- with the website	1	7	5.26	1.469	-1.278	.964
SAT2- with my experience on the website	1	7	5.25	1.434	-1.231	.870
SAT3- met my needs	1	7	5.19	1.389	-1.061	.661
Loyalty						
LOY1- preference would not change	1	7	4.83	1.607	-.597	-.698
LOY2- difficult to change my beliefs	1	7	4.61	1.536	-.505	-.606
LOY3-Even if friends recommended another website, my preference would not change	1	7	4.24	1.552	-.061	-.938
LOY4- buy from this website the next time	1	7	5.09	1.386	-1.005	.721
LOY5- intend to keep using this website	1	7	5.11	1.414	-.983	.514
Functionality						
FUN1- reservation information	1	7	5.16	1.382	-1.054	.767
FUN2- products information	1	7	4.89	1.370	-.656	-.036
FUN3- user-generated information	1	7	5.16	1.410	-1.002	.752
FUN4- surrounding area information	1	7	5.00	1.449	-.718	-.088
FUN5- contact information	1	7	5.24	1.422	-1.141	.895
Usability						
USA1- language	1	7	5.09	1.354	-.976	.716
USA2- layout and graphics	1	7	5.00	1.387	-.768	.167
USA3- information architecture	1	7	4.94	1.397	-.692	-.019
USA4- user interface and navigation	1	7	4.97	1.423	-.753	-.031
USA5- general	1	7	5.09	1.333	-1.031	.890
Perceived Value for Money						
PVM1- good value for money	1	7	5.02	1.345	-.913	.600
PVM2- Price charges are acceptable	1	7	5.18	1.330	-1.247	1.386
PVM3- considered to be a good buy	1	7	5.08	1.346	-.980	.825

Perceived Value for Time						
PVT1- the time spent is less than other ways	1	7	5.14	1.449	-.968	.574
PVT2- time-saving transaction	1	7	5.17	1.447	-1.055	.692
PVT3- save more time	1	7	5.11	1.464	-.931	.474
PVT4- right choice if saving time is considered	1	7	5.19	1.530	-1.025	.454

4.3 Profile of the Respondents

As illustrated earlier, this study has two target populations: Chinese customers who have experienced hotel booking through computer website; and Chinese customers who booked hotel room via mobile App. Table 4.3 and Table 4.4 displays the profile of the respondents using computer website and mobile App respectively. The tables also show the background information of the hotel booking channels.

Among the total of 431 d-Bookers who have used computer website for hotel booking in the past 12 months, there were 44 respondents (10.2%) merely used computer channel and the majority of d-Bookers (387, 89.8%) had booked a hotel room through both the computer website and mobile App. Notably, the results revealed that among the 387 online bookers (who used both the computer and mobile channel), more than half (325, 84%) indicated that the computer website and mobile App they used most often were from the same brand (e.g. both are booking.com), whereas only 16% (62) respondents used separate brands when booking hotel through each channel. Of the 431 d-Bookers, approximately 47% were male and 53% female. In terms of age, the majority of respondents were within 26 to 35 years old (59.9%) and following were aged between 36-45 (19.5%) and 16-25 (14.8%). As for the education level of the

respondents, most the respondents held a bachelor's degree or higher: College/university (284, 65.9%) and Postgraduate or above (135, 31.3%). Among all the respondents, 40.6% earned 5,001-10,000 RMB per month (US$755- US$1510), and following (22.3%) was 10,001-15,000 RMB monthly income (US$1510- US$2265) group. At the time of data collection, it is about 6.62 RMB= US$1.00.

Table 4.3 Description of the respondents (d-Booker, N=431)

		Number	
Target respondents (N=431)	Computer only	44	10.2%
	Computer and Mobile	387	89.8%
Same brand (N=387)	yes	325	84%
	no	62	16%
Gender	Male	204	47.3%
	Female	227	52.7%
Age	16–25	64	14.8%
	26-35	258	59.9%
	36-45	84	19.5%
	46-55	19	4.4%
	56-65	4	0.9%
	66 or above	2	0.5%
Education	Secondary/high school or below	12	2.8%
	College/university	284	65.9%
	Postgraduate or above	135	31.3%
Monthly income (RMB)	≤1,000(≈US$151)	2	0.5%
	1,001-5,000	64	14.8%
	5,001-10,000	175	40.6%
	10,001-15,000	96	22.3%
	>15,000(≈US$2265)	94	21.8%

Of the total of 401 m-Bookers who have reserved hotel through mobile App in the past 12 months, 133 respondents (33.2%) merely used mobile App for booking and 268 (66.8%) used both channels. Compared to d-Booker data, there were a higher proportion of respondents who only used mobile App for hotel booking (33.2% vs 10.2%), which may imply that fewer people stick with computer website not to use mobile App in the era of mobile Internet. Similar to the results of d-Booker data, among the respondents (268) who have used both computer and mobile channel for hotel booking, most of them (210, 78.4%) pointed out that they chose the same brand when using different channels.

The sample of m-Booker (a total of 401) comprised 207 males (51.6%) and 194 females (48.4%). Most of the respondents for mobile hotel booking were relatively young, with 59.1% were aged between 26 to 35 years old and 30.2% were aged from 16 to 25. In terms of education level, the majority of the respondents held at least a bachelor's degree: College/university (196, 48.9%) and Postgraduate or above (201, 50.1%). For m-Bookers, the income categories split quite evenly throughout the sample, with 29.9 % earned more than US$2265 per month, 26.4% earned 5,001-10,000 RMB (US$755- US$1510), and 22.9% 10,001-15,000 RMB (US$1510- US$2265).

Table 4.4 Description of the respondents (m-Booker, N=401)

		Number	
Target respondents (N=401)	Mobile only	133	33.2%
	Computer and Mobile	268	66.8%
Same brand (N=268)	yes	210	78.4%
	no	58	21.6%

Gender	Male	207	51.6%
	Female	194	48.4%
Age	16–25	121	30.2%
	26-35	237	59.1%
	36-45	35	8.7%
	46-55	5	1.2%
	56-65	3	0.7%
	66 or above	0	0.0%
Education	Secondary/high school or below	4	1.0%
	College/university	196	48.9%
	Postgraduate or above	201	50.1%
Monthly income (RMB)	≤1,000(≈US$151)	10	2.5%
	1,001-5,000	73	18.2%
	5,001-10,000	106	26.4%
	10,001-15,000	92	22.9%
	>15,000(≈US$2265)	120	29.9%

4.4 Independent-samples T-test

When it comes to the comparison of variables obtained from two independent samples, the independent-samples t-test is particularly useful (Robert, 2006). Thus, to determine whether differences existed between d-Bookers and m-Bookers, independent-samples t-test was employed in this study to compare the means of the two groups. Levene's test for equality of variance was checked firstly for each variable. For the Levene statistics, if the corresponding level of significance is large (i.e., $p > 0.05$), the Equal variances assumed t-test statistic should be used. By contrast, if the level of significance is small (i.e., $p < 0.05$) in Levene's test, the equal variances not assumed t-test results should be adopted.

4.4.1 General Comparison between D-Bookers and M-Bookers

Statistically significant differences were noted in 14 of the items and four of the constructs (Table4.5). Specifically, the construct of loyalty (t=2.031, p=0.043*****), functionality (t=2.480, p=0.013*****), usability (t=3.033, p=0.002****)** and perceived value for money (t=2.881, p=0.004****)** were found significantly different between d-Bookers and m-Bookers. Notably, d-Bookers gave a higher score than m-Bookers for all the items that were significantly different between the two samples.

Table 4.5 Comparison of items between d-Bookers and m-Bookers

Items	**Mean**		***t*-Value**	**Two-Tailed Sig.**
	Computer	**Mobile**		
Satisfaction	5.40	5.23	**1.788**	**0.074**
SAT1- with the website	5.41	5.26	1.569	0.117
SAT2- with my experience on the website	5.47	5.25	2.225	0.026*****
SAT3- met my needs	5.32	5.19	1.268	0.205
Loyalty	4.95	4.78	**2.031**	**0.043***
LOY1- preference would not change	4.93	4.83	0.986	0.325
LOY2- difficult to change my beliefs	4.88	4.61	2.731	0.006******
LOY3-Even if friends recommended another website, my preference would not change	4.46	4.24	2.140	0.033*****
LOY4- buy from this website the next time	5.19	5.09	1.099	0.272
LOY5- intend to keep using this website	5.27	5.11	1.612	0.107
Functionality	5.30	5.09	**2.480**	**0.013***
FUN1- reservation information	5.39	5.16	2.450	0.015*****
FUN2- products information	5.11	4.89	2.314	0.021*****
FUN3- user-generated information	5.30	5.16	1.448	0.148
FUN4- surrounding area information	5.24	5.00	2.519	0.012*****
FUN5- contact information	5.44	5.24	2.071	0.039*****

Usability	5.28	5.02	**3.033**	**0.002****
USA1- language	5.24	5.09	1.666	0.096
USA2- layout and graphics	5.29	5.00	3.112	0.002**
USA3- information architecture	5.20	4.94	2.771	0.006**
USA4- user interface and navigation	5.29	4.97	3.336	0.001**
USA5- general	5.37	5.09	2.977	0.003**
Perceived Value for Money	5.34	5.10	**2.881**	**0.004****
PVM1- good value for money	5.24	5.02	2.394	0.017*
PVM2- Price charges are acceptable	5.51	5.18	3.557	0.000***
PVM3- considered to be a good buy	5.28	5.08	2.141	0.033*
Perceived Value for Time	5.16	5.15	**0.117**	**0.907**
PVT1- The time spent is less than other ways	5.06	5.14	-0.849	0.396
PVT2- time-saving transaction	5.29	5.17	1.239	0.216
PVT3- save more time	5.06	5.11	-0.454	0.650
PVT4- right choice if saving time is considered	5.24	5.19	0.467	0.641

Interestingly, except satisfaction which is a dependent factor, perceived value for money scored the highest mean value (mean=5.34) for computer group, while perceived value for time (mean=5.15) scored the highest for m-Bookers. For d-Bookers, using computer website can be regarded as a choice of saving time and perceived value for time was a critical factor for online hotel booking. Notably, d-Booker's perceived value for money (mean= 5.34) was significantly higher than m-Booker (mean=5.10), which can be attributed to the stronger searching capability and the more comprehensive choices with respect to computer website booking. Likewise, the significant higher scores of functionality and usability performance of computer website than mobile App revealed the advantages of computer website, suggesting an easy-to-use design of online booking channel might be more preferred for hotel bookers.

4.4.2 Comparison of Website Quality and App Quality

For the construct of functionality performance and usability performance which are considered as important factors for assessing website quality in previous research, most of the measurement items were significantly different between d-Bookers and m-Bookers. The results showed that d-Bookers gave relatively higher marks than m-Bookers (see Figure 4.1), in the aspect of reservation information (computer=5.39, mobile=5.16), product information (computer=5.11, mobile=4.89), surrounding information (computer=5.24, mobile=5), and contact information (computer=5.44, mobile=5.24), which reveal the reasons why d-Bookers perceived a better functionality performance than m-Bookers.

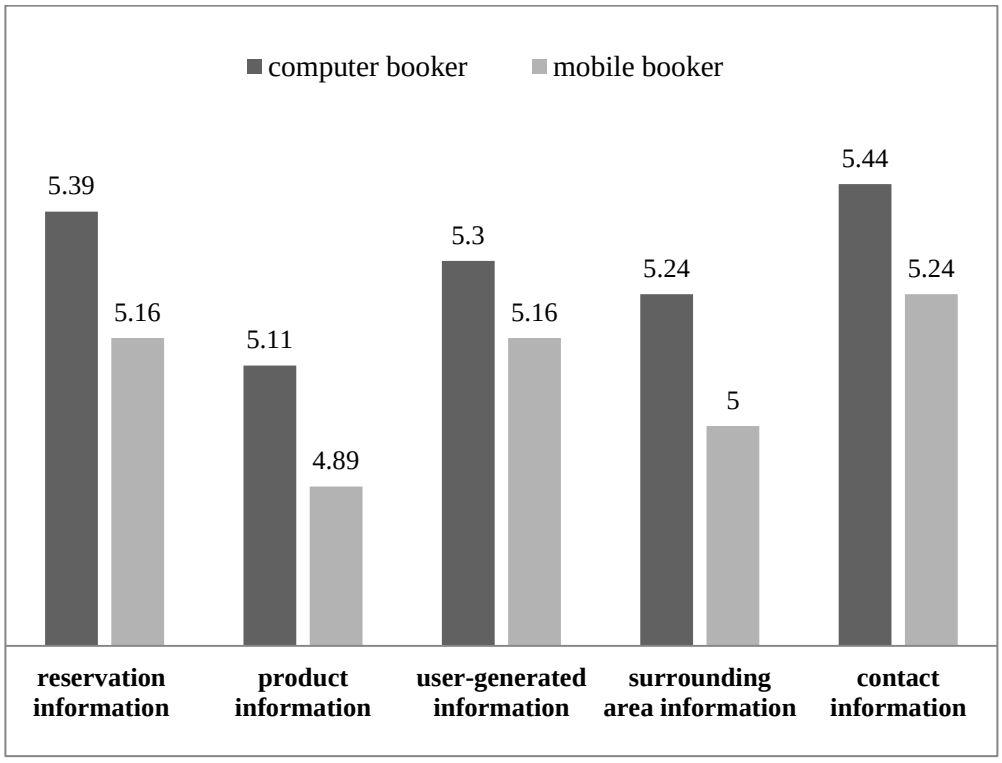


Figure 4.1 Comparison of Functionality Performance

Similarly, customers who reserved hotel through computer website also gave a higher score than the one using mobile App (see Figure 4.2), in the dimension of layout and graphics (computer=5.29, mobile=5), information architecture (computer=5.2, mobile=4.94), user interface and navigation (computer=5.29, mobile=4.97), and general (computer=5.37, mobile=5.09), suggesting the differences of perceived usability performance between the two samples.

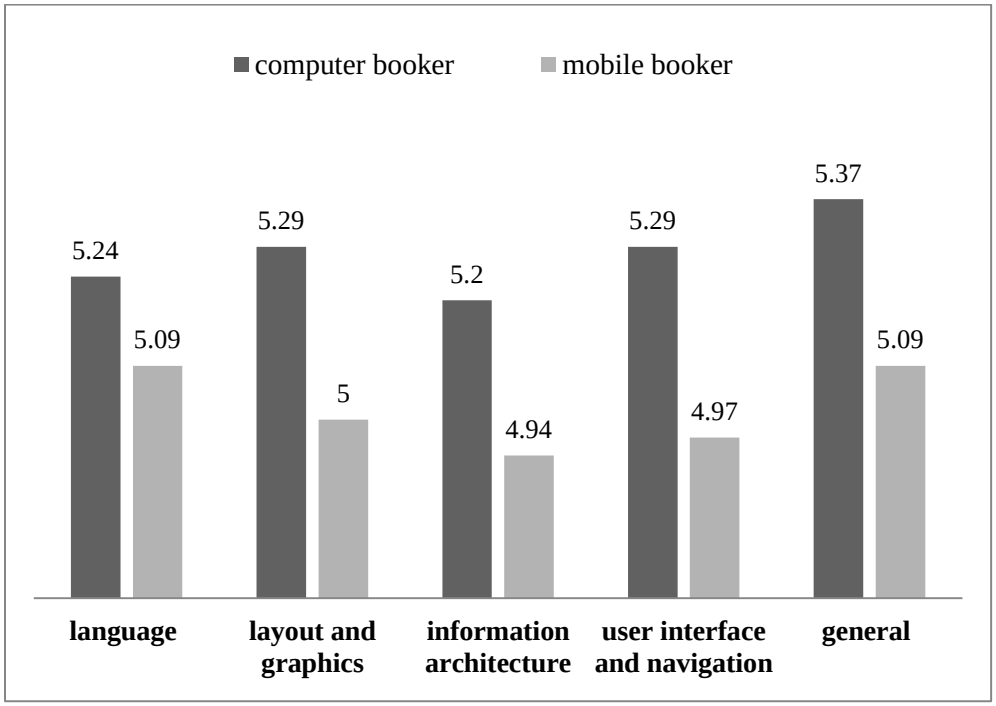


Figure 4.2 Comparison of Usability Performance

4.5 Measurement Model Test

The development of good measurements to obtain reliable and valid estimates of the constructs of interest is of great importance in any management concept. To determine whether the measurement scales of this study truly measure what they tend to

measure, we followed Sureshchandar, Rajendran and Anantharaman's (2002) steps of development and validation of measurement scale. First of all, as elaborated in previous sections, the critical dimensions of each construct have been identified based on a comprehensive literature review. A pre-test was then conducted by seeking experts' (including academia and practitioners) as well as customers' opinions to assess whether the statements of the questionnaire reflected the constructs to be measured (Janda & Seshadri, 2001). Both content validity and face validity were ensured through pre-test. Confirmatory factor analysis (CFA), reliability and validity test were employed to complete the assessment of the measurement model.

4.5.1 Scale Reliability

To determine the extent to which a measurement scale consistently reflect the construct it is measuring (Field, 2009), the reliability analysis was conducted to check the level of internal consistency for the measurements of the constructs functionality, usability, perceived value for money, perceived value for time, satisfaction, and loyalty. A low Cronbach's alpha of the construct suggests a low contribution to the measurement, which should be considered for elimination (Hair et al., 2010). Additionally, whether the exclusion of an item improved the corresponding alpha value is another reference index for item elimination (Parasuraman et al., 1988). Normally, a Cronbach's alpha of 0.7 or above is deemed to be acceptable as a good indication of reliability and value lower than 0.6 can be considered as unreliable (Nunnally & Bernstein, 1994). Table 4.6 (d-Booker data) showed that the alpha coefficients of all constructs were above 0.8, indicating

good reliability. Likewise, the results of showed that the scale for each construct in mobile data had good reliability (Table 4.7).

Table 4.6 Measurement of reliability of the major constructs (d-Booker, N=431)

Items	***Item-Total correlation***	***Alpha if Item Deleted***	***Cronbach's alpha***
Satisfaction			**0.926**
SAT1- with the website	0.886	0.864	
SAT2- with my experience on the website	0.833	0.905	
SAT3- met my needs	0.831	0.910	
Loyalty			**0.899**
LOY1- preference would not change	0.744	0.878	
LOY2- difficult to change my beliefs	0.731	0.881	
LOY3-Even if friends recommended another website, my preference would not change	0.634	**0.902**	
LOY4- buy from this website the next time	0.83	0.858	
LOY5- intend to keep using this website	0.815	0.863	
Functionality			**0.923**
FUN1- reservation information	0.843	0.898	
FUN2- products information	0.763	0.913	
FUN3- user-generated information	0.773	0.911	
FUN4- surrounding area information	0.816	0.903	
FUN5- contact information	0.809	0.904	
Usability			**0.945**
USA1- language	0.850	0.933	
USA2- layout and graphics	0.840	0.934	
USA3- information architecture	0.843	0.934	
USA4- user interface and navigation	0.846	0.933	
USA5- general	0.874	0.928	
Perceived Value for Money			**0.918**
PVM1- good value for money	0.851	0.871	
PVM2- Price charges are acceptable	0.812	0.900	
PVM3- considered to be a good buy	0.843	0.875	
Perceived Value for Time			**0.942**
PVT1- The time spent is less than other ways	0.851	0.927	

PVT2- time-saving transaction	0.864	0.923	
PVT3- save more time	0.857	0.925	
PVT4- right choice if saving time is considered	0.870	0.921	

Table 4.7 Measurement of reliability of the major constructs (m-Booker, N=401)

Items	***Item-Total correlation***	***Alpha if Item Deleted***	***Cronbach's alpha***
Satisfaction			**0.947**
SAT1- with the website	0.890	0.922	
SAT2- with my experience on the website	0.921	0.898	
SAT3- met my needs	0.858	0.946	
Loyalty			**0.901**
LOY1- preference would not change	0.758	0.879	
LOY2- difficult to change my beliefs	0.741	0.882	
LOY3-Even if friends recommended another website, my preference would not change	0.639	**0.905**	
LOY4- buy from this website the next time	0.833	0.864	
LOY5- intend to keep using this website	0.818	0.866	
Functionality			**0.916**
FUN1- reservation information	0.777	0.899	
FUN2- products information	0.746	0.905	
FUN3- user-generated information	0.818	0.891	
FUN4- surrounding area information	0.787	0.897	
FUN5- contact information	0.799	0.895	
Usability			**0.960**
USA1- language	0.842	0.958	
USA2- layout and graphics	0.908	0.947	
USA3- information architecture	0.888	0.950	
USA4- user interface and navigation	0.902	0.948	
USA5- general	0.897	0.949	
Perceived Value for Money			**0.940**
PVM1- good value for money	0.891	0.901	
PVM2- Price charges are acceptable	0.862	0.924	
PVM3- considered to be a good buy	0.874	0.914	

Perceived Value for Time			**0.968**
PVT1- The time spent is less than other ways	0.918	0.958	
PVT2- time-saving transaction	0.933	0.954	
PVT3- save more time	0.910	0.960	
PVT4- right choice if saving time is considered	0.919	0.958	

Notably, if the item "Even if friends recommended another website/mobile App, my preference would not change" was deleted from each dataset, the Cronbach's alpha of loyalty increased. However, this item was not eliminated, since the item-total correlation of the item was 0.634 (d-Booker) and 0.639 (m-Booker), which exceed the threshold value of 0.3 (Ho, 2006). That is to say, this item correlates well within the scale and is acceptable for further analysis.

4.5.2 Confirmatory Factor Analysis (CFA)

It is argued that Exploratory Factor Analysis (EFA) is more useful when there is a lack of sufficiently theoretical support on the relations of the observed variables to the latent constructs, whereas Confirmatory Factor Analysis (CFA) is more appropriate than EFA when the research concepts are at an advanced stage of research (Sureshchandar et al., 2002). Given the fact that the proposed model is based on logic and substantial theoretical findings and the major constructs of this study are not at a very nascent stage of research, this study adopted the CFA approach for scale refinement and validation.

To assess the overall model fit, there are several goodness-of-fit measures that can be employed. Absolute fit measures, incremental fit measures, and parsimonious fit measures constitute the three types of goodness-of-fit measures. Hair et al. (2010)

recommended Chi-square statistic and the associated degrees of freedom (df), comparative fit index (CFI) and the root mean square error of approximation (RMSEA) to provide sufficient information for the evaluation of model fit. Though Chi-square statistic is the most fundamental goodness-of-fit measure, it has been suggested that this is not an absolute index of fit because it is easy to be influenced by sample size and model complexity (Anderson & Gerbing, 1982). Thus, other fit indices should be involved to assess model fit. CFI belongs to incremental fit measures, which represents the degree to which that the null model improved by a proposed model (Bentler, 1990). Incremental fit measures also include Normed Fit Index (NFI), Tucker-Lewis Index (TLI) and Incremental Fit Index (IFI), which demonstrate comparisons between a proposed model and the null model. According to Byrne (1998), CFI, NFI, TLI and IFI all should be greater than 0.9 to suggest a good model fit. The RMSEA calculates the error of approximation in the population. It is suggested that the RMSEA values ranged from 0.05 to 0.08 should be regarded as reasonable and the values ranged from 0.08 to 0.10 as mediocre. When the RMSEA value is greater than 0.10, it suggests a poor model fit (Browne & Cudeck, 1993). The CFA results of d-Booker data showed a good model fit: Chi-square = 635.25 ($p < .01$), df = 260, $\chi 2/df=2.443$; RMSEA = 0.058, CFI = 0.97, NFI=0.95, TLI = 0.94, and IFI=0.97 (Byrne, 1998). Likewise, based on the model fit indices, the measurement model appeared to fit the m-Booker data well: Chi-square = 804.06 ($p < .01$), df = 260, $\chi 2/df=3.093$; RMSEA = 0.072, CFI = 0.95, NFI=0.93, TLI = 0.95, and IFI=0.96.

Besides content validity which was assessed previously by the pre-test, convergent validity and discriminant validity were also examined to establish construct validity. Convergent validity refers to the degree to which two measurement items of the same scale are correlated (Hair et al., 2010). Factor loadings of the items, Average Variance Extracted (AVE), and Composite Reliability (CR) were checked to assess the convergent validity. All standardized factor loading of each item on the underlying construct is significantly greater than the accepted threshold of 0.40 (Anderson & Gerbing, 1988) and the Average Variance Extracted (AVE) of each construct exceeded 0.50 (Fornell & Larcker, 1981), thus indicating appropriate convergent validity for the two datasets. Additionally, the construct's composite reliability values ranged from 0.899 to 0.946 for the d-Booker data, and from 0.894 to 0.968 for the m-Booker data, which were all greater than the cut-off value of 0.7, thereby further confirming the convergent validity for both samples.

Table 4.8 Confirmatory factor analysis (D-Booker, N=431)

Items	***Factor loading***	***AVE***	***Composite reliability***
Satisfaction		**0.813**	**0.929**
SAT1- with the website	.931		
SAT2- with my experience on the website	.887		
SAT3- met my needs	.886		
Loyalty		**0.644**	**0.899**
LOY1- preference would not change	.752		
LOY2- difficult to change my beliefs	.732		
LOY3-Even if friends recommended another website, my preference would not change	.654		
LOY4- buy from this website the next time	.920		
LOY5- intend to keep using this website	.918		

Functionality		**0.708**	**0.924**
FUN1- reservation information	.896		
FUN2- products information	.789		
FUN3- user-generated information	.824		
FUN4- surrounding area information	.833		
FUN5- contact information	.861		
Usability		**0.778**	**0.946**
USA1- language	.891		
USA2- layout and graphics	.867		
USA3- information architecture	.862		
USA4- user interface and navigation	.868		
USA5- general	.912		
Perceived Value for Money		**0.791**	**0.919**
PVM1- good value for money	.891		
PVM2- Price charges are acceptable	.885		
PVM3- considered to be a good buy	.892		
Perceived Value for Time		**0.801**	**0.942**
PVT1- The time spent is less than other ways	.878		
PVT2- time-saving transaction	.905		
PVT3- save more time	.884		
PVT4- right choice if saving time is considered	.913		

Table 4.9 Confirmatory factor analysis (m-Booker, N=401)

Items	*Factor loading*	*AVE*	*Composite reliability*
Satisfaction		**0.861**	**0.949**
SAT1- with the website	.929		
SAT2- with my experience on the website	.962		
SAT3- met my needs	.892		
Loyalty		**0.637**	**0.894**
LOY1- preference would not change	.703		
LOY2- difficult to change my beliefs	.694		
LOY3-Even if friends recommended another website, my preference would not change	.598		
LOY4- buy from this website the next time	.957		

LOY5- intend to keep using this website	.967		
Functionality		**0.686**	**0.916**
FUN1- reservation information	.849		
FUN2- products information	.773		
FUN3- user-generated information	.855		
FUN4- surrounding area information	.813		
FUN5- contact information	.849		
Usability		**0.829**	**0.960**
USA1- language	.874		
USA2- layout and graphics	.921		
USA3- information architecture	.908		
USA4- user interface and navigation	.918		
USA5- general	.930		
Perceived Value for Money		**0.840**	**0.940**
PVM1- good value for money	.929		
PVM2- Price charges are acceptable	.917		
PVM3- considered to be a good buy	.903		
Perceived Value for Time		**0.883**	**0.968**
PVT1- The time spent is less than other ways	.942		
PVT2- time-saving transaction	.958		
PVT3- save more time	.923		
PVT4- right choice if saving time is considered	.936		

Additionally, discriminant validity, which refers to the distinctiveness of each variable from other variables, was assessed by the comparison of the square roots of AVE values for a construct and the correlations between that construct and any other construct (Fornell & Larcker, 1981). As shown in Table 4.10, most of the square roots of AVEs on the diagonal are greater than the inter-correlations between the corresponding latent constructs except for functionality, which suggests acceptable discriminant validity. The results of other assessments suggested reasonable reliability and validity of the measurement of functionality. As such, functionality was retained for

further analysis (Singh & Singh, 2015). For m-Booker data, Table 4.11 displays the correlations between the constructs and the square roots of AVE. Given the results that all the square roots of AVE values are greater than the correlations between the corresponding latent constructs, good discriminant validity of the m-Booker data was ensured.

Table 4.10 Correlations among variables (D-Booker, N=431)

	SAT	**LOY**	**FUN**	**USA**	**PVM**	**PVT**
SAT	(0.902)					
LOY	.736**	(0.802)				
FUN	.849**	.721**	(**0.841**)			
USA	.871**	.757**	.876**	(0.882)		
PVM	.813**	.698**	.854**	.848**	(0.889)	
PVT	.711**	.680**	.709**	.753**	.750**	(0.895)

Note: a. *p < 0.05, **p < 0.01 b. The numbers enclosed in parentheses and presented diagonally indicate the squared root of the AVEs. c. SAT=Satisfaction, LOY=Loyalty, FUN=Functionality, USA=Usability, PVM=Perceived Value for Money, PVT=Perceived Value for Time

Table 4.11 Correlations among variables (m-Booker, N=401)

	SAT	**LOY**	**FUN**	**USA**	**PVM**	**PVT**
SAT	(0.928)					
LOY	.668**	(0.798)				
FUN	.772**	.637**	(0.828)			
USA	.762**	.645**	.815**	(0.910)		

PVM	.713**	.593**	.759**	.743**	(0.917)	
PVT	.669**	.569**	.714**	.715**	.722**	(0.940)

Note: a. *p < 0.05, **p < 0.01 b. The numbers enclosed in parentheses and presented diagonally indicate the squared root of the AVEs. c. SAT=Satisfaction, LOY=Loyalty, FUN=Functionality, USA=Usability, PVM=Perceived Value for Money, PVT=Perceived Value for Time

4.6 Structural Model Test

4.6.1 Assessment of the Structural Models

Based on validating the measurement models, research hypotheses of this study were examined using Structure Equation Modeling (SEM) approach. The structural model (d-Booker) was characterized by the following indices: Chi-square = 393.48 (p < .01), df = 131, $\chi 2/df=3.004$, indicating an acceptable level of model fitness. The results of other indices also supported the good fit of the model: RMSEA=0.068, CFI = 0.967, NFI=0.951, IFI=0.967, TLI=0.911. Likewise, the structural model of m-Booker showed an acceptable fit: Chi-square = 531.66 (p < .01), df = 129, $\chi 2/df=4.121$; RMSEA=0.088, CFI = 0.949, NFI=0.934, IFI=0.949, TLI=0.939. Though the value of RMSEA exceeded the recommended range from 0.05 to 0.08, it was still within the range from 0.08 to 0.10, which is considered as mediocre not poor (Browne & Cudeck, 1993).

4.6.2 Hypotheses testing

Upon the good fit of the structural model, we continued the analysis with hypothesis testing (see Figure 4.3 and Figure 4.4). First, we hypothesized a positive impact of functionality performance and usability performance on online booker's satisfaction. The results revealed that functionality performance ($\beta = 0.371$, $p < .001$) and usability performance ($\beta = 0.594$, $p < .001$) positively influences d-Booker's satisfaction. Similarly, as expected, both functionality performance ($\beta = 0.578$, $p < .001$) and usability performance ($\beta = 0.300$, $p < .001$) has a positive impact on m-Booker's satisfaction. H1 and H2 were supported according to the results. As hypothesized, online booker's satisfaction (d-Booker: $\beta = 0.852$, $p < .001$; m-Booker: $\beta = 0.786$, $p < .001$) positively affected their loyalty toward a certain booking platform. Thus hypothesis 3 was supported as well.

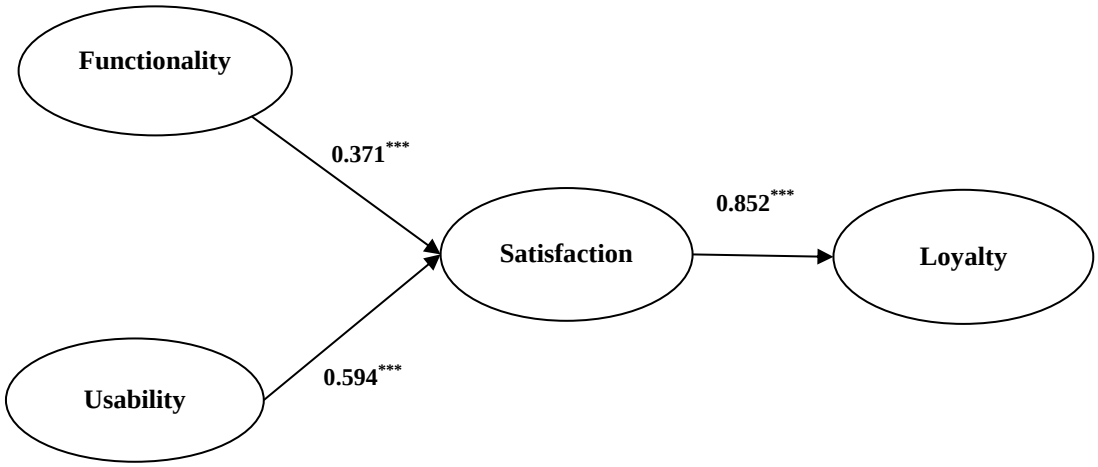


Figure 4.3 Main effect model results (d-Booker)

Note: a. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

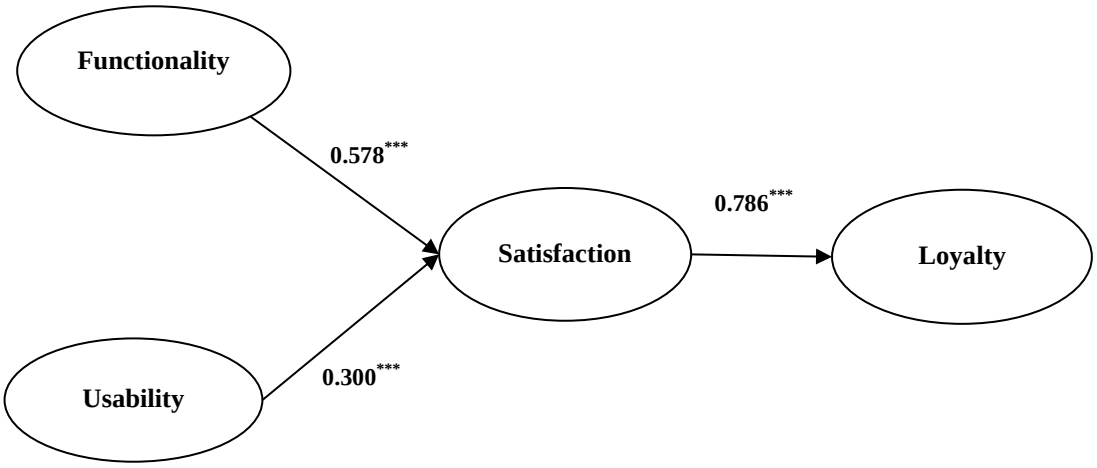


Figure 4.4 Main effect model results (m-Booker)
Note: a. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

4.6.3 Analyses of Mediating Effects

According to Baron and Kenny (1986), the following procedures for regression analyses are employed: (1) to regress the dependent variable on the independent variable to examine whether there is a significant direct relationship (path c) between independent variable (functionality performance or usability performance) and dependent variable (loyalty); (2) to regress the mediator (satisfaction) on the independent variable (functionality performance or usability performance) to determine whether path a in the mediation chain is significant; and (3) to regress the dependent variable (loyalty) on the independent variable (functionality performance or usability performance) and the mediator (satisfaction) simultaneously, to test whether the mediator significantly predicts the dependent variable (loyalty), and to examine whether the path coefficients of functionality-loyalty and usability-loyalty become smaller than

they were in the second step (path c < path c'). Notably, if the association of functionality-loyalty or usability-loyalty shows no significance, it means that the mediator is a complete (or full) mediator. If the path coefficient is significantly smaller in the model with the mediator than the model without the mediator, then the mediator is called a partial mediator. To provide a more accurate assessment of mediation effects, Sobel's (1982) z-test was conducted after the three regression models. If the z-test is significant, it means the differences between path c and path c' are significant. That is, the mediation effect is significant.

Based on the regression results, Figure 4.5 and Table 4.11 show that, the indirect effect of functionality on loyalty is 0.373, and its direct effect is 0.340, yielding a total effect coefficient of 0.713 (not coincidentally equal to the zero-order correlation between functionality and loyalty). Accordingly, 0.373/0.713, 52.31% of the effect of functionality on loyalty is mediated through satisfaction and 0.340/0.713 = 47.69% is direct. The result of Sobel test further support the significance of the mediating effect of satisfaction in the link between functionality and loyalty ($z=7.23$, $p < .001$).

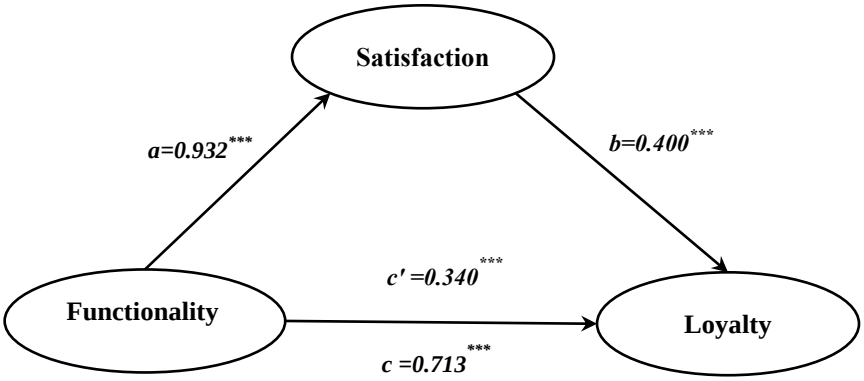


Figure 4.5 Mediation effect of satisfaction (d-Booker)

Note: a. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

It can be found in Figure 4.6 and Table 4.11, the indirect effect of usability on loyalty is 0.271, and its direct effect is 0.468, yielding a total effect coefficient of 0.739 (not coincidentally equal to the zero-order correlation between usability and loyalty). Accordingly, 0.271/0.739, 36.67% of the effect of usability on loyalty is mediated through satisfaction and 0.468/0.739= 63.33% is direct. By conducting the Sobel test for the effect of usability on loyalty through satisfaction, the result also suggests a significant mediating effect of satisfaction in the link of usability-loyalty (z=5.07, p < .001).

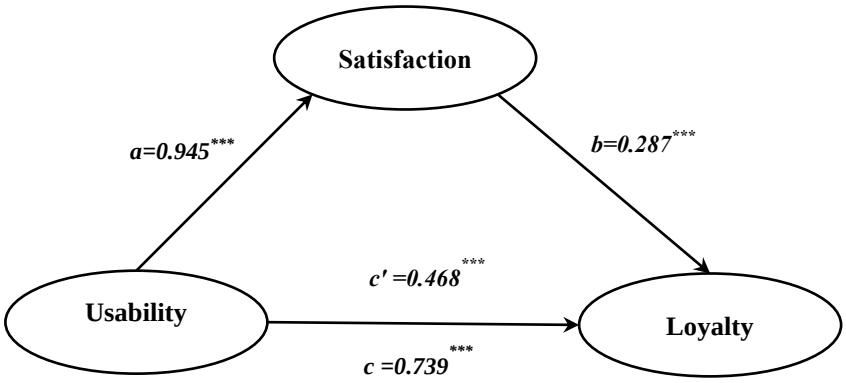


Figure 4.6 Mediation effect of satisfaction (d-Booker)

Note: a. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

Table 4.12 Mediation effect of satisfaction

Computer	**Total effect (*c*)**	**Direct effect (*c′*)**	**Indirect effect**
functionality- loyalty functionality-satisfaction (*a=0.932**) satisfaction-loyalty(*b=0.400****)**	*0.713****	*0.340****	*ab=0.932*0.400=0.373*
usability-loyalty usability-satisfaction (*a=0.945**) satisfaction-loyalty (*b=0.287****)**	*0.739****	*0.468****	*ab=0.945*0.287=0.271*
Mobile	**Total effect (*c*)**	**Direct effect (*c′*)**	**Indirect effect**
functionality- loyalty functionality-satisfaction (*a=0.863**) satisfaction-loyalty(*b=0.407****)**	*0.665****	*0.314****	*ab=0.863*0.407=0.351*
usability-loyalty usability-satisfaction (*a=0.810**) satisfaction-loyalty (*b=0.393****)**	*0.640****	*0.322****	*ab=0.810*0.393=0.318*

For m-Booker model, Table 4.11 and Figure 4.7 showed results of regression models and revealed the mediation effect of satisfaction between functionality and loyalty. The indirect effect of functionality on loyalty is 0.351, and its direct effect is 0.314, yielding a total effect coefficient of 0.665(not coincidentally equal to the zero-order correlation between functionality and loyalty). Accordingly, 0.351/0.665, 52.78% of the effect of functionality on loyalty is mediated through satisfaction and 0.314/0.665 = 47.22% is direct. The result of Sobel test supports the mediation role of satisfaction in the relationship between functionality and loyalty ($z=7.31$, $p < .001$). Thus, the mediation effect of satisfaction in the link of functionality-loyalty is supported in both the computer booking context and mobile booking context.

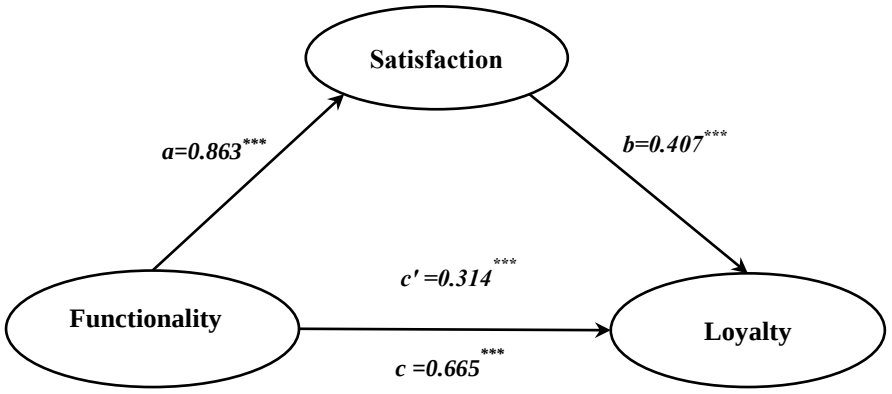


Figure 4.7 Mediation effect of satisfaction (m-Booker)

Note: a. $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

The indirect effect of usability on loyalty is 0.318, and its direct effect is 0.322, yielding a total effect coefficient of 0.640 (not coincidentally equal to the zero-order correlation between usability and loyalty). Accordingly, 0.318/0.640, 49.69% of the

effect of usability on loyalty is mediated through satisfaction and 0.322/0.640= 50.31% is direct. The Z-score for the effect of usability on loyalty through satisfaction was according to the results of Sobel test (z=7.20, p < .001), suggesting that there is a significant mediating effect of satisfaction on the link of usability-loyalty.

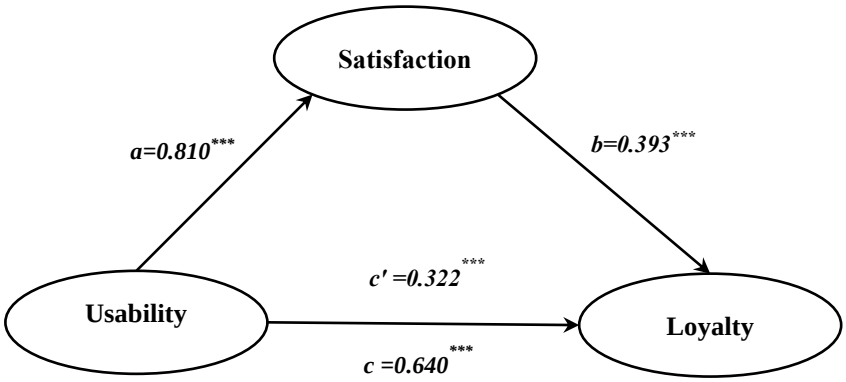


Figure 4.8 Mediation effect of satisfaction (m-Booker)

Note: a. *p < 0.05, **p < 0.01, ***p < 0.001

4.6.4 Analyses of Moderating Effects

4.6.4.1 Hierarchical Regression Analysis

Hypothesis 5a and Hypothesis 6a predicted that customer's perceived value for money and perceived value for time significantly moderate the relationship between satisfaction and loyalty. Moderating effect occurs when the effect of independent variable on dependent variable varies according to certain conditions (Baggio & Klobas, 2011).As such, to assess the moderating effects of perceived values (for money and for time) on the satisfaction-loyalty link, hierarchical regression analyses were adopted, in which predictors were added at a time in three individual steps (Jose, 2013): (1) entering

control variables (gender, age, education, and income) into the regression equation; (2) testing the main effects of satisfaction on loyalty, including the control variables in the regression equations; (3) testing the moderating effects of perceived value variables (perceived value for money and perceived value for time) on the relationship between satisfaction and loyalty. According to the suggestions from Aiken and West (1991), the satisfaction and the moderators (perceived value for money and perceived value for time) were centered at their means before computing the interaction analyses. If the results of hierarchical regression analysis are significant, a simple slope analysis would be recommended to interpret the specific moderating roles of perceived value variables (Aiken & West, 1991). IBM SPSS Statistic 22 was used to analyze the data.

In terms of d-Booker data (see Table 4.12), the dependent variable (loyalty) was firstly regressed on the control variables of gender, age, education level and income level. The results of Model 1 showed that d-Booker's gender was significantly associated with loyalty. Then loyalty was regressed on satisfaction, which generated an adjusted R2 of 0.549. Consistent with the results of SEM, the results from Model 2 revealed that d-Booker's satisfaction had positive effect on their loyalty($\beta = 0.741$, $p < .001$). Then the impact of perceived value for money was assessed in Model 3, producing a positive association with loyalty ($\beta = 0.303$, $p < .001$). When the products of satisfaction and perceived value for money were added in the regression model, the results did not show a significant effect of the interaction terms ($\beta = -0.049$, $p > .05$) and the adjusted R2 of Model 4 did not change. As for the other moderator-perceived value for time, its impact on loyalty was examined in Model 5, showing a significant

positive relation with loyalty (β = 0.312, p < .001). However, the coefficient of satisfaction × perceived value for time was not significant (β = -0.004, p > .05) according to the results of Model 6. Thus, the findings of d-Booker data did not support Hypothesis 5a and Hypothesis 6a.

Table 4.13 Moderation effect of perceived value variables (D-Booker, N=431)

Variables	Loyalty					
	Model1	Model2	Model3	Model4	Model5	Model6
Gender	0.095*	0.091**	0.097**	.099**	0.089**	0.089
Age	0.055	-0.016	-0.024	-0.021	0.008	.008
Education	0.026	0.050	0.047	0.041	0.028	.028
Income	-0.042	-0.017	-0.015	-0.015	0.007	.007
Satisfaction		0.741***	0.495***	0.513***	0.516***	0.518***
PVM			0.303***	0.321***		
PVT					0.312***	0.313***
Satisfaction*PVM				-0.049		
Satisfaction*PVT						-0.004
R^2	0.012	0.554	0.585	0.586	0.600	0.600
Adjust R^2	0.003	0.549	0.579	0.579	0.595	0.594
ΔR^2		0.546	0.03	0	0.016	-0.001
F	1.316	105.6***	99.6***	85.6***	106.1***	90.8***

Note: a. *p < 0.05, **p < 0.01, ***p < 0.001 b. PVM=Perceived Value for Money, PVT=Perceived Value for Time

Same steps were conducted for analyzing the m-Booker data, and the results were depicted in Table 4.13. Model 1 showed the relations of control variables and loyalty (dependent variable). In addition to gender, age was found to be significantly related to loyalty. The main effects were assessed in Model 2, Model 3 and Model 5. The results

indicated that satisfaction (β = 0. 662, p < .001), perceived value for money (β = 0.251, p < .001), and perceived value for time (β = 0.223, p < .001) all has a positive influence on loyalty. The results of Model 4 and Model 6 revealed that the regression coefficients of satisfaction × perceived value for money (β = 0.099, p < .05) and satisfaction × perceived value for time (β = 0.105, p < .05) were both significant. Thus, we cannot reject Hypothesis 5a and Hypothesis 6a for mobile hotel bookers at this stage. The results of the VIF values of predictors were relatively low, ranging from 1.0 to 2.6, suggesting that the impact of multicollinearity should not be a serious threat.

Table 4.14 Moderation effect of perceived value variables (m-Booker, N=401)

Variables	Loyalty					
	Model1	Model2	Model3	Model4	Model5	Model6
Gender	0.142**	0.056	0.051	0.052	0.055	0.055
Age	0.120*	0.003	-0.028	-0.042	-0.007	-0.025
Education	-0.092	0.023	0.035	0.038	0.024	0.027
Income	-0.102	-0.025	-0.032	-0.025	-0.026	-0.021
Satisfaction		0.662***	0.489***	0.439***	0.514***	0. 458***
PVM			0.251***	0.232***		
PVT					0.223***	0.209***
Satisfaction*PVM				0.099*		
Satisfaction*PVT						0.105*
R^2	0.049	0.451	0.481	0.486	0.478	0.484
Adjust R^2	0.039	0.444	0.473	0.477	0.470	0.475
ΔR^2		0.405	0.029	0.004	-0.007	0.005
F	5.06***	64.94***	60.81***	53.07***	60.22***	52.74***

Note: a. *p < 0.05, **p < 0.01, ***p < 0.001 b. PVM=Perceived Value for Money, PVT=Perceived Value for Time

4.6.4.2 Simple Slope Analysis of Moderating Effects

According to Jose (2013), we cannot interpret the moderating effect simply using a significant beta of the interaction term, and a simple slope should be graphed. It was suggested that when the moderator is a continuous variable, simple slope analysis would describe more clearly how the relationship of independent-dependent change according to various levels of the moderator (Aiken &West, 1991). As such, based on the results from hierarchical regression analyses, simple slope analysis was conducted to present the moderating effects of perceive value for money and perceived value for time. According to the analysis procedure by Aiken and West (1991), the following steps were followed: first, the conditional values of moderators (perceived value for money and perceived value for time) was calculated by using the original values of moderators to minus the conditional value of interest, generating high level (one standard deviation above the mean) and low level (one standard deviation below the mean) of moderator; second, form the interaction term into the cross-product of the new variable (satisfaction*perceived value for money, satisfaction* perceived value for time); third, regress the dependent variable (loyalty) on independent variable (satisfaction), moderator (perceived value for money, perceived value for time), and the interaction terms (satisfaction*perceived value for money, satisfaction* perceived value for time).

As shown in Table 4.13, the perceived value for money of the slope of satisfaction had a significant effect on loyalty ($\beta = 0.099$, $p < .05$), and 47.7 percent of the between-group variance in the slope of the effect of satisfaction on loyalty was explained. High level and low level of moderator were depicted in Figure 8 as one standard deviation

below and above the mean. As we posited, mobile hotel bookers with a higher satisfaction level were more likely to be loyal towards a specific booking App. This positive association was stronger for the hotel bookers who perceive a better value for money.

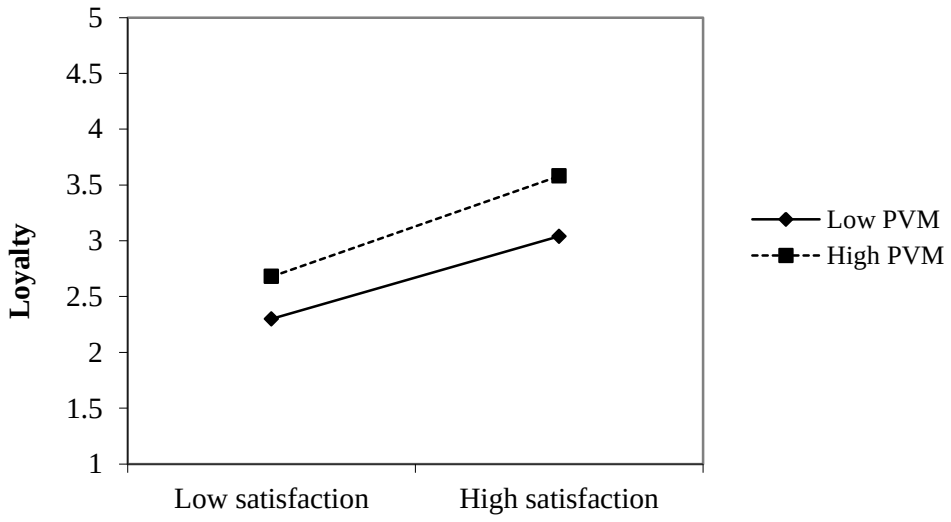


Figure 4.9 Moderation effect of Perceived Value for Money on the relationship between satisfaction and loyalty (m-Booker)

Note: PVM= Perceived Value for Money

Similarly, the role of perceived value for time as a moderator was evidenced by the results from Table 4.13 and Figure 9. Table 4.13 indicated that the perceived value for time of the slope of satisfaction significantly affected loyalty ($\beta = 0.105$, $p < .05$), and 47.5 percent of the between group variance was explained. The positive relationship between m-Booker's satisfaction and loyalty was stronger when a greater value for time was perceived by the users.

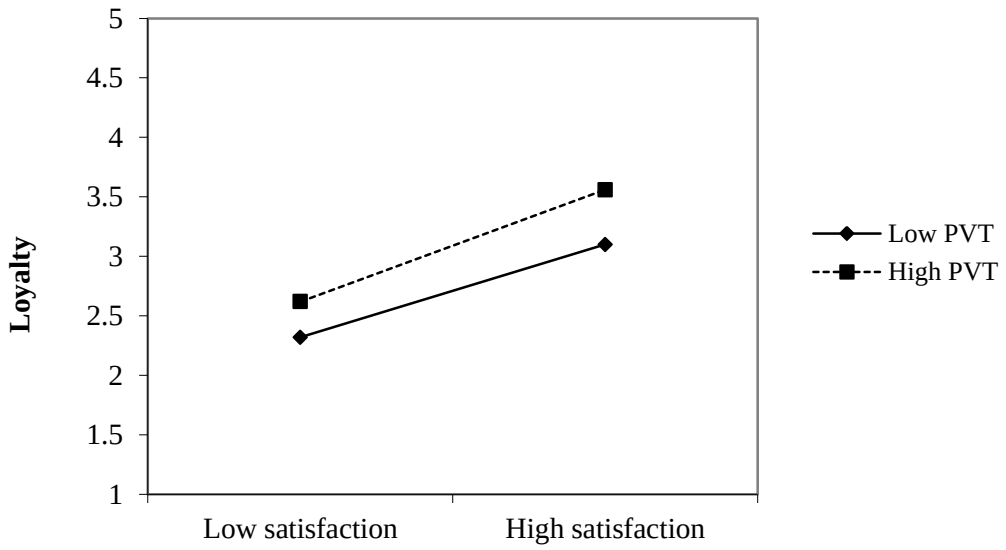


Figure 4.10 Moderation effect of Perceived Value for Time on the relationship between satisfaction and loyalty (m-Booker)

Note: PVT= Perceived Value for Time

4.7 Summary of Hypothesis Testing

The results of hypothesis testing are shown in Table 4.15. Hypothesis 1a suggested that functionality positively affects customer satisfaction. Both the results from a sample of 431 d-Bookers and the results from a sample of 401 m-Bookers show that functionality performance has a positive effect on consumer satisfaction (see Figure 4.11 and Figure 4.12). As such, Hypothesis 1a was supported in both contexts.

Hypothesis1b proposed that the perception of functionality performance when booking through computer website differs from that of through mobile App. The results of T-test revealed that d-Bookers and m-Bookers are significantly different in regard to the perception of functionality performance. Therefore, Hypothesis1b was supported.

Hypothesis 2a suggested usability performance has a positive effect on consumer satisfaction. Similar to Hypothesis 1a, both the results from d-Bookers and m-Bookers revealed that usability performance is a significant and positive antecedent of customer satisfaction (see Figure 4.11 and Figure 4.12). Thus, Hypothesis 2a was supported.

Hypothesis 2b proposed that the perception of usability performance when booking through computer website is different from that of through mobile App. According to the results of independent-sample T-test, d-Bookers and m-Bookers are significantly different from each other with reference to the perception of usability performance. As such, Hypothesis 2b was supported.

Hypothesis 3 proposed that consumer satisfaction has a positive effect on consumer loyalty. According to the results from both the d-Bookers and m-Bookers, consumer satisfaction was found to affect loyalty directly and positively (see Figure 4.11 and Figure 4.12). Thus, Hypothesis 3 was supported on the basis of the results.

Hypothesis 4 posited that consumer satisfaction mediates the relationship between perceived-quality variables (functionality performance and usability performance) and consumer loyalty. Following Baron and Kenny's (1986) procedures, functionality performance and usability performance were found to affect customer loyalty through customer satisfaction. The mediating effect of customer satisfaction was confirmed in both the d-Bookers sample and the m-Bookers sample (see Figure 4.11 and Figure 4.12). As such, Hypothesis 4 was supported.

Hypothesis 5a suggested that perceived value for money significantly moderates the relationship between satisfaction and loyalty. The results of hierarchical regression analysis revealed that perceived value for money significantly moderates the link of satisfaction-loyalty for m-Bookers but not d-Bookers (see Figure 4.11 and Figure 4.12). That is, the association between m-Bookers' satisfaction and loyalty varies at different levels of perceived value for money. The results from a sample of 401 m-Bookers suggest that the positive association of satisfaction-loyalty becomes stronger when m-Bookers perceive higher level of value for money. Therefore, Hypothesis 5a was supported in mobile booking context and not supported in computer website booking context.

Hypothesis 6a posited that perceived value for time significantly moderates the relationship between satisfaction and loyalty. Similar to Hypothesis 5a, the results show that no moderating effect of perceived value for time on satisfaction-loyalty was found in computer booking context, whereas significant moderating effect exists in mobile booking context (see Figure 4.11 and Figure 4.12). As such, based on the results from the two samples, Hypothesis 6a was supported in mobile booking context and not supported in computer website booking context.

Hypothesis 5b proposed that the perception of value for money when booking through computer website is different from that of through mobile App. The results of independent-samples T-test revealed that the perception of value for money was significant different between d-Bookers and m-Bookers. As such, Hypothesis 5b was supported.

Hypothesis 6b posited that the perception of value for time when booking through computer website is different from that of through mobile App. According to the T-test results, no significant difference was found between d-Booker and m-Booker in regard to the perception of value for time. Therefore, Hypothesis 6b was rejected.

Table 4.15 Results of hypothesis testing

Hypothesis	Results	
	Computer	***Mobile***
H1a: Functionality performance has a positive effect on consumer satisfaction.	Supported	Supported
H1b: The perception of functionality performance when booking through computer website is different from that of through mobile App.	Supported	
H2a: Usability performance has a positive effect on consumer satisfaction.	Supported	Supported
H2b: The perception of usability performance when booking through computer website is different from that of through mobile App.	Supported	
H3: Consumer satisfaction has a positive effect on consumer loyalty.	Supported	Supported
H4: Consumer satisfaction mediates the relationship between perceived quality variables (functionality performance and usability performance) and consumer loyalty.	Supported	Supported
H5a: Perceived value for money significantly moderates the relationship between satisfaction and loyalty.	Rejected	Supported
H5b: The perception of value for money when booking through computer website is different from that of through mobile App.	Supported	
H6a: Perceived value for time significantly moderates the relationship between satisfaction and loyalty.	Rejected	Supported
H6b: The perception of value for time when booking through computer website is different from that of through mobile App.	Rejected	

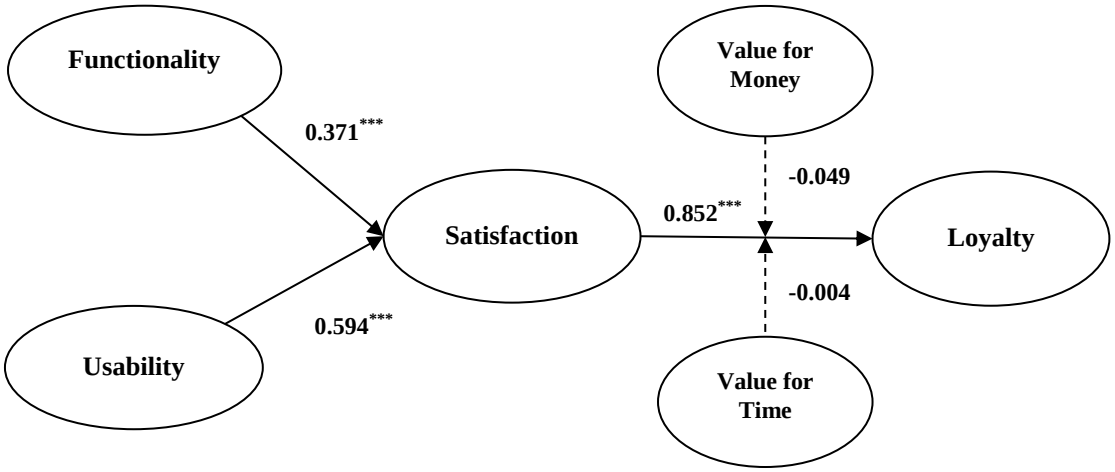


Figure 4.11 The results of the conceptual model (d-Booker)

Note: a. *p < 0.05, **p < 0.01, ***p < 0.001

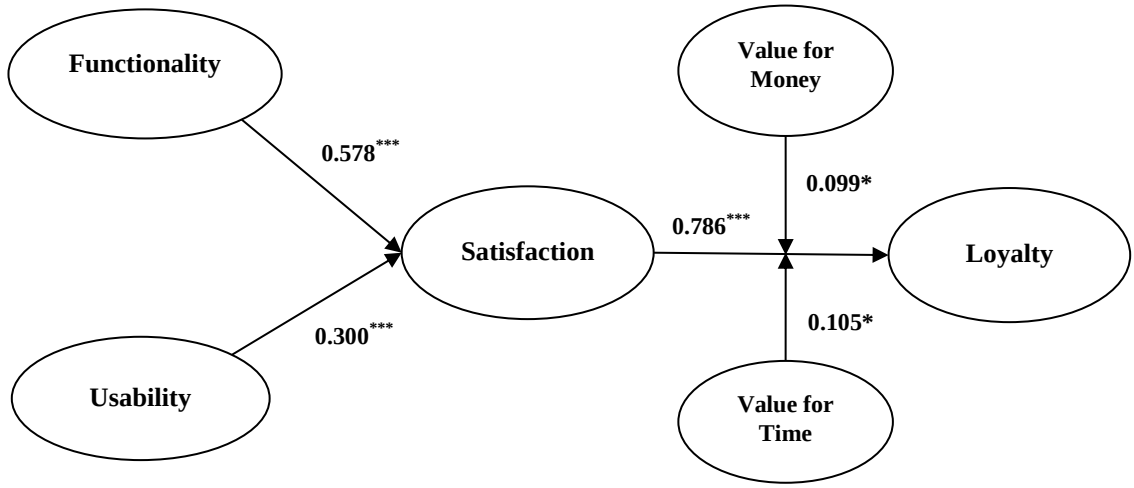


Figure 4.12 The results of conceptual model (m-Booker)

Note: a. *p < 0.05, **p < 0.01, ***p < 0.001

4.8 Chapter Summary

According to Jose (2013), we cannot interpret the moderating effect simply using a significant beta of the interaction term, and a simple slope should be graphed. It was suggested that when the moderator is a continuous variable, simple slope analysis would describe more clearly how the relationship of independent-dependent change according to various levels of the moderator (Aiken &West, 1991). As such, based on the results from hierarchical regression analyses, simple slope analysis was conducted to present the moderation effects.

CHAPTER 5. DISCUSSIONS AND IMPLICATIONS

5.1 Chapter Introduction

The interpretation of the research findings and how this study relates to prior research are presented in this chapter. The chapter starts with a description of overall model performance. Thereafter, how the study addresses the research objectives are presented separately. Specifically, the factors affecting the satisfaction of d-Booker and m-Booker are discussed respectively. The differences between d-Booker and m-Booker in regarding to hotel booking behavior are further explicated. The mediation effect and moderation effects are also discussed before indicating how this study contributes to knowledge and practice. This chapter concludes with a discussion of theoretical implications and practical implications.

5.2 Overall Model Performance

On the basis of a comprehensive literature review on e-Tourism and m-Tourism, this study develops a research framework that specifies the relations among the constructs of functionality performance, usability performance, and perceived value for money, perceived value for time, customer satisfaction and loyalty. By conducting a pretest to seek opinions from experts and customers, the appropriateness of the instrument was examined. Since few efforts have been done to investigate functionality and usability performance as major variables to evaluate the quality of mobile App, this study adopted the measurements from previous website evaluation studies. The results of pretest showed that the statements of the questionnaire reflect the measurement

constructs well in both context. That is, the measurement items for computer booking and mobile booking shared a similar meaning.

The results showed that the measurement scales of each population (d-Booker and m-Booker) were all valid and reliable. Upon the results of Confirmatory Factor Analysis (CFA), the reliability and validity of the latent constructs as well as the model fit were confirmed. The internal consistency of each latent construct in both dataset was shown to be satisfactory, while construct validity was found to be mostly reasonable with the exception of functionality in d-Booker data. Despite the unsatisfactory discriminant validity of functionality, other tests of reliability and validity appeared to be good in both the context of computer hotel booking and mobile hotel booking. The good results of the reliability and validity of the operational measures could be attributed to the following reasons. First of all, all the measurement scales were adopted from prior literature and the research concepts used in this study are not at an initial stage of research. Furthermore, this study rigorously followed the guideline by Churchill (1979), Gerbing and Anderson (1988) and Tsang, Lai, and Law (2010) to develop the measurements: identify measurement items based on a thorough review of relevant literature and confirm the measurements upon the opinions from both the experts and customers.

According to the results of CFA, the measurement model was found to fit each sample of data well (Hair et al., 2010). The SEM results suggest a good fit of the structural model for d-Booker data, where as an acceptable fit for m-Booker data. The proposed research model of each sample was mostly confirmed by the findings of this

study, demonstrating the relations among quality variables, value variables, satisfaction and loyalty. In the total of eight hypotheses, H1-H4 were supported in both the d-Booker data and the m-Booker data, which can be generalized to the research on customer's online booking behavior. Specifically, functionality and usability were found to have positive influence on customer satisfaction either in the context of computer website booking or mobile App booking. The positive association of satisfaction and loyalty was also confirmed in both dataset. Additionally, satisfaction was found as an important mediator that links quality variables (functionality and usability) with customer loyalty. H5a and H5b were only supported in mobile booking data. The findings indicated that perceived value for money and perceived value for time significantly moderate the relationship between m-Booker's satisfaction and loyalty, while the moderating effects of the two perceived value variables were not found for d-Booker. Based on the results of independent T-test, online hotel booker's perception of value for money through computer website was found to be significantly different from that of through mobile App, while no difference was found in regards to the perception of value for time. Thus, H5b was supported and H6b should be rejected.

5.3 Research Objective 1: Investigate the factors affecting online booker's choice

Based on prior e-Tourism and m-Tourism literature, this study identified and investigated the factors influencing hotel bookers' choice of using online channels. Though previous research has indicated the role of functionality and usability as being important dimensions of website quality in predicting hotel booker's satisfaction (Bai et al., 2008; Wang et al., 2015), little research has examined the impact of functionality

and usability on hotel booker's mobile booking preference. The results of this study suggest that functionality performance and usability performance have significant impacts on hotel booker's satisfaction in both the samples (d-Booker and m-Booker), while the relative criticalities among these two antecedents of customer satisfaction are different in each sample.

5.3.1 Factors Affecting D-Booker

The results of d-Booker data support the arguments from prior research that website quality is a critical component of consumers' online experience (Hasbullah et al., 2016). The findings indicate that usability performance had a greater level of importance than functionality performance in the context of computer hotel booking, which is consistent with the assertions from previous research on hotel website evaluation (Bai et al., 2008). The more pronounced role of usability in affecting hotel booker's satisfaction corresponds with the findings from Law (2007) and Qi, Law & Buhalis (2017) that poor usability of hotel website leads to high possibility of customer loss. When online hotel bookers find the website difficult to use for hotel reservation, they are likely to switch to other booking channels. Moreover, as Aziz and Kamaludin (2014) suggested, easy to use and navigate is increasing crucial for a website to win competitive advantage in the era of e-Commerce.

Regarding the associated importance indices of usability, the results reveal that most usability attributes received relatively high scores from d-Booker. Nevertheless, the evidences showed that some attributes are more important than others. The results

reveal that “general design” is the most important for d-Bookers in regard to hotel booking, followed is the aspect of “clear language”, while “information architecture” is the least, which is different from the results from previous e-Tourism research on hotel website quality (Bai et al., 2008; Wang et al., 2015) that user-friendly layout appeared to be more critical.

In line with the findings in Bai et al. (2008) and Ip et al. (2012), regarding functionality performance, d-Bookers are more interested in “contact information” and “reservation information” with reference to hotel booking. It is not surprising, as Zafiropoulos and Vrana (2006) argued that, it is highly possible for customer to opt for an alternative when the reservation information is limited on a certain website.

5.3.2 Factors Affecting M-Booker

Similar to the results of computer booking model, usability performance and functionality performance were found to have direct and positive impacts on hotel bookers’ satisfaction. However, when the relative criticalities of functionality and usability with respect to mobile App were compared, functionality appeared to be of greater importance in affecting hotel bookers’ satisfaction than that of usability. This finding differs from the results of computer booking, as well as the findings in previous e-Commerce literature that online consumers give higher priory to usability performance than to functionality (Bai et al., 2008; Calisir et al., 2010). The results of m-Booker are consistent with the findings of prior research on hotel website quality that functionality performance is the most influential factor (Ma et al., 2008).

The findings show that m-Bookers gave "user-generated information" the highest score in regard to functionality performance of mobile App, which is different from the results of d-Booker as well as the findings from previous studies (Ip et al., 2012). Additionally, the findings of m-Bookers are in line with that of d-Booker, that "reservation information" and "contact information" are being one the most important dimensions of functionality (Bai et al., 2008). The "user-generated information" refers to the relevant and up-to-date information generated by customers. It is not surprising that this dimension received the highest relative importance because other customers' opinions are becoming increasingly important and influential in today's online market (Litvin et al., 2008). It was suggested in recent e-Tourism studies that other customers' comments have significant influences on the focal customer's attitude toward hotel (Ladhari & Michaud, 2015). Notably, with more convenient access to other customers' reviews towards certain products/services, the findings of this study suggest an extended venue beyond the traditional interaction between two actors (supplier and customer) to a three-actor interaction: supplier, the focal customer and other customers.

5.4 Research Objective 2: Compare the differences between d-Booker and m-Booker

Numerous studies have investigated hotel booking through computer website; however, empirical evidences of hotel mobile booking is limited (Lee & Mills, 2010). It is suggested that the influencing factors of mobile buyers' preferences and behaviors might be different from computer buyers due to the features of mobile technologies, such as location-based services and more dynamic supplier-buyer interaction (Beritelli & Schuppisser, 2006; Law et al., 2009). One of the major objectives of this study is to

compare and contrast the differences between d-Bookers and m-Bookers in regard to hotel reservation. Based on the results of this research, the similarities and differences between d-Bookers and m-Bookers were depicted in Table 5.1.

Table 5.1 Similarities and differences between d-Booker and m-Booker

	D-Booker	**M-Booker**
Similarity	▪ functionality performance and usability performance has positive effect on customer satisfaction (H1a and H2a) ▪ satisfaction has a positive effect on customer loyalty (H3) ▪ satisfaction partially mediates the relationship between perceived quality variables (functionality and usability) and customer loyalty (H4) ▪ "general design" is the most important in regard to usability ▪ "reservation information" and "contact information" are of great importance in regard to functionality	
Difference	▪ usability is the most influential factor predicting satisfaction ▪ "reservation information" is the most important in regard to functionality ▪ perceived value of money and perceived value of time show no moderating effect on the link of satisfaction-loyalty	▪ functionality is the most influential factor predicting satisfaction ▪ "user-generated information" is the most important ▪ perceived value of money and perceived value of time significantly moderate the link of satisfaction-loyalty (H5a and H6a)
	▪ The perception of functionality, usability and perceived value for money is significantly different between the two samples (H1b , H2b and H5b) ▪ There is no difference between d-Booker and m-Booker in regard to perceived value for time (H6b)	

Collectively, the results of d-Booker and that of m-Booker both indicate that perceived quality is crucial in affecting hotel online bookers' attitudes, with functionality performance and usability performance being the important antecedents of satisfaction. This finding supports Hypothesis 1a and Hypothesis 2a, which matches with the results in prior tourism and hospitality studies on website evaluation (Bai et al., 2008; Wang et al., 2015; Lee et al., 2016). In addition, satisfaction was found to be directly and positively related to online booker's loyalty in both the samples, which supports Hypothesis 3 and corresponds with previous research (Anderson & Srinivasan, 2003). As previously proposed in Hypothesis 4, the findings of both samples suggest that customer satisfaction has mediating effect between perceived quality variables (functionality and usability) and customer loyalty. Furthermore, the level of satisfaction was found as being a partial mediator between perceived quality variables and loyalty. This finding is consistent with the results of previous research that customer satisfaction is an important mediator between quality performance of products/services and loyalty (Caruana, 2002; Olsen, 2002; Shi et al., 2014).

Notably, drawing on the findings of this research, there are several differences between d-Bookers and m-Bookers with reference to hotel booking. First of all, the results show that d-Bookers and m-Bookers significantly differ in their perceptions of the functionality performance and usability performance of booking websites and mobile Apps. Specifically, d-Bookers gave higher priority to usability performance of hotel booking website than to functionality performance, whereas m-Bookers valued a little more on functionality performance of mobile App than usability performance. As

previously stated, the results of d-Bookers are consistent with the findings from previous research, that usability performance is the most influential factor of customer satisfaction (Bai et al., 2008; Calisir et al., 2010). The higher information demand during travel can explain why functionality performance was found to be more important for mobile hotel bookers. This also corresponds with the arguments that mobile technologies provide individuals new and more convenient ways to search information and informational value is one of the features what travelers value most toward mobile channel (Law et al., 2009; Larivière et al., 2013).

Furthermore, the results suggest that both d-Bookers and m-Bookers consider "general design" as being the most important dimension of usability, while d-Bookers are more interested in "contact information" and "reservation information" in regard to functionality performance but m-Bookers value "user-generated information" most. This difference can be attributed to the limitations of mobile devices. Since when hotel bookers navigate a mobile App, with the limited screen size of mobile device, they may need more information to facilitate their decision-making, especially the feedback information from other hotel guests. Additionally, based on the results of independent-samples t-test, loyalty, the perception of functionality and usability, and perceived value for money, were found to be significant different between d-Bookers and m-Bookers. It shows that d-Bookers seem to be more loyal than m-Bookers, and accordingly, their perceptions of functionality and usability were higher.

Notably, another important difference between d-Booker and m-Booker is the role of perceived values (value for money and value for time) as moderators. Results show

that there is no moderating effect of perceived value for money or perceived value for time on the relationship between satisfaction and loyalty. However, the results of m-Bookers revealed that both the perceived value for money and perceived for time significantly moderates the link of satisfaction-loyalty. The difference of moderating effects can be attributed to the mobility nature of mobile hotel booking. When people are on the way, saving time is of great importance and the perception of time-saving can enhance the transforming of customer satisfaction and loyalty.

5.5 Research Objective 3: Investigate the mediating effect of satisfaction

The results show that customer satisfaction is of great significance to pursue customer lifetime value, whether in the context of computer website consuming or that of mobile App consuming. Consistent with previous research (Bai et al., 2008; Olsen, 2002; Shi et al., 2014), satisfaction was found to have a partial mediating effect on the relationship between perceived quality variables and customer loyalty. Specifically, with reference to computer booking, this study found 52.29% of the effect of functionality and 36.72% of the effect of usability on loyalty was mediated through satisfaction. Similarly, the results of m-Bookers suggest that 52.90% of the effect of functionality and 49.61% of the effect of usability on loyalty was mediated through satisfaction. The findings suggest that the underlying dimensions of website and mobile App arousing customer satisfaction strongly affect hotel bookers' decision, indicating tourism and hospitality operators should maintain a satisfaction relationship with online consumers (Wang et al., 2015).

The results of this study also validated the link of "service quality-satisfaction-loyalty" in the context of online hotel booking (Gustafsson & Johnson, 2002; Olsen, 2002; Helgesen et al., 2010). The findings suggest that customer loyalty can only be obtained from a sound foundation of good quality service and satisfied users. Consistent with prior studies, functionality performance and usability performance were found to important quality variables that affect the satisfaction level of online bookers as well as loyalty towards a certain booking channel. The mediating power of satisfaction is probably because online bookers may overemphasize the influences of quality variables on loyalty if highly satisfied hotel booking experience is perceived. Satisfaction, like other emotional reactions, facilitates to link cognitively-oriented variables such as functionality and usability to behavioral outcomes (Lai et al., 2009). Furthermore, the results of this study support the central and predominating position of customer satisfaction in marketing research and practice. The findings confirm the role of satisfaction in transforming the initial hotel booking behavior to customer loyalty which is regarded as the most important post-purchase phenomena (Xu et al., 2015).

5.6 Research Objective 4: Investigate the moderating effects of perceived value

Extensive studies have investigated the relationships between perceived value, satisfaction and loyalty (Chang et al., 2009; Xu et al., 2015). Perceived value was suggested in these studies to have a direct impact on customer satisfaction or loyalty, or to play as a mediator of the effect of perceived quality on customer loyalty (Kuo et al., 2009). Xu et al. (2015) asserted that perceived value for money directly affects mobile users' satisfaction and loyalty, whereas perceived value for time was indicated by Kim

et al. (2015) to have direct and positive effect on mobile buyers' satisfaction. Empirical evidence of the role of perceived value as a moderator on the link of satisfaction-loyalty is limited. In addition, perceived value was mostly assessed as perceived value for money, and fewer efforts have been done to investigate perceived value of time. In the context of online hotel reservation, perceived value for money as well as perceived value for time was expected to facilitate the transformation of customer satisfaction and loyalty.

Results suggest that the more satisfied a m-Booker is, the more likely he/she will be loyal towards a hotel booking App. This positive relationship is contingent on the level of perceived values, including perceived value for money and perceived value for time. The satisfaction-loyalty link will become stronger when a m-Booker perceives a higher perceived value for money or time. The findings are in line with previous e-Commerce research which indicated the moderating role of perceived value (Chang et al., 2009). However, no moderating effect of perceived value variables was found in computer website booking context. As we explicated earlier, the difference between m-Bookers and d-Bookers in regard to the role of perceived value can be attributed to the mobility nature of mobile consuming. Furthermore, it was indicated in prior studies that mobile technologies transformed tourist value in e-Tourism context (Beritelli & Schuppisser, 2006). Different from computer website, location-based services and a more dynamic booker-supplier interaction are always offered by mobile reservation channels (Law et al., 2009), which means the consuming behavior of m-Bookers might distinct from that of d-Booker.

Time saving and mobility were found important in the context of m-tourism consuming. It was indicated that 60% of reservations made by m-Bookers are same-day reservations, while only 14% of same-day reservations made from computer (Kim et al., 2015). When people are travelling, they are under a certain level of time pressure, and a high level of time value is likely to enhance the transformation of satisfaction into loyalty towards a mobile App. Conversely, when people choose to sit down in front of their computer, it means that time pressure might not be a concern to some extent. As for perceived value for money, previous tourism studies have demonstrated its direct and positive influence on customer satisfaction (Williams and Soutar, 2009; Kim et al., 2015). However, satisfaction alone is not enough to lead to retain customer loyalty for ensuring long-term profits. The results of m-Bookers suggest that when a higher value for money is perceived, the more possibilities the satisfied hotel bookers will repurchase through that mobile App.

5.7 How to Co-Create Value with Customers in Online Hotel Booking?

On the basis of value co-creation literature, this study elaborated how customers co-create value with suppliers in online hotel booking with empirical evidences. The role of suppliers (online booking channels) and the role of customers (hotel bookers) were explicitly clarified in this study which shed light on the reciprocity of the involved parties.

Consistent with Vargo and Lusch (2016), the actors involved in the value co-creation process often contribute each other's well-being unawares. As noted by

Grönroos (2008), service provider (online booking channel) offers resources (hotel products/services) to consumers who constantly evaluate the values they consider as important during the value co-creation process. In this research, a focal hotel booker utilizes hotel products and services or information that an online hotel booking channel provides. The improvements in the dimensions of functionality performance, usability performance, and perceived value increased the hotel booker's propensity to provide a positive assessment, while the focal hotel booker's satisfaction level affects his/her loyalty (customer lifetime value) that contributes to providers. As prior research asserted, customer engagement values including customer lifetime value and customer knowledge value are values that customers contribute to providers (Kumar and Mirchandani, 2012). Thus, these values can be seen as Values for Supplier. Coinciding with website evaluation literature (Tsang et al., 2010), functionality is the dimension customers value most when they make a hotel reservation via online booking channels (computer website or mobile App), which means whether the information of a computer website/mobile App could satisfy hotel booker is crucial in online hotel booking context. This study found that functionality performance and usability performance constitute *Values for Customers* which can directly and positively influence customer satisfaction, in which functionality has the greatest predicting power for m-Bookers and usability is the most influential for d-Bookers. Satisfaction has been found a significant antecedent of customer loyalty. Specifically, similar to emerging e-Tourism research (Yang, 2017; Cantallops and Salvi, 2014), this study validated that a satisfied hotel booker is more likely to be loyal towards a certain booking channel. Considering the above, the findings

confirmed that a focal hotel booker's satisfaction is enhanced by the functionality and usability performances of a computer website/mobile App, and in turn the satisfaction level determines customer lifetime value (customer loyalty) for the online suppliers, which is consistent with the Value for Customer—Satisfaction—Value for Supplier scheme that conceptually guided this research (see Figure 2.2). As Figure 2.2 illustrated, three actors (online booking channels, focal hotel booker, and other hotel bookers) were involved in the value co-creation process of online hotel booking context, which goes beyond existing e-Tourism and m-Tourism research on value co-creation (Morosan, 2015; Morosan and DeFranco, 2016).

5.8 Contributions of the Study

Based on theoretical and empirical analyses, this study contributes both theoretically and practically. Though existing e-Tourism literature has provides extensive evidences of website quality, fewer efforts have been made to mobile App quality. This study not only extends current literature on m-Tourism, but also identifies and demonstrates similarities and differences between d-Booker and m-Booker. Based on the data of Chinese hotel bookers, the findings of this current research provide managerial implications for industry practitioners aiming to reach Chinese online travel market.

5.8.1 Theoretical Contributions

Extensive research efforts have been made to investigate website quality and the factors influencing d-Bookers' attitudes towards website (Bai et al., 2008; Wang et al.,

2015); however, limited research exists on m-Booker's perspective in regard to App quality and the factors affecting satisfaction and loyalty. While recent m-Tourism studies investigate how hotel guests use mobile devices as an important mediator to facilitate their co-creation experiences in hotel (Morosan, 2015; Morosan & DeFranco, 2016), this study extended existing literature by focusing on mobile App-customer interaction. Specifically, the findings of this study suggest that functionality performance and usability performance of mobile App are important perceived quality factors that predict the satisfaction level of mobile hotel bookers, which is consistent with the results from d-Booker.

The present research also contributes to the current literature by verifying the interrelationships among perceived quality variables (functionality and usability), perceived value variables (perceived value for money and perceived value for time), satisfaction and loyalty in the context of computer booking and mobile booking respectively. This study empirically validates the application of "quality-satisfaction-loyalty" link in e-Tourism and m-Tourism (Gustafsson & Johnson, 2002; Olsen, 2002; Helgesen et al., 2010), suggesting functionality and usability as being important dimensions of perceived quality that affect customer loyalty through satisfaction. Whether booking hotel through computer website or mobile APP, a good performance of functionality and usability is an important precondition of satisfaction, and satisfaction in turn leads to customer loyalty.

Perceived value has been studied as a multidimensional construct that varies among individuals and cultures (Parasuraman, 1997; Assael, 1995). It is also regarded as

a dynamic variable that can experience at pre-purchase stage, onsite purchase stage, or post-purchase stage (Sanchez et al., 2006). In line with these different stages, the value that is perceived by customers is likely different. Prior research mostly investigated perceived value at the moment of purchase and from the perspective of price (value for money). Unfortunately, limited information supports the role of perceived value in the transformation of customer satisfaction and loyalty. Moreover, time-saving was asserted as a critical factor that cannot be neglected in e-Commerce environment (Kim et al., 2015). As such, this study helps to improve the knowledge of perceived value at post-purchase stage in mobile tourism, by incorporating perceived value for time into analysis. The role of perceived value variables as being moderators on the relationship between satisfaction and loyalty were examined. The results indicate that both perceived value for money and for time can enhance the strength of satisfaction-loyalty link during and after the used of mobile App.

Another significant contribution is to compare and contrast the similarities and differences between computer buyer and mobile buyer in regard to hotel reservation. Mobile technologies are changing the manner that information-related activities are conducted. With the features and advantages of mobile technologies, such as localization awareness and ubiquity, the preferences and behaviors of computer buyer and mobile buyer might be different. The present research provides empirical evidences of the differences between these two groups. The findings reveal that computer buyers attach more importance to usability performance of website, while mobile buyers think more of functionality performance of a mobile App. Collectively, both computer buyers

and mobile buyers are interested in “general design” with respect to usability performance. As for functionality performance, significant difference exists between these two groups of buyers that computer buyers valued “reservation information” more, whereas mobile buyers are more interested in “user-generated information”.

This study also shed lights on the reciprocity of suppliers and customers in the value co-creation process of online hotel booking. While previous studies investigate either the outcome variables or the antecedents of co-creation (Mathis et al., 2016; Morosan, 2015), the present research supports the view proposed by Vargo & Lusch (2016) that co-creation can be studied as being a process instead of being a specific variable. This means that the actors involved in the value co-creation process contribute to each other’s value often without being aware of it. The results of this study suggest that the emergence of value for the customer has the potential to generate value for the supplier. To be more specific, the findings of this study suggested that online booking channels (computer website or mobile App) should improve the values for customers (functionality performance and usability performance) to achieve values for themselves (customer loyalty).

5.8.2 Practical Contributions

As for practical implications, this study helps industry practitioners to have a better understanding of online market. With the trend of m-Commerce, many tourism and hospitality operators are considering to move from traditional PC channel to other web enabled channel, such as mobile devices. The results of this research identified the

similarities and differences between computer buyers and mobile buyers in regard to the factors affecting satisfaction and loyalty, which might be helpful for those who are interested in shifting from PC channel into mobile market.

If tourism and hospitality companies plan to have an invincible position in the increasingly competitive online market, striving for customer satisfaction is still of great importance to obtain long-term profits. The findings of this study indicate that functionality performance and usability performance positively and directly affect the satisfaction level of online hotel bookers. Thus, whether for computer website or mobile App, it is vital for industry practitioners to enhance the functionality and usability dimensions. The results also suggest for both the d-Bookers and m-Bookers, general design and contact information is a factor of influence.

Different from d-Bookers, m-Bookers valued more on the functionality performance of mobile App rather than usability performance. This suggests that when designing a mobile App of hotel reservation, industry practitioners should attach greater importance to the information provided by the App. Moreover, user-generated information is the key should be seriously considered by tourism and hospitality operators. Since tourism-related product is a kind of experience which cannot be assessed in advance, information provided from experienced customers seems to be particularly critical for first-time visitors. User-generated information is so powerful and influential that App operators should encourage customers to share their information and comments as much as possible. Easy access should be provided for m-Bookers to share online reviews and proper incentives can be offered. Nevertheless, it should be noted

that negative user-generated information can be more powerful than positive information in affecting customer's online purchasing decision (Xie, Miao, Kuo, & Lee, 2011). To minimize the undesirable impact, hotel managers may consider responding the negative reviews in time, and try to carry on service recovery if the problem stated in the reviews is really serious.

For tourism and hospitality operators who have the plan to enter into mobile market, another important managerial implication is to emphasize the value for money as well as the value for time. It should be noted that a satisfied experience of mobile hotel booking is not enough to lead to customer loyalty towards a mobile App. It is important for industry practitioners to consider how to leave an impression of high-quality service with fairly modest price to mobile buyers. Moreover, for m-Bookers, those who are under time pressure to some extent, a perception of time-saving is the key element that can facilitate their satisfaction to convert into long-term commitment.

5.8 Chapter Summary

This chapter presents the interpretations of the findings of this study. Additionally, it discusses how this study relates to previous research. First, it describes overall model performance. Second, it presents how this current research addresses all the research objectives. Specifically, it discusses the factors affecting the satisfaction of d-Booker and m-Booker respectively and thereafter clarified the differences between these two groups in regard to hotel booking behavior. In addition, it discusses the mediation effect of satisfaction and the moderation effects of perceived value variables. Third, this

chapter also indicates how the findings of this research contribute theoretically and practically.

CHAPTER 6. CONCLUSIONS

6.1 Chapter Introduction

The chapter concludes the current study. This chapter starts with a summary of the entire study. Then, it revisits the results of hypothesis findings. This chapter also revisits the achievements of the research objectives and the contributions of the present research. Lastly, this chapter presents the limitations of this study and provides suggestions for future research.

6.2 Overview of the Study

This study aims to develop a conceptual framework for understanding the factors affecting satisfaction and loyalty of online hotel bookers (d-Booker and m-Booker). The differences in regard to hotel booking behavior between d-Booker and m-Booker were compared and contrasted. The mediating role of customer satisfaction and the moderating role of perceived values were examined.

Chapter One introduces both the industry and the research background of this study. It states the research question and the rational why this research should be conducted. That is, Chapter One sheds light on what relationships we are focusing on, and who should concern with those relationships. With the unprecedented development of IT and wireless, online market has been growing constantly, especially more rapidly in mobile market. To achieve success in the increasingly fierce competitions, it is essential for tourism and hospitality operators to make sense of the preferences of online buyers. Given that the features of mobile technologies, such as localization awareness and

ubiquity, the behaviors of mobile buyer and computer buyer may differ from each other. However, compared to studies focusing on hotel booking through computer website, fewer efforts have been made to investigate mobile hotel booking (Kim et al., 2015). There are limited evidences of the evaluation of mobile App quality and how App quality affects satisfaction and loyalty of m-Booker.

Though the links between perceived quality, perceived value, satisfaction and loyalty have been researched in various studies (Cronin et al, 2000; Lai et al., 2009), there is a lack of widespread agreement on the interrelationships among these factors. Prior research either suggests that perceived quality variables affect customer satisfaction through perceived value, or indicates that perceived quality and perceived value are two direct antecedents of satisfaction (Cronin et al., 2000). Since perceived value is a dynamic construct which varies according to different stages of consuming, the role of perceived value in this study is expected to moderate the relationship between satisfaction and loyalty at post-purchase stage. Moreover, considering the importance of time-saving in mobile tourism, this study incorporated perceived value for time with perceived value for money into analysis. Previous e-Tourism studies mostly investigate value co-creation as a specific variable to determine the outcome variables or the antecedents of it (Mathis et al., 2016; Morosan, 2015). It is argued that value co-creation can be seen as process that suppliers and customers jointly interact with each other without being aware of co-creation (Vargo & Lusch, 2016). To investigate the value co-creation process of online hotel booking, the study also elaborates the reciprocity of the websites/Apps and customers.

Chapter Two provides a comprehensive review of e-Tourism literature. Specifically, this chapter begins with a brief literature review of Information Technologies in hospitality and tourism industry, and then a review of studies in relation to online hotel booking and website evaluation. Important dimensions of website quality in e-Tourism are identified by the review of prior website evaluation research. Functionality performance and usability performance were found as being the most influential factors of customer satisfaction (Bai et al., 2008). Chapter Two also reviews the previous research on mobile tourism (m-Tourism). The adoption of mobile technology in tourism (Kim et al., 2008; Peres et al., 2011), mobile business performance (Salwani et al., 2009), the role of social media in mobile tourism (Hudson & Thal, 2013; Ye et al. 2011) and how mobile business transforms tourism (Wang et al., 2014) are the main streams of the existing studies. Compared to the extensive empirical evidences of the dimensions of website quality (e.g. functionality and usability) in e-Tourism literature, empirical efforts on mobile App quality are limited. Albeit emerging m-Tourism research investigated the affecting factors of mobile buyers' satisfaction and loyalty, m-Tourism research is still at an initial stage and there are much more should be further explored. The chapter also elaborates theoretical foundations of this study, including "quality-satisfaction-loyalty" chain, service dominant logic and value co-creation.

Then Chapter Two reviews what existing research says about the major constructs (functionality, usability, perceived value for money, perceived value for time, satisfaction and loyalty), and their relationships. On the basis of the literature review, the chapter presents how the hypotheses are proposed. Functionality performance and

usability performance as being perceived quality variables are posited to have a positive and direct impact on customer satisfaction. Customer satisfaction is hypothesized to influence loyalty directly and positively, and to mediate the links between perceived quality variables (functionality and usability) and loyalty. Perceived value variables including value for money and for time are posited to have a moderating effect on the relationship between satisfaction and loyalty at post-purchase stage. Furthermore, drawing on the review of prior e-Tourism and m-Tourism research, the perceptions of functionality performance, usability performance, value for money, and value for time when booking through computer website are hypothesized to differ from those of through mobile App.

Chapter Three describes the nature of this study and the research design. This study follows the post-positivism research paradigm, and due to the research objectives of the current research, this study is more of an explanatory study in which exploratory work and descriptive study are included. The chapter explicates the research methods that are adopted to address the research questions for the current study. According to the research objectives of this study, quantitative approach is adopted as the predominant research approach to test the hypotheses. Considering both etic and emic perspectives, qualitative approach is also adopted to review and analyze the previous literature, and to combine opinions from experts for the development of research framework. After a discussion of how the measurements of this study are developed, the chapter presents the process of data collection, including pre-test, pilot test, and the main survey. Academic experts, industry practitioners, and customers with hotel booking experiences

through website or mobile App were invited in pre-test. On the basis of the results from pre-test, the wording and question sequence of questionnaire was improved accordingly. Snowball sampling was adopted for pilot test and with the results of pilot test; the final draft of the questionnaire was prepared for the main survey. Online survey with a convenience sampling design was conducted then to obtain data from most of the regions in China. The chapter goes further to discuss the research methods for data analysis. T-test, SEM, hierarchical regression analysis as being analyzing techniques were introduced at the end of Chapter Three.

Chapter Four presents of the results of this study. The chapter begins with the part of data screening, in which the consistency of the cases, missing data, and the normality of data distribution were examined. Then, this chapter displays the profiles of the main survey respondents, including d-Bookers who have hotel booking experience via computer website and m-Bookers who reserved hotel through mobile App. By conducting independent-samples T-test, the chapter identifies statistically significant differences between d-Booker and m-Booker in regard to satisfaction and loyalty towards hotel booking. D-Bookers were found to give a significantly higher score than m-Bookers in terms of functionality, usability, loyalty and perceived value for money. Before showing the results of the quality of structural model as well as hypotheses testing, Chapter Four displays the assessment of measurement model. The results of CFA, and other reliability and validity tests were shown. Using SEM approach, the model fit of each structural model (computer booking and mobile booking) was confirmed and the results of main effect models were presented. The chapter also

presents the analyses of mediating effect of satisfaction, as well as the moderating effects of perceived values. The results of hierarchical regressions analysis and the simple slope analysis for assessing the moderation effects were displayed as well.

On the basis of Chapter Four, Chapter Five interprets the results of this study. The findings of this research were discussed in this chapter, particularly, how they relate to previous studies. Overall performance of the model is outlined first and then the chapter interprets the findings in line with the research objectives of this study. Chapter Five emphatically discusses the similarities and differences between d-Booker and m-Booker. Collectively, functionality performance and usability performance were found as being the important antecedents of customer satisfaction towards online hotel booking. Satisfaction mediates the relationships between perceived quality variables (functionality and usability) and customer loyalty. D-Bookers and m-Bookers differ in the relative importance of perceived quality variables, namely, functionality and usability. Functionality is more influential in predicting the satisfaction level of m-Booker, whereas usability is of greater importance for d-Booker's satisfaction. Another significant difference is the role of perceived values. Perceived value for money and perceived value for time significantly moderate the relation between satisfaction and loyalty for m-Bookers not for d-Bookers. Chapter Five also elaborate theoretical contributions and practical contributions of this study.

Chapter Six concludes the study. It starts with an overview of the study with summaries of all the chapters. Then Chapter Six outlines the results of hypothesis testing. Following a summary of achievement of research objectives, the study states the

limitations of this research and indicates possible future research directions. The chapter ends with a few concluding remarks.

6.3 Results of Hypothesis Testing

Hypothesis1a proposed that functionality performance has a positive effect on consumer satisfaction. The results indicate that whether for d-Bookers or m-Bookers, functionality performance directly and positively affects customer satisfaction. Thus, Hypothesis1a was supported based on the results. Hypothesis1b suggested that the perception of functionality performance when booking through computer website is different from that of through mobile App. According to the results of independent T-test, significant differences were found between d-Booker and m-Booker in regard to the perception of functionality performance. As such, Hypothesis1b was supported.

Hypothesis 2a proposed that usability performance has a positive effect on consumer satisfaction. It was supported both in the computer booking context and mobile booking context. Similar to Hypothesis 1b, Hypothesis 2b suggested that the perception of usability performance when booking through computer website is different from that of through mobile App. The results of this study also affirm this hypothesis.

Hypothesis 3 posited that customer satisfaction has a positive effect on customer loyalty. Based on the results from both d-Booker data and m-Booker data, this hypothesis was supported as well.

Hypothesis 4 suggested that customer satisfaction mediates the relationship between perceived quality variables and customer loyalty. The mediation effect of

satisfaction on the link of functionality-loyalty, and the link of usability-loyalty was confirmed in both the computer booking context and mobile booking context. As such, Hypothesis 4 was supported.

Hypothesis 5a suggested perceived value for money significantly moderates the relationship between satisfaction and loyalty, while Hypothesis 6a proposed that perceived value for time significantly moderates the relationship between satisfaction and loyalty. These two hypotheses were supported in m-Booker data but not in computer booking context. The findings indicated that perceived value for money and perceived value for time significantly moderate the relationship between m-Booker's satisfaction and loyalty, while the moderating effects of the two perceived value variables were not found for d-Booker.

Hypothesis 5b proposed that the perception of value for money when booking through computer website is different from that of through mobile App. According to the results of independent-samples T-test, significant difference was found between d-Booker and m-Booker in regard to perceived value for money. Thus, Hypothesis 5b was supported.

Hypothesis 6b suggested that the perception of value for time when booking through computer website is different from that of through mobile App. However, based on the results of independent T-test, no difference between d-Booker and m-Booker was found concerning the perception of value for time. As such, Hypothesis 6b was not supported.

6.4 Achievement of Research Objectives

All the research objectives of this study have been addressed on the basis of the findings. The first objective of this study is to investigate the factors affecting customer's choice of using website or mobile Apps to book hotel. The study addressed this objective by identifying functionality and usability as being the influencing factors that directly and positively affect the satisfaction level of hotel online bookers. The findings of this study suggest that functionality performance and usability performance are not only the important antecedents of satisfaction in regard to computer website booking, but also the influential factors in predicting customer's satisfaction toward mobile App. The study also reveals that, just as hotel website quality, mobile App quality positively and profoundly affects the willingness of customers to reserve a hotel room over the phone. By conducting CFA, the reliability and validity of the scales of functionality and usability are confirmed. The results demonstrated that d-Bookers are more concerned with "general design" with reference to usability performance, and "reservation information" and "contact information" regarding functionality performance. Interestingly, for m-Bookers, "user-generated information" is of greater importance with respect to functionality performance of a mobile App, and "general design" is the most concerned attribute of usability performance. Drawing on the results, the first objective of this study has been achieved.

The second objective of this research is to compare and contrast the differences between computer buyers and mobile buyers in terms of hotel reservation. The study achieved this objective by identifying and elaborating the similarities and differences

between d-Bookers and m-Bookers in regard to online hotel booking. Results of independent-samples T-test indicate that m-Bookers' perceptions of functionality, usability and value for money, as well as loyalty, are significantly different from d-Bookers. The findings imply that m-Bookers perceive a better performance with respect to functionality and usability than d-Bookers. Regarding the theoretical relationships among the variables, with results of SEM and hierarchical regression analysis, the study demonstrates that perceived value for money and perceived value for time moderates the link of satisfaction and loyalty in mobile booking context but not in computer booking context. Moreover, the differences in the relative criticalities of functionality and usability between computer booking and mobile booking are identified and illustrated. The findings suggest that m-Bookers are more concerned with functionality performance, while d-Bookers gave higher priority to usability performance. On the basis of the results, the second objective has been achieved.

The third objective is to examine whether satisfaction mediates the relationship between quality factors (usability performance and functionality performance) and customer loyalty. Following Baron and Kenny's (1986) procedures, the study conducted three regression models to test the four conditions of mediation effect, and used Sobel test (1982) to test the significance of the mediation effects. The results show that all the four conditions were met and the Z-scores for the effects of perceived quality variables (functionality and usability) on loyalty through customer satisfaction were significant. Since the links between perceived quality factors (functionality and usability) and loyalty are significantly weaker in the model including satisfaction than in the model

without satisfaction, the results suggest that satisfaction partially mediates the association between perceived quality variables and customer loyalty. As such, the third objective of this study has been achieved.

The fourth objective is to examine if perceived value factors (perceived value for money and perceived value for time) moderate the relationship between satisfaction and loyalty. By using hierarchical regression analyses, the results demonstrated the moderating roles of perceived value for money and perceived value for time in the satisfaction-loyalty relationship, after controlling gender, age, income and education level. However, the moderating effects of perceived value factors were only found in mobile hotel booking context, while no moderating effect was identified in computer booking context. Based on the findings, the fourth objective has been achieved.

6.5 Limitations and Future Research

There are several limitations that should be acknowledged, which suggest directions for future research. First, albeit this study made the efforts to compare and contrast the differences between d-Bookers and m-Bookers, it is two groups that we targeted for investigation: d-Bookers (who used computer website for hotel booking, including those who only used computer website and those who used both computer website and mobile App), and m-Bookers (who used mobile App for hotel booking, including those who only used mobile App and those who used both mobile App and computer website). To further determine the differences in hotel booking preferences, future research may consider comparing among three groups: d-Bookers (who use

computer website only), m-Bookers (who use mobile App only), and online bookers (who use both computer and mobile channels).

Second, only a cross-sectional study was conducted, which may cause the issue of causality as in other cross-sectional research. A longitudinal study that examines a dynamic evolution of the relations (perceived quality variables, satisfaction and loyalty) would be more useful to trace patterns of development. Specifically, how perceived quality variables and perceived value variables affect customer loyalty in long term. Moreover, data were collected online using convenient sampling method. Though the professional survey website (Wenjuanxing, www.sojump.com) used in this study covers almost all the regions in China, the sampling was still limit to geographical structure due to the uneven economic development in the country.

Given the cross-sectional nature of this research, the study may also be associated with a common method variance (CMV), which refers to the variance attributable to the measurement method instead of the constructs of interests (Podsakoff et al., 2003). It is indicated that self-report bias is one of the major sources of common method bias. People tend to maintain consistency in their responses, and search for similarities among the questions in the self-reported survey. As such, a single-factor test recommended by Podsakoff *et al.* (2003) to address the concern of common method bias was conducted, which has been widely used in management literature as well as recent e-Tourism research (Slater et al.,2006; Morosan and DeFranco, 2016). The logic underlying this approach is that if common method bias poses a serious threat, a single latent factor should emerge from a factor analysis (Podsakoff *et al.*, 2003). The results of CFA

revealed that the single-factor model did not fit the date well, while the hypothesized four-factor model showed a better model fit, suggesting CMV is less likely to a serious threat in the current study. In order to control possible common method biases, future study may consider obtaining data from different sources and using different response formats (e.g. Likert scales and open-ended questions).

Furthermore, despite self-reported loyalty was considered as acceptable and has been widely used in previous studies. It is possible for future research to use a more objective measure of customer loyalty such as customer share development or data of service usage, which can provide a more robust assessment. Such kind of measurements based on real behavioral data is likely to be more objective in reflecting hotel booker's loyalty towards a certain online booking channel than traditional self-reported measurement. According to Petrick's (2002) study, perceived value was defined and investigated as five dimensions: behavioral price, monetary price, emotional response, quality, and reputation. The constructs of functionality performance and usability performance (considered as perceived quality variables) were examined in the current study as the antecedents of hotel booker's satisfaction. That is, the dimension of quality in Petrick's (2002) study has been involved in our research framework. Perceived values in this study refer to functional value rather than affective value (Sanchez, 2006), which are similar to the dimensions of monetary price and behavioral price in Petrick's (2002) study. Notably, as for the dimension of reputation asserted by Petrick (2002), though it is not the main objective of this study, it can be considered as an important direction for future research.

6.6 Chapter Summary

The chapter concludes the whole study. It first overviews the study with a summary with each chapter and then it goes through the results of hypothesis testing. The chapter also summarizes how the objectives of this study were achieved. After a discussion of the research limitations, this chapter proposes several suggestions for future research.

Appendix A:

EXPERT PANEL REVIEW

The questions and items in the following will be used for the main survey. Hotel bookers who reserved a hotel room in the past 12 months via computer website or mobile App will be targeted. Please kindly assess the questions and items for content validity. Anything confusing or inappropriate in the questionnaire is welcomed to be pointed out. You are also welcome to recommend other ways of tapping the phenomenon that have been overlooked.

The questionnaire is divided into three parts: (1) questions in regard to hotel bookers' online booking experience; (2) items that measure the perceived quality variables (functionality and usability), perceived value variables (perceived value for money and perceived value for time), satisfaction, and loyalty; (3) and the questions designed to obtain respondents' demographic information. In regard to Part 2, please rate each of the items with respect to its applicability and representativeness of the associated construct.

Please feel free to contact me at (sinuo.wu@) should you have any questions.

Thank you for your time.

Jialin (Snow) Wu

Part 1:

1. Please specify your region of residence:_____province/municipality/autonomous region

2. Have you ever booked a hotel room in the past 12 months via computer or mobile devices (smartphone or tablet)?

□Yes (continue) □No (terminate interview)

3. Have you ever booked a hotel room via computer in the past 12 months?
□Yes □No

4. Have you ever booked a hotel room via mobile devices in the past 12 months?

□Yes □No

5. Based on your previous hotel booking experiences, which hotel booking website or mobile application (App) you use more often?

Please specify_____ (If you use both channels, please specify the both)

Comments in relation to the above questions:

Part 2:

1. ***Customer satisfaction*** towards online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
Overall, I am satisfied with the mobile App/computer website.	1	2	3	4	5	
Overall, I am satisfied with my experience on the mobile App/computer website.	1	2	3	4	5	
The content of the hotel products in the App /computer website met my needs.	1	2	3	4	5	
I am satisfied with my decision in booking hotel through the mobile App/computer website.	1	2	3	4	5	

2. ***Customer loyalty*** towards online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
My preference for this mobile App/computer website would not willingly change.	1	2	3	4	5	
It would be difficult to change my beliefs about this mobile App/computer website.	1	2	3	4	5	
Even if close friends recommended another mobile App/computer website, my preference for this App would not change.	1	2	3	4	5	
I will buy from this mobile App/computer website the next time I book hotel room.	1	2	3	4	5	
I intend to keep using this mobile App/computer website for booking hotel.	1	2	3	4	5	

3. ***Functionality performance*** of online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
The purchase information in the mobile App/computer website	1	2	3	4	5	
The products information in the mobile App/computer website	1	2	3	4	5	
The quality of information of the mobile App/computer website	1	2	3	4	5	
The contact information in the mobile App/computer website	1	2	3	4	5	

4. ***Usability performance*** of online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
The language of the mobile App/computer website	1	2	3	4	5	
The layout and graphics of the mobile App/computer website	1	2	3	4	5	
The information architecture of the mobile App/computer website	1	2	3	4	5	
The user interface and navigation of the mobile App/computer website	1	2	3	4	5	
The general of the mobile App/computer website	1	2	3	4	5	

5. ***Perceived value for money*** of online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
The product in the mobile App/computer website is good value for money.	1	2	3	4	5	
Price charges in the mobile App/computer website are acceptable.	1	2	3	4	5	
The booking through the mobile App/computer website is considered to be a good buy.	1	2	3	4	5	

6. ***Perceived value for time*** of online channels

1 = Totally inapplicable, 2= Somewhat inapplicable, 3=Neutral, 4=Somewhat applicable, 5=Totally applicable

Items	Applicability					Comments
The time spent in making this purchase from the mobile App/computer website is less than other ways.	1	2	3	4	5	
Booking hotel rooms from the mobile App/computer website is a time-saving transaction.	1	2	3	4	5	
By booking hotel rooms from the mobile App/computer website, I can save more time than I could by using other shopping options.	1	2	3	4	5	
Booking hotel rooms from the mobile App/computer website is the right choice if saving time is considered.	1	2	3	4	5	

Part 3:

V1 Gender [1] Male [2] Female

V2 Age [1] 16–25 [2] 26–35 [3] 36–45 [4] 46–55 [5] 56–65 [6] 66 or above

V3 Education

[1] Primary school or below [2] Secondary/high school [3] College/university

[4] Postgraduate or above

V4 Your family monthly income per capita:
[1] RMB 1,000 or less [2] RMB 1,001-5,000 [3] RMB 5,001-10,000
[4] RMB 10,001-15,000 [5] More than RMB 15000

Comments in relation to the above questions:

Appendix B:

THE QUESTIONNAIRE FOR MAIN SURVEY

A Study of Online Hotel Booking

Dear participant:

I would like invite you to participate in a survey for my PhD study. The purpose of this study is to examine the affecting factors when consumers make hotel reservation online. This survey asks about your experience of hotel booking through website or mobile applications (Apps). The survey should take less than 15 minutes to complete.

Your participation is completely voluntary, but I hope you would help me. Please note that your responses will remain confidential.

Please feel free to contact me at (sinuo.wu@) should you have any questions.

Thank you for your time.

Sincerely,

Jialin (Snow) Wu

PhD student

1. Please specify your region of residence:_____province/municipality/autonomous region

2. Have you ever booked a hotel room in the past 12 months via computer or mobile devices (smartphone or tablet)?

□Yes (continue) □No (terminate interview)

3. Have you ever booked a hotel room via computer in the past 12 months?

□Yes □No (terminate interview)

If yes, please specify the website you use most often for hotel booking_____

4. Have you ever booked a hotel room via mobile devices in the past 12 months?

□Yes □No

If yes, please specify the mobile Application (App) you use most often for hotel booking_____

If you choose yes for both Q3 and Q4, please answer the following question:

5. The mobile App and the computer website I used most often for hotel booking are from the same brand (e.g. both are Ctrip)

□Yes □No

Section 1 Please indicate the extent of your agreement with the following statements about your **experience of hotel booking via the above website.**

7 = Strongly agree, 6 = Agree, 5 = Somewhat agree, 4 = Neutral, 3 = Somewhat disagree, 2 = Disagree, 1 =Strongly disagree

1.	Overall, I am satisfied with the website.	7	6	5	4	3	2	1
2.	Overall, I am satisfied with my experience on the website.	7	6	5	4	3	2	1
3.	The content of the hotel products on the website met my needs.	7	6	5	4	3	2	1

Section 2 Please indicate the extent of your agreement with the following statements about your **experience of hotel booking via the above website**.

7 = Strongly agree, 6 = Agree, 5 = Somewhat agree, 4 = Neutral, 3 = Somewhat disagree, 2 = Disagree, 1 =Strongly disagree

4. My preference for this website would not willingly change.	7	6	5	4	3	2	1
5. It would be difficult to change my beliefs about this website.	7	6	5	4	3	2	1
6. Even if close friends recommended another website, my preference for this website would not change.	7	6	5	4	3	2	1
7. I will buy from this website the next time I book hotel room.	7	6	5	4	3	2	1
8. I intend to keep using this website for booking hotel.	7	6	5	4	3	2	1

Section 3 Please express your perceived quality of **the above website according to your experience of hotel booking online**.

7 = Very good, 6 = good, 5 = Somewhat good, 4 = Neutral, 3 = Somewhat not good, 2 = Not good, 1 = Not good at all

9. The reservation information on the website	7	6	5	4	3	2	1
10. The products information on the website	7	6	5	4	3	2	1
11. The user-generated information on the website	7	6	5	4	3	2	1
12. The surrounding area information on the website	7	6	5	4	3	2	1
13. The contact information on the website	7	6	5	4	3	2	1

Section 4 Please express your perceived quality of **the above website according to your experience of hotel booking online**.

7 = Very good, 6 = good, 5 = Somewhat good, 4 = Neutral, 3 = Somewhat not good, 2 = Not good, 1 = Not good at all

14. The language of the website	7	6	5	4	3	2	1
15. The layout and graphics of the website	7	6	5	4	3	2	1
16. The information architecture of the website	7	6	5	4	3	2	1
17. The user interface and navigation of the website	7	6	5	4	3	2	1
18. The general of the website	7	6	5	4	3	2	1

Section 5 After making hotel booking through the above website, please indicate the extent of your agreement with the following statements about your **experience.**

7 = Strongly agree 6 = Agree 5 = Somewhat agree 4 = Neutral 3 = Somewhat disagree 2 = Disagree 1 =Strongly disagree

19. The product on the website is good value for money.	7	6	5	4	3	2	1

20. Price charges on the website are acceptable.	7	6	5	4	3	2	1
21. The booking through the website is considered to be a good buy.	7	6	5	4	3	2	1

Section 6 After making hotel booking through the above website, please indicate the extent of your agreement with the following statements about your **experience.**

7 = Strongly agree 6 = Agree 5 = Somewhat agree 4 = Neutral 3 = Somewhat disagree 2 = Disagree 1 =Strongly disagree

22. The time spent in making this purchase from the website is less than other ways.	7	6	5	4	3	2	1
23. Booking hotel rooms from the website is a time-saving transaction.	7	6	5	4	3	2	1
24. By booking hotel rooms from the website, I can save more time than I could by using other shopping options.	7	6	5	4	3	2	1
25. Booking hotel rooms from the website is the right choice if saving time is considered.	7	6	5	4	3	2	1

PERSONAL INFORMATION

Please indicate your social demographic information by ticking (✓) ONLY ONE item in each category.

V1 Gender [1] Male [2] Female

V2 Age [1] 16–25 [2] 26–35 [3] 36–45 [4] 46–55 [5] 56–65 [6] 66 or above

V3 Education

[1] Primary school or below [2] Secondary/high school [3] College/university

[4] Postgraduate or above

V4 Your family monthly income per capita:

[1] RMB 1,000 or less [2] RMB 1,001-5,000 [3] RMB 5,001-10,000

[4] RMB 10,001-15,000 [5] More than RMB 15000

Thank you for your cooperation.

Chinese version of the questionnaire for d-Bookers

酒店网络预订调查

尊敬的女士/先生：

您好！香港理工大学-中山大学联合培养博士生吴佳琳在此诚邀您参与本次调查研究。本调查主要围绕互联网时代下酒店预订的相关问题，您的参与将为研究带来很大的帮助！

调查所用时间不会超过 15 分钟，同时我们保证您的回答只用于学术研究，不会用于任何商业目的并将被严格保密。如有任何疑问，请随时和本人联系，邮箱：sinuo.wu@ 。

感谢您的支持！

吴佳琳

香港理工大学酒店与旅游管理学院

1. 您来自_____省/直辖市/自治区

2. 在刚刚过去的 12 个月内， 您通过电脑或者移动设备（手机或者移动平板电脑）预定过酒店吗？

□ 是(继续)　　□ 否(调查结束)

3. 在刚刚过去的 12 个月内， 您通过电脑网站预定过酒店吗？

□ 是　　□ 否（调查结束）

如回答是，请列出您最经常使用的网站（酒店预订）_____

4. 在刚刚过去的 12 个月内，您通过移动设备（手机或者移动平板电脑）预定过酒店吗？

□ 是　　□ 否

如回答是，请列出您最经常使用的 App（酒店预订）_____

如 3、4 题都回答是，请回答下题：

5. 我用手机订酒店的 App 和用电脑订酒店的网站是同一个平台（如都是携程）

□ 是　　□ 否

第一部分：请根据您在您经常使用的电脑网站预订酒店的经历，对于下列每个选项表明您的同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

1. 总体而言，我对这个酒店预订网站感到满意。	7	6	5	4	3	2	1
2. 总体而言，我通过这个网站预订酒店的经历是满意的。	7	6	5	4	3	2	1
3. 此网站中有关酒店的内容满足我的需求。	7	6	5	4	3	2	1

第二部分：请根据您在您经常使用的电脑网站预订酒店的经历，对于下列每个选项表明您的同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

4. 我不会主动改变使用该网站预订酒店的偏好。	7	6	5	4	3	2	1
5. 我不会轻易改变对该网站的看法。	7	6	5	4	3	2	1
6. 即使好友推荐别的网站, 我仍然会使用该网站预订酒店。	7	6	5	4	3	2	1
7. 下次预订酒店我仍然会选择该网站。	7	6	5	4	3	2	1
8. 我会继续使用该网站预订酒店。	7	6	5	4	3	2	1

第三部分：请根据您在您经常使用的电脑网站预订酒店的经历，对以下方面进行评价。

7= 非常好，6= 好，5=有些好，4= 中立，3= 有些不好，2= 不好，1= 非常不好

9. 网站中有关酒店的预订信息（如酒店价格、是否满房等）	7	6	5	4	3	2	1
10. 网站中有关酒店设施服务的信息（如有否健身房，房间提供什么等）	7	6	5	4	3	2	1
11. 网站中其他顾客的酒店评论信息	7	6	5	4	3	2	1
12. 网站中有关酒店周边环境的信息（如酒店位置，周边交通等）	7	6	5	4	3	2	1
13. 网站中有关酒店的联系信息	7	6	5	4	3	2	1

第四部分：请根据您在您经常使用的电脑网站预订酒店的经历，对以下方面进行评价。

7= 非常好，6= 好，5=有些好，4= 中立，3= 有些不好，2= 不好，1= 非常不好

14. 网站的语言表述	7	6	5	4	3	2	1
15. 网站的版面和图表	7	6	5	4	3	2	1
16. 网站的信息结构	7	6	5	4	3	2	1
17. 网站 的用户界面和导航	7	6	5	4	3	2	1
18. 网站的整体功能	7	6	5	4	3	2	1

第五部分：通过在您经常使用的电脑网站预订酒店后，请根据您的使用经历对于下列选项勾选同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

19. 通过该网站预订酒店性价比高	7	6	5	4	3	2	1
20. 通过该网站预订酒店价格可以接受	7	6	5	4	3	2	1
21. 通过该网站预订酒店是划算的	7	6	5	4	3	2	1

第六部分：通过您经常使用的电脑网站预订酒店后，请根据您的使用经历对于下列选项勾选同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

22. 通过该网站预订酒店花的时间比通过其他方式花的时间少	7	6	5	4	3	2	1
23. 通过该网站预订酒店是一个节省时间的交易	7	6	5	4	3	2	1
24. 用该网站预订酒店比我用其他渠道预订酒店更节省时间	7	6	5	4	3	2	1
25. 如果考虑时间因素的话，通过该网站预订酒店是一个正确的选择	7	6	5	4	3	2	1

个人信息

最后，我们想通过了解一些基本情况结束本次调查：

V1　　性别　　[1] 男　　[2] 女

V2　　年龄　　[1] 16–25　[2] 26–35　[3] 36–45　[4] 46–55　[5] 56–65　[6] 66 或以上

V3　　教育程度

[1] 小学教育或以下　　[2] 初/高中教育　[3] 专科院校或大学　[4] 研究生学历或以上

V4 您的人均家庭月收入为:

[1] 1,000元或以下　　[2] 1,001-5,000元　　[3] 5,001-10,000元

[4] 10,001-15,000元　　[5] 15,000元以上

再次感谢您的支持！

Appendix C:

THE QUESTIONNAIRE FOR MAIN SURVEY

A Study of Mobile Hotel Booking

Dear participant:

I would like invite you to participate in a survey for my PhD study. The purpose of this study is to examine the affecting factors when consumers make hotel reservation online. This survey asks about your experience of hotel booking through mobile applications (Apps). The survey should take less than 15 minutes to complete.

Your participation is completely voluntary, but I hope you would help me. Please note that your responses will remain confidential.

Please feel free to contact me at (1490 @) should you have any questions.

Thank you for your time.

Sincerely,

Jialin (Snow) Wu
PhD student

1. Please specify your region of residence:_____province/municipality/autonomous region

2. Have you ever booked a hotel room in the past 12 months via computer or mobile devices (smartphone or tablet)?

□Yes (continue) □No (terminate interview)

3. Have you ever booked a hotel room via computer in the past 12 months?

□Yes □No
If yes, please specify the website you use most often for hotel booking_____

4. Have you ever booked a hotel room via mobile devices in the past 12 months?

□Yes □No (terminate interview)
If yes, please specify the mobile Application (App) you use most often for hotel booking_____

If you choose yes for both Q3 and Q4, please answer the following question:
5. The mobile App and the computer website I used most often for hotel booking are from the same brand (e.g. both are Ctrip)
□Yes □No

Section 1 Please indicate the extent of your agreement with the following statements about your **experience of hotel booking via the above App.**

7 = Strongly agree, 6 = Agree, 5 = Somewhat agree, 4 = Neutral, 3 = Somewhat disagree, 2 = Disagree, 1 =Strongly disagree

1.	Overall, I am satisfied with the mobile App.	7	6	5	4	3	2	1
2.	Overall, I am satisfied with my experience on the mobile App.	7	6	5	4	3	2	1
3.	The content of the hotel products in the App met my needs.	7	6	5	4	3	2	1

Section 2 Please indicate the extent of your agreement with the following statements about your **experience of hotel booking via the above App**.

7 = Strongly agree, 6 = Agree, 5 = Somewhat agree, 4 = Neutral, 3 = Somewhat disagree, 2 = Disagree, 1 =Strongly disagree

4. My preference for this mobile App would not willingly change.	7	6	5	4	3	2	1
5. It would be difficult to change my beliefs about this mobile App.	7	6	5	4	3	2	1
6. Even if close friends recommended another mobile App, my preference for this App would not change.	7	6	5	4	3	2	1
7. I will buy from this mobile App the next time I book hotel room.	7	6	5	4	3	2	1
8. I intend to keep using this mobile App for booking hotel.	7	6	5	4	3	2	1

Section 3 Please express your perceived quality of **the above App according to your experience of hotel booking online**.

7 = Very good, 6 = good, 5 = Somewhat good, 4 = Neutral, 3 = Somewhat not good, 2 = Not good, 1 = Not good at

all

9. The reservation information in the mobile App	7	6	5	4	3	2	1
10. The products information in the mobile App	7	6	5	4	3	2	1
11. The user-generated information in the mobile App	7	6	5	4	3	2	1
12. The surrounding area information in the mobile App	7	6	5	4	3	2	1
13. The contact information in the mobile App	7	6	5	4	3	2	1

Section 4 Please express your perceived quality of **the above App according to your experience of hotel booking online**.

7 = Very good, 6 = good, 5 = Somewhat good, 4 = Neutral, 3 = Somewhat not good, 2 = Not good, 1 = Not good at all

14. The language of the mobile App	7	6	5	4	3	2	1
15. The layout and graphics of the mobile App	7	6	5	4	3	2	1
16. The information architecture of the mobile App	7	6	5	4	3	2	1
17. The user interface and navigation of the mobile App	7	6	5	4	3	2	1
18. The general of the mobile App	7	6	5	4	3	2	1

Section 5 After making hotel booking through the above App, please indicate the extent of your agreement with the following statements about your **experience.**

7 = Strongly agree 6 = Agree 5 = Somewhat agree 4 = Neutral 3 = Somewhat disagree 2 = Disagree 1 =Strongly disagree

19. The product in the mobile App is good value for money.	7	6	5	4	3	2	1
20. Price charges in the mobile App are acceptable.	7	6	5	4	3	2	1
21. The booking through the mobile App is considered to be a good buy.	7	6	5	4	3	2	1

Section 6 After making hotel booking through the above website/App, please indicate the extent of your agreement with the following statements about your **experience.**

7 = Strongly agree 6 = Agree 5 = Somewhat agree 4 = Neutral 3 = Somewhat disagree 2 = Disagree 1 =Strongly disagree

22. The time spent in making this purchase from the mobile App is less than other ways.	7	6	5	4	3	2	1
23. Booking hotel rooms from the mobile App is a time-saving transaction.	7	6	5	4	3	2	1
24. By booking hotel rooms from the mobile App, I can save more time than I could by using other shopping options.	7	6	5	4	3	2	1
25. Booking hotel rooms from the mobile App is the right choice if saving time is considered.	7	6	5	4	3	2	1

PERSONAL INFORMATION

Please indicate your social demographic information by ticking (✓) ONLY ONE item in each category.

V1 Gender [1] Male [2] Female

V2 Age [1] 16–25 [2] 26–35 [3] 36–45 [4] 46–55 [5] 56–65 [6] 66 or above

V3 Education

[1] Primary school or below [2] Secondary/high school [3] College/university [4] Postgraduate or above

V4 Your family monthly income per capita:
[1] RMB 1,000 or less [2] RMB 1,001-5,000 [3] RMB 5,001-10,000
[4] RMB 10,001-15,000 [5] More than RMB 15000

Thank you for your cooperation.

The top 10 hot Apps for hotel booking in Mainland China Apple Store

1		携程 Ctrip
2		去哪 Qunar
3		同程 Tongcheng
4		途牛 Tuniu
5		去啊 Qua
6		驴妈妈 Lvmama
7		淘在路上 Taozailushang
8		旅游攻略 Mafengwo
9		艺龙旅行 Elong
10		要出发　Yaochufa

Chinese version of the questionnaire for m-Bookers

移动互联网酒店预订调查

尊敬的女士/先生：

您好！香港理工大学-中山大学联合培养博士生吴佳琳在此诚邀您参与本次调查研究。本调查主要围绕移动互联网时代下酒店预订的相关问题，您的参与将为研究带来很大的帮助！

调查所用时间不会超过 15 分钟，同时我们保证您的回答只用于学术研究，不会用于任何商业目的并将被严格保密。如有任何疑问，请随时和本人联系，邮箱：sinuo.wu@ 。

感谢您的支持！

吴佳琳

香港理工大学酒店与旅游管理学院

1. 您来自_____省/直辖市/自治区

2. 在刚刚过去的 12 个月内， 您通过电脑或者移动设备（手机或者移动平板电脑）预定过酒店吗？

□ 是(继续)　　□ 否(调查结束)

3. 在刚刚过去的 12 个月内， 您通过电脑网站预定过酒店吗？

□ 是　　□ 否

如回答是，请列出您最经常使用的网站（酒店预订）_____

4. 在刚刚过去的 12 个月内，您通过移动设备（手机或者移动平板电脑）预定过酒店吗？

□ 是　　□ 否（调查结束）

如回答是，请列出您最经常使用的 App（酒店预订）_____

如 3、4 题都回答是，请回答下题：

5. 我用手机订酒店的 App 和用电脑订酒店的网站是同一个平台（如都是携程）

□ 是　　□ 否

第一部分：请根据您在您经常使用的手机 App 预订酒店的经历，对于下列每个选项表明您的同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

1. 总体而言，我对这个酒店预订 App 感到满意。	7	6	5	4	3	2	1
2. 总体而言，我通过这个 App 预订酒店的经历是满意的。	7	6	5	4	3	2	1
3. 此 App 中有关酒店的内容满足我的需求。	7	6	5	4	3	2	1

第二部分：请根据您在您经常使用的手机 App 预订酒店的经历，对于下列每个选项表明您的同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

4. 我不会主动改变使用该 App 预订酒店的偏好。	7	6	5	4	3	2	1
5. 我不会轻易改变对该 App 的看法。	7	6	5	4	3	2	1
6. 即使好友推荐别的 App, 我仍然会使用该 App 预订酒店。	7	6	5	4	3	2	1
7. 下次预订酒店我仍然会选择该 App。	7	6	5	4	3	2	1

8. 我会继续使用该 App 预订酒店。	7	6	5	4	3	2	1

第三部分：请根据您在您经常使用的手机 App 预订酒店的经历，对以下方面进行评价。

7= 非常好，6= 好，5=有些好，4= 中立，3= 有些不好，2= 不好，1= 非常不好

9. App 中有关酒店的预订信息（如酒店价格、是否满房等）	7	6	5	4	3	2	1
10. App 中有关酒店设施服务的信息（如有否健身房，房间提供什么等）	7	6	5	4	3	2	1
11. App 中其他顾客的酒店评论信息	7	6	5	4	3	2	1
12. App 中有关酒店周边环境的信息（如酒店位置，周边交通等）	7	6	5	4	3	2	1
13. App 中有关酒店的联系信息	7	6	5	4	3	2	1

第四部分：请根据您在您经常使用的手机 App 预订酒店的经历，对以下方面进行评价。

7= 非常好，6= 好，5=有些好，4= 中立，3= 有些不好，2= 不好，1= 非常不好

14. App 的语言表述	7	6	5	4	3	2	1
15. App 的版面和图表	7	6	5	4	3	2	1
16. App 的信息结构	7	6	5	4	3	2	1
17. App 的用户界面和导航	7	6	5	4	3	2	1
18. App 的整体功能	7	6	5	4	3	2	1

第五部分：通过在您经常使用的手机 App 预订酒店后，请根据您的使用经历对于下列选项勾选同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

19. 通过该 App 预订酒店性价比高	7	6	5	4	3	2	1
20. 通过该 App 预订酒店价格可以接受	7	6	5	4	3	2	1
21. 通过该 App 预订酒店是划算的	7	6	5	4	3	2	1

第六部分：通过您经常使用的网站/手机应用预订酒店后，请根据您的使用经历对于下列选项勾选同意程度。

7= 非常同意, 6= 同意，5=有些同意，4= 中立，3= 有些不同意，2= 不同意，1= 非常不同意

22. 通过该 App 预订酒店花的时间比通过其他方式花的时间少	7	6	5	4	3	2	1
23. 通过该 App 预订酒店是一个节省时间的交易	7	6	5	4	3	2	1
24. 用该 App 预订酒店比我用其他渠道预订酒店更节省时间	7	6	5	4	3	2	1
25. 如果考虑时间因素的话，通过该 App 预订酒店是一个正确的选择	7	6	5	4	3	2	1

个人信息

最后，我们想通过了解一些基本情况结束本次调查：

V1　　性别　　[1] 男　　[2] 女

V2　　年龄　　[1] 16–25　[2] 26–35　[3] 36–45　[4] 46–55　[5] 56–65　[6] 66 或以上

V3　　教育程度

[1] 小学教育或以下　　[2] 初/高中教育　[3] 专科院校或大学　[4] 研究生学历或以上

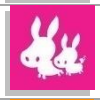
V4 您的人均家庭月收入为:

[1] 1,000元或以下　　[2] 1,001-5,000元　　[3] 5,001-10,000元

[4] 10,001-15,000元　　[5] 15,000元以上

再次感谢您的支持！

中国大陆地区苹果应用商店下载量排名前十的酒店预订 App（供参考）

1		携程
2		去哪
3		同程
4		途牛
5		去啊
6		驴妈妈
7		淘在路上
8		旅游攻略
9		艺龙旅行
10		要出发

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