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Assessing the Factors that Drive Consumers' Intention to Continue Using Online Travel Agencies: A Heuristic-systematic Model Perspective

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ABSTRACT

As the growth of online travel agencies (hereafter OTAs) accelerates, competition among hotels to gain exposure on the first page of OTA websites, and the financial burden, such as commissions hotels have to pay in return, are increasing. Therefore, to facilitate successful management in the tourism industry, it is important to establish what makes people continue the practice of using OTAs to book rooms in hotels and other accommodation outlets. By adopting the heuristic-systematic model (HSM), this study explores the factors that drive consumers' continued use of OTA and classifies them into heuristic cues (brand awareness, cost saving, and scarcity message) and systematic cues (recommendation quality and the ability to provide reputation). Furthermore, we divided the sample based on the location of hotels within and outside Korea, and investigated the different roles of the cues between two models. The results are expected to provide theoretical and practical implications for both OTAs and hotels.

Keywords: Online Travel Agency (OTA), Heuristic-Systematic Model (HSM), Smart Tourism Service, Continuance Intention

Ⅰ. Introduction

As travel products are extremely perishable, effective distribution channels are particularly important for successful yield management in the tourism industry (O'Connor and Piccoli, 2003). E-commerce has long been considered the most effective distribution channel in the tourism industry, and tourism has also been one of the most successful business industries in the E-commerce environment (Kim et al., 2007). According to Statista (2017), global digital travel sales in 2016 were about USD565 billion, and

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this amount is expected to increase to USD818 billion in 2020. In view of this massive growth in sales revenue, online travel agencies (OTAs) such as Expedia.com, Priceline.com, Hotels.com, Booking.com, Agoda, Ctrip, and so on have become increasingly critical distribution channels for tourism companies as smart tourism services. OTAs help consumers find and book hotel rooms or other accommodation that best suits them.

However, as the growth of OTA accelerates, competition among travel companies for exposure on the first results page of OTA websites and the financial burden travel companies have to bear (e.g., commission) are increasing (Pan et al., 2013). Budget hotels, in particular, tend to depend highly on OTAs to enhance their brand awareness (Ling et al., 2014), but their burden of paying commission to OTAs is relatively large. Competition among OTAs is also intensifying as increasing numbers of smart consumers compare the benefits of multiple OTAs. Furthermore, according to Trefis Team's report on Nasdaq (2017), [with] the advent of blockchain, OTAs will face greater competition by being prevented from having control over the inventory of hotel rooms and airline seats and charging hotels and airlines commission. As OTAs have been compelled to remove fees in excess of those the airlines charge, most of OTAs' profit is made by selling hotel rooms (Hussain, 2018).

Therefore, it can be assumed that the relationship between OTAs and hotels (as neither foes nor friends) will continue. In order for hotels and OTAs to coexist by obtaining the effect of paying such a commission and being used by consumers, it is necessary to explore what makes tourists use OTAs, not just once (acceptance), but time and again. Thus, this study focused on the concept of consumers' continued intention to use. Bhattacherjee (2001) highlighted the importance of consumers' continued intention to use information systems (IS) to ensure the survival of business-to-consumer e-commerce firms. According to the author, investigating the continued intention to use IS helps researchers and practitioners explain consumers' actual use of IS and reduce costs in acquiring new consumers by retaining existing consumers.

What, then, makes people continually use a specific IS? The results of Bhattcherjee and Sanford (2006)'s study revealed that people's perceived quality of information content provided by IS (argument quality) and the perceived credibility of system developers (source credibility) influence the continued intention to use IS via its perceived usefulness. In other words, people's continued intention to use IS is influenced by information content and the source factor of IS, two factors that comprise dual-process theory.

There are two prominent models of dual-process theory: the elaboration likelihood model (ELM) suggested by Petty and Cacioppo (1986) and the heuristic-systematic model (HSM) suggested by Chaiken (1980) and Chaiken et al. (1989). However, HSM has some differences that distinguish it from ELM; for example, HSM has been applied to a wider range of validity-seeking contexts rather than being applied to a persuasive communication context (Chaiken et al., 1989) and the dual processes occur simultaneously and impact each other in various ways; they do not have just a trade-off relationship (Zhang and Watt, 2008). Therefore, we choose HSM rather than ELM since we aim to examine the role of a systematic cue (recommendation quality) as an antecedent of a heuristic cue (scarcity message) and their impacts on continued OTA usage. In addition, considering the results of previous studies, which have shown that heuristic cues for online information about hotels are especially important in the online environment (Yang et al., 2017), HSM is more appropriate for

this study than ELM.

Therefore, the purpose of this study is twofold: (1) to classify OTA factors into heuristic cues (e.g., brand awareness, cost saving, and scarcity message) and systematic cues (e.g., recommendation quality and the ability to provide reputation) by adopting the heuristic-systematic model, and (2) to investigate their different influences on continued intention to use OTA in accordance with the location of the hotels (hotels within Korea or outside of Korea).

Ⅱ. Theoretical Background

2.1. Heuristic-Systematic Model

There are two prominent models of dual-process theory: the elaboration likelihood model (ELM) suggested by Petty and Cacioppo (1986) and the heuristic-systematic model (HSM) suggested by Chaiken (1980) and Chaiken et al. (1989). Both ELM and HSM have a common point in explaining the roles of (1) the information content of a message ("central" or "systematic" processing), and (2) the factors in the surrounding context ("peripheral" or "heuristic" processing) affecting persuasion and attitude change (Zhang and Watt, 2008). A "central" or "systematic" process happens when an individual concentrates deeply on message content and evaluates it, whereas a "peripheral" or "heuristic" process occurs when an individual focuses on more simple attributes of a message, such as message provider, in order to minimize the effort required to evaluate it (Chaiken, 1980; Chen and Chaiken, 1999). As stated in the introductory part, we selected HSM rather than ELM since HSM can be applied to a wider range of validity-seeking context (Chaiken et al., 1989), and postulates that dual processes occur simultaneously and form an influencing relationship with each other (Zhang and Watt, 2008).

A systematic process springs from information content, quality, and elaborateness (Eagly and Chaiken, 1993), whereas a heuristic process devolves from easily perceived cues such as information provider-related or price-related information (Chaiken et al., 1989). As shown in <Table 1>, previous studies classified the information source factors (e.g., the reviewer's reputation) and product-related information that can be easily recognized by consumers (e.g., star rating and discounted price) as heuristic cues. On the other hand, factors related to quality or content of information such as elaborateness, appropriateness, and valence (e.g., word count, appropriate amount of information, and proportion of negative or positive words in a content) have been classified as systematic cues.

2.2. Online Travel Agency

An OTA is an online platform providing travel information and options for booking travel products and services through a computer reservation system (CRS), and receiving commission from numerous tourism companies in return (Kim et al., 2007). It helps hotels reduce costs by providing an online platform for selling unsold rooms which lose their value after a certain date, while maintaining control over inventory and charging a commission to hotels. Traditional online travel agencies have exclusive access to a Global Distribution System (GDS), in which hotel and airline inventory information resides (Granados et al., 2012). Currently, OTAs have access to hotel inventory via various methods. Especially, large OTAs, such as Expedia, source hotel and airline inventory by negotiating directly with hotels and airlines for lower rates than they can get through a

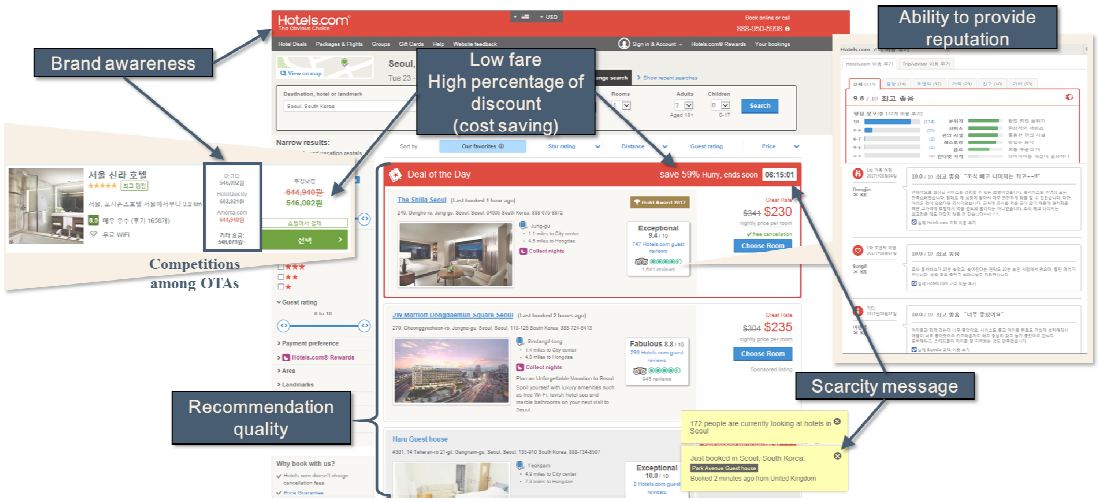
<Table 1> The Summary of Studies Adopting Heuristic-Systematic Model in Tourism

Authors	Data (Platform)	Systematic cues	Heuristic cues	Findings
Baek et al.(2012)	Online consumer review about search good (e.g. clothing, accessories and so on) and experience good (e.g. books, movies and so on) (Amazon.com)	- Word count - Proportions of negative words	- Rating inconsistency - Reviewer ranking - Reviewer real name	- The impacts of reviews' heuristic and systematic cues on review helpfulness depend on the types of good
Liu et al. (2012)	Specific subject-related messages (e.g. earthquake) among users in microblogging platform (Weibo)	- Appropriate amount of information - Content objectivity	- Source trustworthiness - Source expertise - Source popularity	- Heuristic cues have influence on information retweet - Almost every systematic cue have no influence on information retweet
Yang et al. (2017)	Online hotel review (Tripadvisor)	- None	- Reviewer-related attributes (location, level, helpful vote) - Review-related attributes (rating, length, photo)	- Review rating and review helpful vote are the two most important factors
Chung et al. (2017)	Online hotel review (Tripadvisor)	- Review length - Proportions of cognitive words - Proportions of negative words	- Reviewer's name - Reviewer's photo - Reviewer's level - Star rating - Attached photos	- Only systematic cues have influence on review usefulness

GDS system (Hussain, 2018).

Therefore, OTAs are regarded as a kind of "double-edged sword" (Kaynama and Black, 2000; Pan et al., 2013). However, OTAs have a clear role to play as efficient distribution channels for the tourism industry. With the proliferation of OTAs, numerous attempts have been made to investigate the factors of OTAs and their roles in consumers' intention to use them. Kaynama and Black (2000) developed E-QUAL which consists of seven dimensions (e.g., content and purpose; accessibility; navigation; design and presentation; responsiveness; background; personalization and customization) by referring to SERVQUAL developed by Zeithaml et al. (1988) to evaluate the service quality of OTAs. Park et al. (2007) also conceptualized OTA website quality as a six-dimensional construct composed of fulfillment, ease of use, security/privacy, information/content, responsiveness, and visual appeal. The authors investigated the impacts of these attributes on willingness to use OTAs. Kim et al. (2007) identified nine attributes customers consider in selecting OTA: security, ease of use, finding low fares, useful and relevant content, and design and presentation of the website, speed of the website, ability to book all travel services in one transaction, booking flexibility, and sorting option. These studies highlight the importance of the functional and visual attributes of OTA websites and the quality of information and service provided by OTAs.

However, with the increasing competition among OTAs, we need to consider additional attributes OTAs use in their attempts to survive the competition: brand awareness and booking facilitation, such as using scarcity messages. As many OTAs enter the market, the better-known ones rather than the unknown ones have gained consumers' trust and competitive advantage. In addition, today's OTAs use



<Figure 1> The Examples of Heuristic and Systematic Cues on OTA Website

several stimulators. One of these is pop-up messages alerting consumers that a limited number of bookable hotel rooms is available (for example, "We have only one left at this price," or "This hotel has been booked four times in the past 24 hours.") These two factors remain undefined, and little OTA research has paid attention to their potential impact.

Therefore, based on the literature, we classified the attributes of OTA into heuristic and systematic cues (see <Figure 1>). Brand awareness, cost saving, and scarcity messages are considered heuristic cues, and recommendation quality and ability to provide reputation are regarded as systematic cues. The next section will examine their roles in detail.

Ⅲ. Theoretical Background and Hypothesis Development

3.1. The Impacts of Heuristic Cues

Numerous budget hotels or relatively unknown hotels tend to depend highly on OTAs to enhance their brand awareness (Ling et al., 2014). Brand awareness refers to how strongly individuals can identify a brand under different conditions (Huang and Sarigöllü, 2014; Keller, 2008). The extent of such awareness is related to the probability that consumers can recognize and recall a brand name (Keller, 1993). The reason why brand awareness is important is that it is strongly relevant to brand trust, and ultimately influences purchase intention (Chi et al., 2009; Hutter et al., 2013), as proposed by signaling theory and suggested by Schlosser et al. (2006). According to this theory, consumers tend to make inferences (e.g., about the credibility of the source, message, and medium) by using signals such as a brand name (Casalo et al., 2015). In other words, a high level of credibility about the source, message, and medium, which numerous studies have found to be prominent heuristic cues, can be derived from a high level of brand awareness. For example, when shopping online, consumers are more likely to infer that the quality of products and services presented on a well-known website is higher than those presented on a relatively unknown website. Considering that

OTAs provide information about hotels and options for booking rooms, they can be a medium in which awareness is critical to its credibility and behavior in consumers eyes. In fact, Casalo et al. (2015)'s research revealed that online hotel ratings presented on a well-known online travel community site are more likely to be perceived as credible than those presented on an unknown online travel community site. In this vein, it can be assumed that consumers will continually use well-known OTAs.

Cost saving is related to the concept of low price. Internet travel services have been regarded as helping reduce consumers' costs by providing the lowest prices or the highest discounts (Kim et al., 2007; Kim et al., 2014). The price and percentage discount of an item have been regarded as important heuristic cues enabling consumers to decide when to stop searching for the best price (Darke et al., 1995). Recently, consumers have been able to easily compare the prices or options of hotel rooms provided by numerous OTAs via Metasearch engines such as Trivago (www.trivago.com). In this vein, it can be assumed that consumers are more likely to select OTAs offering the lowest prices or the highest discounts.

Scarcity messages involve last-minute deals. As the competition among OTAs increases, they often vie for business by providing last-minute deals to stimulate consumers' purchase behavior (Dacko, 2004). When consumers search for a hotel room through an OTA's website, they are often exposed to pop-up scarcity messages containing such inducements as, "We have only one room left at this price," or "Three other people have looked at this hotel in the past hour," or "This hotel has been booked four times in the past 24 hours." This kind of scarcity message has been revealed to influence consumers' unplanned purchases (Chung et al., 2017). Auction-ending theory also supports that more orders have been placed during the final three-hour period of an auction cycle (Chen et al., 2009; Kauffman and Wang, 2001). Therefore, we propose the following hypotheses:

H1: Brand awareness has a positive impact on the OTA continuance intention.

H2: Cost saving has a positive impact on the OTA continuance intention.

H3: Scarcity message has a positive impact on the OTA continuance intention.

3.2. The Impacts of Systematic Cues

There are two ways to get information online – searching and discovering (Chung et al., 2017). When searching, a consumer inputs keywords related to his interest or preference into a search engine, while in the case of discovering, he stumbles on unanticipated information related to his interest or preference when navigating a website. Therefore, it is important for OTAs to recommend hotel rooms that are (1) compatible with what a customer is interested in, (2) offer unanticipated amenities that contribute to a consumer's decision making, and (3) are diverse. Today's OTAs provide automated recommendations based on analyses of consumers' interests and preferences. Therefore, the quality of recommendations is critical in persuading consumers to use an OTA. Nilashi et al. (2016) considered accuracy (compatibility), novelty, and diversity of recommendations as precursors to recommendation quality. Although Nilashi et al. (2016) suggested novelty had no positive impact on recommendation quality, several previous studies have revealed that serendipity as a form of novelty impacts consumers' behavior (Bellotti et al., 2008; Chung et al., 2017; Song et al., 2015; Zhang et al.,

2012). Furthermore, the concepts of accuracy, novelty, and diversity of recommendation are similar to the attributes of OTAs proposed by previous studies: relevant information, ability to book all travel services in one transaction, a sorting option proposed by Kim et al. (2007), and personalization or customization proposed by Shapiro (2001) and Kaynama and Black (2000). All these attributes have been proposed as factors that influence consumers' intention to use IS. Based on this literature, we measured recommendation quality as a second order composed of accuracy, novelty, and diversity.

Meanwhile, systematic cues and heuristic cues can occur concurrently and have impacts on each other in various ways in HSM (Zhang and Watt, 2008). The relationship between systematic cues and heuristic cues can be explained by the co-occurrence of processing modes. This is an important theoretical extension of HSM and can be described as three theoretical extensions: additivity, attenuation, and bias effect (Chaiken et al., 1989; Chaiken, 2012; Chen and Chaiken, 1999). According to these scholars, additivity effect postulates that systematic processing and heuristic processing independently influence consumers' decisions. Attenuation effect posits that the impact of systematic processing on consumers' decisions can weaken the impact of heuristic processing. This effect can occur when a consumer perceives the need to increase judgmental confidence (Chen and Chaiken, 1999). On the other hand, bias effect demonstrates that the heuristic process can indirectly change consumers' decision by biasing systematic processing. Contrary to attenuation effect, this effect can occur when a consumer already has a high level of judgmental confidence. Zhang et al. (2014) found that the heuristic cues (source credibility) of online reviews demonstrate a significant impact on systematic cues (argument quality), and explained this result with bias effect. However, Stephenson et al. (2001)'s research demonstrated the opposite result, which showed that systematic cues (argument quality) influence heuristic cues (source credibility). They explained the result with Hamilton (1997)'s assertion that cognitions precede the inference-making process based on information processing theory. Although the results of previous research differ considerably, we assumed that systematic cues (recommendation quality) may precede heuristic cues (scarcity messages) based on the following reasons. First, when consumers are searching for hotels or navigating OTA websites, the pages of the recommended hotel list (systematic cue) are shown before any pop-ups containing a scarcity message (heuristic cue) appears. Therefore, systematic processing is more likely to occur before heuristic processing under this process on an OTA website. Second, since the automated recommendation system of an OTA offers a list of recommended hotels to consumers based on an analysis of his/her interests and preferences, it is likely the consumer already prefers the hotels somewhat when he/she sees a scarcity message. Furthermore, a scarcity message enhances a consumer's perceived value of the recommended hotels (Chung et al., 2017).

A hotel's reputation is relevant to how well an OTA manages to present peers' comments about a hotel room. Many e-commerce websites, including OTAs, have a peer-reviewing system which evaluates the quality and contributes to, or detracts from, the reputation of a product or service via numerical scores (e.g., from 1 to 5), status icons (e.g., smile icon), and textual reviews posted by other customers (Dholakia et al., 2009; Liu and Park, 2009). Useful and credible reviews influence consumers' decision-making process by decreasing uncertainty and enabling consumers to infer the quality of products

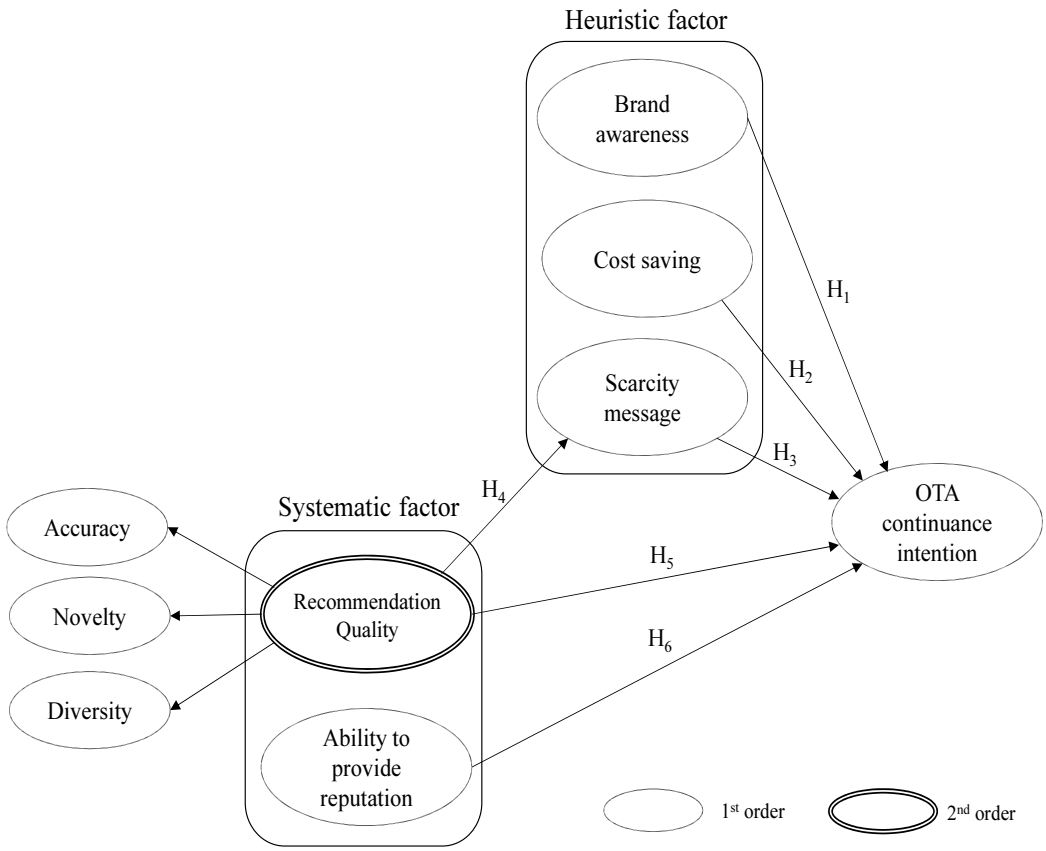
and services in advance (Banerjee et al., 2017; Liu and Park, 2015). Thus, positive reviews lead to more bookings, while negative reviews lead to less bookings. Especially, given the abstract nature of some tourism products, such as a hotel room's inherent intangibility, the importance of online reviews assumes considerable importance. In fact, many OTAs have tried to present more online reviews about hotel rooms to their consumers. For example, hotels.com (www.hotels.com) shows online reviews not only posted through its own peer- reviewing system but also posted through TripAdvisor (www.tripadvisor.com), one of the predominant online review platforms, in order to show more online reviews that can contribute to consumers' decision making. Therefore, we propose the following hypotheses:

H4: Recommendation quality has a positive impact on Scarcity Message.

H5: Recommendation quality has a positive impact on the OTA continuance intention.

H6: Ability to provide reputation has a positive impact on the OTA continuance intention.

<Figure 2> depicts the proposed model with the hypothesized relationships.



<Figure 2> Research Model

Ⅳ. Methods

4.1. Operational Definitions and Measures of Constructs

<Table 2> presents the operational definitions of the constructs employed for this study. The constructs were conceptualized in line with previous studies. Based on the operational definitions of each construct, we adopted the measurement items from the previous research and modified them to be suitable for our study. This procedure yielded 24 measurement items summarized in <Table 3>: 3 items for Brand awareness (Barreda et al., 2016); 3 items for Cost saving (Kim et al., 2014); 3 items for Scarcity message (Chung et al., 2017); 3 items for Accuracy (Nilashi et al., 2016); 3 items for Novelty (Nilashi et al., 2016); 2 items for Diversity (Nilashi et al., 2016); 4 items for Ability to provide reputation (Dholakia et al., 2009); and 3 items for OTA continuance intention (Lee et al., 2011).

Then, researchers proficient in English and Korean with academic specializations in the area under study translated the measurement items into Korean. Questionnaires translated independently by the researchers were compared to others. Once an agreement was achieved, the measurement items were translated back into English and compared to the original version. No serious discrepancies were found. A seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree) was used for all measurement items.

4.2. Data collection

The online survey was conducted from March 28 to April 4, 2017, with Macromill Embrain, which is one of the largest Internet market research companies in South Korea, and which has more than one million registered Korean panels. The questionnaires were randomly distributed to the panels via e-mail. An online survey enables researchers to access a large appropriate population quickly and affordably (Van Selm and Jankowski, 2006). In other words, an online

<Table 2> Operational Definitions of Constructs

Constructs	Operational Definitions	Reference
Brand awareness	The extent to which an OTA has probability that its name might arise to consumer's mind and the simplicity with which this happens.	Aaker (1991)
Cost saving	The extent to which an individual perceives that using OTA for booking a hotel room can save costs, generates discounts and take advantage of transaction costs than other methods can (e.g. hotel website).	Kim et al. (2014)
Scarcity message	The extent to which an individual is sensitive to scarcity message which alerts consumers that there is a limited time and quantity of hotel rooms.	Chung et al. (2017)
Recommendation quality (Second order)	The extent to which an individual perceives that the hotels recommended to him/her match the his/her preferences, interests (accuracy) and general taste (novelty), and are somewhat different from each other (diversity).	Nilashi et al. (2016)
Ability to provide reputation	The extent to which an individual perceives that how well an OTA offers an opportunity to referring peer's comments about a hotel.	Dholakia et al. (2009)
OTA continuance intention	The extent to which an individual has intention to continually use the OTA.	Bhattacherjee (2001)

<Table 3> Questionnaire Items

Constructs		Measured items	Reference
Brand awareness		1. The name of this OTA is well-known in the OTA industry.	Barreda et al. (2016)
		2. This OTA is recognized as a strong OTA brand.	
		3. In comparison to other OTAs, this OTA is a leading brand in the industry.	
Cost saving		1. By booking hotel rooms from the OTA, I can save more on transaction costs than I could by using other methods.	Kim et al. (2014)
		2. Booking hotel rooms from the OTA can generate more discounts than other methods can.	
		3. Booking hotel rooms from the OTA is the right choice if price and other expenses are considered.	
Scarcity message		1. When I do purchasing in the OTA, I worried about limited time.	Chung et al. (2017)
		2. When I do purchasing in the OTA, I concerned about limited quantity.	
		3. When I do purchasing in the OTA, I was anxious about sold out sign.	
Recomme-ndation quality	Accuracy	1. The hotel recommended to me matched my interests.	Nilashi et al. (2016)
		2. The recommendations I received better fits my interests than what I may receive from other one.	
		3. I find many hotels appealing that the OTA recommended me.	
	Novelty	1. This OTA recommended hotels to me that I did not expect.	
		2. This OTA helped me discover new hotel.	
		3. I could find new hotels through the OTA.	
	Diversity	1. The hotels recommended to me are not similar to each other.	
		2. The hotels recommended to me are of various kinds.	
Ability to provide reputation		1. The evaluative comments about a member in addition to the scores make it easier to evaluate hotel characteristics.	Dholakia et al. (2009)
		2. The reputation scores in OTA help to visually show how much the hotels are preferred.	
		3. The reputation score in OTA helps me to compare each hotel.	
		4. The reputation scores in OTA make it easier to judge the expertise of the other customers.	
OTA continuance intention		1. I will persistently use the OTA in the future.	Lee et al. (2011)
		2. I have the intention to use again the service provided in the OTA.	
		3. I have the intention to visit the OTA as frequently as possible.	

survey can exclude unsuitable respondents with some screening questions. Since this study focused on what makes people intend to continually use OTAs, the sample should consist of those who had already booked hotel rooms via OTA. Therefore, we excluded respondents who had no previous experience of booking hotel rooms via OTAs by adopting the initial screening question: Have you ever bought a hotel room through an OTA in the past year? If a respondent clicked the "no" button for this question in the initial stage of the survey, he or she was excluded from the survey. Therefore, OTA in this study refers

to any OTA individuals have used to book a hotel.

Furthermore, we let the respondents choose the location of the hotel they had booked within or outside of Korea. A total number of 408 valid questionnaires was obtained. Among them, 175 questionnaires (42.9%) were about the experience of booking hotels within Korea, and 233 (57.1%) were about the experience of booking hotels outside of Korea. <Table 4> shows the demographic characteristics and travel types of the respondents

Ⅴ. Analysis and Results

To test our hypotheses, this study employed a structural equation modeling (SEM) approach using the software, Analysis of Moment Structures, version 23 (hereafter AMOS 23). The sample size for AMOS should exceed tenfold the total number of measurement items (24) in this study (Nunnally, 1967). Therefore, 240 participants were required to fulfill the minimum sample size for the present study, which

<Table 4> Demographic Characteristics and Travel Types of the Respondents

Characteristics	Frequency	%	Characteristics	Frequency	%
Age			**Job**		
20-29	108	26.5	Student	44	10.8
30-39	106	26.0	Office management	192	47.1
40-49	98	24.0	Sales service	16	3.9
50-59	96	23.5	Technical post	22	5.4
Income			Specialist	46	11.3
Less than 1 million KRW*	28	6.9	Self-employed	20	4.9
1-1.9 million KRW	46	11.3	Public servant	11	2.7
2-2.9 million KRW	97	23.8	Housewife	48	11.8
3-3.9 million KRW	65	15.9	Other	9	2.2
4-4.9 million KRW	69	16.9	**Education**		
More than 5 million KRW	103	25.2	High school	23	5.6
Marital status			In university/college	57	14.0
Married	245	60.0	University/college	271	66.4
Single	163	40.0	Graduate school	57	14.0
Travel companions			**Travel purpose**		
Alone	44	10.8	Leisure	379	92.9
Family	228	55.9	Visit friends, or family	6	1.5
Lover	50	12.3	Beauty, health, and remedy	2	0.5
Friends	72	17.6	Business	18	4.4
Colleague	14	3.4	Religion, pilgrimage	0	0.0
Alone	44	10.8	Education	1	0.2
Hotel types			Shopping	1	0.2
independent	212	52.0	Others	1	0.2
Chain	196	48.0	**Total**	**408**	**100**

Note: 1 KRW (Korean Won) is about 1 USD

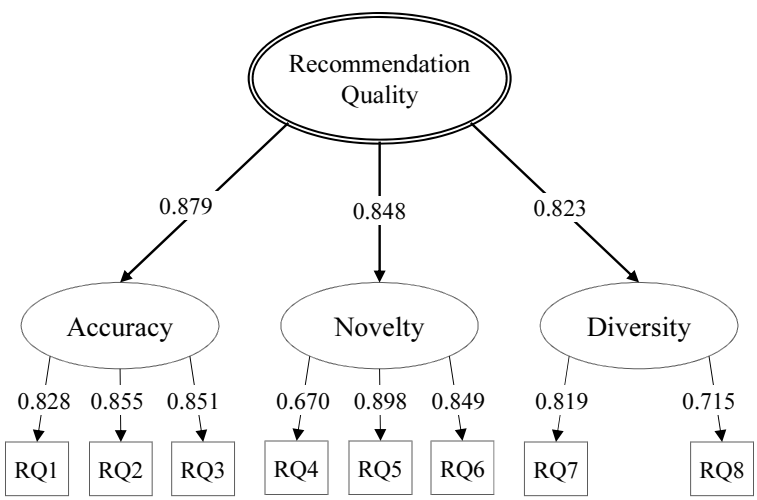
comprised 408 participants – well above the threshold. Before conducting any analysis, we calculated the skewness and kurtosis values of the measurement items to check normality (Tabachnick and Fidell, 2007). Skewness values ranged from -0.427 to 0.167, and kurtosis values ranged from -0.186 to 1.118, which means the items were approximately normally distributed. Thus, we estimated the confirmatory factor analysis and structural model analysis.

5.1. Confirmatory Factor Analysis for Recommendation Quality (Second-order)

Since Recommendation Quality is the most complex second-order construct in our model, we decided to separately conduct a confirmatory factor analysis for this construct (hereafter CFA). According to Burts (1976) and Kah et al. (2010), this approach can reduce the likelihood of interpretational confounding which results from conducting a complex model. The results showed that all of the loadings are more than 0.5, and the *t*-value exceeds 12.317 ($p < 0.001$). The statistics of the CFA for Recommendation Quality showed an χ^2 fit of 36.709 ($p = 0.000$) with 17 degree of freedom ($\chi^2/df = 2.159$). Although the root mean square error of approximation (RMSEA) was 0.053, which is slightly larger than its threshold (RMSEA should be smaller than the threshold, 0.05), other fit indices were revealed to satisfy the threshold (Anderson and Gerbing, 1992): the goodness-of-fit index (GFI) was 0.977, the adjusted-goodness-of-fit (AGFI) was 0.952, the normed fit index (NFI) was 0.980, and the comparative fit index (CFI) was 0.989 (see <Figure 3>).

5.2. Confirmatory Factor Analysis for Overall Model

CFA was conducted separately for three separate models: the entire group and two sub-groups (hotels within Korea and hotels outside of Korea). The statistics of the entire model showed an χ^2 fit of 430.922 ($p = 0.000$) with 224 degree of freedom ($\chi^2/df = 1.924$). Although the AGFI was 0.890, which was slightly smaller than its threshold, 0.9, other fit indices were revealed to satisfy the threshold (Anderson and



<Figure 3> A Second-order Confirmatory Factor Analysis of Recommendation Quality ($\chi^2 = 36.709$, $df = 17$, $\chi^2/df = 2.159$, $p = 0.000$, GFI = 0.977, AGFI = 0.952, NFI = 0.980, CFI = 989, RMSEA = 0.053)

<Table 5> Model Fits of the Three Separate Models

	χ^2	*df*	χ^2 /*df*	AGFI	GFI	NFI	CFI	RMSEA
Entire model (n = 408)	430.922	224	1.924	0.890	0.918	0.938	0.969	0.048
Hotels within Korea (n = 175)	383.748	224	1.713	0.787	0.841	0.872	0.941	0.064
Hotels outside of Korea (n = 233)	384.341	224	1.716	0.840	0.880	0.912	0.961	0.056

Gerbing, 1992): GFI was 0.918, NFI was 0.938, CFI was 0.969, and RMSEA was 0.048. The statistics of the two-subgroups showed marginally satisfied values, as shown in <Table 5>.

We assessed content and discriminant and convergent validity to validate our measurement model. As we have employed the already validated measurement items in previous studies, content validity was demonstrated. Discriminant validity was assessed by comparing the square root of the average variance extracted (hereafter AVE) of a construct with the correlation values of that construct and other constructs (Fornell and Larcker, 1981). As shown in <Table 6>, the diagonal elements in bold mean the square root of AVE of each construct, these were found to be greater than the correlation values of that construct and other constructs. Convergent validity can be assessed by checking whether the composite reliabilities (hereafter CR) and Cronbach's alpha values of the constructs are greater than the recommended threshold 0.7 (Fornell and Larcker, 1981). <Table 5> shows that all the CR and Cronbach's alpha values exceed the 0.7. Therefore, the measurement model appears to be acceptable.

5.3. Structural Model

Three separate models for the three groups were assessed via AMOS: the entire group, hotels within Korea and hotels outside of Korea. The statistics of the entire model showed an χ^2 fit of 474.384 (p = 0.000) with 237 degree of freedom (χ^2/df = 2.002). Although AGIF was 0.886, which was slightly smaller than its threshold, 0.9, other fit indices were revealed to satisfy the threshold (Anderson and Gerbing, 1992): GFI was 0.910, NFI was 0.932, CFI was 0.969, and RMSEA was 0.041 (RMSEA should be smaller than the threshold, 0.05). Considering that all of the values for the fit indices were significantly met, the estimated structural equation model is statistically sound.

<Figure 4> and <Table 7> show the results of the structural equation model. In the entire model, it was found that, except for the scarcity message (β = -0.069, t-value = -1.597, n.s), all of the heuristic and the systematic cues have an influence on OTA continuance. Recommendation quality was found to be the strongest predictor of intention to continue using OTAs (β = 0.463, t-value = 5.266, p < 0.001) among the heuristic and systematic cues, and it was also found to significantly influence scarcity message (β = 0.442, t-value = 7.600, p < 0.001), as well.

In both models, brand awareness was found to influence intention to continue using OTA, and scarcity message was not. In other words, brand awareness is an important motivator stimulating people to continue to use OTAs, whereas scarcity message is not, whether the hotel is located within or outside of Korea. Furthermore, recommendation quality was found to impact scarcity message in both models.

Other factors that motivated OTA users to continuously use OTA differed according to the hotel's location. Cost saving (β = 0.127, t-value = 2.021, p < 0.05) and recommendation quality (β = 0.559,

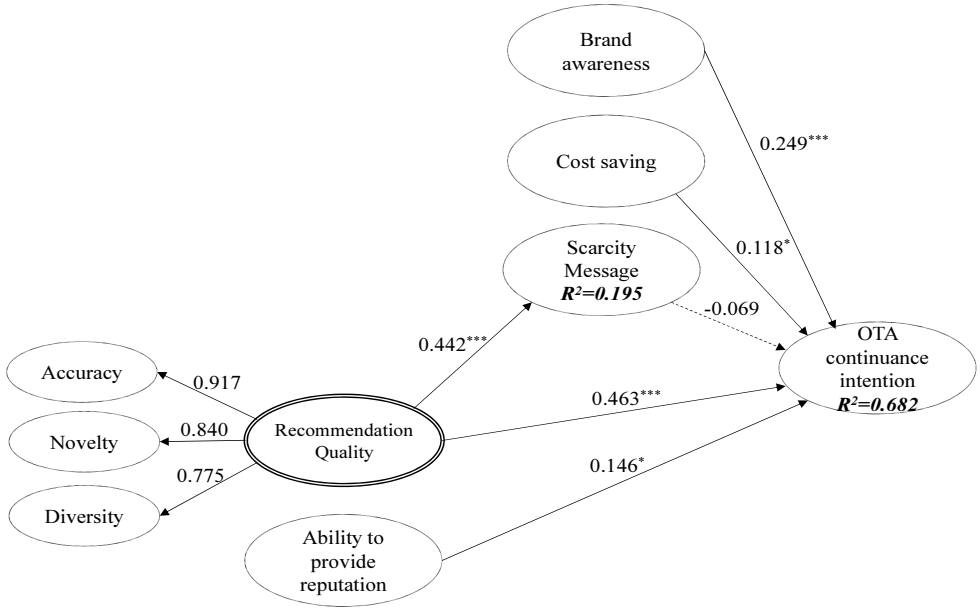
<Table 6> The Results of the Measurement Model

Model and Constructs	CR	AVE	α	Mean	*SD*	Correlation of constructs							
						(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Entire model (*n* = 408)													
(1) Brand awareness	.890	.730	.889	5.03	0.97	**.854**							
(2) Cost saving	.876	.703	.874	4.89	1.14	.422	**.838**						
(3) Scarcity message	.811	.590	.804	4.44	1.23	.232	.228	**.768**					
(4) Accuracy	.882	.714	.881	4.69	0.96	.626	.364	.336	**.845**				
(5) Novelty	.850	.658	.842	4.63	0.92	.496	.394	.397	.648	**.811**			
(6) Diversity	.742	.590	.738	4.56	0.91	.375	.249	.256	.587	.559	**.768**		
(7) Ability to provide reputation	.909	.716	.908	4.97	0.94	.569	.505	.342	.621	.575	.481	**.846**	
(8) OTA continuance intention	.907	.764	.906	5.01	1.02	.645	.472	.258	.666	.566	.467	.637	**.874**
Hotels within Korea (*n* = 175)													
(1) Brand awareness	.889	.728	.889	4.93	0.90	**.853**							
(2) Cost saving	.895	.740	.891	4.93	1.12	.409	**.860**						
(3) Scarcity message	.762	.524	.737	4.44	1.04	.211	.307	**.724**					
(4) Accuracy	.863	.677	.861	4.70	0.87	.692	.379	.243	**.823**				
(5) Novelty	.855	.668	.849	4.63	0.90	.471	.384	.381	.554	**.817**			
(6) Diversity	.718	.561	.708	4.55	0.85	.447	.176	.210	.551	.529	**.749**		
(7) Ability to provide reputation	.882	.652	.879	4.92	0.85	.619	.492	.210	.605	.524	.447	**.807**	
(8) OTA continuance intention	.900	.750	.898	5.02	0.91	.682	.465	.184	.615	.495	.451	.649	**.866**
Hotels outside of Korea (*n* = 233)													
(1) Brand awareness	.890	.729	.888	5.11	1.01	**.854**							
(2) Cost saving	.864	.681	.862	4.86	1.15	.440	**.825**						
(3) Scarcity message	.836	.630	.834	4.43	1.36	.246	.186	**.794**					
(4) Accuracy	.893	.736	.893	4.68	1.02	.595	.356	.382	**.858**				
(5) Novelty	.849	.655	.838	4.63	0.95	.515	.401	.409	.706	**.809**			
(6) Diversity	.758	.610	.756	4.57	0.95	.333	.298	.281	.608	.579	**.781**		
(7) Ability to provide reputation	.924	.754	.923	5.01	1.00	.539	.518	.409	.632	.609	.500	**.868**	
(8) OTA continuance intention	.912	.775	.911	5.01	1.10	.630	.479	.293	.693	.610	.476	.632	**.880**

CR: Composite Reliability, AVE: Average Extracted Variance, α: cronbach's alpha, SD: Standard deviation

Note: Diagonal elements (in bold) in the correlation of constructs matrix are the square root of the average variance extracted (AVE). For adequate discriminant validity, the diagonal elements should be greater than the corresponding off-diagonal elements.

t-value = 4.862, $p < 0.001$) were found to be strong predictors of continuing intention to use OTAs when booking hotels outside of Korea, whereas this was not the case when booking hotels within Korea. On the other hand, the ability to provide reputation (β = 0.255, *t*-value = 2.365, $p < 0.05$) showed a significant causal relationship with the intention to continue using OTA only in the case of booking hotels within Korea.



* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

<Figure 4> Entire Model: Path Estimates by AMOS

<Table 7> The Estimated Structural Model for the Hotels Within and Outside of Korea

Hypothesis				Path coefficient	*t*-value	*p* value	Results
Entire model (*n* = 408)							
H1	Brand awareness	→	OTA continuance intention	.249	4.204	<.001	Supported
H2	Cost saving	→	OTA continuance intention	.118	2.555	.011	Supported
H3	Scarcity message	→	OTA continuance intention	-.069	-1.597	.110	*Rejected*
H4	Recommendation quality	→	Scarcity message	.442	7.600	<.001	Supported
H5	Recommendation quality	→	OTA continuance intention	.463	5.266	<.001	Supported
H6	Ability to provide reputation	→	OTA continuance intention	.146	2.112	.035	Supported
Hotels within Korea (*n* = 175)							
H1	Brand awareness	→	OTA continuance intention	.314	2.779	<.01	Supported
H2	Cost saving	→	OTA continuance intention	.103	1.756	.079	*Rejected*
H3	Scarcity message	→	OTA continuance intention	-.048	-1.101	.271	*Rejected*
H4	Recommendation quality	→	Scarcity message	.472	3.408	<.001	Supported
H5	Recommendation quality	→	OTA continuance intention	.292	1.751	.080	*Rejected*
H6	Ability to provide reputation	→	OTA continuance intention	.255	2.365	<.05	Supported
Hotels outside of Korea (*n* = 233)							
H1	Brand awareness	→	OTA continuance intention	.220	3.037	<.01	Supported
H2	Cost saving	→	OTA continuance intention	.127	2.021	<.05	Supported
H3	Scarcity message	→	OTA continuance intention	-.072	-1.240	.215	*Rejected*
H4	Recommendation quality	→	Scarcity message	.494	6.519	<.001	Supported
H5	Recommendation quality	→	OTA continuance intention	.559	4.862	<.001	Supported
H6	Ability to provide reputation	→	OTA continuance intention	.079	0.840	.401	*Rejected*

Ⅵ. Discussion and Conclusions

Based on the literature of HSM and OTA attributes, this study considered brand awareness, cost saving, and scarcity message as heuristic factors, and recommendation quality and ability to provide reputation as systematic factors, and investigated the impacts of these factors on the intention to continue using OTA in accordance with the locations of the hotels within and outside of Korea.

First, it was found that only scarcity message has no significant influence on intention to continue using OTA in the entire model. One possible explanation is that scarcity message is related to impulsive behavior derived from temporal bursts of hedonic and positive affect (Chung et al., 2017; Dhurup, 2014). Therefore, it can be assumed that scarcity message failed to enable customers to have the intention to continually use a specific OTA, although it might have influenced consumers' first-time use. Second, recommendation quality was found to be the strongest predictor of intention to continue using OTA in the entire model. In other words, whether a consumer continually uses an OTA depends highly on the extent to which the recommended hotel rooms match his preferences, contribute to his decision making, and how diverse the recommended hotel items are. Third, cost saving (heuristic cue) and recommendation quality (systematic cue), were found to have no significant impact on the intention to continue using OTA when booking a hotel within Korea. On the other hand, the opposite result was obtained when booking a hotel outside of Korea. In other words, consumers only care about the price and information quality of recommended hotel rooms suggested by OTA when they are booking within Korea. It can be assumed that consumers tend to perceive less or no uncertainty and risk in booking hotels in their home country, whereas they tend to perceive more uncertainty and risk arising from relatively insufficient information and cultural differences when booking hotels outside of their home country.

Based on these results, this study provides theoretical and practical implications. One of the theoretical implications is that we added brand awareness and scarcity message to the research model and investigated the roles of heuristic and systematic cues on the intention to continue using OTAs. We also measured recommendation quality as a second order composed of accuracy, novelty, and diversity, and demonstrated that recommendation quality is the most important cue of OTA. Furthermore, this study divided the sample based on the location of hotels within and outside of Korea, and revealed that depending on where the hotel is located, the cues consumers are interested in are somewhat different.

As practical implications, managers and practitioners of both hotels and OTAs can refer to this study in making consumers continually use an OTA. In order to retain existing consumers, the design and development focus must be placed on an automated recommendation system to provide a high quality of recommendation related to consumers' interests and preferences, instead of focusing too much on scarcity messages, such as those contained in pop-ups because the results revealed that recommendation quality is closely related to the intention to continue using OTAs, while scarcity message is not.

However, this study has some limitations. First, although some previous studies have pointed out that functional and visual attributes of an OTA's website, such as security, ease of use, visual appeal, and quality of online review influence consumers' behavior (Kaynama and Black, 2000; Kim et al., 2007;

Park et al., 2007; Raguseo et al., 2017), these factors were not considered in this study since we used several OTAs as examples, and not as specific OTAs. Second, we did not analyze whether the impacts of heuristic and systematic cues on continued intention to use OTAs differed at a statistically significant level, depending on the location of the hotels. Therefore, further studies are needed to analyze the moderating effect of hotel location in the relationships between a greater number of OTA attributes and the intention to continue using OTAs.

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