How do Benefit and Cost Shape Perceived Value of Hotel Stays?

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Abstract: Hotel online reviews are important for hoteliers because they provide the aggregated digital footprints of tourists’ experience and behavior. This paper explores the effects of hotel attributes, reviewer attributes, experience attributes, and their interactions on hotel customers’ perceived value, with a special focus on the relationship between benefit and cost in shaping customers’ perceived value of hotel stays. A sample consists of 39,222 reviews from 166 hotels in Los Angeles was extracted from TripAdvisor. Mix effect ordered logit model was employed. Results shows that hotel price and hotel reputation (star level and overall rating) negatively affects perceived value. Customers’ experience quality positively affects perceived value and moderates the effect of price on perceived value. Customers’ review expertise positively affects perceived value, but negatively moderates the effect of experience quality on perceived value. Findings support social exchange theory and expectation disconfirmation theory. Some marketing practices are recommended based on the findings.

Keywords: hotel, online review, benefit, cost, perceived value

Introduction

Along with the advancement of new technologies and the wide-spread adaptation of these technologies in the hospitality industry, travelers increasingly rely on online reviews before the travel and heavily involve in posting reviews after their trips (Kim, Mattila and Baloglu, 2011). Previous studies have recognized that perceived value has a significant impact on travelers’ satisfaction, loyalty, revisit-intentions, and word of mouth (Al-Sabbahy, Ekinci and Riley, 2004; Grewal, Monroe and Krishnan, 1998; Lai, 2015; Oh, 1999; Petrick, 2002). However, few studies examine travelers’ perception of experience in hotels from the perspective of perceived value by analyzing hotels’ online reviews. There is still much unknown regarding the perceive value of hotel stays, for example, the relationship between price and satisfaction in shaping the perceived value. The present study aims to abridge this gap by understanding the impacts of hotel attributes, reviewer attributes, experience attributes, and their interactions on hotel customers’ perceived values based on a mixed effect ordered logit model. Special attention is paid to the relationship between benefit and cost in shaping the perceived value.

Literature review and Hypotheses

According to Y. H. Kim, Duncan, and Chung (2014), perceived value is the customer’s overall appraisal of the net worth of the service or products based on their assessment of benefits they received as against what is offered (costs or sacrificed time, and efforts). Nasution and Mavondo (2008) propose a distinctive definition and regarded perceived value as a trade-off between total benefits and total sacrifices (costs) customers perceived. Trade-off can be viewed as the gap between perceived benefits and sacrifices or costs. Existing studies suggest that perceived value is influenced by three types of variables: 1) hotel attributes, such as hotel price (Botanic,1996; Derbaix and Pham,1991; Oh, 1999; Petrick, 2002; Ye, Li, Wang and Law, 2014), star level (Ye et al., 2014), and hotel overall rating(Xie, Zhang and Zhang, 2014); 2) reviewer attributes, e.g. reviewers’ review expertise (Caltabiano,1983; Weaver, Weber and McCleary, 2007) and past review experience (Kim, Mattila and Baloglu, 2011; Mackiewicz, 2009; Zou, Yu and Hao, 2011); and 3) experience attributes, including reviewers’ rating of experience (Nasution and Mavondo,
2008) and the performance of hotel attributes (Ekinci, 2004; Lockyer, 2002; Oguchi, Okamoto, Shimizu and Matsushima, 2004). Hence, six hypotheses were proposed as follows:

Hypothesis 1: Transaction price is negatively associated with hotel guests’ perceived value.
Hypothesis 2: Customers’ ratings of their experience in hotels influence perceived value.
Hypothesis 3: Customers’ ratings of their experience moderates the effect of price on perceived value.
Hypothesis 4: Customers’ expertise moderates the effect of ratings on perceived value.
Hypothesis 5: Customers’ review experience moderates the effect of rating on perceived value.
Hypothesis 6: The performance of hotel attributes, including cleanliness, location, room, quality of service, and sleep quality, affect perceived value.

**Methodology**

**Data collection**

Online reviews of hotels in Los Angeles, the second biggest metropolitan areas in the United States, were crawled on TripAdvisor website between November 15, 2016 and December 15, 2015 through a web spider: Bazhuayu. The data collected involves attributes of hotels (name, address, star, overall rating, location, price, and rank), hotel performance (ratings of room quality, service, sleep, cleanliness, location, and value), and characteristics of reviewers (age, gender, number of cities visited, membership level, total membership points). Totally 96,633 online reviews of 231 hotels in Los Angeles were collected. Then hotels with review amount less than 60 were excluded, resulting a sample consisting of 39,222 reviews for 166 hotels in Los Angeles.

**Empirical model**

To evaluate the research hypotheses proposed previously, we use a mixed effect ordered logit model. In this model, the dependent variable is a five-point ordinal measure of perceived value score posted on the TripAdvisor. The model is able to accommodate the multi-level structure of data with the reviewer-level information nested within the property level. The mixed-effect ordered logit model is commonly presented as a latent variable model. Defining \( y^* \) as a latent variable ranging from \(-\infty\) to \(+\infty\), the structural model is

\[
y^*_j = \alpha + \beta X_{ij} + \mu + \epsilon_{ij}
\]

where \( j \) indexes the reviewer and \( i \) indexes the hotel property. The measurement model for divide \( y^* \) into \( M \) ordinal categories:

\[
y_{ij} = m \text{ if } \tau_{m-1} \leq y^*_j < \tau_m \text{ for } m = 1 \text{ to } M
\]

where the cut-points \( \tau_1 \) through \( \tau_{M-1} \) are estimated. We assume \( \tau_0 = -\infty \) and \( \tau_J = +\infty \). In our model, based on the five point scale of value measure, \( M = 5 \). The error term \( \epsilon_{ij} \) distributed as logistic with mean 0 and variance \( \pi^2/3 \) and are independent of \( \mu_i \), which is the hotel-property-specific effect.

In the proposed econometric model, dependent variable is five-point value score evaluated by the reviewer based on his/her stay in the hotel property. There are four categories of independent
variables: hotel attributes, reviewer attributes, experience attributes, and interactions. Hotel attributes include hotel price, hotel reputation (measured by hotel star level and overall rating), and volume of hotel online reviews. Reviewer attributes include reviewer total points and volume of reviews. Experience attributes include experience rating, cleanliness rating, location rating, room rating, service rating, and sleep rating. Three interactions are included, including interaction between reviewer total points and experience rating, interaction between volume of reviewers’ reviews and experience rating, and interaction between price and experience rating. Among these, hotel reputation (including star levels and overall ratings) and the volume of the hotel’s total reviews are control variables. Before testing the model, the multicollinearity of independent variables were examined, and the VIFs for all independent variables are smaller than 5, indicating there is no multicollinearity problem in the model.

Results

The model test results support hypotheses 1, 2, 3, 4, and 6, but not hypotheses 5. In terms of hotel attributes, the result indicates that 1) hotel prices, i.e. economic cost, have significant negative effect on hotel guests’ perceived value; 2) hotel reputation (measured by hotel star and hotel overall rating) have significant negative influence on perceived value; and 3) volume of hotel reviews does not significantly affect perceived value. Hotel price and hotel reputation set up customers’ expectation for the hotel experience and both have negative effects on perceived value. The negative impact of hotel reputation on perceived value is different from the findings in some previous studies (Cui, Yang and Hou, 2009) but is consistent with some others (Li and Hitt, 2010; Ye, Li, Wang and Law, 2014).

In terms of reviewer attributes, the result reveals that customers’ expertise (measured by total points) has a positive effect on perceived value, but it negatively moderates the effect of experience quality on perceived value. No sufficient evidence show that past experience (measured by the volume of reviewer’s total reviews) negatively affects perceived value, and past experience does not significantly moderate the effect of experience rating on perceived value, either. These results imply that reviewers who have higher total points, i.e. who provide more, detailed, and serious reviews are more friendly customers. However, the volume of reviews a reviewer posted could not tell if the reviewer is picky or not. These are new findings which have not been mentioned in previous studies.

In terms of experience attributes, the result shows that customer experience quality (measured by experience rating) positively affects perceived value, and it positively moderates the impact of price on perceived value; and hotel experience attributes (including the ratings of cleanliness, location, room, service, and sleep quality) positively influences perceived value. Experience attributes represent customers’ perceived sub-benefits. Their positive impacts and hotel prices’ negative impacts on customer perceived value imply that social exchange theory could also work in explaining hotel customers’ perceived value.

Conclusion

Using hotel reviews data of 166 Los Angeles hotels from 2012 to 2015, this study applied a mixed-effect ordered logit model to understand how perceived value is shaped by hotel attributes, reviewer attributes, experience attributes, and interactions among them. Compared to existing related studies, the method in this study is more rigid and allows hotels to estimate the probability
of different perceived values a certain customer would have. The results are consistent with Asgarpour, Hamid, Sulaiman and Asgari (2015)’s finding that the gap between expectations formed by reading target hotels attributes information (e.g. star level, rank, and rating) and actual experiences will affect customers’ perceived value. Some new relationships are found in this research, such as the negative impacts of reviewers’ membership points on perceived value.

Results provide several important implications for hoteliers who endeavor to improve their values to customers. First, hotel operators may provide some discounts to these reviewers who have higher total points. It is because as suggested by social exchange theory, the less economic costs reviewers spend, the more positive reviews they would post, and these reviewers typically post more, detailed, and positive reviews. Second, hotel operators should keep in mind that hiring people posting fake positive reviews does not necessarily lead to a long-term success. As implied by expectation disconfirmation theory (Oliver, 1977), although high price, high star levels, and high overall rating may improve hotels’ image to a certain degree, they also set up customers’ high expectation on the experience, which usually negatively affects customers’ perceived value. Third, improving customers’ experience quality should always be the priority on the agenda of the hotel operators because experience attributes are the most important positive determinants of hotel customer perceived value.

Some limitations may temper the generalizability of our results. First, we do not consider other cost-related variable as such travel costs. Second, reviewers may pay different rates for the same hotel, and we are unable to get the data on the exact transaction price. Therefore, we recommend future studies to incorporate more precise and comprehensive cost measures to understand the value model using big data.

References


