An analysis of smart tourism system satisfaction scores: The role of priced versus average quality

Jin-Young Kim [a,*], Linda Canina [b]

[a] College of Hotel and Tourism Management, Kyung Hee University, 26, Kyungheedae-ro, Seoul 130-701, Republic of Korea
[b] School of Hotel Administration, Cornell University, Ithaca, NY 14850, United States

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ABSTRACT

The availability of customer reviews from smart tourism systems provides an interesting research opportunity to investigate the role of consumer's perceived quality relative to a reference group on online satisfaction scores. This paper shows a positive relationship between the satisfaction score and the difference between the consumers' perceived quality and the reference group's quality level. The findings support comparison-level theory coupled with the product-based norm as a comparison standard, which posits that consumers use the average quality of the product's reference group as the relevant comparison standard. Furthermore, consumers are found to be more sensitive to negative deviations from the reference group's quality than from positive deviations, which is consistent with prospect theory.

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1. Introduction

With the development of smart tourism systems, online reviews have become a critical source of information regarding the perceived quality of tourism destinations and hotels (Gretzel & Yoo, 2008). While the definition of smart tourism is still evolving, it has been generally agreed that smart tourism systems refer to the use of technologies, including but not limited to the internet, mobile communication, and augmented reality to serve the stakeholders of the tourism industry, by providing innovative service and information sharing (Hunter, Chung, Gretzel, & Koo, 2015; Tu & Liu, 2014).

For hotels, smart tourism systems have a profound impact on consumers' decision-making (Ye, Law, Gu, & Chen, 2011) because a hotel room is needed irregularly when consumers travel to an unfamiliar place. Furthermore, a fundamental characteristic of hotels is their uniqueness in terms of both physical amenities as well as service level. In particular, architectural qualities, location, age, amenities, customer interaction, as well as service quality are important to guests. Unlike manufactured goods, no two hotels are identical within a product tier (e.g. luxury to economy or five-start to one-star, also referred to as class and category) or even within the same brand. Since many of these characteristics are intangible and are based upon impressions, it is difficult for customers to know ex ante, the physical and the service level quality of the hotel. As a result, the development and utilization of smart tourism

systems, where information is generated and shared on blogs, websites, and SNS has been growing rapidly in the lodging and tourism industries.

Online consumer reviews of hotels often describe the quality of the hotel in comparison to the star rating category. A review like "Not worth the four-star rating!" is a typical example. In fact, on Tripadvisor.com, one of the largest travel review websites, a keyword of "not star" returns more than 4.94 million hits, which is substantially larger than the number of hits for "good service" (4.01 million) or "than expected" (4.07 million) (as of November 2014). Since many reviewers compare their perception of the quality of a hotel to a reference group it is an interesting research topic to investigate how the consumer's perceived quality relative to a reference group of the hotel affects the satisfaction scores in the online space.

Thus, the purpose of this paper is to analyze the relationship between the priced quality of a hotel room relative to the average quality of the reference group and the overall satisfaction score on the smart tourism system. It has been established that price is an important extrinsic cue which serves as a general indicator of quality (Zeithaml, 1988). Thus, we operationalize priced quality of a focal hotel by the agreed-upon paid price given the current perceived quality of the hotel, and the quality of the star rating category by the average price of hotel rooms with the same star rating in the same location, henceforth referred to as the reference group.

The underlying theoretical frameworks for this analysis are comparison-level theory and prospect theory. Comparison-level theory postulates that consumers use comparison levels, or reference points, in order to evaluate the exchange relationship under consideration (Thibaut & Kelley, 1959). Prospect theory (Kahneman &

* Corresponding author. Tel.: +82 2 961 9454.
E-mail addresses: jk293@khu.ac.kr (J.-Y. Kim), lc29@cornell.edu (L. Canina).

Tversky, 1979) also has relevance to this study since consumer satisfaction displays an asymmetric relationship with respect to positive reference group comparisons, gains, and negative reference group comparisons, losses (Mittal, Ross, & Baldasare, 1998).

This paper extends the existing literature of electronic word-of-mouth (e-WOM) communication and satisfaction in several ways: consumer's relative quality evaluation is analyzed rather than the absolute level; the role of consumer's relative quality gains and their relative quality losses are examined; and the estimation procedure corrects for sample selection bias, a methodological problem that has not been addressed much in the existing literature. In addition, this research contributes to the comparison-theory research by using a reference standard that is actually known to be used by consumers.

In the next section, we review the literature in satisfaction and online reviews and develop hypotheses. Instead of going over vast extant literature, we focus on the comparison-level theory, prospect theory and e-WOM literature that is most relevant to our hypotheses. Then, we present a description of the sample, the research methodology and results, followed by discussion.

2. Literature review and hypotheses

Comparison-level theory framework of satisfaction, developed by LaTour and Peat (1979), has been a widely accepted paradigm used to study customer satisfaction in the marketing literature. This theory postulates that satisfaction or dissatisfaction arises through the comparison between a pre-experience standard and the actual experience (LaTour & Peat, 1979). If the actual experience is better than the referenced standard, customer satisfaction increases whereas if it is less than the referenced standard then satisfaction falls, or dissatisfaction increases.

The unresolved issue in comparison-level theory is the conceptualization and the selection of the comparison standard (Yüksel & Rimmington, 1998; Yüksel & Yüksel, 2003). The expectation of the most probable quality has been widely used as a comparison standard. However, researchers have also proposed the use of consumer's prior experience with the brand or similar brands in a product category as the comparison standard (LaTour & Peat, 1979). Along this line, the perceived capability of the overall product category has also been conceptualized as an appropriate reference standard (Woodruff, Cadotte, & Jenkins, 1983). This reference standard was empirically tested by Cadotte, Woodruff, and Jenkins (1987) in the context of the restaurant industry. In their satisfaction models involving the best brand norm and overall product norm as comparison standards, overall product norm was found to be an appropriate reference standard for fast food and family restaurants whereas the best product norm was more appropriate for upscale restaurants.

While the use of a reference standard based on the product category has valid theoretical and practical support, empirical challenges include the fact that the product class is not always clear. Moreover, consumers' actual comparison mechanism is unobservable. For the lodging industry, these issues are less of a concern. Product tiers or classes are commonly used as reference standards in the lodging industry. Hotels have well-defined product tiers or classes that are officially classified into a diamond or star rating by private and/or public agencies. Furthermore, consumers are familiar with the product tiers and use them as a tangible cue to draw information about the quality (Rao & Monroe, 1988) of a specific hotel property prior to making the reservation. This evidence is supported further through the guest's online reviews discussed previously.

In terms of the user-generated reviews and ratings, the literature is burgeoning across a broad spectrum of disciplines. The research streams can be categorized according to the following areas: (i) characteristics of the information content; (ii) consumer behavior related to the information generation, search, and the impact on the purchasing decision; and (iii) impact of reviews on firm performance. For example, Kim, Mattila, and Baloglu (2011) identified convenience and quality, risk reduction, and social reassurance as the three main motivating factors regarding the information seeking behavior of consumers. Lee and Shin (2014) investigated the characteristics of the online reviews that lead consumers to actually buy the product. They found that visual cues facilitate systematic message processing in addition to the quality of the reviews. Research on the impact of online reviews on firm performance investigated the role of various moderating factors. Zhu and Zhang (2010) found differential impacts of consumer reviews on sales across products in the same product category. They reported that online reviews are more influential for less popular product and for consumers who have greater internet experience.

With regard to the literature related to the smart tourism systems in the lodging industry, Vermeulen and Seegers (2009) found that exposure to online reviews, both positive and negative, enhance consumers' consideration of hotels with a stronger effect for lesser-known hotels. Sparks and Browning (2011) found that positively framed information together with numerical rating details increases both booking intentions and consumer trust, suggesting that consumers tend to rely on easy-to-process information, when evaluating a hotel based upon reviews. Ye et al. (2011) found a significant relationship between online consumer review scores and online booking revenue for hotels.

Racherla, Connolly, and Christodoulidou (2013) and Jeong and Jeon (2008) are among the few that investigated factors that impact online review scores in the lodging industry. In both of these studies, attributes of value and cleanliness were found to be positively associated with the overall satisfaction scores. This paper extends these studies by analyzing the satisfaction rating score from the perspective of a comparison-level framework through the use of the average quality of the star rating category as a reference point. More exactly, this study analyzes the relationship between the overall satisfaction score and a measure of the gap between the consumer's evaluation associated with the quality of the hotel and the average value of the reference group. Also, the estimation procedure corrects for sample selection bias.

As discussed above, customer reviews provide anecdotal evidence that product categories are used as reference standards by consumers in the lodging industry. Hotels display a substantial degree of heterogeneity in quality across properties within a star rating category or even within the same brand. Given that hotels are not manufactured, a property's current condition can deviates from its star rating category due to the age of the property, scheduled versus actual maintenance, renovation status, management type, and service (Mattsson, 1992).

Comparison-level theory with the average quality as a reference point predicts that if the hotel property's facilities are old or service is poor compared to what is generally expected for the particular star rating category, customers will feel dissatisfied (Woodruff et al., 1983). On the other hand, if the property is new, just renovated, or provides exceptional service within the star rating category, consumers will feel satisfied. In sum, if the consumer's perceived quality value is above the normative quality level, consumers feel greater satisfaction, and vice versa. Thus, we develop the following testable hypothesis:

H1. Consumer satisfaction with the focal hotel is positively associated with the difference between the perceived quality value and the relevant reference standard of the focal hotel.