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### **Inferences and Decision Heuristics in Peer-to-Peer Accommodation Booking**

This paper presents a preliminary result of a study on the roles of inference making in decision heuristics involving P2P accommodation booking. The goals of the study are to identify the influence of cues from similar listings on a decision to book a target listing when reviews are not available (i.e., missing information) as well as the effects of decision-making styles on actual choice and decision confidence. Preliminary results showed that the inclusion of a similar listing (comparison) did not make a significant difference in decision confidence, which may indicate insignificant roles of external cues in booking decisions. Due to a limited number of participants in the pilot study, the main study with a larger number of participants may explicate the phenomenon more significantly. Should the results hold, they suggest P2P accommodation hosts pay more attention to the listing characteristics instead of relying on information from similar listings.

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Key words: Heuristics, inference, P2P accommodation, Airbnb, decision making

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## **Introduction**

Peer-to-peer (P2P) accommodation has rapidly become one of the preferred lodging choices for a large number of travel consumers. About 150 million people use Airbnb and two million guests stay in Airbnb rentals across the world at a given night (iProperty Management, 2018). The growth of P2P accommodation is not limited to its consumers (i.e., demand), but also its listings (i.e., supply). However, with new listings introduced often, consumers are faced with choices of accommodation rentals with not only varying standards but also different depths and breadths of information about them. These include brand new listings, which have not received any consumer reviews. Considering the ever more significant role of reviews in P2P sharing systems (Guttentag, 2015), this could pose challenges for consumers to make booking decision due to perceived incomplete information.

The challenges can further be confounded by situations requiring consumers to make decisions quickly. For example, consumers may have their reservation cancelled in the last minute, thus need to find a replacement in due time. Also, the fact that most listings are unique (i.e., there is no other room/property with the exact same set of characteristics: price, location, size, etc.), consumers may be pressured to make a decision to book an appealing listing as soon as possible before it will have been taken. Studies have shown that consumers often resort to heuristics when confronted with decision making under risk or time pressure (Payne, Bettman, & Johnson, 1994). Also, it has been suggested that missing product information can bring about decision heuristics (Kardes, Posavac, & Cronley, 2004). In cases of new listings in Airbnb, lack of online reviews can be considered incomplete information, which may lead consumers to make inferences from other cues and knowledge.

In light of the increasing significance of P2P accommodation, it is important to explore the consumer decision-making process to elucidate what leads consumers to book accommodation. To that end, this study aims to explain the role of inference in P2P

accommodation booking when consumers need to adopt heuristics. Specifically, a pilot study was conducted to identify differences in actual choices and decision confidence when consumers are presented with inferences. Theoretically, this study will shed light into the link between inference making and decision heuristics in the context of P2P accommodation choice (i.e., choice under risk). From a practical point of view, this study will contribute to a better understanding of listing strategies (e.g., making use of similar listings as substitutes for missing information) that will be effective in guiding consumers to make a booking.

### **Decision heuristics and inference making**

The concept of heuristics arises as consumers tend to rely on shortcuts in decision-making due to a lack of time and commitment (Payne et al., 1994). It helps individuals to reduce the cognitive load spent on solution searching and adapt to the complex environment (Simon, 1957). Therefore, it has been suggested that heuristics play an important role in consumer's behavioural intention in the information searching process (Zhang, Zhao, Cheung, & Lee, 2014). In the hospitality industry, in order to reduce information asymmetries, people tend to read online reviews to reduce search time and to obtain information related to accommodation. Therefore, online reviews are considered a crucial factor for accommodation booking. When people book peer-to-peer accommodation, because some listings are located in non-touristy areas, and new listings are introduced into the market often, there is limited information online facilitating guests to make a decision. This implies that a decision must be made under conditions of incomplete information. Sometimes online review on peer-to-peer accommodation is the only source for potential guests to rely on. For this reason, such decisions are often referred to as examples of a choice under risk or uncertainty. With incomplete information and limited time, individuals tend to make decisions by using heuristic-based inference including repetitiveness heuristic, availability heuristic, simulation heuristic, and anchoring and adjustment heuristic (Kardes et al., 2004).

These four types of heuristics are unpacked as follow (Tversky & Kahneman, 1974). Representativeness heuristic highlights similarity to a known object when they predict the characteristics or performance of a product or service. Availability heuristic refers to making a prediction based on the ease with which examples of the product or service can be recalled. Stimulation heuristic relates to making a prediction based on picturing the likelihood of an event. Anchoring-and-adjustment heuristic relates to cases in which an individual uses a specific target value (e.g., an anchor) as an initial judgement, and then makes changes until the acceptable value is reached.

### **Heuristics and decision-making styles**

People with different personality will apply different decision-making style. Decision-making style here is defined as an individual's characteristic approach to understanding and reacting to decision-making (Harren, 1979). It is also referred to different ways that individuals make sense of information gathered (Mckenney & Keen, 1974). Individual decision making can either demonstrate the use or avoidance of heuristics (Scott & Bruce, 1995). There are five decision-making style (DMS) dimensions: (1) dependent (reliance on recommendations from others), (2) rational (logical evaluation of options), (3) intuitive (reliance on feelings and instinct), (4) avoiding (attempts to avoid decision making), and (5) spontaneous (making impulsive decisions). The DMS grants decision maker a score in each dimension. The instrument of decision making style was later applied to analyse the usage of particular heuristics and individual decision-making styles and to assess the impact of decision making styles on use of heuristics (Del Campo, Pauser, Steiner, & Vetschera, 2016).

### **Method**

The main goal of the study is to explore variations in booking decisions involving inference and heuristics. In order to facilitate the use of heuristics, the following booking

scenario was presented to the respondents: they were asked to imagine they were ready to board a plane to head for a weekend holiday and received a notification on their mobile phone that their accommodation reservation was cancelled and must make a decision to book or not to book a suggested P2P accommodation listing within two minutes. This condition provides the time pressure element that leads respondents to lean on heuristics. Respondents were then presented a target P2P accommodation listing they need to make a decision on, which is a new listing that does not have any reviews. This condition adds the “incomplete information” element to the scenario. Further, three stimuli were created to facilitate different inference making opportunities: (1) the target listing only (“No Comparison”), (2) the target listing and a similar listing with a 3-star rating (“3-Star Comparison”), and (3) the target listing and a similar listing with a 5-star rating (“5-Star Comparison”). The similar listing was presented following the typical presentation in P2P platform; it includes the most salient information and images, without detailed descriptions. A total of 57 respondents rated the similarities amongst various images of hosts and listings (bedrooms, bathrooms, etc.). Images rated highest in similarity to those of the target listing are presented in the similar listing. Previous studies have confirmed that Airbnb ratings are positively skewed (e.g., Tussyadiah & Zach, 2017), with averages well above 4.5. Thus, we included 5-Star Comparison as a proxy for good quality and 3-Star Comparison for below average quality. These stimuli were integrated into an online questionnaire together with measures of decision-making styles, booking decision, and decision confidence. Scales validated in previous studies were used. All measures were presented in a 5-point Likert-type scale (1=strongly disagree; 5=strongly agree).

A pilot study was conducted to test the reliability of measures and to gain preliminary understandings of the relationships between variables under study. The questionnaire was distributed online through researchers’ social network (via social media channels and direct

messages) in August 2018. Only those who have travelled domestically or internationally in the past six months were included in the survey. A total of 87 people responded to the pilot study: 65% are female, 48% have a Master's Degree, and 70% with less than US\$30,000 in annual income. Respondents reside in China (31%), United Kingdom (26%), Malaysia (21%), Australia (10%), and others. The preliminary results will be consulted to further refine the questionnaire and make other adjustments.

### **Preliminary result and discussion**

The scales were proven reliable with Cronbach's Alphas exceeding .70, indicating that measurement items can be used in the main study. Further, different aspects of heuristics and inference making were tested against decision confidence. The majority of respondents selected "Yes" to book the target listing (77%). This may indicate that people use (availability) heuristics to make a booking decision. Those who selected "No" (23%) were statistically significantly less confident in their decision. This phenomenon needs to be further examined in the main study.

No statistically significant differences were found between consumers who were exposed to the three stimuli. This may indicate that cues from a similar listing were not important in influencing booking decision. Fig. 1 illustrates the relationships between decisions, inference stimuli, and decision confidence. Differences were present in terms of inferences. Among consumers who decided not to book, those who were exposed to a comparison were more confident in their decisions compared to those who only viewed the listing (no comparison). Decision confidence was almost level among those who decided to book the listing. ANOVA results indicate statistically significant differences in decision confidence in terms of booking decisions ( $F = 7.354, p < .01$ ), but no statistically significant differences were found in terms of inferences.



**Figure 1. Decision Confidence: Booking Decisions vs. Inferences**

Decision confidence was also tested between decision styles of respondents. Based on the means and standard deviations of the constructs, respondents were allocated into high and low groups in each of the five decision making styles: Dependent, Rational, Intuitive, Avoiding, and Spontaneous. This excluded those who are within the mean values. No significant differences were identified. It is important to note that mean value of Rational is higher than that of the other decision styles, indicating that most respondents regard themselves as rational decision makers (consistent with Del Campo et al. [2016]). As a result, no significant differences were found between low (Mean = 3.40, s.d. = .857) and high (Mean = 3.44, s.d. = .893) Rational scores in terms of decision confidence. This indicates that rational decision makers will resort to heuristics (under time pressure) and are confident with their choice.

Preliminary results indicate that cues from a similar listing might not be as important in influencing booking decisions for P2P accommodation. No significant differences in decision confidence were found among decision-making styles. However, this non-significance may be due to a limited number of responses in the pilot study, hence a low number of respondents within the low and high groups, and low effect sizes of the stimuli. It is important to collect a large number of responses to ensure sufficient statistical power to test these further. Should the results hold in the main study, it can be suggested that P2P accommodation hosts need to pay more attention to the target listing characteristics.

Consumers may not the need to make inferences from other cues when descriptions of the target listing satisfy their information need, even under time pressure.

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