Classifying Different Levels of Customer Satisfaction With Vietnamese Hotel Services by Analyzing Customer Feedback

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ABSTRACT

The development of online booking systems has created information platforms for sharing customers when choosing a destination. Mining this information helps to understand the customer's experience and measure customer satisfaction with hotel services. Recent studies used this approach with machine learning or language models to mine the data generated by customers on the internet. However, this approach still has some limits when wanting to understand more customer insight.

This article uses linguistics rules to measure customer satisfaction by combining aspects and polarity words. In the first step, the dataset with 21,196 reviews on seven main cities in Vietnam was collected from TripAdvisor. Next, the study developed a series of formulas to measure customer satisfaction with Vietnamese hotel service aspects based on inferential statistics and linguistic rules. Python's VADER library was used to measure overall customer satisfaction for Vietnamese hotels. In the final step, by language analysis, the authors calculate and grade the satisfaction score with hotel aspects from 1 to 5. Moreover, the study discovered the negative aspects of positive reviews, while previous studies were rarely mentioned.

KEYWORDS

customer satisfaction, data analysis, hotel service, linguistic rule, online review, TripAdvisor

1. CLASSIFYING SATISFACTION WITH VIETNAMESE HOTEL SERVICES BY ANALYZING CUSTOMER REVIEWS

Customer experience has become a vital focus for researchers and business leaders in the last two decades. This is particularly true for the hotel service industry, where customer experience is one of the most crucial factors for survival (Mohamed, 2021; Lee et al., 2019; Paulose & Shakeel, 2022; Kim & Kim, 2022). Understanding customer experience is essential for hotels to thrive in the market. The trend of online tourism causes the number of tourists booking traditional tours to decrease rapidly,

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forcing businesses to find new directions to catch up with market demand (Özen & Özgül Katlav, 2023). Travelers also tend to use omni-channel. Before deciding where to go, they usually collect and search for information about the destination. The source of online reviews from customers on online booking sites is a channel that attracts a lot of customers' consideration (Quan Xiao et al., 2021; Alrawadieh & Law, 2019). Over the past decade, hotels have faced numerous challenges in terms of customer reviews (Vo et al., 2022). According to researchers and companies, customer reviews play a critical role in determining the service quality of a hotel and whether it meets international standards (Thu et al., 2020; Mohamed, 2021; Adi, 2022). Visitors often rely on reviews and feedback from previous guests to gather detailed information about the services, additional amenities, and the destination's appeal (Breda et al., 2020). As a result, online booking websites for tours, hotels, and restaurants, such as Agoda and TripAdvisor, have gained global popularity (Gómez-Suárez & Veloso, 2022; Chalupa & Petricek, 2022; Breda et al., 2020). Nowadays, most tourism companies are also part of this supply chain, leading to an ever-expanding tourism industry and increasing international competition (Hu et al., 2019; Breda et al., 2020).

The competition in the global hotel industry is fiercer due to the rise of online booking systems (Chalupa & Petricek, 2022; Gómez-Suárez & Veloso, 2022). Therefore, customer satisfaction is crucial in ensuring customer loyalty and generating positive word-of-mouth, increasing the hotel's reputation (Vo et al., 2022; Paulose & Shakeel, 2022). The hotel industry is vast, and as a result, numerous studies measure customer satisfaction in this area (Zhao et al., 2019; Adi, 2022; Cherdouh et al., 2022; Kim & Kim, 2022; Quan Xiao et al., 2021; Alrawadieh & Law, 2019). Hotels often have relied on questionnaire surveys to gauge customer satisfaction. These surveys are typically conducted using Linkert's measuring scale. However, this approach has a limited sample size, with only a few hundred responses obtained. Additionally, this method provides little information, as it only depends on the content by designers. To address these limitations, modern techniques such as analyzing online reviews posted by customers on booking sites have been adopted (Li et al., 2019; Li et al., 2020). When mining a large number of reviews, hotel managers can gain a better understanding of customer preferences and feedback compared to traditional questionnaires.

Vietnam is a country with high tourism potential with many attractive destinations. In recent years, Vietnam has continuously been involved in the group of destinations with the highest growth in the world. The average growth rate is from 50% to 75%. The number of projects in Vietnam relating to international and regional hotel brands is expected to double in the next three years, from 127 to 261 projects by 2025 (Bui et al., 2022). The development of international investment projects shows that the hotel market in Vietnam will explode in the coming years (Bui et al., 2022). The global and domestic competition will become more intense. However, it is necessary to evaluate the customer's experience with Vietnamese hotel services to assess whether the current hotel quality meets the requirements of tourists or not. Are customers delighted with the quality of hotel services in Vietnam? If not, what aspects are customers unsatisfied with hotel services?

In the past five years, studies on data analysis of customer reviews have become increasingly popular (Alaei et al., 2019; Barnes et al., 2020; Chalupa & Petricek, 2022; Chen et al., 2019; Li et al., 2019; Leal et al., 2019). Customer review data is always available and usable for real-time mining (Ba et al., 2019). These reviews carry the opinions and feelings of customers after experiencing hotel services. This way, we can see customer satisfaction or dissatisfaction after a service experience (Ba et al., 2019; Chen et al., 2019). However, when this data is too big, it is not easy to analyze by conventional means but rather by techniques of extensive data analysis. Machine learning models, artificial intelligence, or natural language processing solve this problem (Ba et al., 2019; Özen & Özgül Katlav, 2023; Akhtar et al., 2017). These results are meaningful for the researchers and are expected by many hotel managers for expanding their business and building marketing campaigns (Zhang & Niu, 2024). To the best of our knowledge, previous studies have rarely used linguistic rules to exploit in detail the unsatisfied aspects of customer satisfaction ratings (Alaei et al., 2019; Barnes et al., 2020; Chalupa & Petricek, 2022; Chen et al., 2019). Very few studies have focused

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