

INTERNATIONAL CUSTOMERS' SATISFACTION BETWEEN GREEN AND NON-GREEN HOTELS IN VIETNAM

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ABSTRACT

Vietnam was named “Asia's 2018 Leading Destination” (Das, 2019). However, with a substantial increase in both international and domestic visitors, Vietnam has also experienced environmental challenges. The increase in guests has also given way to an increased growth in hotel development. And with this, Vietnam has offered the Green Lotus Award to organizations that are working toward environmental protection. However, more guests still trend toward patronizing the non-green hotels, noting room rate differences and easier access to the non-green properties. Through content analysis of 2,000 guest comments from TripAdvisor, this study has focused on hotel customer satisfaction in Vietnam using technical quality, functional quality, the physical environment, and the natural environment as factors of satisfaction. Ultimately, this information should provide the green hoteliers a useful understanding on guest satisfaction points between green and non-green hotels that they can use to expand their customer base. The study revealed that guests are most satisfied with the cleanliness of green lotus hotels and the staff's helpfulness or knowledge of green hotels and non-green hotels.

Keywords: Servicescape, Technical quality, Functional quality, Customer Satisfaction, green hotels

INTRODUCTION

Vietnam is fast becoming a very popular tourist destination for both domestic and international travelers. The country is known for its beautiful beaches and coastal views, its scenic mountains, and its historic and cultural sites. And because of its many jewels, Vietnam has experienced impressive tourism growth and momentum, most dramatically in the last decade. The increased number of international visitors, the increase in domestic travelers, as well as the accelerating total revenues, have in part, afforded Vietnam to be named “Asia's 2018 Leading Destination” (Das, 2019).

Activities of the young Vietnamese tourism industry have been recorded by The World Economic Forum (WEF) since 1995, starting with a modest number of 1.35 million international visitors for the year, and increasing to 4.2 million visitors with a revenue receipt of 3.5 billion US dollars in 2008. International visitors tallied over 15.7 million for the twelve-month period March 2018 - February 2019 (Tourism Statistics, 2019).

Domestic tourism has also grown. An estimated 80 million domestic tourists enjoyed Vietnam in 2018, up by 6.8 million domestic travelers in 2017 (2018- Successful year for Vietnam's Tourism, 2019). Within 10 years from 2008 to 2018, Vietnam domestic tourism made a great breakthrough. There are two factors that make this jump. The first is the development of the middle class who are in high demand for tourism. Moreover, the change of prices with lower cost of domestic airlines in Vietnam makes it easier to travel. With these important changes, the number of domestic trips increased from 20.5 million to 80 million, which is a four-fold increase within 10 years (Dinh et al., 2019). Revenue, therefore, has also increased dramatically. The Vietnam Tourism Industry reported revenues of \$26.75 billion in 2018. In just ten years, tourism revenues climbed by over \$23 billion dollars (Das, 2019).

The tourism infrastructure has had to develop quickly in response to the high tourist demand. By the end of 2012, the country had approximately 13,000 tourist accommodation establishments (up 19.2% compared to 2009), with 265,000 available rooms (up 23% compared to 2009). By 2018, the number of tourist accommodations nearly doubled, offering more than 550,000 rooms, with 20% of the rooms of luxury status (Ngo, 2019). And in 2019, an estimated 30,000 additional rooms were made available. While the rapid development rate of tourism has brought positive impacts economically and culturally, it also has created some resultant negative impacts on the environment and society (Yoon, Gursoy, & Chen, 2001). Depletion of natural resources, pollution, physical impacts, overcrowding of areas, and lack of strong infrastructure have challenged the country as it has welcomed a growing number of travelers to its tourist treasures (UNEP, n.d).

Therefore, sustainability and green practices have become a point of focus, particularly given the growth of hotel development. Realizing the importance of hotels' green practice in preserving the environment, the Vietnam National Administration of Tourism grants "Green Lotus" awards to the hotels which meet the green practice requirements in hopes of raising awareness and responsibility for an environmentally friendly hotel system and the sustainable use of natural resources and energy for environmental protection. Some criteria which are included in the standard to certify the Green Lotus award include factors such as saving water to minimize wastewater or using solar energy in hotel operations to avoid waste and overload of general electricity. Persistence in implementing these standards is an important factor to maintain the position on the list of green hotels of Vietnam's tourism industry (The Environmentally and Socially Responsible Tourism Capacity, 2011).

Unfortunately, the market share of green hotels in Vietnam is very low. According to Vietnam Tourism, in 2015, the number of hotels awarded the Green Lotus certification was 33 out of a total 19,000 hotels across the country (Vietnam Tourism, 2017). Multiple factors might contribute to this unsatisfactory situation including cost to the operators, a higher room rate to the guests, geographic location of the green properties, and lack of a broad consumer audience.

From the hotel operators' viewpoint, many organizations and businesses are still primarily interested in profitability but are less interested in the environment and the long-term benefits of the environment to the nation, their local communities and future generations (Ta, 2012). In addition, green hotels that operate under the eco-friendly guide to improve the environment, may experience higher start-up costs (Han, Hsu, Lee, & Sheu, 2011). From the consumer's perspective, it has been commonly observed that the room rates for green hotels are higher than the non-green

hotels since the initial costs for green operating procedures are higher than those for non-green hotels (Cometa, 2012). Second, due to the environmentally friendly operational requirements, many green hotels are located in a remote location, making it less easily accessible to potential guests (Love, 2016). Finally, most green hotels' marketing efforts focus only on green consumers who are already conscious of the environment by emphasizing the contribution of the hotels' green practices to the environment. Most green hotels seldom promote the factors which are important to the general public; this majority may select their hotel based on service, location, or room rate, but may not consider the environmental advantage (Chong & Verma, 2013). In order for green hotels to better compete with non-green hotels and appeal to a larger number of guests, it is important to identify the factors which influence customer satisfaction in both green and non-green hotels. Ultimately, this would be a valuable effort for the promotion of environmental protection in Vietnam. Hence, this study evaluated how technical quality, functional quality, physical environment, and natural environment influence customer satisfaction in both green hotels and non-green hotels.

LITERATURE REVIEW

Service Quality

Quality of service is an important factor when researching hotels and is noted as “the customer’s perception of excellence or superiority of an entity” in many studies (Liat, Mansor, Chuan, & Imrie, 2017). Service Quality, in fact, has had significant influence on business performance, customer satisfaction, sustainability, and profitability (Miklós, Haddad, Nagy, Popp, & Oláh, 2019).

Gronroos (1984) assessed how service quality affects customer satisfaction by examining the dual perspectives of technical quality and functional quality. In effect, Gronroos studied “what” a customer receives (the technical quality) and “how” that customer receives the service (the functional quality). The technical quality represents the outcome, or what the customer leaves with after consuming the service (Gronroos, 1984; Fassnacht & Koese, 2006). The functional quality relates to the process of service. Total quality perception is generated from the perceptions of both technical quality and function quality.

In the hotel experience, a guest may pay attention to the technical quality of products. Their experience in using such products, the perception of the quality of the product, and their perspective after use will be an important factor to create the image of the hotel for that customer and other customers who have not yet experienced a stay at this hotel. The results can lead to new insights into what products and services are most praised by customers to enable managers to focus on and utilize their advantages to attract new customers and maintain relationships with old customers. Popular product “categories” in the hotel that fall into the technical quality are areas of rooms, food and beverage outlets, and entertainment services; in green hotels there are also environmental considerations. More specifically, a hotel guest may enjoy the comfort of the bed, may appreciate the water pressure of the shower, may marvel over the beautiful view, and consume excellent food and beverage! Further, the green hotels may offer “green products” such as dispensable lotions and shampoos, which delights the green-minded guest! The hotel manager must determine the appropriate offerings to please their guests and still, the physical characteristics

and offerings of the hotel, alone, do not determine overall guest satisfaction (Ali, Hussain, Konar, & Jeon, 2016).

The functional quality of the service must be considered and then integrated with the technical quality offered. Functional quality is related to the satisfaction that the service recipient feels about the process or service experience (Babic-Hodovic, Arslanagic-Kalajdzic, & Imsirpasic, 2017). The functional quality defines “how” the service is delivered and reflects the guest’s perspective on the service they are experiencing. Warmth, welcome, courtesy, and professionalism are elements of functional quality that contribute greatly to the overall customer satisfaction. Functional quality is an important factor influencing customers’ satisfaction when experiencing green hotels in Vietnam. The perception of how services are delivered whether at the front desk, in the restaurant, or with a given nature conservation program will directly impact their overall satisfaction with the hotel experience.

Ali et al. (2016) pointed that there is a significant influence of technical quality and functional quality on customers' perception and satisfaction. When these two bundles of quality perceptions are integrated, and then evaluated against expectation, the result is perceived service quality (Ali et al., 2016; Miklós et al., 2019). Service quality effects customer satisfaction directly. Therefore, service products and delivery should come together to create a harmonious combination that attracts the attention of customers, resulting in the best quality of service to increase customer satisfaction. In this way, the hotel can have a long-lasting relationship with its customers and gain their loyalty.

Servicescape

Servicescape has also been found to effect customer satisfaction. The term "servicescape" discusses the physical setting of a business (Bitner, 1992; Balakrishnan, 2017). Servicescape is the most widely used term to refer to the effects of tangible and intangible signals on consumers. According to Agnihotri and Chaturvedi (2018), servicescape includes four dimensions: physical, social, socially symbolic, and natural environmental dimensions. With reference to the green hotels, only two dimensions have been addressed: physical and natural environment.

Physical Environment. Physical environment is a factor for managers to understand because it can be controlled by the company to supplement or restrict the interaction of the physical environment and the customers (Zeithaml, Bitner, & Gremler, 2009; Mmutle & Shonhe, 2017). For example, ambient conditions, such as temperature, sound, and air affect human senses. Many studies indicate that these stimuli include images (light and color); cleanliness, smell (air quality, and aroma); surrounding environment (temperature); and hearing (music and noise) (Agnihotri & Chaturvedi, 2018).

These physical factors directly affect the customer when they enter the hotel. This is the first impression of the customer and a very important consideration in hotel design. Green hoteliers try to maintain the natural landscape in and around the property, and they rely on it to create a distinctive hotel that avoids the destruction of nature. Therefore, some important factors of green hotels include the fresh air, the green scenery, the use of environmentally friendly materials, the limited impact of noise, and composting of waste that does not decompose. Some of Vietnam's

green hotels, for example, do not use air conditioners in order to reduce harmful emissions into the atmosphere; others build guest rooms with local materials that do not have a harmful impact on the local environment.

In this study, the physical environment is referred to as the environment that can be seen and felt, such as the atmosphere, the decoration, and the furniture of the green hotels. Unlike regular hotels, green hotels have a unique design to create a sense of harmony with nature, avoiding environmental harm. The items used are environmentally friendly, so there may be no chemically based aromas, for example, or no use or excessive use of heaters and air conditioners. Some green hotels in Vietnam are now taking advantage of the natural location of the mountains. According to Githiri (2016), consumers who have greater perception of the physical environment are more likely to have positive emotions, which raise customer satisfaction. The physical environment brings a sense of well-being, familiarity, or comfort to the customer and brings about the positive emotions that every hotel wants its customers to have. Furthermore, the physical environment has a significant impact on the overall impression of the customers (Mmutle & Shonhe, 2017). This overall impression can lead to their satisfaction during their experience in the hotel.

Natural Environment. According to biologist Wilson (1984), an innate connection exists between humans and other living systems, including nature and wildlife. In addition, Clarke and Schmidt (1995) pointed out that many service relationships are "natural encounters" that affect consumers psychologically and at an uneven distribution. Studies indicated that the natural recovery environment has three stimulants for customer recovery; these include being away, fascination, and compatibility (Rennit & Maikov, 2015).

The first stimulant, being away, refers to a break for people from everyday concerns by creating the feeling that they are escaping to a completely different place away from the familiar habitat and the circle of their lives. Natural environments are often the preferred destination for expanded recovery; beaches, botanical gardens, mountains, and lakes are all idyllic places for "getting away" (Kaplan, 1995; Viviers, 2016). The feeling of going away does not have to be measured by distance. However, it requires a person to feel that he or she is living in a completely different world.

The second stimulant, fascination, refers to the ability of a setting to easily keep one's attention; people want to stay in a context because something in that place easily attracts their attention (Kaplan, 1995; Viviers, 2016). An attractive servicescape is a fascinating setting where customers stay away from the noise or disturbance and only when they are ready to rejoin the world, will they venture back into everyday life.

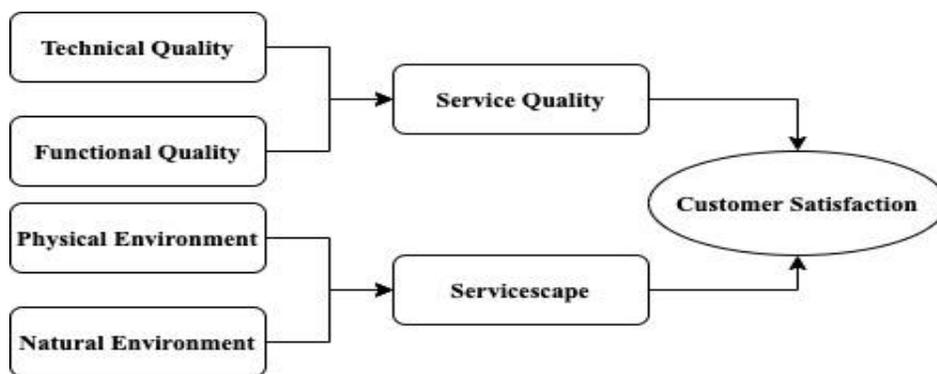
The third stimulant, compatibility, refers to the ability of a setting to provide customers with a sense of belonging (Rosenbaum et al., 2007). A compatible environment is one of human enjoyment, no struggle, and no embarrassment (Kaplan, 1995; Viviers, 2016). When people are in a compatible environment, there are no constraints on human interaction and they can participate in harmony (Rennit & Maikov, 2015). Therefore, guests can find the quiet and fresh air at the green hotel to become calm and rested.

Thus, the commercial servicescape provides guests with three types of restorative stimulants to help them reduce the load of mental fatigue syndrome through patronage of the green hotel. In this study, the natural environment is referred to as the surroundings of the hotel, which is the natural landscape in which the hotel is located. The green hotel can market the beauty of the natural to attract customers. Given the severe pollution situation in Vietnam, the natural environment factor is an extremely important element to consider in attracting guests. The natural environment serves to soothe the guests, helps future generations with ecofriendly practices, saves on hotel costs, and also increases customer satisfaction (Rennit & Maikov, 2015; Viviers, 2016).

Customer Satisfaction. In a rapidly growing service environment, service providers can maintain competitive advantage by providing high quality services to their customers (Mmutle & Shonhe, 2017; Agnihotri & Chaturvedi, 2018). Satisfied customers can bring many other benefits to the service provider as a ripple effect including loyalty to the service provider and active participation in broadcasting by word-of-mouth (Ryu & Han, 2010; Ali, Ryu, & Hussain, 2016). McDougall and Levesque (2000) showed that customer satisfaction is the overall assessment of the service provider. Ali et al. (2016) pointed that there is a significant influence of technical quality and functional quality on customers' perception and satisfaction. These two factors directly affect the customers and are two main factors that make for customer satisfaction. Service products and delivery should come together to create a harmonious combination that attracts the attention of customers, resulting in the best quality of service to increase customer satisfaction. In this way, the hotel can have a long-lasting relationship with its customers and gain their loyalty.

Customer satisfaction of green hotels varies in part, due to the cultural differences of the guests. (Carlos, Alén, Pérez-González, & Figueroa, 2019). International visitors may have different expectations compared with local customers for the feel of natural-friendly products, and may therefore, have a different height of acceptance and satisfaction. Green hotel managers need to pay attention to this factor to create breakthroughs and long-term development for their properties.

Figure 1. Proposed Model.



METHODOLOGY

Sample

Two thousand guest comments posted on Tripadvisor from 20 hotels were analyzed in this study. Customers use online technology to share their travel experiences across different social media

platforms. Studies showed that comments or reviews significantly influence customer decisions (Stringam & Gerdes, 2010). The power of online comment influences hotel businesses; this has been shown in many studies (Ye, Law, Gu, & Chen, 2011). According to Gretzel and Yoo (2008) three quarters of tourists refer to online reviews when planning their trips. When evaluating travel information, “visitors constantly rank word-of-mouth recommendations as the most credible travel information source” (Pan, Ting, & Bau, 2013, p. 3). In addition, unlike casual interviews that document temporary emotions, online comments are the most accurate source of information about the true feelings of the visitors since after experiencing service and scenery, customers will have had more time to think about the emotions and will be able to provide the most authentic comments (Dermers, 2015).

The reason for selecting international guests’ comments is that all the Green Lotus Certified Hotels are 5-star luxury hotels and thus the majority of their customers are international customers. The authors selected current guest comments from Tripadvisor. Tripadvisor is the most popular source in Vietnam, which is a famous website in helping customers to search for information, as well as to give their opinions and experiences. Furthermore, most Vietnamese domestic customers left comments in the Vietnamese Tripadvisor platform; therefore, their comments were written in Vietnamese, not in English. The information analyzed in this study are 100 comments from the chosen 20 hotels from two different categories: green lotus certified hotels and non-green hotels. The first group has 10 hotels with Green Lotus certification; they were voted top 10 luxury hotels in 2015 according to the announcement of the Tourism Department in Vietnam and included names such as Sheraton Hanoi, Six Sense Ninh Van Bay, and Intercontinental Hanoi Westlake. The second group includes 10 non-green hotels which are the competition in the same area with the certificated hotels such as Hanoi Daewoo, Hotel Nikko Saigon, and Fusion Maia Da Nang.

The two thousand comments were selected based on the relevancy. The authors read through all the comments and looked for pre-determined key words under technical quality, functional quality, physical environment, and natural environment for comment selection.

Table 1. Descriptions and Keywords of the Dimensions

<i>Dimensions</i>	<i>Descriptions</i>	<i>Keywords</i>
Technical Quality	Hotel products and services that give customers the ultimate feeling of comfort when they stay at the hotel. (Rosenberg, 2017).	room, food, drink, spa, bag, air conditioning, pool, shampoo, towel, ...
Functional Quality	The delivery of services, how customers feel the best services at the hotel (Hognas, 2015).	staff, reservation, front desk, friendly, polite, gentle, professional, useful, enthusiasm, understanding...
Physical	The environment that can	temperature, air, noise, music, smell, building,

Environment	be seen and felt, such as the atmosphere, the decoration, and the furniture (Mmutle & Shonhe, 2017).	furnishings, windows, bed, decorations...
Natural Environment	The surroundings of the hotel, which is the natural landscape at which the hotel is located (Viviers, 2016).	fresh, green, organic, tree, mountain, forest, sea, ocean, sand, nature...
Customer Satisfaction	The emotional response to a particular service experience, and the response is developed based on customer and non-customer cognitive reactions to service performance (Jang & Namkung, 2009; Agnihotri & Chaturvedi, 2018).	Positive Key words: joy (joyful, pleased, romantic, welcoming), excitement (excited, thrilled, enthusiastic), peacefulness (comfortable, relaxed, at rest), and refreshment (refreshed, cool) ...
		Negative key words: anger (angry, irritated), distress (frustrated, disappointed, upset, downheartedness), disgust (disgusted, displeased, bad), fear (scared, panicky, unsafe, tension), or shame (embarrassed, ashamed, humiliated) ...

DATA ANALYSIS

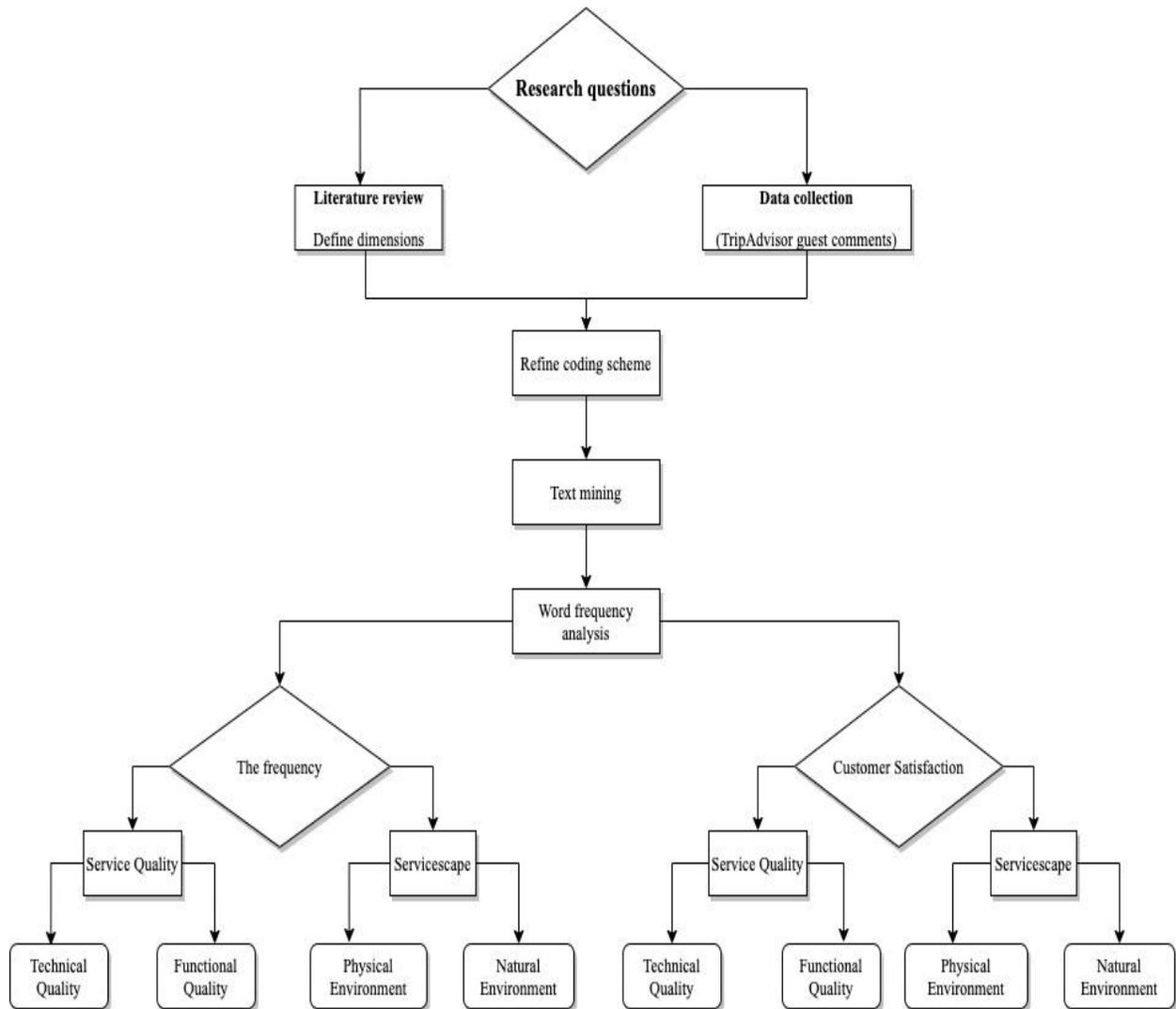
This study uses content analysis as the method of analyzing the collected data. Content analysis is a research technique used to make repeatable and valid inferences by explaining and coding text documents. By systematically evaluating the text, qualitative data can be transformed into quantitative data (Hsieh & Shannon, 2005).

In scientific research, the text mining of large datasets is bringing efficiencies and new knowledge (McDonald, 2012). Using text extraction can save time and resources by analyzing the text effectively and the results can be continually obtained. This is very useful when tracking comments over time. Also, text mining unlocks hidden information and improvement in the research process and quality. Two thousand reviews were downloaded to Microsoft Excel for analysis. Each guest comment was assigned an identification number for cross references. The study follows the research framework and procedure in Figure 1.

The coding was conducted by two trained graduate students who read through every comment manually, then placed each comment of content into pre-established categories presented in Table 2. Then, the authors apply Voyant to determine word frequencies. Furthermore, recognizing one common criticism about content analysis is that it might not fully capture the complex text because it tends to simplify the content based on word count. Hence, the semantic analysis was also conducted manually on every comment to determine key words associated with a positive or negative emotion in the same manner as previously mentioned. Both the importance (frequency of

mentioning) and perception (positive/negative) of technical quality, functional quality, physical environment, and natural environment were visually presented utilizing an Excel template. Figure 2 explains the research framework and procedures.

Figure 2: Research Framework and Procedures (Source: Pan et al., 2013)



RESULTS AND DISCUSSION

Importance (frequency of mentioning) of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

Inter-coder reliability. The inter-coder reliability is estimated by Percent Agreement Technique to compare how the two coders classify the same online review comments. The analysis possesses satisfactory inter-coder reliability with a 0.98 percent agreement between two coders. As indicated by Kassarian (1977), an analysis is reliable when an inter-coder reliability is higher than 0.85.

Technical Quality. The results revealed that the top three important features related to technical quality are the same between green hotel customers and non-green hotel customers and they are room(s), breakfast, and pool. Among the 1000 green lotus hotel comments, “room(s)” were mentioned in the comments up to 1,254 times, followed by “breakfast” (554) and “pool” (392). A customer commented in TripAdvisor that: “*The rooms are very large, well appointed, clean and comfortable*”. Similarly, among the 1000 non-green hotel comments, “room(s)” were mentioned in the comments up to 1,184 times, followed by “breakfast” (519) and “pool” (376). According to TripAdvisor, a customer said “*...Pool areas are great and very well maintained.*”

Functional Quality. The results revealed that the top three important features related to functional quality are the same between green hotel customers and non-green hotel customers and they are staff, friendly, and helpful. Among the 1000 green lotus hotel comments, “staff” was mentioned 707 times, followed by “friendly” (279) and “helpful” (205). Similarly, among the 1000 non-green hotel comments, “staff” was mentioned in the comments up to 851 times, followed by “friendly” (341) and “helpful” (256). According to TripAdvisor, a customer commended about Six Senses Ninh Van Bay resort “*Staff was always friendly and tried to be helpful.*” And in group non-green hotels, Nikko Saigon received a compliment about their staff: “*The staff is very kind and helpful.*”

Physical Environment. The results revealed the differences between green hotel customers and non-green hotel customers in terms of physical environment features. Among the 1000 green lotus hotel comments, the top three frequently mentioned key words are: “old” was mentioned 159 times, followed by “large” (145) and “floor” (136). For example, the Intercontinental Hanoi Westlake Hotel received compliments about the room: “*Room: a. Clean and Large. b. Every room has a balcony. c. Clean and large shower room with bathtub.*” On the other hand, among the 1000 non-green hotel comments which are related to physical environment, only one key word was mentioned more than 100 times. “Floor” was mentioned in the comments up to 131 times. For example, about Vinpearl Da Nang Resort and Villa, a guest left a comment on Tripadvisor and said “*room was very spacious with a polished, wooden floor and big marble bathroom.*”

Natural Environment. The results revealed that the top three important features related to nature environment are very similar between green hotel customers and non-green hotel customers. Among the 1000 green lotus hotel comments, “view” was mentioned 202 times, followed by “beach” (197) and “water” (131). For instance, a guest commented about Six Senses Ninh Van Bay resort: “*The positives were the room, which was beautiful, the private pool which was fabulous, the view, the personal touches like the bicycles and the beach which was stunning.*” Similarly, among the 1000 non-green hotel comments which are related to nature environment, “view” was mentioned in the comments up to 204 times, followed by “beach” (170) and “river” (134). Fusion Mai Da Nang’s comment showed in Tripadvisor that “*What a treat the accommodation is superb the cabana has great views of the ocean and its own pool, the amenities are excellent the food awesome and the service 5star plus.*”

Table 2. Importance (frequency of mentioning) of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

	Green Lotus Hotels	Non-Green Hotels
Technical Quality	room(s) (1254); breakfast (554); pool (392); service (385); food (336); location (263); bar (256); restaurant (232); clean (224); comfortable (162); buffet (161); spacious (135)	room(s) (1184); breakfast (519); pool (376); food (373); service (370); clean (244); spa (240); restaurant (225); location (220); bar (216); comfortable (213); buffet (172); restaurants (162); bed (120); bathroom (115)
Functional Quality	staff (707); friendly (279); helpful (205)	staff (851); friendly (341); helpful (256)
Physical Environment	old (159); large (145); floor (136)	floor (131)
Natural Environment	view (202); beach (197); water (131)	view (204); beach (170); river (134)

Positive and Negative Perceptions of Technical Quality, Functional Quality, Physical Environment, and Nature Environment

Technical Quality. The results reveal that both green hotel and non-green hotel customers felt positively about technical quality. However, the intensity of the positive feelings of green hotel customers was less strong than the intensity of the positive feelings felt by non-green hotel customers. There were 7.24 times as many positive comments as negative comments from green hotel customers, but the PN ratio (i.e. the number of positive comments divided by the number of negative comments) was 16.06 among non-green hotel customers. Particularly, the PN ratio for room(s) is 6.19 among green hotel customers and 15.25 for non-green hotel customers; and the PN ratio for Food and Beverage is 8.21 among green hotel customers and 22.26 for non-green hotel customers.

Functional Quality. The intensity of the positive feelings of non-green hotel customers was more than double the intensity of the positive feelings felt by green hotel customers. There were 18.11 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 6.99 among green hotel customers. Particularly, the PN ratio for helpfulness of staff is 28.85, friendliness of staff is 38.71, and professionalism of staff is 3.48 among green hotel customers and the PN ratio for helpfulness of staff is 21.82, friendliness of staff is 47.07, and professionalism of staff is 6.57 among non-green hotel customers.

Physical Environment. The results reveal that both green hotel and non-green hotel customers felt positively about the physical environment. The intensity of the positive feelings of non-green hotel customers was almost triple the intensity of the positive feelings felt by green hotel customers. There were 9.89 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 3.81 among green hotel customers. Particularly, the PN ratio for Architecture is 8.71, Facilities is 1.52, and Atmosphere is 1.98 among green hotel customers and the PN ratio for Architecture is 12.63, Facilities is 6.88, and Atmosphere is 17.38 among non-green hotel customers.

Natural Environment. The intensity of the positive feelings of non-green hotel customers was about double the intensity of the positive feelings felt by green hotel customers. There were 34.63 times as many positive comments as negative comments from non-green hotel customers, but the PN ratio was only 17.20 among green hotel customers. Particularly, the PN ratio for Landscaping is 19 among green hotel customers and 46.17 for non-green Hotel customers.

In summary, it is clear that the non-green hotel guests have shared a greater degree of positive perception of their hotels than the green hotel guests. The PN ratio of the online reviewers from green hotel guests is lower than the ratio of non-green hotel guests in nearly every dimension studied. In fact, the PN ratios of the green hotel guest comments is consistently lower in every feature except the functional quality of “staff helpfulness”.

From this study, green hotels with Green Lotus government-certification show a great advantage in terms of rooms (size) and food, but there are many complaints and poor comments about the behavior of the employees. Interestingly, the green hotel guests have reported a high PN for staff “helpfulness” but much lower PN ratios for staff “friendliness” and “professionalism”. Therefore, it can be implied that the staff may be performing their tasks and roles, but not performing their roles in a way that creates a positive human connection. Such negative perceptions can create overall lower guest satisfaction when considering the entire hotel experience. This human element can potentially negate the efforts of those green hotels that have adopted strong environmental protection practices. While the green practices may be important to hotel guests, the overall experience may be irreversibly altered by a staff who lacks a positive attitude of service, hospitality, and professionalism.

Non-green hotels also have a number of advantages which attracted international guests; with higher positive perceptions of service and guest/employee interaction, helpfulness, and professionalism, positive satisfaction has been achieved. However, this type of hotel also received some negative comments on the quality of the furniture and the facilities. These physical features contribute to the overall experience and may indicate the need for repair and renovation in these properties to continue to attract new and repeat guests.

Table 3 - Positive and Negative Perceptions of Technical Quality, Functional Quality, Physical Environment, and Natural Environment

$PN = \frac{PositiveComments}{NegativeCommetsns}$						
	Green Lotus Hotels			Non-Green Hotels		
	Positive comments	Negative comments	PN	Positive comments	Negative comments	PN
Technical Quality	1441	199	7.24	1703	106	16.06
Functional Quality	846	121	6.99	1521	84	18.11
Physical Environment	526	138	3.81	732	74	9.89
Natural Environment	172	10	17.20	277	8	34.63

IMPLICATIONS

The results of this study verified that customers’ perceptions toward non-green hotels are more positive than those perceptions of green hotels. Green hotel managers can utilize the information and overall themes from this study to improve their operations, and ultimately improve their guests’ satisfaction.

From the perspective of “technical quality”, the results show through this content analysis that the top five most frequently mentioned words regarding technical quality were the same for both green and non-green hotel guests. “Rooms”, “breakfast”, “pool”, “service”, and “food” were the most mentioned words and were in nearly the same order from a frequency perspective. Therefore, it could be argued that these areas present top priorities for guests, regardless of whether the hotel is green or non-green; this should be a focus of excellence from the management viewpoint. Additionally, it is also noteworthy that there is no mention from green hotel guests of words such as “bed”, “bathroom”, and “spa”. These may be areas that provoke no emotion either way for green hotel guests; however, these are areas of consideration, as they have favorably impacted the non-green guests’ responses and could enhance the opportunity for guest satisfaction.

The results of the study also show that the variety and appeal of the food in hotels has a great influence on the satisfaction of customers. Menu selection, food quality, and the general presentation of the food offerings could increase the positive emotions of guests, and therefore, increase guest satisfaction. Managers should make this a point of focus in developing the guest experience.

In addition, some of the negative comments about the green hotel rooms may indicate that the hoteliers need to make adjustments in housekeeping procedures and facilities inspections to ensure that the cleanliness and condition of the rooms are satisfactory. The condition of the furniture and facilities in the room are important to the overall guest experience.

With regard to functional quality, the results indicate that guests from both green and non-green hotels use the terms “staff”, “friendly”, and “helpfulness” with great frequency, showing significant importance to the guests. Regardless of the type of hotel, staff friendliness and helpfulness impact the overall guest experience. However, in the green hotels, the positive emotions were greatest in the attribute of helpfulness. Therefore, green hotel managers should promote and exploit this notable attribute to promote and advertise their services. For the green hotel manager, this finding does suggest that the staff is delivering needed services to the guests. The managers should use this advantage to encourage and motivate employees to continue to help their customers anytime, anywhere, and to share useful information with them. In this way, customer satisfaction may increase, and customer loyalty may be achieved.

On the other hand, green hotel customers showed the most dissatisfaction with the professionalism and the friendliness of employees. This is a big disadvantage that needs to be addressed and changed quickly. Added efforts in recruitment, training, and supervision may be strongly encouraged of the management teams of the green hotels. Managers must model appropriate behaviors, conduct, and professionalism. The human interaction will impact the overall guest experience, and while managers often have difficulty in training for these attributes, the positive connections that friendliness and professionalism can convey will be worth the training efforts. Improvements in these areas will lead to a better quality of service.

The physical environment seemed to create greater response from the green hotel guests than the non-green hotel guests. Unfortunately, there was much greater negativity in comment from the green hotel guests, particularly in the areas of furniture and facilities in the hotels. Therefore, the physical environment was not nearly as pleasing. The word “old” was used 159 times by the green hotel guests, indicating that perhaps some upgrades, or renovations should be considered. Therefore, hotel managers should invest in good and long-lasting furniture and equipment, as well as focus on the maintenance of furniture and facilities.

The green hotel guests did mention the word “large” many times in the analysis, while there was no mention of this word from the non-green hotel guests. If physical size of the rooms or common areas is a factor that invokes positive emotion, it may be a good marketing resource for the green hotel managers, and a factor that could not be easily imitated by its non-green competitors.

From the perspective of the “Natural environment” factor, this study has shown that landscape has a great influence on the satisfaction of customers. Therefore, green hotel managers should select a location where they can create beautiful landscapes in the surrounding areas, and then those locations should be exploited through advertising. Moreover, green hotel managers should promote their sustainable practices, a rising trend that creates positive emotion. By raising the awareness of their offerings to consumers as well as promoting the hotel itself, the existing green hotels can help the government attract more hotels to register for certification and implement more natural protection practices.

Finally, to demonstrate governmental commitment to global environmental protection and responsibility for the present society and future generations, the Vietnamese government should promote the many benefits of practicing “green”. Not only are these practices responsible actions for the betterment of the environment, but they also help to save long-term operating costs. Perhaps more specifically, the government should also set the rules for waste disposal to protect the environment around the hotel.

The green movement is critically important to the environment. This study indicates, however, that the practices of our green hotels must be in addition to the generally required practices of our service industry, including the elements of technical quality, functional quality, physical environment, and the nature environment. In combination, the green hotelier will create satisfaction for the guest, success for the organization, and a contribution to society and the environment.

Limitations and Recommendations for Future Research

This study has five limitations: sample, comment, model, and type of customer. First, samples were taken from several cities and regions throughout Vietnam. Therefore, this does not reveal the overall situation of all hotels within Vietnam's borders. Future research is encouraged to gather comments from more cities in Vietnam. Second, the comments are the most current 100 comments per hotel nearest to the time of sample selection and future research can gather more comments to expand the sample size. Third, the theoretical framework in this study might not cover all factors that affect customer satisfaction and future research can include other factors. Fourth, only international customer reviews were analyzed in this study, which in turn limits the sources of information and the perceptions of customers, especially domestic customers; all are important sources for all hotels. Finally, the authors used the comments from TripAdvisor because this platform has the greatest number of international tourists' comments. Nevertheless, when applying the results to the daily operations, hotel managers need to be aware of the rising concern regarding the false negative comments on the social media platforms, such as Google and TripAdvisor. Therefore, future studies might gather guest comments from different platforms which have better guards on the reviewers' credentials.

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