

Summer 6-26-2019

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Recommended Citation

Ma, Jinlu; Bian, Xiukun; Chen, Jiahe; and Chang, YuWei, "An Empirical Study of Hotel Online Booking in O to O Commerce" (2019). *WHICEB 2019 Proceedings*. 84.

<https://aisel.aisnet.org/whiceb2019/84>

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An Empirical Study of Hotel Online Booking in O to O Commerce

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Abstract: Many studies have postulated the reasons for the development of the O2O business though the research of the customers' behavioral intention is relatively unexplored. This study selects the travel industry as the research context to investigate online-offline integration between hotels and online travel agencies (OTAs). To investigate customers' behavioral intention, this study establishes an integrated model of information systems success model and customer loyalty. The research focuses on whether customer loyalty (e.g., satisfaction and trust) can increase the booking intention, and the factors of increasing satisfaction and trust. According to the analyzed results, satisfaction directly influences customers' booking intention while trust directly and indirectly influences customer booking intention through satisfaction. For antecedents, system quality and service quality have a significant impact on satisfaction, while brand image and size have a significant impact on trust. These findings have implications for OTAs to attract customers to book hotels through their websites.

Keywords: O2O Commerce; Online Travel Agency; Hotel Booking; Information Systems Success Model

1. INTRODUCTION

In recent years, online to offline (O2O) business mode has received more attention in research and practice. Online marketing and purchase effectively drive customers' offline consumption. O2O commerce has widely applied to various daily life services, such as travel, catering, house leasing, car rental, and many others. According to the iResearch report (2017), the number of Internet users booking airline tickets, hotels and train tickets had reached 348 million in China. A comparison with the year 2016 shows that the increase was 48.47 million, with a growth rate of 16.2%. Among them, the transaction volume of the accommodation market was appropriately 170 billion Yuan, accounting for 20.5% of all transactions.

In the travel industry, customers like online travel agency (OTA) due to its advantages. These advantages include speed, convenience, and so on. The hotels provide their information to enrich the OTA websites. OTA websites offer booking features, price comparisons, and review comments for customers. Booking online, as the starting link for the hotel O2O mode, is also the most important link that directly influences customers to visit hotels.

To address the issues outlined and fill the gaps in previous researches, this study integrated the information systems success model and customer loyalty to develop a new research model and hypothesized relationships. This study aimed to deal with the following research questions: (1) Does customer loyalty (e.g., satisfaction and trust) affect customer booking intent? (2) Which factors influence satisfaction and trust? The answers to these questions not only have important research implications but also can clarify the impact of the factors on OTA websites.

2. LITERATURE REVIEW

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2.1 O2O commerce

Recently, O2O (online to offline) has been a mainstream commerce mode in e-commerce. O2O commerce has been widely applied in many service industries, such as tourism, catering, house leasing, and car rental among others. In previous studies, several researchers have investigated the factors that affect the adoption of the O2O business model. For example, Du & Tang (2014) emphasized the problems of offline service quality and provided some suggestions for O2O's healthy development in China. The results showed that offline service quality was required to be high in O2O mode^[1]. For different e-commerce environments, Shen & Wang (2014) found that larger size, local entry costs, recommendation rankings, discount, and policies could help O2O companies get more revenue^[2]. In addition, some studies analyzed the O2O mode using its future development trends and existing problems based on actual cases^{[3]-[5]}.

The above literature only studied the issue of the single channel. However, few studies involved multichannel integration such as cooperation between OTAs and hotels. In addition, many studies confirmed that intentions would determine behavior. A pending question is: "what factors would affect intentions?" Thus, in this study, we focus on the O2O mode of OTAs-hotels and investigate the factors influencing the booking intention.

2.2 Online Travel Agency

The development of information technology has brought several changes to the traditional tourism industry. In order to satisfy the requirements of tourists for convenience, OTA (Online Travel Agency) was established. The ensuing question is how the members of the industry improve their performance through OTA, then complete the transformation of the enterprises.

Several studies have investigated factors that can increase OTA use. For instance, Ye et al. (2011) analyzed the user reviewing practices on Ctrip.com. Their findings are that the valence of traveler reviews had a significant impact on the online sales of hotel rooms^[6]. In addition, Merce et al. (2012) found evidence that the chain from e-quality→perceived value→loyalty was significant in the context of tourism e-commerce^[7]. Looking at a different culture, Carmen et al. (2014) compared the perceptions of Spanish and British tourists in the formation of the overall perceived value of the purchase decision-making process for a hotel stay. The results showed that the "uncertainty-avoidance" and "individualism/collectivism" dimensions moderated the relationship between the antecedents of overall perceived value^[8].

What is clear is that these papers studied the actual behavior of users. However, they did not involve their intention to use. Therefore, this study focused on the intention of users to book hotels through OTAs and investigated the influencing factors.

3. RESEARCH HYPOTHESIS AND MODEL

Customer satisfaction with OTAs in this study is defined as customers' emotional feelings for previous use of OTA. The booking intention through OTAs refers to the users' willingness to use OTAs to book a hotel. Satisfaction is an important factor in information system use. Prior researchers found that high customer satisfaction affected customer loyalty in a positive manner^[9]. As mentioned above, satisfaction plays an important role in the brand's long-term viability. The booking intention through OTAs is considered a conscious loyalty in customer loyalty. We expect that a high level of satisfaction with OTAs influences users' intention to use OTA. Thus, we hypothesize:

H1: Satisfaction is positively associated with the booking intention.

A definition of trust is that it is the expectation of the trustor to the behavior and motivation of the trustee^[10]. Customer trust in this study refers to customers' expectations of OTAs motivation and behavior. Trust is vital to

the success of e-commerce and is an important factor in building and maintaining relationships^[8]. Schurr & Ozanne (1985) found that trust affected customer behavior^[11]. When customer trust in Internet stores is closely related to customer attitudes, customer trust in OTAs may make them more willing to book hotels through OTAs.

In addition, a lot of literature has proposed the relationship between trust and satisfaction. In the field of instant messaging, customer trust in service providers can increase their satisfaction^[12]. In this study, we postulate that customer trust in OTAs will improve customer satisfaction with OTAs.

Other hypotheses postulated by this study include:

H2: Trust is positively associated with the booking intention.

H3: Trust is positively associated with satisfaction.

One way of successfully assessing customer satisfaction is through constructs of IS success model, such as information quality and system quality. System quality and information quality are the two main determinants of information system usage and user satisfaction. These two directly affect individuals, and in turn, have a positive impact on net income.

Information quality in this study refers to the characteristics of the OTA output. Previous researchers found that higher information quality made customers more satisfied^{[13][14]}. As the direct recipient of information quality, higher quality of OTAs information is also considered more satisfactory to users.

System quality in this study refers to the characteristics of the OTAs. In previous studies, system quality was used to measure the functional characteristics of ERP systems, such as system reliability, response time, flexibility, integration, and accessibility, which users value^[13]. In ERP systems, the quality of the system is positively associated with the quality of customer satisfaction^[14]. As mentioned above, we assume that the higher the quality of the OTAs system, the easier it is to satisfy customers when using OTAs.

Service quality in this study refers to the quality of the service or support that the OTA website provides. The service quality includes three dimensions: assurance, empathy, and responsiveness. The quality of OTAs services will directly affect customer attitude towards OTAs. Several studies on e-commerce support the relationships between the three qualities and satisfaction^{[15][16]}. This study assumes that information quality, system quality, and service quality are determinants of customer satisfaction with OTAs. We hypothesize:

H4: Information quality is positively associated with satisfaction.

H5: System quality is positively associated with satisfaction.

H6: Service quality is positively associated with satisfaction.

Brand image is defined as the degree to which a customer believes that a company is honest and cares about its customers^[17]. In this study, we define the OTAs brand image as the degree to which customers believe that OTAs are honest and concerned about their customers. Under normal circumstances, customers are more likely to trust a company with a good brand image. In the field of industrial supply, the seller's brand image is associated with a buyer's trust in a positive manner^[18]. Therefore, we propose the following hypothesis:

H7: Brand image is positively associated with trust.

In this study, the size of OTAs refers to customers' perception of the overall size of the OTAs and its market share. The size of the website and company also reflects the ability and reliability of risk control. In the traditional marketing channel, customers regard the size of the company as a signal that the company can be trusted. We assume that the larger the size, the more trustworthy the OTA is. Some studies have shown that size and trust are positively correlated. Thus, we propose the hypothesis:

H8: Size is positively associated with trust.

The research model of this study is shown in Figure 3.1.

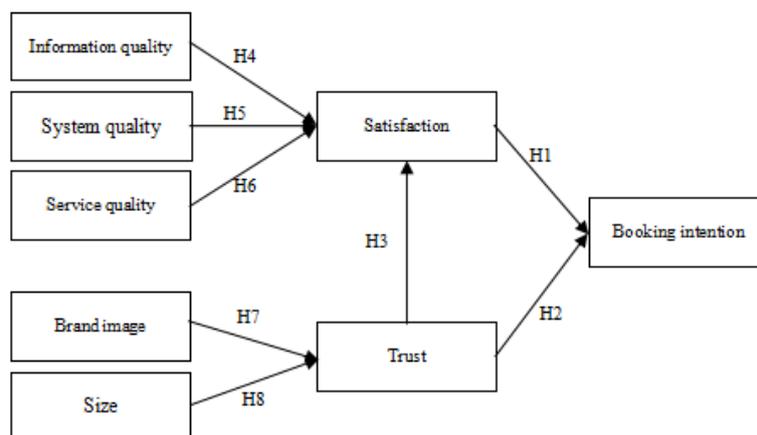


Figure 3.1. Research model

4. RESEARCH METHODOLOGY

4.1 Instrument development

In this study, items for the constructs are primarily adapted from prior studies to ensure content validity. System quality, information quality, and service quality are from the research of DeLone and McLean (1992); satisfaction and booking intention are from the research of Bhattacharjee (2001); trust, brand image, and size are from the research of Jarvenpaa et al (2000). The 7-point Likert scale is used for all items in this study, ranging from “strongly disagree”(1) to “strongly agree”(7). Table 4.1 shows the definitions of eight constructs.

Table 4.1. Definitions of constructs

Construct	Operational definition	Source
Information quality	The characteristics of the OTAs output.	DeLone and McLean (1992)
System quality	The characteristics of OTAs.	DeLone and McLean (1992)
Service quality	The quality of services or support from the OTAs website.	DeLone and McLean (1992)
Brand image	Customers believe that OTAs are honest and care about their customers.	Jarvenpaa et al. (2000)
Size	Customers' perception of the overall size of OTAs and their market share.	Jarvenpaa et al. (2000)
Satisfaction	Customers' feelings about previous use of OTAs.	Bhattacharjee (2001)
Trust	Customers' expectations to OTAs motivation and behavior.	Jarvenpaa et al. (2000)
Booking intention	The strength of a user's willingness to use OTAs to book a hotel.	Bhattacharjee (2001)

4.2 Data collection

The research samples consist of the customers from ten hotels in four well-known chains, including Homeinns, 7daysinn, Motel168, and Podinns. The OTA website investigated in this study is Ctrip.com. We distributed 800 questionnaires to customers who booked hotels through the Ctrip website and collected 309 questionnaires with a response rate of 38.6%. Among the respondents, 65.4% are male, 52.4% are 26 to 35 years old, 75.4 % have a bachelor's degree, and 30.7 % of the respondents have incomes between 3001-4500 Yuan per month.

5. RESULTS

5.1 Measurement model

This study evaluates the measurement model by convergent validity and discriminant validity. Item reliability, composite reliability (CR) and average variance extracted (AVE) measure convergent validity. As shown in Table 5.1, the factor loading for each item is higher than the acceptable standard of 0.5. Therefore, item reliability is acceptable.

Cronbach's α is used to evaluate the reliability of constructs. As shown in Table 5.1, Cronbach's α for all constructs ranges from 0.92 to 0.95, exceeding the recommended level of 0.7. AVE for constructs ranges from 0.80 to 0.87, which exceeds the recommended level of 0.5. In addition, the square root of AVE for each construct exceeds the correlations between the construct and other constructs. Thus, convergent validity and discriminant validity are supported.

Table 5.1. Reliability

Construct	Item	Factor loading	Mean	SD	Cronbach's α	CR	AVE
Information quality	IQ1	0.72	5.43	1.04	0.93	0.92	0.82
	IQ2	0.75					
	IQ3	0.72					
System quality	SQ1	0.61	5.54	1.02	0.93	0.92	0.83
	SQ2	0.65					
	SQ3	0.71					
Service quality	SVQ1	0.66	5.57	1.03	0.94	0.93	0.84
	SVQ2	0.64					
	SVQ3	0.68					
Brand Image	BIM1	0.75	5.55	1.01	0.93	0.91	0.80
	BIM2	0.68					
	BIM3	0.78					
Size	SI1	0.68	5.50	0.99	0.92	0.92	0.81
	SI2	0.63					
	SI3	0.77					
Satisfaction	SAT1	0.72	5.53	1.12	0.95	0.93	0.87
	SAT2	0.74					
	SAT3	0.69					
Trust	TR1	0.56	5.50	1.04	0.94	0.93	0.85
	TR2	0.63					
	TR3	0.54					
Booking Intention	BIT1	0.89	5.18	1.22	0.94	0.91	0.85
	BIT2	0.90					
	BIT3	0.90					

Table 5.2. Inter-construct correlations

	IQ	SQ	SVQ	BIM	SI	SAT	TR	BIT
IQ	0.904							
SQ	0.803	0.909						

	IQ	SQ	SVQ	BIM	SI	SAT	TR	BIT
SVQ	0.760	0.739	0.914					
BIM	0.756	0.774	0.703	0.901				
SI	0.728	0.726	0.791	0.759	0.892			
SAT	0.789	0.751	0.808	0.780	0.779	0.930		
TR	0.798	0.715	0.801	0.790	0.790	0.725	0.921	
BIT	0.533	0.531	0.506	0.483	0.497	0.503	0.515	0.922

5.2 Structural model

PLS is used to examine the hypothesized relationships among all constructs. The results show that satisfaction ($\beta=0.27$, $p<0.01$) and trust ($\beta=0.30$, $p<0.001$) positively affect the booking intention, supporting H1 and H2. The two paths account for 28.9% of the variance in the booking intention. Trust ($\beta=0.23$, $p<0.001$) positively affects satisfaction, thus, supporting H3. However, contrary to expectations, information quality ($\beta=0.06$, $p>0.05$) has no significant impact on satisfaction, thus H4 is not supported. System quality ($\beta=0.37$, $p<0.001$) and service quality ($\beta=0.42$, $p<0.001$) positively affect satisfaction, supporting H5 and H6. The two paths account for 80.8% of the variance in satisfaction. Brand image ($\beta=0.54$, $p<0.001$) and size ($\beta=0.43$, $p<0.001$) positively affect trust, supporting H7 and H8. The two paths account for 88.0% of the variance in trust.

Table 5.3. Path coefficient and significance

Hypothesis	Path	Path coefficient		t	Y/N
H1	Satisfaction -- Booking intention	0.27	**	3.01	Yes
H2	Trust -- Booking intention	0.30	***	3.30	Yes
H3	Trust -- Satisfaction	0.23	***	4.21	Yes
H4	Information quality -- Satisfaction	-0.06	0.430	-0.79	No
H5	System quality -- Satisfaction	0.37	***	4.90	Yes
H6	Service quality -- Satisfaction	0.42	***	5.33	Yes
H7	Brand image -- Trust	0.54	***	8.43	Yes
H8	Size -- Trust	0.43	***	6.79	Yes

* $p < .05$, ** $p < .01$, *** $p < .001$

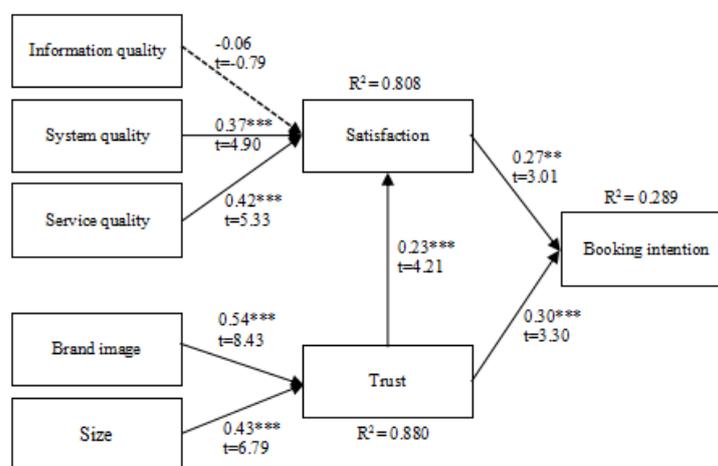


Figure 5.1. Result

6. CONCLUSIONS

This study aims to investigate hotel online booking. The factors that increase customer satisfaction and the booking intention are from IS success model and customer loyalty.

According to the analysis, satisfaction directly influences customer booking intention, trust directly and indirectly influences customer booking intention through satisfaction. For antecedents, system quality, and service quality have significant impacts on satisfaction; brand image and size have significant impacts on trust. These results are consistent with previous studies on e-commerce. These findings show that customers tend to believe that well-designed websites with a good brand image can provide them with real and good hotel information and perfect services, which will lead to increased satisfaction, and achieve a win-win situation for both hotels and customers.

On the other hand, information quality does not significantly affect customer satisfaction with OTAs. One possible explanation for resulting in low satisfaction from high information quality may be: in many OTAs, such as Ctrip and “Where to Go”, service quality and system quality of each OTA are significantly different, which will directly affect customer satisfaction with OTAs. However, most of the information for each OTA hotel comes directly from the hotel without significant differences. In other words, there is no direct relationship between hotel information and customer satisfaction.

6.1 Management suggestions

Based on the above results, this study can provide some efficient suggestions for OTAs, such as Ctrip and “Where to Go”. For OTAs, it is important to improve their systems and services to increase customer satisfaction. In addition, OTAs should show customers good brand images and website size to enhance their trust, which help attract more customers to book hotels through them.

6.2 Limitations and Prospects

This study contains some limitations that require further examination and further research. First, this study is cross-sectional. Implying that posited casual relationships may only be inferred rather than proven. Future research should conduct a longitudinal investigation. Second, the hotels investigated in this study are economic hotel chains. If we investigate customers of different types of hotels, the results may differ. Third, the data for this study comes from China. Researchers are encouraged to examine cultural differences and even conduct a cross-national analysis to test whether the impacts are different in different countries. Fourth, this study aims at hotel online booking, without considering the offline factors. Future research can incorporate some offline factors, such as hotel service quality, offline satisfaction and so on. Finally, this study only verifies that customer loyalty can improve hotel booking intentions, but did not explain how it affects.

ACKNOWLEDGEMENT

This research was supported by the National Natural Science Foundation of China under Grant 71601172. Besides, thank you for the amendments proposed by the editors of the conference and refinement of Mr.Chang on the structural grammar of this article.

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