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The effects of choice set size and information filtering mechanisms on online hotel booking

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Abstract

Online booking is one of the most popular ways of making reservations for hotel guests. Thus, hoteliers are paying increasing attention to hotel website information presentation and design. The purpose of this study, then, is to examine the joint influence of choice set size and information filtering mechanisms on consumers' decision confidence towards online hotel booking. Choice set size was operationalized through 3-, 9-, and 30-hotel room choice sets. Through experimental design, this study shows that the presence of an information filtering mechanism reduces consumers' perceptions of choice overload with a large number of choices (30 choices), whereas its impact is attenuated with smaller choice sets (3 and 9 choices). In addition, choice overload mediates the impact of choice set size on decision confidence. Theoretical contribution and managerial implications are also discussed.

Keywords: choice overload; information filtering; choice set; hotel industry; online hotel booking.

1. Introduction

The online environment is information-rich and easily enables service providers to offer ever-increasing amounts of product/service-related information. For example, when a customer wants to book a hotel room online, they have many websites through which they can do so, ranging from online travel agencies (e.g., Expedia. Booking.com) to hotel websites and referral sites (e.g., Kayak). Once the customer decides which website to visit, they have a variety of available alternatives to choose from. However, human brains have a limited information processing capacity (Iyengar & Lepper, 2000; Schwartz, 2000), which may lead to choice overload. Choice overload can be conceptualized as the presence of a high similarity of alternatives and an abundance of attribute information affecting the complexity of the choice task (Chernev, Bockenholt, & Goodman, 2015). In other words, it happens when the human brain is overwhelmed with choices and becomes overloaded, slowing and reducing its decision-making processes. Although consumers like choices, offering too many may result in negative consequences, such as regret, lower post-choice satisfaction, and lower decision confidence (Iyengar & Lepper, 2000).

A term that is closely related to choice overload is information overload. Information overload refers to the customer's limited cognitive ability to process information appropriately (Le Lec, Lumeau, & Tarroux, 2016). In simple terms, choice overload is the outcome of the number of choices and information overload is the outcome of the amount of information. "The effect of information overload is often compounded in assortments in which options are poorly organized, since the very lack of structure further complicates evaluating the available options" (Chernev, 2011).

Hotels and travel companies devote effort and resources to simplifying the complexity of their offerings. For example, the world's most popular online travel agency, Expedia, allows hotels to list a limited number of room types instead of having all their available room types. This rule exists to reduce decision complexity. The problem from the providers' perspective is determining the best way to communicate and structure the extensive choice sets in order to

simplify the choice process for the consumer (Langner & Krengel, 2013). Langner and Krengel (2013) highlighted the importance of communication between the provider and customers in the context of design of catalogues, websites, and flyers. One such method to assist customers with the decision-making process in extensive choice set environments is information filtering mechanisms. For online travel agency or hotel websites, information filtering mechanisms help consumers customize the available hotel room choices according to their individual preferences (Häubl & Trifts, 2000). This study, then, aims to examine the joint influence of choice set size and information filtering mechanisms on consumers' decision confidence towards online hotel booking.

Filtering is one technique for categorizing the available choice sets to ease consumers' decision-making processes (Langner & Krengel, 2013). Prior research indicates that information filtering mechanisms help to relieve burdensome information processing (Chen, Shang, & Kao, 2009; Jacoby, 1984; McGuire, 1976). Many online businesses today provide information filtering mechanisms to help customers sort and evaluate alternatives (Chen et al., 2009). In the context of hotel room booking, many hotel and online travel agency websites provide information filtering mechanisms to help customers sort available rooms according to various factors, such as rate, view, size, bed type, payment terms, and executive lounge access. By sorting the room inventory according to their preferences, customers are able to choose the options most suitable to their needs. In this study, we examine the role of filtering mechanisms in reducing choice overload and thereby increasing consumers' confidence in their decisions.

The following objectives are addressed in this study:

1. Does the presence of information filtering mechanisms moderate the impact of the choice set size on consumer perceptions of choice overload?
2. Is choice overload the underlying process explaining the impact of choice set size on consumers' confidence in their booking decisions?

The present research contributes to the hospitality knowledge in at least three ways. First, it refines the theory regarding the relationship among information filtering, choice set size, and decision confidence that may facilitate its application to online hotel booking contexts. Second, it responds to a stated need for a deeper understanding of the choice overload problem in online booking settings. Third, the findings will inform industry professionals on customer responses to choice overload under different conditions related to choice set size and information filtering mechanism.

2. Study Background

2.1 Choice Overload

There has been a long debate in consumer behavior research on consumer choices and choice overload (Chernev et al., 2015; Hadar & Sood, 2014). There are two major streams of literature on the topic (Scheibehenne, Greifeneder, & Todd, 2010): With large choice sets, customers tend to have a better chance of matching their purchase with their preferences (Bellenger & Korgaonkar, 1980). Larger assortments allow customers to maintain flexibility (Kahneman & Snell, 1992), increase freedom of choice (Kahn, Moore, & Glazer, 1987), and enhance the pleasure of shopping (Babin, Darden, & Griffin, 1994). However, with larger choice sets, customers must spend more effort to make a decision and turn down unsuitable options

(Iyengar & Lepper, 2000). As a result, customers can feel choice overload, which in turn decreases their willingness to purchase.

Chernev (2003a, 2003b) showed that making a purchase decision from a large choice set results in lower confidence in the eventual choice. In the context of this research, choice overload, also known as overchoice, is defined as a situation in which the customer faces a cognitive tasking decision problem due to a large number of alternatives (Iyengar & Lepper, 2000; Simon, 1955; Toffler, 1970). Overchoice happens when a customer's cognitive resources are not able to handle the complexity of the decision problem (Simon, 1955; Toffler, 1970). One of the most popular experiments related to the assortment size and purchase likelihood is the jam experiment (Iyengar & Lepper, 2000). In the study, shoppers tasted either 6 or 24 flavors of jams. The results indicated that customers were more willing to make a purchase from the 6-flavor (vs. 24-flavor) jam assortment. Such findings have been extended to other product categories, including chocolate, consumer electronics, and mutual funds (Berger, Draganska, & Simonson, 2007; Chernev, 2003a; Huberman, Iyengar, & Jiang, 2007). In the context of online hotel booking, we focus on a particular type of choice overload, where decision complexity is predominantly due to a large number of decision alternatives (Iyenhar & Lepper, 2000).

Choice overload cannot be observed directly, as it is a mental construct. It largely depends on the subjective state of the customer during the decision-making process. Objective indicators of choice overload are categorized as process-based indicators and outcome-based indicators (Chernev et al., 2015). Process-based indicators are related to the subjective state of the customers, such as confidence, satisfaction, and regret. Outcome-based indicators are related to customers' observable behavior, such as the likelihood of deferring a choice or reversing an already made choice.

2.2 Choice Overload in Tourism and Hospitality Research

Choice overload, a largely overlooked topic in tourism and hospitality research, has gained attention over the past six years. Park and Jang (2013) argued that choice overload is inevitable in tourism given the overabundance of choices. Thai and Yuksel (2017a) offered five recommendations to reduce choice overload in the tourism context. One recommendation was to reduce choice set complexity through comprehensive filtering tools based on sociopsychological factors. Such filtering tools are particularly useful when dominant options are available in the choice set. In the case of hotel room booking, the location or room rates can be considered as dominant factors.

In the hospitality and tourism context, Pan, Zhang, and Law (2013) presented customers with 4 hotel sets: 5 hotels with images and text, 5 hotels with text only, 20 hotels with images and text, and 20 hotels with text only. They revealed that 20 hotels with text overwhelmed their respondents. They further stated that participants tried to reduce their consideration sets by using price as a measurement or determinant. In other words, participants created an ad-hoc filtering mechanism in their minds. Thai and Yuksel (2017a) and Pan et al. (2013), therefore, stressed the importance of filtering tools to reduce choice overload in the tourism and hospitality context.

Park and Jang (2013) demonstrated that having more than 22 choices represents choice overload for tourism products. Their stimuli involved destination types and holiday packages

(flight and hotel). Five different choice sets were composed of 1, 3, 10, 20, or 30 choices. Thai and Yuksel (2017b) assessed the presence of choice overload in the holiday destination choice context using three destination portfolios as a small set and seven destination portfolios as a large set. Their findings showed that people choosing from a small choice set were more satisfied and less regretful than their large set counterparts. In another study, Thai and Yuksel (2017c) showed that travelers with high self-confidence tend not to experience choice overload. They also suggested that choice overload spans both the early and late stages of the decision-making process.

2.3 The Moderating Effect of Information Filtering Mechanism

There are several ways to reduce task difficulty and choice overload. One such technique is to organize the options in a manner that influences consumers' perceptions of variety (Langner & Krengel, 2013; Mogilner, Rudnick, & Iyengar, 2008). Such organization and categorization inform customers about the attributes of the items grouped under each heading (Alba, Hutchinson, & Lynch 1991; Roberts & Lattin 1991). There is abundant literature on the usefulness of categorization and category labels to refine options in the choice set (e.g., Chakravarti & Janiszewski, 2003). Diehl, Kornish, and Lynch (2003) stated that customers using a screening device that helped them rank the available options made better choices compared to those that did not. Interestingly, linguistics research offers an explanation for how categorization is perceived by customers (Schmitt & Zhang, 1998). For instance, items under the same label are likely to be perceived as more similar, and items listed under different labels are likely to be perceived as more different (Clark, 1985). Mogilner et al. (2008) argued that customers presented with categories are more likely to infer differences between the available options.

The organization and structure of the choice set have an impact on perceived variety, thus influencing satisfaction with the chosen option (Kahn & Wansink, 2004). Mogilner et al. (2008) used an assortment of 50 coffee flavors to examine how categories and category labels impact consumers' decision-making processes. They showed that the presence of categories in an assortment increases satisfaction. They also noted that any type of categorization, regardless of the content, has a positive effect on customers' decision making. Langner and Krengel (2013) used cellphones as stimuli and demonstrated that partitioning a large assortment by meaningful categories (with informative labels) is helpful for customers during the selection process.

In this study, we focus on a novel way of categorizing online product choices—filtering mechanisms. Online selling platforms allow information filtering to aid consumers' in information searching and processing (Chen et al., 2009). The purpose of filtering mechanisms is to ease consumers' decision-making processes and thus reduce choice overload with large choice sets. We, therefore, put forth the following prediction:

H1: The presence of an information filtering mechanism will reduce consumers' perceptions of choice overload with a large number of choices, whereas its impact will be attenuated with smaller choice sets.

2.4 Decision Confidence

It is typical for customers to evaluate their feelings about decisions they have made. This is a part of the overall decision-making process. Constructs to measure such feelings in the marketing and psychology literature include decision satisfaction, regret and confidence (Heitmann, Lehmann, & Herrmann, 2007; Tsai, Klayman, and Hastie 2008; Zeelenberg, 1999). In this study, subjective decision quality is conceptualized as consumer's degree of confidence in a purchase decision which is a consequence of choice overload (Chernev et al, 2015). Choice confidence play an important role consumers' decision-making processes (Andrews, 2016).

This decision confidence is "the degree of certainty people hold about the appropriateness or optimality of their decisions" (Parker, Lehmann, & Xie, 2016, p. 116). It is a cognitive evaluation of decision optimality. In simple terms, individuals ask themselves whether they made an optimal or most appropriate decision. It reflects people's impressions of the quality of their judgements and is influenced by the amount of information available prior to the decision (Tsai & McGill, 2011) and balance of arguments supporting and in opposition to the chosen option (Griffin & Tversky, 1992). Parker et al. (2016) stated that a comparison between what was and was not chosen impacts decision confidence. In addition, there is a negative relationship between decision confidence and the similarity of the options in the choice set.

Prior research suggests that confidence is a reliable predictor of consumer attitudes and actual behaviors and is inherently linked to future purchase decision (Bizer, Tormala, Rucker, & Petty, 2006; Rucker & Petty, 2004). Thomas and Menon (2007) found that customers who are confident with their decision in an extensive choice set display increased willingness to pay. These customers also have higher purchase intention, along with faster purchase speed (Greenleaf & Lehmann, 1995), higher satisfaction (Heitmann et al, 2007), and stronger choice commitment (Clarkson, Tormala, & Rucker, 2008). These types and qualities of external information play an important role in driving choice confidence (Rucker, Tormala, Petty, & Briñol, 2014). Types of external information refer to direct experience versus encountered experience, and external versus internal information. Qualities of external information refer to many factors, including but not limited to source credibility, importance, validity, consistency, quantity, and ease of processing. When such external information does not exist, choice confidence is largely dependent on inferences and subjective evaluations (Hammond, 1996).

2.5 The Mediating Effect of Choice Overload

Previous research shows that choice overload is a consequence of choice size, choice complexity, and choice variety (Chernev et al., 2015; Townsend & Kahn, 2013). In an effort to explore downstream consequences of choice overload, we propose choice overload as the psychological mechanism explaining the effect of choice set size on decision confidence.

In Chernev et al., (2015)'s framework, choice overload can result in both subjective states such as choice satisfaction, decision regret, and decision confidence; and behavioral outcomes, including choice deferral, switching. More specifically, consumers experiencing choice overload may feel less determined and less confident (Chernev, 2003a, 2003b; Dhar & Nowlis, 1999; Haynes, 2009; Mogilner et al., 2008; Morrin et al., 2012; Scheibehenne et al., 2009). This is

because consumers feel uncertain about whether their choice is the best option (Dhar & Nowlis, 1999). Following this stream of literature, this study hypothesizes that:

H2: Choice overload mediates the joint effect of choice set size and presentation format on decision confidence.

The research model of the study is illustrated in Figure 1.

*** Insert Figure 1 about here***

3. Research Methodology

3.1 Study Design and Instrument

An experiment was conducted to test our predictions. A three (small, medium, and large assortment of hotel room choices) by two (with or without information filtering mechanisms) between-subjects design was used. Choice complexity was operationalized as a small, medium, and large assortment of hotel room choices. The large assortment included 30 room rates/types displayed on the hotel's website. Thirty options were selected to represent a large choice set after reviewing the literature on choice overload research (Malhotra, 1982; Park & Jang, 2013). Nine room rates/types were displayed in the medium assortment and only three room rates/types were displayed in the small assortment condition

We used online hotel room booking stimuli. First, a simulated hotel website inspired by existing hotel websites (e.g., Marriott and Starwood) was created. The location of the hotel was Hong Kong. Participants in the study were told that they would travel to Hong Kong for two days (preselected weekend dates targeting leisure customers) and they were interested in booking a four-star hotel located in downtown Hong Kong. They had decided to look at the hotel's website for available room types and rates.

The room rate/types were prepared with the following assumptions: The average daily rate for the Hong Kong hotel market in 2017 (approximately HK $1,400) was used as a base rate for a 36 square-meter city view room with advance payment. The three room types were "City view," "Victoria Harbor view," and "Mountain view." These room types are typical in the Hong Kong market. In addition, other information, such as room size (36 vs. 40 square feet), executive lounge access (access or no access), advance payment (no advance payment with cancellation or seven-day advance payment with penalty), and breakfast (breakfast included, breakfast not included), were provided. These combinations generated 48 room rate/types. The options that were not meaningful were removed from the choice set. For instance, no breakfast option was deleted from executive lounge access choices, as the breakfast is normally provided in the executive lounge. These eliminations resulted in 37 room rate/type choices. Out of 37 choices, 30, 9, and 3 room rate/type choices were selected to represent large, medium, and small assortments of room choices.

Amenities and services included with every room choice (which can be expanded with a click) include, 1 king bed or 2 twin beds, Satellite, i-cable, and TV channels, in-room safe, coffee machine, complimentary wired and Wi-Fi high-speed internet within hotel area, complimentary

shuttle bus to the train/subway station. Executive lounge access benefits included breakfast at the lounge, afternoon tea selection of pastries, desserts, and sandwiches, evening cocktails and wine, exclusive access to refreshments, including coffee, juices, tea, soft drinks, and snacks, and priority check-in.

Next, room rates for the room types were generated according to several assumptions. The base rate of HK $1,400 (daily average in 2017) was used as base rate for the 36-m^2 city view room with advance payment. The rate information was requested from Smith Travel Research. The Victoria Harbor view rooms were priced 10% higher than city view rooms, and mountain view rooms were priced 10% lower than city view rooms. Club privileges were HK $500 per room per night. Breakfast was HK $200 per room per night (breakfast charge is not included for club privilege rooms, as they include breakfast). The 40-m^2 rooms were HK $150 more than the 36-$m^2$ rooms. Seven-day advance payment rooms were 15% cheaper than a free cancellation option.

Lastly, information filtering mechanisms were applied. Six hotel websites were created to match six possible scenarios (three [small, medium, and large assortment of hotel room choice sets] by two [with or without information filtering mechanisms]). Each participant was randomly assigned to one of the six scenarios. Figure 2 shows a snapshot of two of the websites with a medium assortment (nine hotel room choice set) with and without the information filtering mechanism. Figure 3 illustrates how respondents could use the information filtering mechanism. A currency converter was included in all six websites to help participants convert Hong Kong dollars to their currency.

*** Insert Figure 2 about here***

*** Insert Figure 3 about here***

Once participants clicked on the link, they were transferred to the one of the six simulated hotel websites to make a room rate/type selection. Participants were able to freely surf the hotel's website and, if available, to use the information filtering mechanism to filter preferred attributes. Once they made their choices, participants were redirected to the survey to make a room selection. They were once again presented the room choices that they saw on the simulated website. All participants were required to make a choice among the room options presented to them. Next, participants answered questions on manipulation checks, choice confidence, perceived choice overload, travel behavior, and demographic information.

3.2 Participants

A Qualtrics panel was used to collect the data. Two layers of filtering were used to identify participants. Participants were individuals who have traveled to Hong Kong in the past year and have had an online hotel room booking experience within the past year. Participants were from the United States, the UK, and Australia, representing the top three long-haul markets for Hong Kong. The U.S. is the most popular long-haul market, with 1.2 million arrivals in 2017, followed by Australia with 567,881, and the UK with 555,353 (Hong Kong Tourism Board,

2018). Participants' demographic and travel behavior information is presented in Table 1. The sample size was 247.

*** Insert Table 1 about here***

About 56% of the respondents were male and 66.6% of the participants were in the 25–44 age range. American, Australian, and British respondents made up about 29.6%, 36.4%, and 34% of the sample, respectively, and 58% of the participants had a college degree. The most popular hotel stay category for the sample was an upscale hotel (4-star). Only 10% of the sample considered themselves as inexperienced or slightly experienced travelers.

3.3 Dependent Measures

A perceived choice overload scale was adapted from Agnew and Szykman (2005), including the items: "There were too many different options to consider," "This decision required a great deal of thought," "This was a difficult decision," "I found this decision to be overwhelming," "It was difficult to comprehend all of the information available to me," "This task was stressful," and "It was a relief to make a decision" (Cronbach's $\alpha = 0.88$). All questions were answered by a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

Decision confidence was measured via five items adopted from Parker et al. (2016): "I am 100% confident that my choice is objectively better than other choices on the hotel website," "I am unsure whether my choice is objectively better than other choices, or vice versa" (reverse coded), "I am certain that my choice was the best choice I could make," "Regardless of my personal feelings about my choice, it is clear that my choice is objectively superior to other hotel room choice available on the website," and "Even if my friends might not agree, my choice is the best option" (1 = strongly disagree, 7 = strongly agree) (Cronbach's $\alpha = 0.80$).

4. Findings

4.1 Manipulation Checks

Two questions were used as manipulation checks. The first asked participants to indicate the extent to which they agreed with the following statement: "The Website had an information filter to help me sort through the options" (1 = strongly disagree, 7 = strongly agree). The second question asked: "Approximately how many room choices did you encounter on the Webpage?" (3, 9, or 30). Participants in the information filter condition agreed that the website they browsed had an information filter to help them sort through the options more so than their counterparts in the no information filter option ($M_{\text{information filter}} = 6.07$ vs. $M_{\text{noinformation filter}} = 3.17$, $F[1, 245] = 150.91$, $p < 0.001$). Twenty-nine participants were excluded from further analysis, as they did not pass the first manipulation check. All participants selected the correct number of room choices according to their assigned condition.

4.2 Hypotheses Testing

A two-way ANOVA three (assortment of room choice sets: small [3], medium [9], and large [30]) by two (information filtering mechanism: present and absent) was used to test the first hypothesis. The model was significant ($F[2, 241] = 92.70$, $p < 0.001$). The main effects for assortment size and information filtering mechanism were significant ($p < 0.001$). More importantly, there was a statistically significant interaction between the assortment size and

information filtering mechanism (F[2, 241] = 60.39). The ANOVA results are presented in Table 2. The two-way interaction effect is depicted in Figure 4.

Simple effect analysis further shows that perceived choice overload among participants with 30 hotel room choices and no information filtering mechanism (M = 6.01, SE = 0.16) was much higher compared to their counterparts with an information filtering mechanism (M = 3.46, SE = 0.0, $p < 0.001$) (F[1, 241] = 176.71, $p < 0.001$) (Table 3). Such differences disappeared in the medium choice set (9 hotel room choices) (F[1, 241] = 0.13, $p = 0.26$) and small choice set conditions (3 hotel room choices) (F[1, 241] = 0.13, $p = 0.72$). These results are congruent with Hypothesis 1.

*** Insert Table 2 about here***

A simple mediation model following Hayes's (2013) PROCESS macro for SPSS (model 4, bias-corrected bootstrap samples: 10,000) was used to test the second hypothesis. The analysis revealed significant indirect effects for the choice overload (β = -0.14, SE = 0.06, 95% confidence interval excluding zero [CI] = [-0.27, -0.17]). This finding implies that the impact of choice set size on decision confidence through perceived choice overload is negative. Choice set size was associated with decision confidence that was approximately -0.14 lower as mediated by choice overload. In other words, the higher the perceived choice overload, the lower the decision confidence. As a result, Hypothesis 2 is supported.

*** Insert Figure 3 about here***

*** Insert Table 3 about here***

5. Discussion and Conclusion

This research offers insights into the effectiveness of the online hotel information presentation that influences hotel customers' perceptions and decisions. It provides an opportunity for hospitality scholars and practitioners to understand the interaction effect of choice sets and filtering mechanisms. The findings of this research can help online travel agencies and hotel managers design websites more effectively in order to make consumers' booking experiences more pleasant and streamlined.

5.1 Theoretical Contribution

Filters are important in the online shopping environment for simplifying consumers' decision-making processes (Häubl & Trifts, 2000; Olbrich & Holsing, 2011). Consumers can use filters to refine their search and make it easier to decide on their final choices. This research contributes to the hospitality literature in several ways. First, we demonstrated that the presence of an information filtering mechanism reduces choice overload with a large choice set, whereas its impact is attenuated with smaller choice sets. Large choice sets are complex and require considerable amounts of cognitive effort (Malhotra, 1982), but filtering mechanisms can

minimize such effects. In other words, perceived decision difficulty is reduced when information can be easily filtered (Thai & Yuksel, 2017a).

Second, prior research in services marketing suggests that consumers use pre-purchase information to reduce risk and uncertainty with intangible service offerings (Murray, 1991). Filtering mechanisms can help consumers to sort and prioritize relevant information, thereby offering them a sense of control. In this research, we found that filtering is an effective tool for buffering the negative effect of large choice sets on decision confidence. This finding is congruent with previous research showing that high levels of control over information to be processed enhances consumers' confidence, thus leading to better decisions (Ariely, 2000).

Third, methodologically, this is the first study in the hospitality literature that used an online information filtering mechanism in an experimental design setting. Although previous research examined the organization and structure of the choice sets (Langner & Krengel, 2013; Mogilner et al., 2008), the effect of interactive decision aids in the form of information filtering mechanisms has been ignored.

5.2 Practical Implications

This study demonstrates the importance of filtering mechanisms in assisting consumers' decision-making process, particularly with large choice sets. Our findings indicate that hotel website managers and online travel agents should implement filtering functions in their website design. This is particularly critical for hotels that offer a large number of options. Without any filtering mechanism, consumers might feel high levels of choice overload, thus decreasing their decision confidence. As a result, consumers facing large choice sets could be hesitant to book if the information search task seems overwhelming. In such a case, hotels and travel agencies may want to highlight their filtering functions on their websites (e.g., sort by location, price, view). For instance, for a metropolitan tourist destination, such as Hong Kong, a hotel search can generate thousands of listings. Expedia.com provides over 20 different filters for star rating, budget, guest rating, location, etc. on the left-hand side to assist their customers with their decision making. Customers can sort based on their priorities to reduce the decision difficulty and increase their booking confidence and likelihood to book.

Park and Jang (2013) proposed that having more than 22 choices may result in inaction, and, therefore, tourism suppliers should not offer too many choices on their websites. This study had 30 choices in the large choice set; however, participants in the information filtering condition did not feel choice overload even with 30 choices. In contrast to the recommendation by Park and Jang (2013), this study shows that offering customers large choice sets does not necessarily lead to perceived choice overload in the presence of an information filtering mechanism. Marriot's newest Bonvoy program website offers hotel information for their 30 different brands from "select" to "luxury." Brand and distance are the two major filters on the website. In addition, they offer other filters, such as amenities, loyalty category, and transportation, under the dropdown menu.

In addition to filtering mechanisms, website managers should apply other interactive tools to increase consumers' sense of control and confidence (Ariely, 2000). For example, hotel and OTA websites might probe the consumer's purpose of travel in order to suggest appropriate

filters. Booking.com provides the option of "I'm traveling for work" to help business travelers filter hotels that have business centers or work facilities.

5.3 Limitations and Future Research

Although a decision task involving 30 options might seem demanding, such a choice set is still a simplification of real-life choices. For instance, many hotel and OTA websites offer far more than 30 choices. In this study, room rates varied by five factors, including view, size, breakfast, advance payment, and executive lounge access. Actual hotel and OTA websites may offer additional criteria, making the choice process even more complex. Given our choice of research design, inherent limitations of the experiments apply to the present study. For instance, our stimuli were restricted to three choice set sizes (3, 9, and 30 choices). Another limitation is the fact that study participants did not have to make purchase commitments based on their choices. Future studies in a field setting is needed to fully understand the impact of filtering mechanisms on consumers' booking decisions.

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Figures

Figure 1. Research model

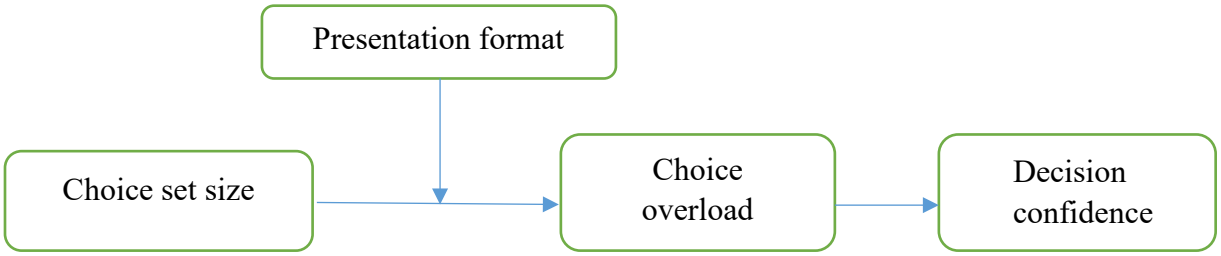


Figure 2. Simulated hotel website with room rate/type choices

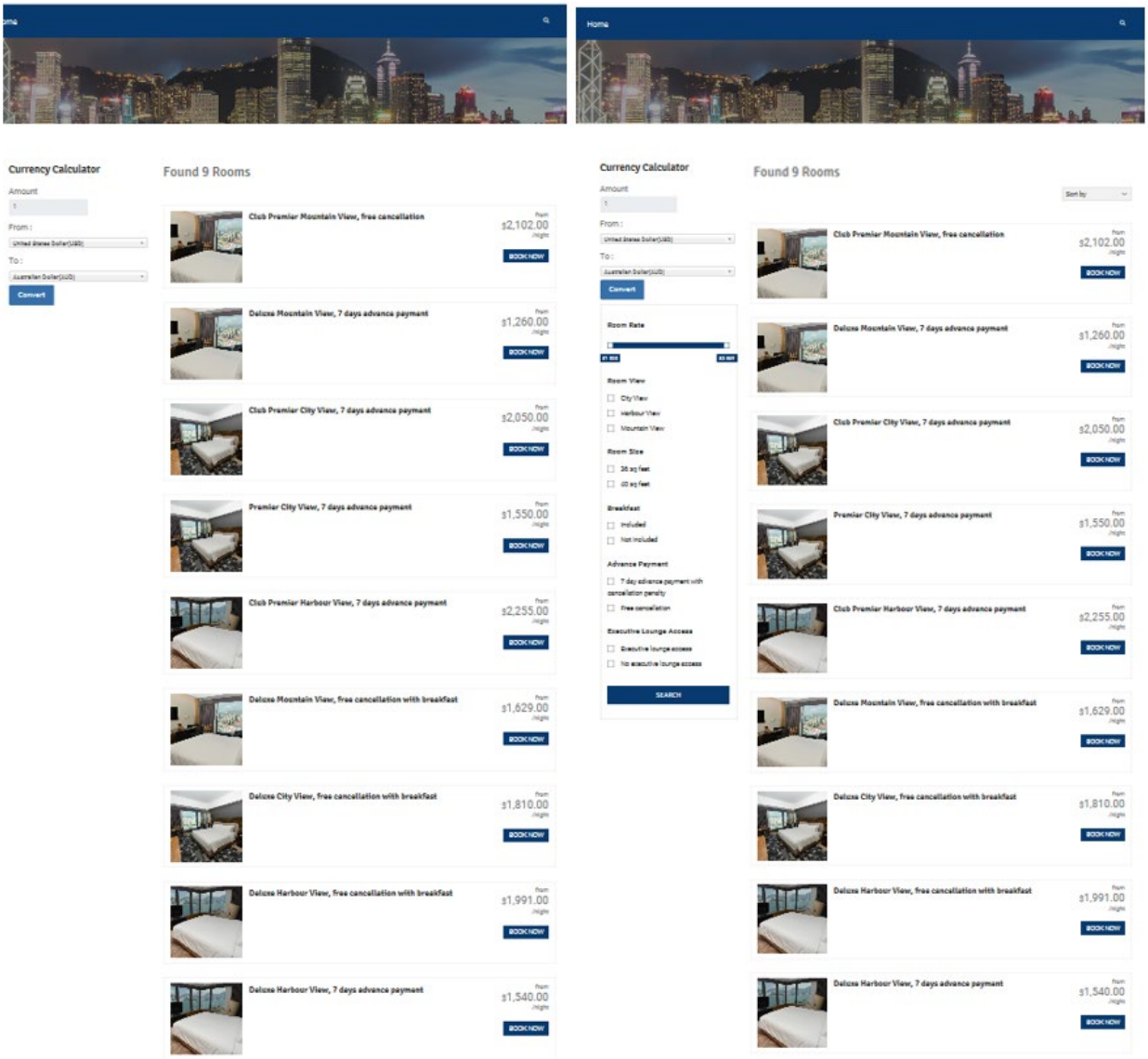


Figure 3. Information filtering mechanism

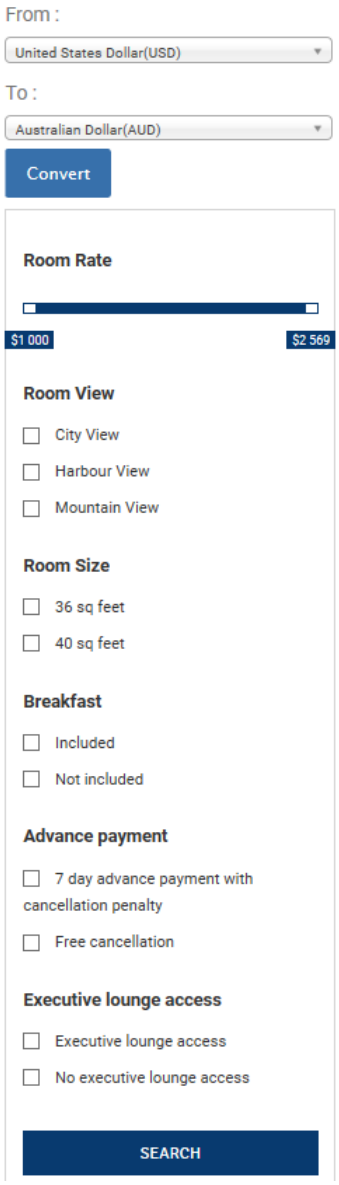
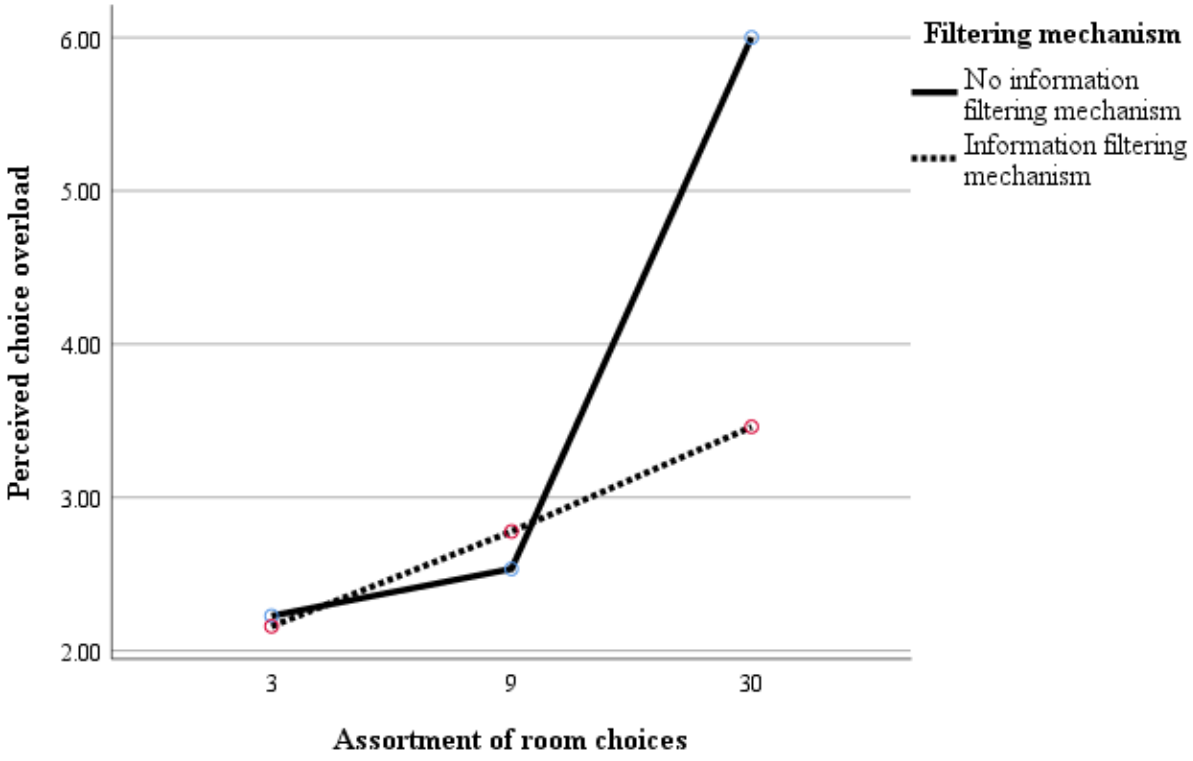


Figure 4. Interaction plot between assortment of room choices and information filtering mechanism



Tables

Table 1. Demographic information and travel behavior (%)

Gender	
Male	55.5
Female	44.5
Age	
18–24	16.2
25–34	41.7
35–44	25.9
45–64	13.8
≥ 65	2.4
Monthly income (USD)	
< $2,000	6.0
$2,001–4,000	27.6
$4,001–6,000	25.1
$6,001–8,000	13.8
≥ $8,001	27.5
Nationality	
American	29.6
Australian	36.4
British	34.0
Education	
High school	13.8
Some college education	27.1
College degree	30.8
Professional degree	26.3
Graduate school	2.0
Hotel stay category	
Budget or economy hotel	8.9
Midscale hotel (3-star)	28.7
Upscale hotel (4-star)	48.6
Luxury hotel (5-star)	13.8
Hotel stay frequency, per year	
1–3 times	36.4
4–6 times	39.7
7–9 times	16.2
> 10 times	7.7
Hotel stay frequency for leisure purposes, per year	
1–3 times	46.6
4–6 times	36.0
7–9 times	13.4
> 10 times	4.0
Average length of hotel stay	
1 day	2.0
2–3 days	23.1
4–5 days	42.9

6–7 days	23.1
> 7 days	8.9
Perceived travel experience	
Inexperienced	1.2
Slightly experienced	8.9
Moderately experienced	36.4
Very experienced	36.0
Extremely experienced	17.4

Table 2. Analysis of variance results for assortment of room choices and information filtering mechanism

Source	Type III SS	df	MS	F	*p*-value
Test effects					
Assortment of room choices	227.906	2	113.953	198.215	< 0.000
Information filtering mechanism	26.946	1	26.946	46.871	< 0.000
Assortment of room choices by (x) Information filtering mechanism	69.428	2	34.714	60.383	< 0.000
Error	138.549	241	0.575		
Total	2,634.000	247			

Table 3. Simple main effects analysis

Assortment of room choices		SS	df	MS	F*	Sig.
3	Contrast	0.077	1	0.077	0.133	0.715
	Error	138.549	241	0.575		
9	Contrast	0.724	1	0.724	1.259	0.263
	Error	138.549	241	0.575		
30	Contrast	101.587	1	101.587	176.706	0.000
	Error	138.549	241	0.575		

* Note: Each F tests the simple effects of presentation format within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

Highlights

- Information filtering mechanism reduces choice overload with a large number of choices.
- Impact of information filtering is attenuated with smaller choice sets.
- Choice overload mediates the impact of choice set size on decision confidence.