

Cooperation and competition between online travel agencies and hotels[☆]

Yu-Wei Chang^a, Ping-Yu Hsu^{b,*}, Yi-Chen Lan^c

^a Department of Information Management, China Jiliang University, China

^b Department of Business Administration, National Central University, Taiwan

^c Global Department, Western Sydney University, Australia



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ABSTRACT

With the advent of O2O (online to offline) mode, Online Travel Agency (OTA) websites help to introduce new customers to hotels. However, since OTAs charge a hefty commission, hotel managers hope returning customers can book future visits from hotel websites instead of OTA websites. The study is to investigate how OTAs and hotels cooperate and compete with each other at the same time in the multichannel environments. The results show that OTAs can attract new and returning customers by website service quality while hotels can attract returning customers by perceived value. On the other hand, OTA website service quality has a negative effect on intention to rebook via hotel websites and the intention to rebook via OTA and hotel websites indeed have a negative relationship. Thus, the two channels compete with each other for customers' future visits.

1. Introduction

With the development of e-commerce, the O2O (online to offline) mode is emerging as a very popular business mode because it integrates online and offline channels. O2O refers to “the use of online and mobile technology to drive offline local sales or redemption” (Fitzgerald, 2012). That is, online marketing and purchasing drive offline consumption. According to an iResearch report (2016), the GMV (gross merchandise volume) of the O2O market is expected to reach 1.6 trillion Yuan (approximately US\$ 250 billion) by 2018. In particular, the online travel GMV reached approximately 590 billion Yuan (approximately US\$ 90 billion) in 2016 and contributed to the rapid growth of China's O2O market (iResearch report, 2017).

Today's O2O mode has been widely applied to the travel industry. Several hotels are trying to attract customers to visit their hotels offline using multiple online channels, such as online travel agencies (OTAs) and hotel websites. OTAs do not own any hotels but host websites that attract tourists or business travelers with large collections of hotel information, price comparisons, discounts, and review comments. In contrast, hotel websites belong to hotels and serve only those particular hotels. The revenue of China's OTA market amounted to 30 billion Yuan in 2016 (statista, 2016). Therefore, OTAs also became a major channel to sell hotel services.

OTAs and hotels cooperate and compete with each other

simultaneously in multichannel environments. OTA websites help to introduce new customers to hotels, and hotels provide information to enrich OTA websites. However, because OTAs force hotels to provide deep discounts and charge a hefty commission for each referred customer, hotel managers hope that returning customers book their future visits directly through hotel websites instead of OTA websites. Thus, hotels offer valuable packages to attract customers to use hotel booking services. The two channels cooperate to introduce new customers to hotels, but compete with each other for returning customers.

From the standpoint of attracting returning customers, the operation flow can be described as an O2O2O (online to offline to online) mode. The first O (online) refers to the service quality of OTA websites attracting customers to hotels; the second O (offline) refers to customers experiencing offline hotel services; and the third O (online) refers to attracting returning customers to rebook hotels through OTA or hotel websites. This study focuses on the factors affecting customers' intentions during the three different stages of the operation flow.

Recent research has focused heavily on the cooperation between OTAs and hotels (Ling, Guo, & Yang, 2014; ; 2015; Long & Shi, 2017). Limited work has been devoted to studying the competition between the two entities (García and M, 2013; Roper, 2011; Viglia, Mauri, & Carricano, 2016). To the best of our knowledge, no prior work has investigated both the cooperation and competition between OTAs and hotels in the same model, even though it is vital for hotel managers to

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* Corresponding author.

E-mail address: pyhsu@mgt.ncu.edu.tw (P.-Y. Hsu).

understand how hotels cooperate and compete with OTAs to attract customers. Furthermore, it is critical for OTAs to choose good business partners to increase profits. To fill this gap, this study aims to strengthen the understanding of how OTAs and hotels cooperate and compete with each other throughout the operation flow to attract customers. In particular, we address the following issues:

- (1) How do OTAs attract customers?
- (2) How do offline hotel services affect customers' future visits through OTA or hotel websites?
- (3) How do hotel managers attract customers?
- (4) How do OTAs and hotel websites affect each other?

This study uses cost-benefit analysis, expectation confirmation theory, the halo effect, and the multiple channel effect to investigate customers' intentions. Cost-benefit analysis is employed to explain the factors that motivate/demotivate customers to access OTA and hotel websites. The service quality of OTA websites and the perceived value of hotel booking services are the two main factors that attract customers to the two channels. Expectation confirmation theory is applied to investigate whether customers' expectations of offline hotel services are confirmed by their experiences, the halo effect is utilized to explain customers' decisions to rebook hotels after their experiences with the offline services, and the multiple channel effect is used to study the competition between OTA and hotel websites.

From a theoretical perspective, we develop an integrated model to explain the cooperation and competition between OTAs and hotels based on cost-benefit analysis, expectation confirmation theory, the halo effect, and the multiple channel effect. We also extend the traditional O2O mode to the O2O2O mode to study the competition to attract returning customers.

From a practical perspective, our findings confirm the roles of the service quality of OTA websites and the perceived value of hotel booking services in the operation flow. The service quality of OTA websites helps to introduce new customers to hotels. After customers visit the hotels, their experiences with offline hotel services motivate them to rebook the hotels through OTA and hotel websites. However, OTAs and hotels can compete with each other to attract returning customers by increasing website service quality and perceived value. This study contributes to the practice by providing some suggestions about marketing strategies and helping to improve the service qualities of OTAs and hotels.

The remainder of the paper is organized as follows. The next section reviews the relevant theories and literature and develops the research hypotheses. Section 3 describes the research methodology and data collection. The research results are shown in Section 4, followed by the discussion in Section 5. Section 6 summarizes theoretical and practical implications of the study. Finally, the conclusions and limitations of the study are presented in Section 7.

2. Literature review and hypotheses development

2.1. O2O commerce

With the development of e-commerce, business practices have gradually turned away from purely online channels to the integration of online and offline channels, termed the O2O mode. Online and offline channels can cooperate with each other to attract new customers, yet they may also compete with each other for returning customers.

The O2O mode has also flourished in the travel industry (Gretzel, Sigala, Xiang, & Koo, 2015; Long & Shi, 2017; Werthner, Koo, Gretzel, & Lamsfus, 2015). OTAs allow customers to book hotels through OTA websites and then visit the hotels to experience their offline services. Customers who are satisfied with the offline hotel services may rebook the hotels through OTA or hotel websites in the future. OTAs and hotels cooperate to introduce new customers to hotels, but compete with each

other for returning customers.

2.2. Cost-benefit analysis

Cost-benefit analysis assumes that people compare and weigh the anticipated costs and benefits of each alternative before making choices (Ekelund, 1968). Cost-benefit analysis has been used in various areas to describe the antecedents of usage intentions, such as e-commerce (Li, Zhang, & Sarathy, 2010; Xu, Dinev, Smith, & Hart, 2011) and tourism research (Fleischer & Felsenstein, 2000; Lin, 2017; Raya, Martínezgarcía, & Celma, 2017; Torre & Scarborough, 2017). Therefore, customers likely evaluate the costs and benefits of booking hotels based on cost-benefit analysis before visiting hotels.

In the context of e-commerce, the benefit refers to the psychological utility gained from using a particular website, while the cost refers to the psychological loss of utilizing another website. Both factors have impacts on usage intentions. The psychological utility of a website is the satisfaction gained from utilizing the services offered by the website. Satisfaction, on the other hand, depends on the service quality according to the information systems (IS) success model (DeLone & McLean, 2003). This study proposes website service quality as the antecedent of usage intentions of OTA websites. If a customer opts to book his/her visits through hotel websites, he/she will have to give up the benefits and satisfaction derived from using OTA websites. Therefore, giving up the service quality of OTA websites can be viewed as the costs of booking hotels through hotel websites.

In the O2O mode, the role of hotels is to offer offline services. According to the value-satisfaction-loyalty framework (Lam, Shankar, Erramilli, & Murthy, 2004), high-value services can lead to customer satisfaction and increase the utility of offline hotel services. Thus, several studies identified perceived value as an important antecedent of satisfaction in the travel industry (Gallarza & Saura, 2006; Lee, Yoon, & Lee, 2007; Nunkoo, Teeroovengadum, Thomas, & Leonard, 2017). In addition, most hotels offer valuable packages to entice customers to rebook hotels through hotel websites. Thus, perceived value is considered to be a factor for increasing customers' intentions to rebook hotels. However, if a customer decides to book future visits through OTA websites, then he/she will have to give up the potential benefits of hotel booking services. Therefore, giving up the perceived value of hotel booking services is the cost of booking hotels through OTA websites.

2.3. Model development

In the proposed cost-benefit analysis model, the service quality of OTA websites is viewed as the benefits of booking hotels through OTA websites and the costs of booking hotels through hotel websites. Therefore, website service quality is a key measure of online benefits and costs. Website service quality-related hypotheses are discussed in Section 2.3.1.

OTA website services are the first contact that the customers experience in the service chain. After booking hotels online, the customers experience the offline services. Therefore, the confirmation of expectations about offline hotel services also plays an important role in affecting customers' intentions to visit hotels. The related hypotheses are discussed in Section 2.3.2.

The intention to visit hotels leads to the intention to rebook hotels through hotel websites. However, an equivalent, if not more important, factor is the value that hotels offer returning customers to rebook through hotel websites. To explain the effects of these values on the intention to rebook hotels through hotel websites, the theory of perceived value is discussed and adapted in Section 2.3.3.

According to the halo effect, the intention to visit hotels leads to the intention to rebook hotels through OTA and hotel websites. Thus, the halo effect is discussed and adopted in Section 2.3.4. However, customers booking hotels through OTA websites may not book hotels

through hotel websites and vice versa. Therefore, the two channels have to compete with each other for returning customers. The related hypotheses based on the multiple channel effect are introduced in Section 2.3.5.

2.3.1. Website service quality

Service quality is defined as “the extent of the discrepancy between the customers' expectations and perceptions of service” (Zeithaml, Berry, & Parasuraman, 1996). Parasuraman, Zeithaml, and Berry (1988) developed the SERVQUAL instrument to measure service quality. The scale includes five dimensions: tangible, reliability, responsiveness, assurance, and empathy. The tangible dimension was later excluded because of its low reliability (Pitt, Watson, & Kavan, 1995). Other researchers have subsequently adopted the four-dimension approach of this instrument (Carr, 2002; Gorla, Somers, & Wong, 2010; Kettinger & Lee, 2005; Zhou, Lu, & Wang, 2009).

Scholars further indicated strong correlations among the four dimensions of the SERVQUAL instrument. The items for each dimension highly correlate to a single factor: service level (Cenfetelli, Benbasat, & Al-Natour, 2008; Gefen, 2002; Gorla et al., 2010; Kim, Xu, & Koh, 2004; Zhou et al., 2009). Thus, a second-order construct is used to measure website service quality. With respect to websites, reliability means that an OTA website can provide the promised service in a reliable and dependable manner, and can do so on time. Responsiveness means that an OTA website can help customers and does not ignore their requests for assistance. Assurance means that the courteous and capable behavior of an OTA website instills confidence in its customers. Finally, empathy means that an OTA website gives customers individualized attention and has their best interests at heart.

In multichannel environments, Gallino and Moreno (2014) confirmed that marketing products and information availability in online environments can enhance customers' intentions to purchase products offline. In the tourism literature, website service quality also plays an important role in customer retention (Hahn, Sparks, Wilkins, & Jin, 2017; Nunkoo et al., 2017). Thus, the service quality of OTA websites helps to attract new customers to visit hotels under the traditional O2O mode. We hypothesize:

H1. Website service quality positively affects the intention to visit.

In a cost-benefit analysis, website service quality can be viewed as the factor that increases the benefits of booking hotels through OTA websites. Several studies confirmed that online service quality directly or indirectly influences customer loyalty and attracts customers to revisit websites (Fernández-Sabote & Román, 2012; Jeon, 2017; Verhagen & Van Dolen, 2009; Yang, Lu, Zhao, & Gupta, 2011). On the other hand, we regard website service quality as the factor that increases the costs of booking hotels through hotel websites. If a customer opts to book his/her visits through hotel websites, he/she will have to give up the benefits and satisfaction derived from OTA websites. Therefore, giving up the service quality of OTA websites can be viewed as the costs of booking hotels through hotel websites. The service quality of OTA websites has a negative impact on the usage intentions of hotel websites. We hypothesize the following:

H2. Website service quality positively affects the intention to rebook via OTA websites.

H3. Website service quality negatively affects the intention to rebook via hotel websites.

2.3.2. Confirmation

Based on expectation confirmation theory (Oliver, 1980), customers form their initial expectations of a specific service prior to purchase. After customers accept and use the service, they form perceptions about its performance. Then, customers compare the perceived performance with their initial expectations and determine whether their expectations were confirmed. Finally, customers' expectations and confirmations

form their satisfaction, which in turn determines their repurchase intentions. Therefore, confirmation is said to be one of the most important determinants of satisfaction and repurchase intentions.

Confirmation in this study is defined as customers' perceptions of the congruence between their expectations of offline hotel services and their actual performance. The confirmation of expectations about offline hotel services influences customers' intentions to visit the hotels. If customers' expectations cannot be confirmed, then they will switch to another hotel in the future. Previous studies on tourism found that the higher the level of customers' confirmation, the higher their behavioral intentions (Li & Liu, 2014; Parvin, Wang, & Uddin, 2017; Sedera, Lokuge, Atapattu, & Gretzel, 2017). Thus, confirmation has a positive effect on the intention to visit hotels. We hypothesize:

H4. Confirmation positively affects the intention to visit.

2.3.3. Perceived value

Monroe (1990) defined perceived value as “a tradeoff between the quality or benefits they perceive in the product relative to the sacrifice they perceive by paying the price.” Zeithaml (1988) suggested that perceived value is “a consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given.” Although the ratio of quality to price is often used to assess customer value (Chiu, Hsu, Sun, Lin, & Sun, 2005; Lin & Wang, 2006), measuring only the monetary value seems to be too simplistic. Thus, Sheth, Newman, and Gross (1991a, b) developed five consumption value dimensions (social, emotional, functional, epistemic, and conditional value) to explain customers' decisions to purchase particular products and brands. Later, Sweeney and Soutar (2001) separated functional values into sub-dimensions (quality/performance and price/value for money), and excluded the epistemic and conditional values. They proposed that perceived value is a multidimensional construct consisting of functional, emotional, social, and monetary values.

Perceived value is a multidimensional construct consisting of functional, emotional, social, and monetary values of the package specially offered to customers using hotel booking services. For cost-benefit analysis, the perceived value of hotel booking services is treated as a key for ensuring customer satisfaction. In addition, studies in the travel industry noted the effects of perceived value on satisfaction and repurchase intention (Nunkoo et al., 2017; Ozturk, Nusair, Okumus, & Hua, 2016; Sabioteortiz et al., 2016; Teng, Lu, & Huang, 2018). We hypothesize:

H5. Perceived value positively affects the intention to rebook via hotel websites.

Previous studies proposed that functional, emotional, social, and monetary values influence overall perceived value (Lu & Hsiao, 2010; Sanchez, Callarisa, Rodriguez, & Moliner, 2006; Turel, Serenko, & Bontis, 2007). Functional value reflects the consistency, design, and standard quality of the packaged service. Customers who perceive high functional value are likely to develop higher overall value. Emotional value reflects the enjoyment, relaxation, and pleasure of using the package. If the services can satisfy customers' mental or psychological needs, then they will generate higher emotional value, which in turn will lead to higher overall value. Social value reflects the social approval and impression of using the package. If the services can enhance customers' self-identities, then they will enhance the overall perceived value. Monetary value reflects the economic benefits of using the package. The lower the costs or the less time or effort required to enjoy the package, the higher the economic value received. High monetary value will increase overall perceived value. We hypothesize the following:

H6a. Functional value positively affects perceived value.

H6b. Emotional value positively affects perceived value.

H6c. Social value positively affects perceived value.

H6d. Monetary value positively affects perceived value.

2.3.4. Halo effect

The halo effect proposed by Thorndike (1920) refers to a cognitive bias in which an observer's impression of an entity (e.g., individual, company, brand, or product) influences his/her judgement about certain characteristics of the entity. If an observer likes one aspect of the entity, he/she will have a positive predisposition toward other characteristics of the entity. If an observer dislikes one aspect of the entity, he/she will have a negative predisposition toward everything about it. According to the halo effect, customers may transfer their offline experiences into online purchases (Yang et al., 2011). Previous studies posited that offline loyalty and purchase intentions positively influence online loyalty and purchase intentions (Bock, Lee, Kuan, & Kim, 2012; Jin, Park, & Kim, 2010; Kwon & Lennon, 2009; Verhagen & Van Dolen, 2009; Yang et al., 2011). After a customer visits a hotel, his/her high intention to visit the hotel lead to a high intention to rebook the hotel through OTA or hotel websites. We hypothesize the following:

H7. The intention to visit positively affects the intention to rebook via OTA websites.

H8. The intention to visit positively affects the intention to rebook via hotel websites.

2.3.5. Multiple channel effect

Since OTA and hotel websites sell the same hotel rooms to customers, the two channels can be viewed as substitutes for each other. Therefore, according to economics and consumer theory (Nicholson, 1998), demand in one channel has a negative effect on that in the other channel. Thus, good services offered in one channel can reduce the number of customers in competing channels. Previous studies also investigated the competition between multiple channels (Lu, Cao, Wang, & Yang, 2011; Yang, Lu, & Chau, 2013). Montoya-Weiss and Voss (2003) found that higher perceived service quality in a traditional channel reduces the use of the online channel. Falk, Schepers, Hammerschmidt, and Bauer (2007) identified conflicts (dissynergies) between multiple channels. They found that satisfaction in the traditional channel decreases the usefulness of the online channel. In multichannel environments, using one channel to complete transactions may negatively influence the use of another channel according to the multiple channel effect. We hypothesize:

H9. The intention to rebook via OTA websites negatively affects the intention to rebook via hotel websites.

In addition, if a customer decides to rebook hotels through OTA websites, this implies that customers have to give up the potential benefits of hotel booking services. The satisfaction with one system leads to lower usage intentions for other competing systems (Falk et al., 2007). This study views perceived value as a factor that increases the costs of booking hotels through OTA websites. Thus, the perceived value of hotel booking services has a negative impact on the usage intentions of OTA websites. We hypothesize:

H10. Perceived value negatively affects the intention to rebook via OTA websites.

Based on the e-commerce literature, this study considers gender, age, education, and monthly income as control variables in this model. Previous studies have suggested that these variables might influence customers' intentions (Hsu, Chang, Chu, & Lee, 2014; Lu & Hsiao, 2010). Thus, these control variables were included so that their covariance with the research model could be evaluated. The research model is shown in Fig. 1.

3. Research methodology

3.1. Instrument development

The items for the constructs were adapted from previous studies to ensure content validity. Website service quality was measured by reliability, responsiveness, assurance, and empathy. The four website service quality dimensions were adapted from Gefen (2002). Perceived value was measured by functional, emotional, social, and monetary values. The four value dimensions were adapted from Sweeney and Soutar (2001). Website service quality and perceived value were treated as second-order constructs. The items for the intention to visit were adapted from Moon and Kim (2001). The items for confirmation, the intention to rebook via OTA websites, and the intention to rebook via hotel websites were adapted from Bhattacharjee (2001).

For this study, a questionnaire was developed in Chinese, and we employed a back-translation method to ensure consistency between the English and Chinese versions (Mullen, 1995). First, all original items were translated into Chinese and then the Chinese version was translated back into an English version. Furthermore, we confirmed consistency between the two English versions. We also invited 10 tourists who had experience with booking hotels through OTA websites to conduct a pilot test. Based on their suggestions, the wording, length, and format of the items in the questionnaire were modified. Finally, all of the items were measured on seven-point Likert scales, with anchors ranging from “strongly disagree” (1) to “strongly agree” (7). Appendix 1 lists the 44 items used in this study.

3.2. Data collection

A survey methodology was used to test the research model and hypotheses. The data were collected from the customers of 10 well-known hotel chains (e.g., Homeinns, 7daysinn, Motel168, and Podinns) in China. These hotels provide booking services through OTA and hotel websites. They allow customers to book the hotels online and then visit the hotels offline. In addition, this study investigates the operation flow of the O2O2O mode and examines the factors attracting customers to book future visits. Only respondents who booked hotels through OTA websites were included in the data analysis. When the respondents visited the hotels, hotel managers would explain the benefits of using hotel booking services to encourage the respondents to book the hotels through the hotel websites in the future. Since the respondents had experiences with the service quality of OTA websites and the perceived value of hotel booking services, we further investigated the respondents' intention to rebook hotels through OTA or hotel websites.

With assistance from the managers of the 10 hotels, 1000 paper questionnaires were distributed to customers who booked hotels through OTA websites. The data were collected over the period of July to August 2017. We collected 305 questionnaires for a response rate of 30.5%. Among the respondents, 63.9% were male, 52.5% were between 26 and 35 years old, 72.1% had a bachelor's degree, and 29.5% had incomes between 3001 and 4500 Yuan per month.

3.3. Data analysis

This study uses SmartPLS 3.0 to test the measurement and structural models. The measurement model examines the convergent and discriminant validity of items and constructs. The structural model examines the hypothesized relationships between the constructs in the research model. The partial least squares (PLS) method is also suitable for analyzing the reflective and formative constructs. In our study, website service quality is a reflective second-order construct, whereas perceived value is a formative second-order construct. The second-order website service quality is measured by the indicators of all of the first-order website service quality factors (reliability, responsiveness, assurance, and empathy). The second-order perceived value is

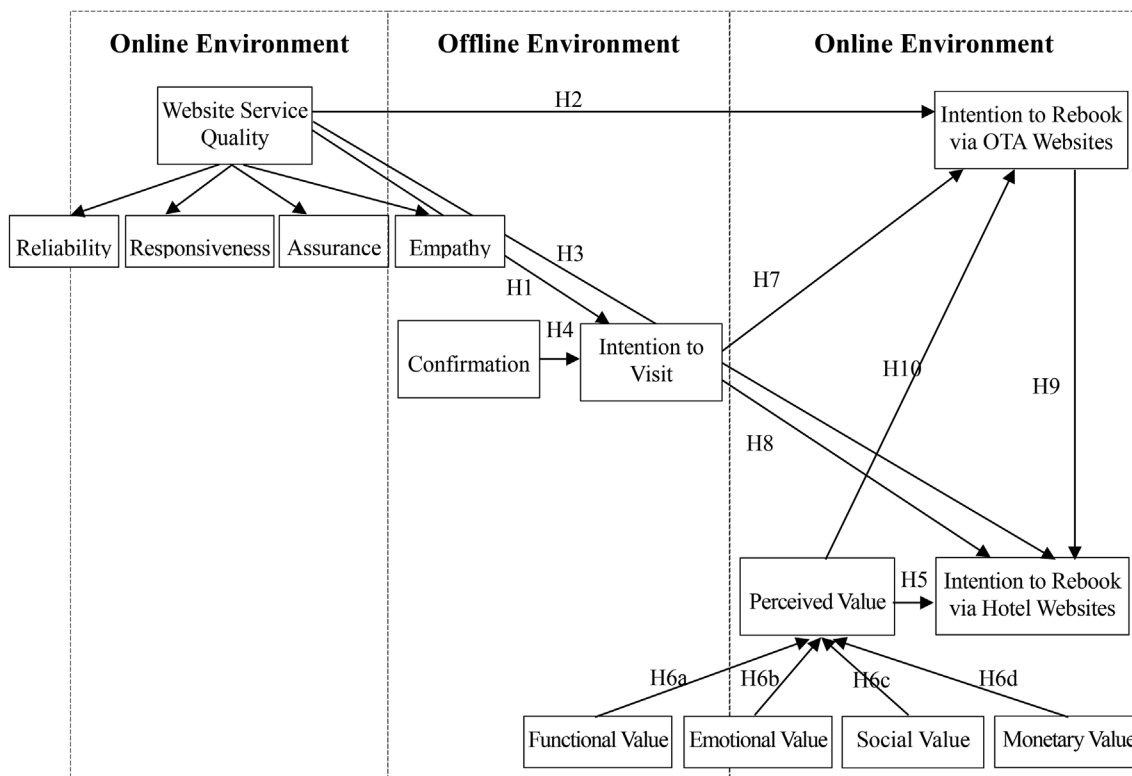


Fig. 1. Research model.

measured by the indicators of all of the first-order perceived value factors (functional, emotional, social, and monetary values).

4. Results

4.1. Common method bias

This study uses a principal component analysis to examine Harman's one-factor test. If a single construct accounts for higher than 50% of the variance, then common method bias will threaten the validity (Harman, 1976; Mattila & Enz, 2002; Pee, Kankanhalli, Ong, & Vu, 2010). The combined 12 constructs of this study account for 88.99% of the total variance. The variance of the 12 constructs ranges from 1.07% to 25.82%, which is lower than 50% of the variance. Thus, the common method bias can be excluded from the items of this study.

4.2. Measurement model

The measurement model is evaluated for convergent validity and discriminant validity, which are analyzed using confirmatory factor analysis (CFA). Convergent validity is assessed using the three criteria recommended by Fornell and Larcker (1981): (1) the factor loadings of each item should exceed 0.7, (2) the composite reliability (CR) and Cronbach's alpha of each construct should exceed 0.7, and (3) the average variance extracted (AVE) of each construct should exceed 0.5 (Gefen, Straub, & Boudreau, 2000). As shown in Table 1, the factor loadings for all items range from 0.88 to 0.97. The CR for all constructs ranges from 0.91 to 0.98. The Cronbach's alpha for all constructs ranges from 0.80 to 0.97. The AVE for each construct ranges from 0.82 to 0.93. Table 2 shows that the square root of the AVE for each construct exceeds the correlations between the construct and other constructs. Thus, convergent validity and discriminant validity are supported.

4.3. Structural model

This study examines the structural equation model by testing the hypothesized relationships among all constructs. As shown in Fig. 2, website service quality has positive and significant effects on the intention to visit ($\beta = 0.217, p < 0.001$) and the intention to rebook via OTA websites ($\beta = 0.251, p < 0.01$), and has a negative and significant effect on the intention to rebook via hotel websites ($\beta = -0.244, p < 0.01$). Thus, H1, H2, and H3 are supported. Confirmation has a positive and significant effect on the intention to visit ($\beta = 0.563, p < 0.001$), meaning H4 is supported. Perceived value has a positive and significant effect on the intention to rebook via hotel websites ($\beta = 0.563, p < 0.001$), meaning H5 is supported. Functional value ($\beta = 0.219, p < 0.001$), emotional value ($\beta = 0.306, p < 0.001$), social value ($\beta = 0.280, p < 0.001$), and monetary value ($\beta = 0.299, p < 0.001$) have positive and significant effects on perceived value. Thus, H6 is supported. The intention to visit has positive and significant effects on the intention to rebook via OTA websites ($\beta = 0.371, p < 0.001$) and the intention to rebook via hotel websites ($\beta = 0.286, p < 0.001$), meaning H7 and H8 are supported. The intention to rebook via OTA websites has a negative and significant effect on the intention to rebook via hotel websites ($\beta = -0.187, p < 0.01$), meaning H9 is supported. However, perceived value has no significant effect on the intention to rebook via OTA websites ($\beta = 0.175, p > 0.05$), meaning H10 is not supported. The model explains 52.7%, 50.1%, and 27% of the variance in the intention to visit, the intention to rebook via OTA websites, and the intention to rebook via hotel websites, respectively.

5. Discussion

All hypotheses are supported by the collected data except H10. The results show that a second-order factor, website service quality, is composed of reliability, responsiveness, assurance, and empathy. The four dimensions have strong loadings on the second-order factor.

Table 1
Reliability.

Construct	Item	Factor loadings	CR	Cronbach's α	AVE
Reliability (REL)	REL1	0.92	0.97	0.95	0.87
	REL2	0.94			
	REL3	0.95			
	REL4	0.93			
Responsiveness (RES)	RES1	0.89	0.96	0.94	0.82
	RES2	0.91			
	RES3	0.88			
	RES4	0.92			
	RES5	0.92			
Assurance (ASS)	ASS1	0.93	0.97	0.95	0.88
	ASS2	0.94			
	ASS3	0.95			
	ASS4	0.93			
Empathy (EMP)	EMP1	0.92	0.96	0.95	0.86
	EMP2	0.93			
	EMP3	0.94			
	EMP4	0.93			
Functional Value (FV)	FV1	0.93	0.95	0.92	0.87
	FV2	0.93			
	FV3	0.93			
Emotional Value (EV)	EV1	0.93	0.97	0.96	0.88
	EV2	0.94			
	EV3	0.96			
	EV4	0.93			
Social Value (SV)	SV1	0.94	0.98	0.97	0.91
	SV2	0.96			
	SV3	0.95			
	SV4	0.97			
Monetary Value (MV)	MV1	0.94	0.97	0.95	0.88
	MV2	0.94			
	MV3	0.95			
	MV4	0.91			
Confirmation (CON)	CON1	0.94	0.96	0.94	0.89
	CON2	0.95			
	CON3	0.94			
Intention to Visit (IV)	IV1	0.90	0.91	0.80	0.83
	IV2	0.92			
Intention to Rebook through OTA Websites (IRO)	IRO1	0.95	0.96	0.94	0.90
	IRO2	0.94			
	IRO3	0.95			
Intention to Rebook through Hotel Websites (IRH)	IRH1	0.96	0.98	0.96	0.93
	IRH2	0.97			
	IRH3	0.96			

Website service quality significantly affects the intention to visit and the intention to rebook via OTA websites, but has a negative effect on the intention to rebook via hotel websites. In addition, confirmation is found to affect the intention to visit, which in turn positively affects the intention to rebook via OTA and hotel websites. Functional, emotional, social, and monetary values have strong effects on perceived value, which in turn positively affects the intention to rebook via hotel websites. Finally, the intention to rebook via OTA websites negatively

Table 2
Inter-construct correlations.

	REL	RES	ASS	EMP	FV	EV	SV	MV	CON	IV	IRO	IRH
REL	0.93											
RES	0.78	0.90										
ASS	0.76	0.82	0.94									
EMP	0.78	0.83	0.79	0.93								
FV	0.69	0.70	0.67	0.68	0.93							
EV	0.69	0.67	0.65	0.68	0.88	0.94						
SV	0.64	0.66	0.55	0.59	0.64	0.68	0.95					
MV	0.69	0.68	0.65	0.65	0.82	0.87	0.67	0.94				
CON	0.62	0.62	0.60	0.60	0.85	0.83	0.62	0.76	0.94			
IV	0.54	0.61	0.49	0.53	0.66	0.66	0.54	0.65	0.71	0.91		
IRO	0.55	0.58	0.56	0.54	0.61	0.58	0.48	0.61	0.56	0.64	0.95	
IRH	0.26	0.26	0.15	0.26	0.36	0.43	0.46	0.37	0.44	0.41	0.20	0.96

affects the intention to rebook via hotel websites.

Perceived value cannot significantly affect the intention to rebook via OTA websites. The possible explanation is that giving up perceived value cannot be directly translated into the costs of utilizing systems. Previous studies proposed that the costs of utilizing systems are categorized into sunk, transition, and uncertainty costs (Kim & Kankanhalli, 2009). The costs of giving up perceived benefits cannot be appropriately classified into to any of these categories. Perceived value in this study represents the potential benefits that customers may enjoy when they rebook hotels through hotel websites. Since sunk costs represent the materialized benefits of the competing systems, the perceived costs incurred from giving up the potential benefits cannot be viewed as sunk costs. In addition, since transition and uncertainty costs are the effort needed and risk faced to utilize a system, the costs resulting from perceived value cannot be counted as either of these costs. Thus, perceived value cannot be viewed as incurring the costs of utilizing OTA websites.

The four control variables of gender, age, education, and monthly income have no significantly positive influences on the intention to rebook via hotel websites ($\beta = -0.036, -0.020, -0.034, -0.172^{**}$, respectively). Although monthly income has a significantly negative effect on the intention to visit, the results are contrary to our hypotheses. One possible reason for the significant effect is that the targeted hotels are economy hotels, which offer reasonable services with economical prices. In general, customers with higher monthly income are willing to pay higher prices for hotels with better service quality. When we remove the control variables from the proposed model, the results also show that the variance in the intention to rebook via hotel websites decreases from 30.1% to 27%. The inclusion of these control variables does not significantly increase the explanation of the variance. Thus, our empirical results are not related to the covariance with these control variables.

6. Implications for research and practice

6.1. Implications for research

This study is the first to extend the traditional O2O mode to the O2O2O mode in order to examine customers' intentions in three different stages. The first two stages investigate the movement from online to offline channels; that is, those stages investigate the effects of online service quality on the experience of offline hotel services. The third stage addresses the movement from offline to online channels; that is, it addresses the effects of the experience of offline hotel services on the rebooking of hotels through online channels.

This study is also the first to investigate both the cooperation and competition between OTAs and hotels in the operation flow of the O2O2O mode. Although previous studies on O2O commerce investigated either the cooperation or the competition between OTAs and hotels (García, 2013; Ling, Dong, Guo, & Liang, 2015, 2014; Long & Shi,

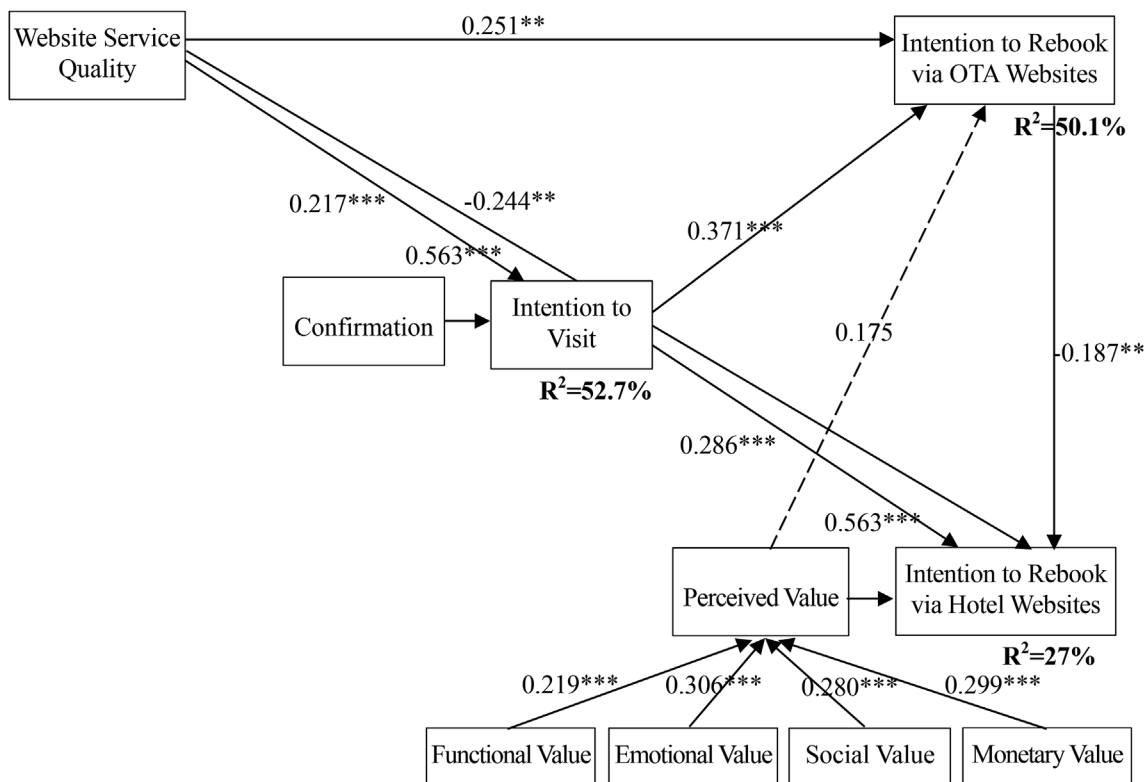


Fig. 2. Results.

2017; Roper, 2011; Viglia et al., 2016), few studies addressed the issue of both cooperation and competition in the same model. Our findings show that the service quality of OTA websites attracts both new and returning customers. Additionally, the perceived value of hotel booking services attracts returning customers. Lastly, OTA and hotel websites compete with each other for customers' future visits. Future studies are encouraged to examine the cooperation and competition between OTAs and other tourism products (e.g., flights, restaurants, and ticketing) in the travel industry.

The website service quality offered by OTAs is an important predictor of the intention to visit and the intention to rebook via OTA websites. Although prior studies supported the relationships between website service quality and online usage intentions (Fernández-Sabiote & Román, 2012; Jeon, 2017; Verhagen & Van Dolen, 2009; Yang et al., 2011), our findings further indicate that offline behavioral intentions are influenced by online service quality. That is, website service quality can strengthen the usage intentions of both online and offline channels. Future research can further investigate the effects of website service quality on offline channels.

The perceived value of hotel booking services is a significant predictor of the intention to rebook via hotel websites. This finding is consistent with prior studies that found that perceived value affects behavioral intentions (Nunkoo et al., 2017; Ozturk et al., 2016; Sabioteortiz et al., 2016; Teng et al., 2018). In addition, the intention to visit is also found to have a significant positive impact on the intention to rebook via OTA and hotel websites. Our results consistently support prior studies, in which offline channels were found to significantly affect the use of online channels (Bock et al., 2012; Jin et al., 2010; Kwon & Lennon, 2009; Verhagen & Van Dolen, 2009; Yang et al., 2011). Future studies on multichannel environments can consider both perceived value and usage experiences.

This study also contributes to the empirical analyses by testing two different types of second-order constructs in an integrated model. Website service quality is a reflective construct, whereas perceived value is a formative construct. The findings show that the reliability,

responsiveness, assurance, and empathy dimensions have strong loadings on website service quality; whereas functional, emotional, social, and monetary values significantly contribute to overall perceived value. Because website service quality and perceived value facilitate the understanding of usage intentions in online and offline channels, future studies can apply these 2 s-order constructs as predictors of customers' intentions in multichannel environments. For more detailed descriptions of how to analyze formative and reflective measurement models, please refer to the use of the PLS-SEM in MIS quarterly (Ringle, Sarstedt, & Straub, 2012).

6.2. Implications for practice

These findings help OTAs and hotels to better understand the advantages and disadvantages of a simultaneously cooperative and competitive business environment. This understanding can help both business entities to cooperate to gain mutual benefits, and yet not be overly reliant on one another.

From the cooperative perspective, the service quality of OTA websites indeed helps to introduce new customers to hotels. Thus, hotel managers should cooperate with OTAs to provide a high quality of website services. Since the results show that high quality OTA website services, which include reliability, responsiveness, assurance, and empathy, can indeed attract customers for hotels, we suggest that OTAs should endeavor to provide the promised services to their customers in a timely manner.

In addition, customers' experiences with offline hotel services foster the integration of online and offline channels. Boosting customers' intentions to visit hotels can increase their intentions to rebook hotels through OTA and hotel websites. As the intention to visit is positively influenced by the confirmation of expectations about offline hotel services, hotel managers should align the quality of hotel services with customers' expectations. We suggest that hotels provide accurate information through photos, videos, and textual descriptions, and avoid exaggerations when providing information to OTAs. Hotel managers

should also maintain the quality of hotel services in order to keep their promises and meet customers' expectations.

From the competitive perspective, OTAs and hotels utilize different factors to motivate customers to return to their respective channels. Website service quality can entice customers to book their future visits through OTA websites. The website service quality can even inhibit customers' intentions to rebook hotels through hotel websites. Therefore, OTAs should not limit their functions to attracting new customers for hotels. Additionally, OTAs can strive to attract returning customers by increasing website service quality. That is, OTAs may create web pages that attract returning hotel chain customers to book hotels through OTA websites.

To win the loyalty of returning customers, hotels should promote and enhance overall perceived value, which entails enhancing functional, emotional, social, and monetary values. Hotels should provide consistent and well-designed benefits for customers who book hotels through hotel websites. The benefits should be useful to customers and be provided in an enjoyable manner and at a reasonable cost. Hotels should also enhance their reputation and social status to increase customer recognition.

Since this study confirms that OTAs and hotels compete with each other for returning customers, hotel managers may also design special promotion packages to win customers from OTAs. These packages may provide special offers for customers who have OTA accounts and yet are willing to book hotels through hotel websites.

7. Conclusions and limitations

A successful operation flow consisting of multiple channels should include attracting customers online, servicing customers offline, and enticing customers to repurchase services in the future. Prior studies of the traditional O2O mode investigated the multiple channels in the first half of the operation flow. This study is the first to investigate the full operation flow and to extend the traditional O2O mode to the O2O2O mode.

This study is also the first to investigate both the cooperation and competition between OTAs and hotels in the operation flow of the O2O2O mode. From the cooperative perspective, the service quality of OTA websites helps to introduce new customers to hotels. After customers visit the hotel, their experiences with offline hotel services increase their intentions to rebook hotels through OTA and hotel

websites. The confirmation of expectations about offline hotel services is a strong predictor of customers' intentions to visit hotels, which in turn affects their intentions to rebook hotels through OTA and hotel websites. From the competitive perspective, customers' perceptions of the service quality of OTA websites and their intentions to rebook hotels through OTA websites negatively affect their intentions to rebook hotels through hotel websites. Hotels can attract returning customers by increasing the perceived value of hotel booking services, whereas OTAs can compete for returning customers by increasing their website service quality. These findings may serve as a stepping stone to further investigate the cooperation and competition among e-commerce websites and between purely online business entities and entities that offer offline services or products and are trying to establish their online presence.

This study has some limitations. First, customers' intentions, instead of actual behaviors, were measured. Second, this study was conducted in the context of the hotel industry. Caution must be taken when generalizing the results to other contexts. Future research can examine the effects other services on OTA websites, such as restaurants, tourism, and ticketing. Finally, the questionnaires were collected in China. Because cultural differences may affect the results, future research can compare these results from China with results from other countries.

Contribution of each author to the paper

Yu-Wei Chang proposed the concept, collected and analyzed the data, and wrote the paper.

Ping-Yu Hsu made a substantial contribution to the development of the research model and questionnaires, and revised the manuscripts based on reviewers' comments.

Yi-Chen Lan contributed the concept and corrected the wording and grammar of the submitted and revised versions of the paper.

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Appendix 1. Measurement items of constructs

Construct	Measurement items	Sources
Reliability	<ol style="list-style-type: none"> 1. When the OTA promises to do something by a certain time, it does so. 2. When users have a problem, the OTA shows a sincere interest in solving it. 3. The OTA is dependable. 	Gefen (2002)
Responsiveness	<ol style="list-style-type: none"> 4. The OTA provides its services at the time it promises to do so. 1. The OTA insists on error-free records. 2. The OTA tells users exactly when services will be performed. 3. The OTA gives prompt service to users. 4. The OTA is always willing to help customers. 5. The OTA is never too busy to respond to user requests. 	Gefen (2002)
Assurance	<ol style="list-style-type: none"> 1. The OTA behavior instills confidence in users. 2. Users feel safe in their transactions with the OTA. 3. The OTA is consistently courteous with users. 4. The OTA has the knowledge to do its job. 	Gefen (2002)
Empathy	<ol style="list-style-type: none"> 1. The OTA gives users individual attention. 2. The OTA has operating hours that are convenient for users. 3. The OTA has user's best interests at heart. 4. The OTA understands the specific needs of users. 	Gefen (2002)
Functional Value	<ol style="list-style-type: none"> 1. The package booked through hotel booking services has consistent quality. 2. The package booked through hotel booking services is well designed. 	Sweeney and Soutar (2001)

Emotional Value	<ol style="list-style-type: none"> 3. The package booked through hotel booking services has an acceptable standard of quality. 1. I will enjoy the package booked through hotel booking services. 2. I would like to experience the package booked through hotel booking services. 3. I will feel relaxed experiencing the package booked through hotel booking services. 4. The package booked through hotel booking services will make me feel good. 5. The package booked through hotel booking services will give me pleasure. 	Sweeney and Soutar (2001)
Social Value	<ol style="list-style-type: none"> 1. The package booked through hotel booking services will help me to feel acceptable. 2. The package booked through hotel booking services will improve the way I am perceived. 3. The package booked through hotel booking services will make a good impression on other people. 4. The package booked through hotel booking services will give me social approval. 	Sweeney and Soutar (2001)
Monetary Value	<ol style="list-style-type: none"> 1. The package booked through hotel booking services is reasonably priced. 2. The package booked through hotel booking services offer value for money. 3. The package booked through hotel booking services is a good choice for the price. 4. The package booked through hotel booking services would be economical. 	Sweeney and Soutar (2001)
Confirmation	<ol style="list-style-type: none"> 1. My experience of visiting the hotel was better than what I expected. 2. The service level provided by the hotel was better than what I expected. 3. Overall, the hotel confirmed most of my expectations. 	Bhattacharjee (2001)
Intention to Visit	<ol style="list-style-type: none"> 1. I will visit the hotel on a regular basis in the future. 2. I will frequently visit the hotel in the future. 	Moon and Kim (2001)
Intention to Rebook via the OTA Websites	<ol style="list-style-type: none"> 1. I intend to rebook the hotel via the OTA website. 2. My intentions are to rebook the hotel via the OTA website rather than others. 3. If I could, I would like to rebook the hotel via the OTA website as much as possible. 	Bhattacharjee (2001)
Intention to Rebook via the Hotel Websites	<ol style="list-style-type: none"> 1. I intend to rebook the hotel via the hotel website. 2. My intentions are to rebook the hotel via the hotel website rather than others. 3. If I could, I would like to rebook the hotel via the hotel website as much as possible. 	Bhattacharjee (2001)

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Yu-Wei Chang is an associate professor at the Department of Information Management of China Jiliang University. He holds a Ph.D. degree in business administration from the National Central University. He also serves an e-Business consultant to provide counseling services for SMEs. His research areas are e-commerce, tourism management, business intelligence, enterprise resource planning, and knowledge management. He has published more than 20 Journal and conference articles.



Ping-Yu Hsu is a professor in the Business Administration department of National Central University in Taiwan and the secretary-in-chief of the Chinese ERP association. He graduated from the CSIE department of National Taiwan University in 1987, got his master degree from the Computer Science Department of New York University in 1991, and Ph.D. degree from the Computer Science Department of UCLA in 1995. His research interest focuses in the business data related applications, including Data mining, Business Intelligence, Data Warehousing, and Enterprise System implementation. He has published more than 100 Journal and conference articles.



Yi-Chen Lan is the Pro Vice-Chancellor, Global Development and Professor of Information Management at the Western Sydney University. Yi-Chen holds a Bachelor of Commerce (Honours) degree and a PhD degree from the same institution.

Yi-Chen is responsible for developing high value international partnerships through maintaining close relationships with government agencies and flagship institutions across the world particularly in the East and South East Asia. In recognition of Yi-Chen's contributions to the international and cross border education development in Vietnam, the University of Economics, Ho Chi Minh City conferred an Honorary Doctor of Economics degree to him in May 2014.

In his academic career, Yi-Chen conducts and leads significant research and HDR students in the areas related to information management in School of Business. Yi-Chen teaches systems development, information systems and management, global e-business marketing, and project management courses at both undergraduate and postgraduate level. Prior to his current academic work, Yi-Chen worked in the industry for five years, where he held senior management roles in the areas of information systems and quality assurance for multinational organisations.

Yi-Chen's main research fields include knowledge management, e-marketing, global transition process, global information systems management issues, globalisation framework development, business process reengineering, green ICT, carbon emissions in business processes & production, carbon accounting & management systems, carbon footprints labelling, big data strategies and the student learning experience & performance.