Research note

Big data for big insights: Investigating language-specific drivers of hotel satisfaction with 412,784 user-generated reviews

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HIGHLIGHTS

- Domestic vs. international tourists' preference on hotel are studied using big data.
- Hotel attributes preference of tourists from nine countries are examined.
- Travel types, e.g. business vs. leisure have significant mediating effects.
- Methodological contributions of the study are highlighted.

GRAPHICAL ABSTRACT
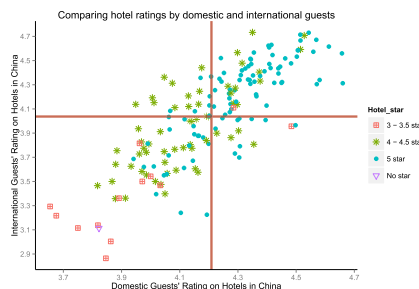
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ABSTRACT

This study leveraged the advantages of user-generated reviews with the aim of offering new insights into the determinants of hotel customer satisfaction by discriminating among customers by language group. From a collection of 412,784 user-generated reviews on TripAdvisor for 10,149 hotels from five Chinese cities, we found that foreign tourists, who speak diverse languages (English, German, French, Italian, Portuguese, Spanish, Japanese, and Russian), differ substantially in terms of their emphasis on the roles of various hotel attributes ("Rooms," "Location," "Cleanliness," "Service," and "Value") in forming their overall satisfaction rating for hotels. Chinese tourists domestically exhibit distinct preferences for room-related hotel attributes when compared to foreign tourists. Major interaction effects are revealed between the attributes "Rooms" and "Service" and between "Value" and "Service".

1. Introduction

Satisfaction of hotel customers has long been an important topic in tourism research. This is understandable, since travelers' lodging experience constitutes an important and integral part of their overall travel experience (cf. Kau & Lim, 2005). A high level of customer satisfaction has been found not only to elicit positive perceptions of hotel image among customers (Hu, Kandampully, & Juwaheer, 2009) but also to motivate willingness to make recommendations, to pay more, and to stay at the hotel again (Bowen & Chen, 2001; Velázquez, Blasco, & Saura, 2015).

Nonetheless, reliably identifying the key determinants of

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satisfaction is challenging, because of the inherent heterogeneity of demand for lodging across various traveler groups. Hotel customers may speak any of numerous languages and differ in their cultural background and expectations. Dissimilarities among tourists' profiles and types of travel influence their preference with respect to various hotel attributes, such as value for money, cleanliness, and location (Banerjee & Chua, 2016; Matzler, Renzl, & Rothenberger, 2006; Poon & Low, 2005). Therefore, hotels favored by a particular group of customers may not be liked by another group, as we will prove later in the paper.

These challenges are highly relevant to both the hospitality and the tourism industry, particularly when heterogeneous groups of inbound and outbound tourists are involved, as in the case of China. According to the China National Tourism Administration (2015a), 26.36 million foreigners visited China in 2014, of whom 20.81 million stayed at least one night. These tourists were from various countries: South Korea, Japan, the United States, Russia, Germany, and many others. How to cater to the needs of tourists with diverse profiles appears to be an important practical challenge. Alongside the issue of foreign tourists, a rapid increase in domestic Chinese tourism presents its own challenge. There were approximately 3.26 billion domestic tourist trips in China in 2013 (China National Tourism Administration, 2014). Clearly, therefore, major hotels in China need to host both domestic and international customers simultaneously. For better satisfying the demands of both categories of guest, a clear understanding of the preferences characteristic of various tourist categories is imperative.

In our research, we sought, to this end, to leverage user-generated reviews of hotels in China. User-generated reviews can be defined as "peer-generated evaluations posted on company or third party websites" (Mudambi & Schuff, 2010, p. 186). Online reviews can be regarded as representing an individual customer's unique lodging experience. Having analyzed 412,784 reviews collected from TripAdvisor, covering 10,149 hotels in five major Chinese cities, we aim to offer new insights into the determinants of customers' overall satisfaction with hotels by discriminating among the languages that customers used to write their review comments.

2. Literature review

2.1. Key factors affecting customer satisfaction and selection of a hotel

Studying the key factors in hotel customer satisfaction is a perennial research effort in tourism studies (Dolnicar & Otter, 2003). For instance, Qu, Ryan, and Chu (2000) reported six latent variables affecting customers' overall satisfaction with hotel service: quality of staff performance, quality of room facilities, value for money, variety & effective services, business-related services, and safety & security. Investigating mainland Chinese travelers' satisfaction with hotel services in Hong Kong, Heung (2000), in turn, reported eight significant predictors, among them service quality and value, augmented product quality, and food & beverage tangibles. Along similar lines, Choi and Chu (2001) identified staff service quality, room characteristics, and value as the three key factors that affect both travelers' overall satisfaction and the likelihood of repeat patronage of a hotel on a future trip. Matzler et al. (2006) indicated that the room, wellness area, friendliness & service, reception, and breakfast & restaurant are the key determinants of travelers' satisfaction with lodging services, while Hu et al. (2009) found perceived value and service quality to be key precursors of hotel customers' satisfaction. After coding and analyzing 1345 user-generated reviews from 97 four- or five-star hotels, Zhou, Ye, Pearce, and Wu (2014) classified 23 specific hotel

attributes into six superordinate categories: room, hotel (e.g., public facilities), food, price (value for money), location, and staff.

Thus far, consumer-satisfaction studies have primarily investigated the influence of a single hotel attribute on overall consumer satisfaction. They thereby assume a linear-additive utility model with main effects only. However, interaction effects occur if the utility provided by one attribute is influenced by the presence or absence of another. Such interaction effects have been observed in a historic conjoint study by Wind, Green, Shifflet, and Scarbrough (1989). They showed that, for instance, a large lobby is valued less in the case of large and comfortable rooms. These two hotel attributes may serve as competing substitutes from a guest perspective: guests might enjoy relaxing or working either in a large lobby or in a comfortable guest room. Therefore, we expect interaction effects between physical room features and some service offerings provided. These can be of either substitutive or complementary nature. It can be argued that service functions as a complement to physical product features if a high-quality positioning of the establishment is aimed for. In such a setting, it is important that the room and the service be of equally high quality and hence provide a coherent impression to the traveler (Bojanic, 1996). Otherwise, the weakest link in the chain will determine overall consumer satisfaction in the context of high-quality offerings (Miyazaki, Grewal, & Goodstein, 2005). Therefore, we assume a positive interaction effect between room and service on customers' overall satisfaction rating.

Previous studies suggest that price and service quality are two of the most important factors jointly affecting consumers' buying behavior and that there are tradeoffs between these two variables (Sweeney & Soutar, 2001; Tse, 2001). Low price has a negative correlation with service-quality expectations (cf. Sweeney & Soutar, 2001; Tse, 2001). In this connection, when a hotel provides rooms to customers at much lower prices or large discounts, a perception of good value for money will be experienced, which probably changes customers' expectations such that they are less demanding of the hotel's services or more forgiving when the service offered is not perfect. On the other end of the spectrum, a hotel that offers excellent service makes the consumers feel that it is reasonable for that hotel to charge a relatively high price. Thus the perception of value becomes less influential on the overall rating when a good perception of service is established. Therefore, we assume a negative interaction effect between value and service on customers' overall satisfaction rating.

2.2. Differentiation of tourists' preferences

Although the precursors to hotel customer satisfaction are largely known, it is important to note that these key factors may affect different customers in difference ways. Under the expectation-confirmation theory, consumer satisfaction is achieved through comparison of service performance with *a priori* expectations (cf. Thong, Hong, & Tam, 2006). One could expect tourists of specific cultural backgrounds, speaking particular languages, to have distinctive expectations surrounding accommodation issues (Dolnicar & Grün, 2007), resulting in different preferences for specific hotel attributes.

Proceeding from a summary of cross-cultural studies of service quality in the hospitality and tourism industries, Tse and Ho (2009) concluded that hotel customers of different cultural backgrounds may indeed value various service attributes in their own characteristic manner. Investigating differences between Asian and Western customers at two hotels in Singapore, Mattila (1999a) found that Western leisure travelers gave the hotels' overall service quality higher ratings than Asian leisure travelers did. However, similar results were not found in comparing Western and