**Why are Chinese and North American guests satisfied or dissatisfied with hotels? An application of big data analysis**

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Why are Chinese and North American guests satisfied or dissatisfied with hotels? An application of big data analysis

Abstract

Purpose—The paper aims to identify the emergent themes of hotel guests’ satisfaction, to compare the attributes distribution of the themes between Chinese and North American guests, and to compare the importance of the themes for different satisfaction levels between Chinese and North American guests from a cross-cultural perspective.

Design/methodology/approach—By adopting Python (a computer language), the word-frequency method was used to identify emergent themes of hotel guests’ satisfaction. Topic modeling was adopted to compare the attributes distribution of each theme and the features of satisfaction between Chinese and North American guests.

Findings—First, three themes were identified including Functionality, Staff and Price. Functionality can be further categorized into five subthemes: room, travel, food, environment and hotel facility. Second, the attributes distribution of the themes between Chinese and North American guests was compared from a cross-cultural perspective. Chinese guests tend to mention both lifestyle- and social norms–related attributes and expect personalized service, while North American guests mainly prefer to describe lifestyle-related attributes and prefer standardized service. Third, the study compared the changing importance of the themes (Functionality, Staff, and Price) for different satisfaction levels between Chinese and North American guests. As the satisfaction level decreases, the importance of Functionality decreases, that of Staff increases, and that of Price remains stable for Chinese guests. In contrast, the importance of each theme has fluctuated mildly from the high to the low satisfaction level for North American guests.

Practical implications—Proposed managerial implications are to highlight lifestyle- and social norms–related attributes as well as personalized service for Chinese guests. But, lifestyle-related attributes and standardized service should be facilitated for North...
American guests. Specific suggestions were made to help improve hotel performance such as the good performance of functional-related attributes, which could enhance satisfaction, and better staff performance, which would reduce dissatisfaction.

**Originality/value**—By mining big data, this study investigated hotel guests’ satisfaction from a dynamic instead of a static perspective. This study provides some rare insights into differences in key attributes influencing satisfaction levels of Chinese versus North American guests staying in luxury hotels in China. This study also takes a novel approach to examine the dynamic of the importance of the various themes at different satisfaction levels, and contrast this dynamics between Chinese and North American guests. The findings offer valuable insight for market segmentation and management in the hospitality industry.

**Keywords**—Satisfaction; Cross-cultural perspective; Big data; Word frequency; Topic modeling

**Paper type**—Research paper
1. Introduction

Customer satisfaction has been the core concept in tourism studies for a relatively long time due to its role in the revisit intention, decision making, and the customer experience (Pizam et al., 2016; Lee and Kim, 2018; Kandampully et al., 2018; Lee et al., 2019; Lin et al., 2020). For instance, Chen et al. (2013) testified to the relationship among quality, satisfaction and loyalty and showed that satisfaction mediates the relationship between quality and loyalty. Jani and Han (2014) examined the relationships among personality, satisfaction, loyalty, ambience, and image and indicated that personality factors (extraversion, agreeableness, and neuroticism) significantly affect satisfaction while satisfaction significantly influences image and loyalty. Park et al. (2019) investigated the impact of a substantive and communicative servicescape on satisfaction and satisfaction’s influence on behavioral intentions.

However, understanding customer satisfaction and dissatisfaction is challenging because of their intricate and complex natures (Sangwon et al., 2018), especially in a cross-cultural context. The behavioral pattern of customers from different cultures has been considered distinctive in many ways (Radojevic et al., 2017). Differentiating market segments has long been a challenging job. Recently, scholars proposed that the dramatic role of big data from websites should be highlighted due to its rich vein of information (Berezina et al., 2016). For instance, travel websites provide both structured and unstructured data such as review scores, review contents, review time, stay time, travel types, the origin or age of travelers, etc. (Zhang et al., 2016). The influential role of the digital world provides an unprecedented opportunity for both scholars and hoteliers to gain insights about customer satisfaction and dissatisfaction. Together with computerized methods, big data from social media could revolutionize tourism research.

The current study focuses on using the large amount of textual data available from travel websites to investigate the emergent themes of hotel satisfaction, compare the attributes distribution of the themes between Chinese and North American guests from a cross-cultural perspective, and compare the changing importance of the themes for different satisfaction levels between Chinese and North American guests. A large
scale of textual data from Ctrip.com and Tripadvisor.com (the two most influential travel websites in China) were collected to unearth the characteristics of hotel satisfaction. The studied five-star hotels, including 261 from Ctrip.com and 60 from Tripadvisor, are located in the country’s six most popular tourist destinations of Shanghai, Beijing, Hangzhou, Chengdu, Guangzhou and Xi’an. In measuring themes of hotel satisfaction, this study compared the attributes distribution of the themes between Chinese and North American guests from a cross-cultural perspective and compared the changing importance of the themes for different satisfaction levels between Chinese and North American guests.

2. Literature review

2.1 Satisfaction studies in hospitality

The concept of customer satisfaction was defined several decades ago. Customer satisfaction can be conceptualized as the discrepancy between expectation and perceived performance (Oliver, 1980). Satisfaction is assured when perceived performance exceeds expectation, while, when expectations are not fulfilled, customers feel dissatisfied. There are mainly three research streams of guests’ satisfaction study according to previous literatures. The first group of the study investigates the symmetric relationships between service quality (SQ) attributes and satisfaction. For example, “room-related attributes” such as cleanliness, comfort, decoration, amenities, and equipment support were considered essential to guests’ satisfaction (Chen et al., 2014; Tussyadiah and Iis, 2016; Zhang and Cole, 2016; Hu et al., 2019; Padma and Ahn, 2020). “Travel-related attributes” including accessibility to attractions, airport shuttle bus service, universities and public transportation, and local businesses were main determinants for satisfaction (Yang et al., 2018; Padma and Ahn; 2020). “Hotel-related attributes” such as parking were identified as a satisfaction factor (Yang et al., 2018). “Staff-related attributes” were also proved to be significant in determining satisfaction (Chen et al., 2014; Zhang and Cole, 2016). Moreover, hedonic attributes, enjoyment and value proved to be influential in enhancing guests’ satisfaction (Tussyadiah and Iis, 2016; Lee and Kim, 2018).
Sources of satisfaction with different types of guests (new, repeat, and frequent travelers) and different types of hotels (luxury versus budget hotels) were also explored to understand guests’ satisfaction (Lai and Hitchcock, 2017).

In addition to the above regular attributes, personal characteristics, gender, hotel staff’s weight, hotel star ratings, sales techniques and hotel program benefits, and features of textual reviews were considered as factors affecting guest’s satisfaction (Gregory et al., 2015; Radojevic et al., 2015; Smith et al., 2016; Radojevic et al., 2017; Zhao et al., 2019). For instance, Radojevic et al. (2017) found that hotel guests’ personal characteristics such as nationality were considered critical in evaluating satisfaction. Smith et al. (2016) found that hotel guests generated higher satisfaction when served by heavy women staff because heavy women were considered to be more friendly. Gregory et al. (2013) revealed that sales techniques and hotel programs affect satisfaction. Zhao et al. (2019) evaluated the relationships between features of a textual review (subjectivity, readability, length, diversity and sentiment polarity) and guests’ satisfaction. The study indicated that a higher level of subjectivity and readability and a longer length of a textual review lead to lower overall customer satisfaction, and a higher level of diversity and sentiment polarity of a textual review leads to higher overall customer satisfaction. In addition, researchers examined guests’ green experiences affecting satisfaction. Guests’ overall satisfaction was significantly influenced by “guest training”, “energy”, “water”, “purchasing” and “education and innovation” (Susskind, 2014). Finally, service recovery performance on customer satisfaction was investigated (Min et al., 2015; Jin et al., 2019). For instance, Jin et al. (2019) revealed that the most effective service recovery time was 30 minutes, and, when service recovery times were shorter, the effects on guests’ satisfaction were more positive.

The second group of the studies explores the asymmetric relationships between service quality (SQ) attributes and satisfaction. For example, Lee et al. (2017) discovered that guests’ satisfaction was affected by factors such as image and attractions, local people, sense of achievement, programs, accessibility, hotel facilities, site environment, and specially arranged programs. The study also showed
that the attributes of each factor can be grouped into delighters, satisfiers, hybrids, dissatisfiers, and frustrators, indicating their asymmetric influence on satisfaction. For instance, delighters and satisfiers were mostly found in the attributes of image and attractions, local people, and site environment; dissatisfiers and frustrators were mainly found in the attributes of programs, accessibility, and hotel facilities; and the attributes of sense of achievement were a mixture of delighters, satisfiers and hybrids. Davras and Caber (2019) discovered that “Entertainment Services”, “Restaurant Services”, “Cleaning of General Areas” and “Foreign Language Knowledge of Staff” were the most critical factors affecting hotel guests’ satisfaction. The study also grouped these factors into three types (satisfiers, dissatisfiers if absent, and hybrids) and compared differences among three market segments (Turkish, German and Russian). Ju et al. (2019) revealed that Airbnb guests’ satisfaction was influenced by quality factors including facility service, host service, web efficiency, and web responsiveness. Attributes of each factor have asymmetric links to guests’ satisfaction. For instance, “safe neighborhood”, “clean bathroom”, and “quiet neighborhood” were considered satisfiers while “comfortable bed” and “visual appeal” were found to be dissatisfiers in facility service quality. “Welcoming” and “best interests at heart” were identified as satisfiers, “helpful host” and “home feeling” were categorized as dissatisfiers, and “friendliness” was proved a frustrator in host service quality. Attributes of web efficiency and web responsiveness quality, all classified into either dissatisfiers or frustrators, have negative asymmetric effects on guests’ satisfaction. Bi et al. (2020) also explored the asymmetric impacts of attributes performance on hotel guests’ satisfaction. Their study revealed that the asymmetric impacts of attributes performance on hotel guests’ satisfaction varied across different types of hotels and different types of guests as well as among guests from different countries and regions.

The third group of the studies examines how satisfaction and other variables affect behavioral intention. For instance, Jani and Han (2014) assessed the links among personality, satisfaction, loyalty, ambience, and image in a hotel setting. The results indicated that personality factors (extraversion, agreeableness, and
neuroticism) significantly affect satisfaction, while satisfaction significantly influences image and loyalty. Hotel image was identified as a mediator between satisfaction and loyalty. Jo et al. (2014) found that, compared to functional value, emotional value exerts a greater influence on satisfaction and further affects behavioral intentions. Gao and Lai (2015) found that integrated satisfaction directly influences loyalty and should be considered a full mediator between F&B satisfaction and customer loyalty, a partial mediator between casino satisfaction and loyalty, and a partial mediator and moderator between shopping satisfaction and customer loyalty. Worsfold et al. (2016) showed that, compared to service satisfaction, physical satisfaction has significantly more influence on the intention to return. Park et al. (2019) found that both a substantive and communicative servicescape positively influence satisfaction and further affect behavioral intentions. Carneiro et al. (2019) revealed that the eventscape (design and entertainment) had the highest influence on emotions (pleasure and arousal), satisfaction, and loyalty. Their study further proved that only the emotional dimension of pleasure significantly impacted satisfaction and loyalty, and it was identified as a mediator between the eventscape and satisfaction.

Previous literature shows that guests’ satisfaction has been profoundly investigated in the tourism and hospitality field, however, very few studies have focused on satisfaction from a cross-cultural perspective in the hospitality field. This study thus tries to unveil this phenomenon.

2.2 Theory background: Hofstede model

The Hofstede model has been widely applied in consumer behavior studies. It has been proved an effective model for differentiating the behavioral features of consumers from different cultures. The Hofstede model covers six dimensions including power distance, collectivism-individualism, masculinity-femininity, uncertainty avoidance, long-term orientation—short-term orientation, and indulgence-restraint (Hofstede, 1980, 2005). Power distance reflects the degree to which lower society members accept an unequal distribution of power; collectivism-individualism indicates the interrelationships and interdependency among society’s members;
masculinity-femininity refers to an individual’s preference for achievement, heroism and materialism or for cooperation, modesty and sympathy; uncertainty avoidance reflects the degree of un-comfortability with uncertainty and ambiguity; long-term orientation—short-term orientation indicates the degree of highlighting the present or the future; and indulgence-restraint means following strict social norms or enjoying life and having fun (Hofstede, 1980, 1991, 2005, 2011).

The Chinese culture is characterized as one with a high power distance that is collectivistic and masculine with a relatively high uncertainty avoidance and that is long-term oriented and characterized by restraint, while the American culture is considered to be one with a low power distance that is individualistic and masculine with a relatively low uncertainty avoidance and that is short-term oriented and characterized by indulgence (Hofstede, 2009; Liu et al., 2017; Jia, 2020). In a high power-distance culture, individuals tend to emphasize social norms such as traditional customs, rituals and habits, which are considered common beliefs in the society. In addition, because of the high power-distance, Chinese people are face-conscious in interpersonal relationships (Ho, 1980), meaning they avoid upsetting personal interactions (Au et al., 2014). Just because a Chinese guest is not complaining does not mean that guest is satisfied (Au et al., 2014). Meanwhile, in a lower power-distance culture, individuals are more open to diverse opinions and more likely to accept different views. Similarly, from a collectivism-individualism perspective, Chinese people are accustomed to following social conventions, while Americans are socially more independent. Compared to Americans, Chinese people are more collectivistic and are more inclined to expect friendlier, more considerate and more personalized service. In an uncertainty avoidance culture, people tend not to complain when they are dissatisfied with the service to avoid conflicts with hotel managers. For instance, compared to non-Chinese guests, Chinese guests complained less in terms of service quality, space, cleanliness, location, noise, food, facilities, price, amenities, and decorations (Au et al., 2014). These findings reflect a distinction between Chinese and American guests.
2.3 Value of big data

Compared with traditional surveys such as questionnaires and personal interviews, the value of big data/online reviews from websites has been highlighted in recent years (Wu et al., 2017; Mariani et al., 2018; Zhao et al., 2019; Moro et al., 2019). Online reviewers are from different countries and regions and are classified into different travel groups on websites. The timespan of the online data could be more than ten years, enabling researchers to conduct longitudinal studies. Reviewers voluntarily contribute an extensive range of opinions, perceptions, and ideas about a certain product or destination, providing insights for scholars or hoteliers to see into the minds of customers and gain a more complete picture of customer behavior (Berezina et al., 2016; Park, 2017). For instance, Liu et al. (2017) found that the importance of “rooms”, “location”, “cleanliness”, “service” and “value” differed among guests from countries where different languages are spoken by analyzing 412,784 user-generated reviews of 10,149 hotels from Tripadvisor.com. The findings also revealed Chinese guests’ unique preferences for room-related attributes. Talón-Ballestero et al. (2018) examined client knowledge in hospitality management with big data. They showed that hotel guests traveling without children had the greatest consistency, British and German clients were very similar, and Spanish clients were distinct in terms of stay duration and age.

Empirical studies of customer satisfaction usually require a large set of data. For instance, product or service attributes have frequently been investigated and identified by previous researchers in different contexts (Tussyadiah and Iis, 2016; Zhao et al., 2019). The determinants of customer satisfaction have been widely assessed in the context of different countries and regions, such as Hong Kong, China, Scotland, and Malaysia (Gundersen et al., 1996; Choi and Chu, 2001; Getty and Gettly, 2003; Füller and Matzler, 2008). The Kano model classifies the attributes into three groups. The first group comprises basic attributes, reflecting minimum service requirements (Matzler and Sauerwein, 2002). These attributes do not necessarily lead to customer satisfaction, but customers would feel dissatisfied if these attributes were absent. For example, the availability of a toothbrush, toothpaste, slippers, and towels in the
restroom or the proper setting of beds including pillows, quilts and sheets on the bed may not create satisfaction, but customers would be disappointed if these features were absent. The second group is performance attributes, indicating satisfaction if present and dissatisfaction if absent (Lai and Hitchcock, 2017). For example, staff’s good attitude leads to satisfaction, while a bad attitude causes dissatisfaction. The third group is excitement attributes, which create higher satisfaction if present, but which will not lead to dissatisfaction if absent (Matzler and Sauerwein, 2002; Zhang and Cole, 2016). In the empirical studies, both identifying the attributes and evaluating the satisfaction level of each attribute require a considerable amount of data. These groups of data involve an extensive range of customers’ opinions or perspectives of products or services. As a result, researchers find traditional surveys a challenging method for obtaining sufficient data from hotel guests. However, online big data provided by anonymous users serve as an important tool for understanding users’ preferences because they are accompanied by a large number of satisfied or dissatisfied comments.

In addition, with the aid of computer technology, textual analysis helps researchers investigate online data from websites. Computerized methods vary, but the methods most frequently used in the tourism field are word-frequency analysis (Berezina et al., 2016) and Latent Dirichlet allocation (LDA) (Guo et al., 2017). Word frequency can be extracted and calculated by using software such as CATPAC (Lee and Hu, 2005) or by writing a Python program (Wang et al., 2019). For instance, high-frequency keywords (staff, service, and room) were identified to show the most frequent complaint factors (Lee and Hu, 2005). Word-frequency methods can enable the mining of a large amount of textual data. Another computerized method is topic models, such as LDA. These models measure the relationship among words by cooccurrence (Guo et al., 2017).

In summary, the research aims of the study are to (1) identify the emergent themes of hotel guests’ satisfaction, (2) compare the attributes distribution of the themes between Chinese and North American guests, and (3) compare the importance
of the themes (Functionality, Staff, and Price) for different satisfaction levels between Chinese and North American guests from a cross-cultural perspective.

3. Research procedure

3.1 Collecting the data

This study collected a large scale of textual data from the two most influential travel websites in China, Ctrip.com and Tripadvisor.com. These two websites encourage users to share their experiences and information on the website. Therefore, the reviews have extensive perspectives and opinions, which provide rich information for a satisfaction study. Users are asked to post reviews with scores ranging from 1 to 5. Scores from 1 to 2 indicate users’ dissatisfaction while scores from 4 to 5 indicate satisfaction. This study collected reviews from 261 (Ctrip.com) and 60 (Tripadvisor.com) hotels located in the 6 most famous tourism destinations (Shanghai, Beijing, Hangzhou, Chengdu, Guangzhou, and Xi’an) in China according to the ranking in Ctrip.com and Tripadvisor.com. By developing a Python program, various data such as the review score, the travel type, the review time, and a textual review can be automatically collected from the website. All reviews from Ctrip.com (from 2014 to 2018) and TripAdvisor (from 2004 to 2020) for each hotel were collected. Finally, after data cleaning, 656,374 Chinese reviews and 6,520 English reviews were obtained.

3.2 Analyzing the data

As the online reviews consist of a large amount of unstructured textual data, traditional methods such as reading through all the data, interpreting it and manual coding it are not feasible to manage the information load (656,374 reviews from Ctrip.com and 6,520 from tripadvisor.com). Thus, in this paper, word frequency with the aid of Python and topic modeling with Gephi software were adopted to extract meaningful information from the data. Python, a computer language, is widely used in computer science and could efficiently manage problems when an appropriate program was developed. Using Python to mine the textual data is more objective than
using traditional approaches due to its computerized and mathematical nature. Gephi software has also been widely used to analyze textual data in the tourism and hospitality field. All reviews were consolidated into one sheet, and satisfied reviews (scores from 4 to 5) and dissatisfied reviews (scores from 1 to 2) were consolidated into another two sheets separately. The study’s data analysis involved three steps.

First, the textual data in each spreadsheet was converted into a TXT file. Then, a Python program was set to calculate the frequency of the top 500 characters from the overall data/satisfied data/dissatisfied data. After the word-frequency calculation was completed, term reduction was conducted. Stops words and words that do not provide meaningful information such as “和” (and), “很” (very), “是” (is), “有” (have), “我” (I), and “说” (say) were removed. Then, words with similar meanings were consolidated into a common term. Finally, key words were obtained, which were translated into English by two researchers. Then, conflicts and disagreements were discussed with the third researcher to reach a final agreement on the word translation.

Second, a thematic analysis was conducted according to the previous literatures and the explicit meanings of the key words. Based on the previous literatures (Zhou et al., 2014; Xu and Li, 2016; Padma and Ahn, 2020), three researchers were involved in the thematic analysis. First, two researchers became familiar with those words. Then, both of them developed broad theme categories and reached consensus on the proposed themes. Third, when disagreement arose during categorization, the third researcher was invited to negotiate and reach a final agreement. Finally, the themes were checked against the previous literatures again. Three themes were identified including Functionality, Staff and Price. Functionality covers subthemes such as room, travel, food, environment, and hotel facility. The percentage of each frequency was calculated to unearth the relative importance of each theme. The satisfied and dissatisfied data can be analyzed in the same way, revealing the differing importance of the theme between satisfied and dissatisfied data.

Third, topic modeling was conducted to visualize the attributes distribution of each theme for Chinese and North American guests. Finally, the importance of the
themes for different satisfaction levels was compared between Chinese and North American guests.

Insert Figures 1 and 2

4. Research results

The current study collected 656,374 online reviews from Ctrip.com (Chinese reviews posted by Chinese guests) and 6,520 online reviews from TripAdvisor.com (English reviews posted by North American guests). Tables 1 and 2 presents the data distributions in terms of cities, the travel group, and the year of review. In the reviews posted by Chinese guests, Shanghai hotels had the most reviews, followed by hotels in Beijing, Hangzhou, Chengdu, Guangzhou and Xi’an. Business guests posted the most reviews, while single guests provided the least. Review numbers peaked in 2017. In the reviews posted by North American guests, Beijing hotels had the most reviews, followed by hotels in Shanghai, Xi’an, Guangzhou, Hangzhou and Chengdu. Review numbers peaked in 2018. Guests from the United States accounted for 88.08% of the total, while Canadian guests accounted for 11.92% of the total.

Insert Tables 1 and 2

4.1 Identifying emergent themes influencing hotel guests’ satisfaction

By using Python, the frequencies of the most frequent words were categorized into three themes: Functionality, Staff and Price. Functionality covers subthemes such as room, travel, food, environment, and hotel facility. Room covers attributes such as facilities and beddings, space, cleanliness, design/decoration, maintenance (well-kept or run down), style, view, and uniqueness. Travel includes the attributes of convenience and location. Food can be demonstrated by such attributes as food variety, food quality, and the dining environment. Environment refers to the serenity and scenery of the hotels’ surrounding areas. Hotel facility covers such attributes as the entertainment facilities, the public area, and parking. Staff can be categorized into
service personnel, service procedure, and service attitude. Price means the room/food price and value for money.

4.2 Comparing the attributes distribution of the themes between Chinese and North American guests

Insert Figures 3, 4, and 5

Figures 3 and 4 shows the attributes distribution of the themes of Chinese guests and North American guests. Figure 5 reflects the cultural differences between China and North America by comparing Hofstede’s six cultural dimensions (Hofstede Insights, 2017). From Figures 3 and 4, the attributes distribution of the themes between Chinese and North American guests has both similarities and distinctions. Overall, both Chinese and North American guests express several similar attributes, but Chinese guests experienced richer attributes for each theme. Specifically, the similarities and distinctions can be further explained by the distribution of the attributes of the three themes (Functionality, Staff, and Price). On the one hand, the attributes distribution of the theme Functionality between Chinese and North American guests has the following similarities. Both Chinese and North American guests pay attention to the lifestyle-related attributes in the five-star hotel context. For instance, “design”, “style”, “luxury”, “decoration” and “modern” are frequently mentioned in the subtheme “room”. This finding is consistent with the features of North American guests from a more individualized society. Since five-star (luxury) Chinese hotel guests have been considered young, wealthy and well-educated, they have been grouped into independent travelers with more intercultural awareness and a deeper understanding of cultural diversification (Gao et al., 2018; Wang et al., 2020). As a result, although Chinese independent travelers are profoundly influenced by their collectivistic culture, they also tend to highlight the lifestyle-related attributes, which are commonly featured in an individualized culture.
On the other hand, Figures 3 and 4 show that the attributes distribution of the subtheme room also has obvious differences. For instance, the figures show that, compared to their North American counterparts, in addition to the common attributes such as “bed”, “shower”, and “view” of the subtheme “room” and the lifestyle-related attributes, Chinese guests tend to express unique topics such as the “floor” and the “layout of room”. This finding is consistent with a high power distance society in that people tend to link the hotel stay to social norms, such as the layout of the room reflecting luck in Chinese geomantic culture or “Fengshui” (Wang et al., 2020). The idea of the Chinese geomantic culture indicates the importance of the building location, room floor, room number, and layout of the room for its inhabitants’ good or bad luck (Wang et al., 2020).

The subtheme “travel” also showed similarities and distinctions with regard to the attributes distribution between Chinese and North American guests. The similar features occur with the subtheme “room”, reflecting the individualized characteristics of Chinese independent guests in a collectivistic culture. For example, Chinese independent guests frequently mention the lifestyle-related attributes such as “scenic spot”, “tourist attraction”, “downtown area”, “shopping mall” and “restaurant”, which is similar to North American guests’ inclinations such as “go travel”, “trip”, “shopping”, “mall”, and “street”. However, compared to their North American counterparts, Chinese guests not only tend to point out these lifestyle-related attributes and regular attributes such as “transportation”, “airport”, “subway”, “location”, and “convenient” but also consistently express their concerns for “the distance to (CBD areas, stations, attractions)”, convenience for “ask for a taxi”, and whether the scenic spot or mall are “within walking distance”. This finding indicates that individuals (Chinese guests) are more careful, attentive and considerate coming from a restrained society (Hofstede, 1980, 2005).

Chinese and North American guests also share the attributes distribution of the subtheme “hotel facility”. For instance, both guests prefer entertainment facilities such as “swimming pool” and “gym”, reflecting the lifestyle inclination. This finding is consistent with the idea proposed by Hofstede (2005) that, in a more indulgence-
oriented society, North American guests are guided more by their desire to be happy, and Chinese guests (independent travelers) will gradually become indulgence-oriented even when they come from a restrained culture. However, the distinctions of the attributes distribution of this subtheme are also obvious. Compared to North American guests, Chinese guests tend to not only focus on entertainment facilities but also highlight facilities such as “entrance”, “lift”, “parking” and “parking lot”. This finding also proved that individuals (Chinese guests) are more careful, attentive and considerate when they come from a restrained society (Hofstede, 1980, 2005). The results can also be explained by a long- vs. short-term orientation. From a long-term-oriented culture, Chinese guests emphasize “hot spring”, which is considered beneficial for one’s long-term physical health. North American guests, from a short-term-oriented culture, tend to choose lifestyle entertainment such as “bar” and “club”.

The attributes distribution subthemes (“environment” and “food”) also showed the features of Chinese guests’ (independent travelers) individualism- and indulgence-oriented tendencies from a collective and restrained culture. For example, Chinese guests describe very rich “environment” related attributes such as “surrounding environment”, “surrounding area”, “landscape”, “beautiful environment”, and “scenery”. These attributes are even richer than those mentioned by North American guests. Similarly, “food”-related attributes mentioned by both Chinese and North American guests indicate indulgence-oriented inclinations such as “rich”, “tasty”, “delicious”, “variety”, “buffet”, “fruits”, “drinks”, “tea” and “coffee”.

Another attributes distribution of the theme Staff exhibits the greatest differentiations between Chinese and North American guests. Figures 3 and 4 show that Chinese guests expressed richer attributes related to staff’s performance such as “considerate”, “in place”, “warm”, “passionate”, “personalized”, “take initiative help”, “focus on detail”, and “handle problem”. These results can be examined in the context of a high or low power-distance culture. In a high power-distance society, the relationship between service providers and guests is distinct from the same relationship in a traditional social hierarchy because of the philosophy “the customer is king” in the hospitality field. Service providers may not feel superior to guests in a
hotel. A high power-distance culture emphasizes social status; therefore, personalized service fulfills Chinese guests’ expectation for a higher social status.

In addition, Chinese guests, considered more collectivistic, expect more close relationships with staffs and ask for more personalized service in the luxury hotel context (five-star hotel context). They experience more diverse dimensions of personalized service during the hotel stay. However, North American guests (individualists) are found to be more masculine and rational when they experience hotel service. Moreover, because the Chinese culture features relatively high uncertainty avoidance and is long-term oriented, personalized service helps maintain harmonious relationships between service providers and guests. Finally, the attributes distribution of the theme Price is similar between Chinese and North American guests in the five-star hotel context. This finding indicates that “price”-related attributes seem to have little impact on all guests’ satisfaction.

4.3 Comparing the changing importance of the themes for different satisfaction levels between Chinese and North American guests

Insert Figures 6 and 7

Figures 6 and 7 show that the importance of the themes (Functionality, Staff, and Price) for different satisfaction levels is changing for Chinese guests, while it remains stable for North American guests. The importance of the themes is represented by average word frequency of the themes for different satisfaction levels. In the high satisfaction level, the importance of the themes is similar between Chinese and North American guests. The importance of Functionality ranks first, followed by the importance of Staff and Price. In the middle level of satisfaction, although the importance of Functionality still exceeds the importance of Staff, the former gradually decreases while the latter gradually increases for Chinese guests. In the low satisfaction level, the importance of Staff matches the importance of Functionality and even exceeds it for Chinese guests. However, each theme has only a mild fluctuation
from the high to the low satisfaction level for North American guests. The importance of price remains stable for different satisfaction levels in the five-star hotel context.

Compared to the previous literatures, the results offer a new insight from a dynamic perspective of a satisfaction study. In the previous literatures, the relationship between satisfaction attributes and the Hofstede dimensions are static. For instance, by analyzing online customer reviews on Amazon.cn, Zhu et al. (2017) found that Chinese guests tend to mention functionality more frequently. Leon (2018) also proved that individuals from collectivistic cultures are more likely to mention functionality such as rooms and meals in a hotel stay. However, with the aid of a large amount of textual data, this study investigated the relationship between satisfaction attributes and the Hofstede dimensions from a dynamic perspective and revealed that the importance of the themes (Functionality, Staff, and Price) for different satisfaction levels has been changing, especially for Chinese guests from collectivistic cultures. The importance of Functionality exceeds the importance of Staff and Price in the high satisfaction level, while Staff is slightly more critical than Functionality in the low satisfaction level.

According to cross-cultural theory, Chinese society is considered to have a high power-distance and a relatively high uncertainty avoidance, to be long-term oriented and masculine and to be characterized by restraint (Hofstede, 2005; Liu et al., 2017). A high power-distance means that individuals are more likely to expect social status, the relatively high uncertainty avoidance and long-term orientation reflect individuals’ inclination to seek harmony, and restraint indicates that individuals are more careful and considerate than their counterparts in other cultures (Hofstede, 2005). As a result, Chinese guests tend to expect professional and personalized service to emphasize their social status in a relatively high satisfaction level. However, when they are angered by terrible service in the low satisfaction level, their complaints for Staff would surge even when they come from a high uncertainty avoidance, long-term oriented and pursuing harmony culture. The results of the study are distinctive because they investigate the relationship between satisfaction attributes and the Hofstede dimensions for different satisfaction levels.
5. Conclusion and discussions

5.1 Conclusion

The current study have three aims. The first aim is to investigate guests’ overall satisfaction at Chinese five-star hotels. The results suggest that the key themes include Functionality, Staff and Price. Functionality can be further categorized into five subthemes: room, travel, food, environment and hotel facility. The findings are largely consistent with the attributes identified in previous studies (Ranjbari et al., 2020; Padma and Ahn, 2020; Li et al., 2020). The second aim is to compare the attributes distribution of the themes between Chinese and North American guests. Chinese guests tend to mention both lifestyle- and social norms–related attributes and expect personalized service, while North American guests mainly prefer to describe lifestyle-related attributes and standardized service. The third aim is to compare the changing importance of the themes (Functionality, Staff, and Price) for different satisfaction levels between Chinese and North American guests. As the satisfaction level decreases, the importance of Functionality decreases, that of Staff increases, and that of Price remains stable for Chinese guests. However, the importance of each theme fluctuates only mildly from the high to the low satisfaction level for North American guests.

5.2 Theoretical implications

Theoretically, this study contributes to the existing satisfaction literature from a cross-cultural perspective. First, although the identified themes (Functionality, Staff, and Price) are largely consistent with previous studies (Xu and Li, 2016; Padma and Ahn, 2020), this study further explores the attributes distributions of each theme and linked those attributes to Hofstede dimensions, generating distinctive findings from a cross-cultural perspective. For instance, on the one hand, the study unearths the individualized and indulgence-oriented features of Chinese guests (independent travelers) such as lifestyle inclinations even for travelers from a collectivistic culture. On the other hand, Chinese guests from a high power-distance culture tend to
highlight social norms–related attributes such as choosing to stay in a lucky room (appropriate layout). Meanwhile, North American guests from an individualistic and indulgence-oriented culture are more likely to mainly emphasize lifestyle-related attributes. In addition, Chinese guests from a high power-distance culture, expect high social status during their stay and ask for more personalized service in the luxury hotel context (five-star hotel context). North American guests (individualists) are found to be more rational when experiencing hotel service. Although satisfaction attributes have been extensively explored in previous literatures, very few studies have linked them to Hofstede dimensions. The current findings extend the understanding of hotel satisfaction from a cross-cultural perspective.

Second, the study reveals the changing importance of the themes (Functionality, Staff, and Price) for different satisfaction levels and permits a more profound understanding of the law of hotel satisfaction. In the high satisfaction level, Chinese guests mentioned Functionality most frequently, followed by Staff and Price. In the middle level of satisfaction, the focus on Functionality still exceeds that on Staff, although the former gradually decreases while the latter gradually increases for Chinese guests. In the low satisfaction level, the emphasis on Staff gradually matches that on Functionality and even exceeds it for Chinese guests. Although Functionality, Staff and Price have been deeply investigated in previous literatures, these themes have been examined primarily from a static perspective. Previous literatures proved that people (e.g., Chinese guests) are more likely to accept inequality, avoid conflicts with hotel managers, and emphasize long-term relationships (Hoare and Butcher, 2008) when they come from high power distance, long-term orientation and relatively high uncertainty avoidance cultures (Hofstede, 2009). For example, compared to non-Chinese guests, Chinese guests complains less in terms of service quality, space, cleanliness, location, noise, food, facilities, price, amenities, and decorations (Au et al., 2014). This study argues that these results from previous literatures ignored the variances in guests’ attitudes at different satisfaction levels. For instance, when guests are angry about terrible service, their complaints would surge even when they come from a culture with a high uncertainty avoidance and tendency to pursue harmony.
The current findings distinctively explore the importance of satisfaction attributes from a dynamic angle and obtain new in depth insights regarding satisfaction.

Third, the findings offer a new perspective from which to differentiate the market segmentation of hotel guests. They indicate that Chinese guests in five-star hotels can be described as independent travelers. This market segment has been considered young, wealthy, and well-educated, with greater intercultural awareness and a deeper understanding of cultural diversification (Wang et al., 2020). This finding suggests that this market segment (independent travelers) possesses the characteristics of being collectivistic, having a high power-distance, having relatively high uncertainty avoidance, being long-term oriented, and coming from a restraint culture. In addition, these travelers tend to seek *lifestyle*-related attributes that are commonly featured in an *individualized* culture. On the one hand, even in a collectivistic society, the *lifestyle*-related attributes are frequently found in the subthemes of *Functionality* (room, travel, hotel facilities, environment, and food). On the other hand, belonging to a high power-distance culture causes them to be accustomed to following social norms and expecting personalized service to enhance social status. However, North American guests mainly tend to highlight the *lifestyle*-related attributes (*Functionality*) and to ask for standardized service (*Staff*).

Specifically, the findings imply that Chinese guests (independent travelers) are gradually more individualized and indulgence oriented in the five-star hotel (luxury hotel) context. They also indicate that, in a high power-distance culture, Chinese guests can still become accustomed to obeying social rules such as *luck* (layout of the building/room), physical health (room above the third floor), and windows facing south (plenty of sunlight). In an individualistic culture, guests’ satisfaction mechanism works through seeking fun such as “bar” and “club”. In addition, Chinese guests from a high power-distance, relatively high uncertainty avoidance and long-term oriented society expect personalized service with features such as “considerate”, “in place”, “passionate”, “personalized”, “take initiative help”, and “focus on detail”, reflecting their unique features of social status seeking, carefulness and harmony preference. Meanwhile, in an individualistic culture, guests mainly ask for standardized service.
such as “friendly”, “warm” and “attentive”. Thus, the findings generate valuable implications for distinguishing between Chinese (independent travelers) and North American guests.

5.3 Practical implications

Pragmatically, implications from the findings are beneficial for positioning strategies, marketing and branding in hotel management. Although satisfied and dissatisfied attributes have been extensively examined in the hospitality field, a cross-cultural perspective would be a more effective way of understanding hotel guests’ behavior. The Hofstede dimensions including power distance, individualism-collectivism, uncertainty avoidance, long- vs. short-term orientation, and indulgence-restraint serve as inner drivers for guests’ behavior and offer a deeper insight for market segmentation. For instance, facilitating both lifestyle- and social norms-related features for Chinese guests and mainly lifestyle-related features for North American guests may lead to higher satisfaction. Personalized service for Chinese guests and standard service for North American service could be competitive advantages for five-star hotels in China. The changing importance of the themes (Functionality, Staff, and Price) for different satisfaction levels further indicates that good performance of functional-related attributes could enhance satisfaction and that better staff performance would reduce dissatisfaction.

Overall, the three identified themes (Functionality, Staff, and Price), the attributes distribution of each theme and the changing importance of the themes for different satisfaction levels unearth the law of hotel guests’ satisfaction a step further. The findings provide new insights for management, branding and marketing segmentation. Based on the findings, to enhance guests’ satisfaction, hoteliers should position strategies to cater to the features of guests from high or low power-distance, from collectivistic or individualistic cultures, with high or low uncertainty avoidances, with long- or short-term orientations, and from an indulgence- or a restraint-oriented culture. Hoteliers should make efforts to offer both lifestyle- and social norms-oriented features as well as personalized service experiences for Chinese guests, while
providing lifestyle-oriented features and standardized service for North American guests. The findings not only provide valuable implications for hotel management, but also contributes to the consumer behavior literature by segmenting different markets, investigating satisfaction from a dynamic instead of a static perspective and revealing the inner drivers of consumer behavior from a cross-cultural perspective. These findings extend satisfaction studies and are beneficial for researchers in other consumer behavior domains.

5.4 Limitations and future research

There are still some limitations remain for this study. First, data from the study were confined to Chinese and North American guests. For cross-cultural research, the opinions of guests from other regions should be assessed in future studies, such as Europe, Oceanic countries, other regions of Asia and beyond. Guests from different countries and regions may generate different outcomes for hotel satisfaction. Second, the data for the study were confined to five-star hotels in China. Future studies could compare the features of satisfaction among different kinds of hotels such as boutique hotels, homestays, budget hotels and Airbnb. Third, in comparison, the textual data available from tripadvisor.com are far fewer than those from ctrip.com. Future studies could collect more rich data to attest the results. Finally, collecting data from online travel websites only involves potential shortcomings. Future studies could adopt data from different sources, including first-hand such as through interviews and questionnaires. Quantitative or mixed methods could be adopted to further explore satisfaction and dissatisfaction in the hospitality field.

References:


Table 1. Features of Chinese guests’ textural reviews

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<tr>
<th>Item</th>
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<tr>
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Table 2. Features of North American guests’ textural reviews

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**Year of review**

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<tr>
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**Guest's origin**

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<td>Canada</td>
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Figure 1. Screenshot of an online review from Ctrip.com

Figure 2. Screenshot of an online review from Tripadvisor.com
Figure 3. Attributes distribution of Chinese guests’ hotel satisfaction
Figure 4. Attributes distribution of North American guests’ hotel satisfaction

Figure 5. Country comparison using Hofstede’s six cultural dimensions (Hofstede Insights, 2017)
Figure 6. The changing importance of each theme for different satisfaction levels (Chinese guests)

Figure 7. The changing importance of each theme for different satisfaction levels (North American Guests)
When revising your paper, please prepare this report explaining how you have responded to each reviewer’s comments and suggestions specifically.

### REVIEWER 1

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### REVIEWER 3 (if applicable)

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<td>1. The main problem is still academic writing. Let me show an example in terms of aims/objectives: Aim in abstract: “The paper aims to examine hotel guests’ satisfaction from cross-cultural perspective in the context of Chinese five star hotels.” In introduction you add something else: “The research aims to examine hotel guests’ satisfaction from cross-cultural perspective in the context of Chinese five star hotels and develop a computerized approach to evaluate emergent themes, assess attributes distribution of each them and the changing importance of each theme and in different satisfaction level.” At the end of introduction you add something more and/or change your aim slightly: “…the current research aims to differentiate market segmentations and demonstrate the practical implications for hospitality industry.” Then at the end of literature review, I assume you are trying to summarize your aims? “In summary, the research aims of the study is to (1) identify the emergent themes of hotel guests’ satisfaction; (2) compare attributes distribution of the themes between Chinese and North American guests from cross-culture perspective; (3) compare the importance of the themes (Functionality, Staff, Price) in different satisfaction level between Chinese and North American” And at some point, you talk about one objective: “The objective of the current study is to investigate the dynamic changing importance of satisfaction attributes in different satisfaction level.” Academic writing part has not been improved! Very clear aim(s) and/or objective(s) which should not confuse but help the reader and guide him/her throughout the paper. Similar academic writing problems continue throughout the paper. 2. And grammatical mistakes are still quite many.</td>
<td>The authors revised research aims as follows (and make sure that the aims, when mentioned, are consistent and written in full): The paper aims to identify the emergent themes of hotel guests’ satisfaction, compare the attributes distribution of the themes between Chinese and North American guests, and compare the importance of the themes for different satisfaction levels between Chinese and North American guests from a cross-cultural perspective. The authors have re-checked the writing of the entire document to correct any academic writing problems: inconsistencies and clarity of expression. The authors have obtained professional English language editing service to check the language of the manuscript before submitting this revision.</td>
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