

COMPARING CONSUMER CHOICE FACTORS BETWEEN
GREEN HOTELS AND CONVENTIONAL HOTELS USING
BIG DATA

by
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**Comparing Consumer Choice Factors Between Green Hotels and Conventional Hotels
Using Big Data**

By Huazhao Huang

Presented as part of the requirement for the award of MA Degree in Sustainable Leisure
Management within the Department of Recreation and Tourism Management at Vancouver
Island University

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DECLARATIONS

This thesis is a product of my own work and is not the result of anything done in collaboration.

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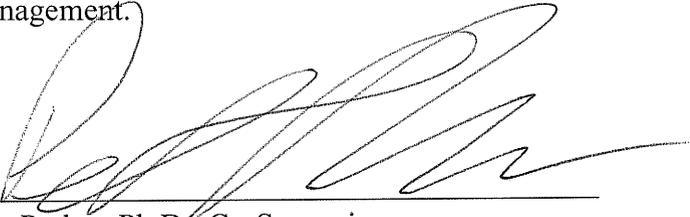
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The undersigned certify that they have read, and recommend to the Department of Recreation and Tourism Management for acceptance, the thesis titled *Comparing Consumer Choice Factors Between Green Hotels and Conventional Hotels Using Big Data* submitted by Huazhao Huang in partial fulfillment of the requirements for the degree of Master of Arts in Sustainable Leisure Management.



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ABSTRACT

The hotel industry makes a significant contribution to economic development, however the hotel market increases the stress on the environment through consumption of large amounts of energy and natural resources, and the release of water and air pollutants. Many hotels have implemented environmental protection practices in order to minimize their environmental impact. These green practices position the hotel differently in the market and improve their long-term profitability. The major reason for hotels to “go green” and be certified by Green Hotel Certification is to attract more of the consumers showing an increased demand for sustainable products and service. Although consumers show a preference for green hotels, not all of them actually buy because they believe green hotels are more expensive and less comfortable than conventional hotels. However, the consumers’ disposition as it corresponds to reality has not been fully examined.

This study was a follow up to the research of Bucan (2015), who assessed the consumer hotel choice decision-making process in Vancouver, and indicated that consumers consider price, amenities and location as influencing factors in their hotel choice and believe that conventional hotels have a lower price, better customer satisfaction and a better location than green hotels. The purpose of the study was to examine whether price, satisfaction and location are the main barriers in consumers green hotel selection through a comparison of: pricing for a basic room, star rating, Green Key rating, TripAdvisor rating, amenities, and distance from downtown Vancouver, between green hotels and conventional hotels in Vancouver. The research demonstrated that there is no difference between green hotels and conventional hotels in Vancouver in terms of price, satisfaction and location.

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Chapter 1. Introduction

1.1. Background of the Hotel Industry

According to Bader (2005), tourism is recognized as one of the world's largest industries, and is continuing to expand quickly. As a profitable economic tool, tourism has been an attractive industry. Tourism is developing in form in many countries and regions all over the world (Graci & Dodds, 2008). However, the growth of the tourism industry through the years has increased the stress on the environment (Alexander & Kennedy, 2002). Tourism creates a significant ecological footprint because it is such a resource intensive industry (Bohdanowicz, 2005). Therefore, implementing environmental practices within the tourism industry is at the forefront of global issues (Dodds, 2007; Hunter, 2002). The hotel industry, the most energy-intensive sector of tourism, consumes energy and natural resources, and releases large quantities of water and air pollutants (Chan & Lam, 2002). Further development of the hotel industry requires environmental protection practices due to its natural resource dependence (Bader, 2005; Bohdanowicz, 2005; Graci & Dodds, 2008).

Due to growing environmental concerns, the tourism industry realized the importance of environmental protection and the urgency 'to go green' (Andereck, 2009; Mihalič *et al*, 2012). Many industries have shown an increased demand for sustainable products and green marketing because of competitive pressures or governmental regulations (Jhavar *et al*, 2012; Lee *et al*, 2010; Sarkis, 1998). Lodging customers are increasingly aware of the environmental damage caused by hotels and are now looking for hotels that perform environmental friendly practices and are considered green (Manaktola, & Jauhari, 2007). As such, hotel managers and marketers are becoming increasingly active in green practices, and the development of environmental programs (Chan & Wong, 2006; Han *et al*, 2010). Manaktola and Jauhari (2007) suggest that the green hotel business will be a growing niche in the lodging industry.

Green hotels are common within the accommodation sector as a means initiate more

environmentally friendly practices. A green hotel is an environmentally friendly hotel that efficiently uses energy, water, and materials while providing quality services (Green Hotel Association, 2015). In the mid-1980s, many hotels started going “green” due to the governmental regulations and the potential cost reduction (Lee *et al*, 2010). Governments exerted pressure on hotels to adopt green practices through the planning restrictions and mandatory Environmental Impact Assessments (Mensah, 2004). By the end of the 20th century, green hotels became a trend and expanded all around the world (Pizam, 2009). Being a green hotel, which uses environmental friendly practices as marketing strategies, can position itself differently in the competitive market because it caters to the customers’ growing needs for green operations (Manaktola, & Jauhari, 2007). Also, going green can enhance competitiveness in the form of improving long-term profitability by lowering expenses as well as transferring those savings to customers (Bansal & Roth, 2000). In general, the strongest motivators for hotels to go green has been the growing consumer demand and the increasing competitive pressure through time (Bohdanowicz, 2005; Rahman *et al*, 2012).

Despite the benefits, the uncertainty of being financially beneficial is one of the reasons some hoteliers are still hesitant to “go green” (Kang *et al*, 2012). That is, while some green practices demand significant initial investments and charge premiums to customers, the willingness of customers to pay additional charges remains unclear. Nevertheless, Alexander and Kennedy (2002) pointed out that hotels can begin the green hotel process with something simple like providing recycling bins. The important element in going green is to realize that, and then start with small but significant steps. Another reason why hoteliers are hesitant to “go green” is that the green hotel trend may be a permanent rule of thumb or just a temporary trend in the hotel industry (Pizam, 2009). However, Enz and Siguaw (1999) argued that all hotels will eventually be involved in sustainability plans and programs.

Hotels who want to go green commonly seek Green Hotel Certification, because they can label and rate their hotel based on predetermined environmental practices and policies through the Green Hotel Certification systems (Millar, 2010). Ratings will be different when the hotel

selects different certification programs. Most certification programs utilize standards that relate to areas such as energy management, water use reduction, waste management, and education. There are five well known and commonly used green hotel certification systems used around the world, namely Green Key Global, Green Seal, Audubon Green Leaf, Green Globe International, and Leadership in Energy and Environmental Design (LEED).

The green hotel is undoubtedly a good way to offer sustainable service. However, there is the potential for conflict between hotel green practices and hotel guests' satisfaction and comfort, as the conservation of resources could detract from the quality of a guest's experience. In other words, green hotels are facing challenges in enhancing their customer satisfaction level in their competition with conventional hotels. The consideration of luxury may diminish the inclination to choose a green hotel, and the willingness to pay more for a green hotel (Baker *et al*, 2013). The customer satisfaction has a significant positive association with the intention to revisit a hotel (Han & Kim, 2010). But research on customer satisfaction in the comparison of green hotels and conventional hotels is rare. So, whether green hotels have lower customer satisfaction than conventional hotels is, in reality, unclear.

Although consumers generally prefer to choose a hotel that performs environmentally friendly practices, not all consumers are willing to pay the premiums to support environmental sustainability (Masau & Prideaux, 2003). There is a positive correlation between the degree of hotel guests' environmental concerns and their willingness to pay premiums for hotels' green initiatives (Kang *et al*, 2012). Some consumers are unwilling to pay the premiums because they do not understand why green hotels cost more, as, the green practices can reduce the operating costs (Han & Chan, 2013). Interestingly, Rahman *et al* (2012) found hotels using no-cost or low-cost green practices are more environmentally friendly than others. That is to say, hotels that adopt environmental friendly practices do not necessarily charge additional costs. However, little research has compared the price between green hotels and conventional hotels and therefore it is still unknown whether green hotels are more expensive than conventional hotels.

1.2. Green Hotels in Vancouver

As the third most liveable city in the world and the top gateway city of Canada, the city of Vancouver attracts nearly 9 million visitors every year (Vancouver Economic Commission, 2015). In order to accommodate the travelers, Vancouver has 13,777 guestrooms in 79 hotels in total (Tourism Vancouver, 2014). As the vital component which helps Vancouver to become the greenest city in the world by 2020 (City of Vancouver, 2015), sustainable tourism development requires a better understanding of the green hotel business. Providing sustainability service is one of the goals of the Vancouver's green economy plan" (Vancouver Economic Commission, 2015).

Green Key Global, which had certified more than 1200 hotels in Canada since its inception in the 1990s, is the mainstream green hotel certification system in Canada. Green Key awards the hotel rating from one to five Green Keys (five is the highest level) based on the results of the comprehensive environmental self-assessment. The number of green hotels in Vancouver shows an upward trend in recent years. There are 40 green hotels certified by Green Key Global in Vancouver (Green Key Global, 2015). Among these 40 green hotels, there are 5 hotels in five keys, 19 hotels in four keys, 15 hotels in three keys, and 2 hotels in two keys.

Bucan (2015) assessed the consumer hotel choice decision-making process in Vancouver. She collected data, based on the theory of planned behavior methodology, by interviewing hotel guests in Tourism Vancouver Visitors Centre. Her results indicated (Bucan, 2015), that hotel visitors consider price, amenities and location as influencing factors in making their hotel choice, and believe that conventional hotels do better in those influencing factors than green hotels. However, consumers will be more willing to choose green hotels when their families support green hotels and they have a higher awareness of environmental degradation. She says, the research only examined the customers' intention to choose a green hotel, and the intention will not always result in an actual purchase (Bucan, 2015) Based on such weaknesses as an inhomogeneous customer sample and uncategorized hotel sample of the research, Bucan (2015) recommended future research to use a more homogenous and representative sample in an actual consumption setting, and analyze green practices in different types of hotels. This current study

is a follow up to the research of Bucan (2015), to examine whether the hotel visitors' perception that conventional hotels have lower price, better customer satisfaction and a better location than green hotels corresponds to the reality.

1.3. Research Hypotheses

The purpose of this study was to examine the difference between green hotels and conventional hotels among the major decision-making factors of price, satisfaction and location. More specifically, this research assessed the price for a basic room, star rating, Green Key rating, TripAdvisor rating, amenities, and distance from downtown Vancouver between green hotels and conventional hotels in Vancouver.

There are five research hypotheses:

Hypothesis 1 (H1): The price of a green hotel is higher than the price of a conventional hotel.

Hypothesis 2 (H2): The satisfaction of a green hotel experience is lower than that of a conventional hotel.

Hypothesis 3 (H3): The location of a green hotel is less desirable than that of a conventional hotel.

Hypothesis 4 (H4): There is a positive correlation between the price of a green hotel and the green reward level of a green hotel.

Hypothesis 5 (H5): There is a difference in green hotel satisfaction among green reward levels.

1.4. Importance of the Study

Vancouver, as a top gateway city of Canada, is focusing on sustainable tourism development. The green hotel is irreplaceably important in sustainable tourism. However, most of the scholars are focusing on the consumer's intention to choose a green hotel or not, and few people actually compare green hotels and conventional hotels to examine whether the consumer's perceived

barriers correspond to reality.

This study will compare the price of a basic room, star rating, Green Key rating, TripAdvisor rating, amenities, and distance from downtown Vancouver between green hotels and conventional hotels in Vancouver, in order to figure out the difference between green hotels and conventional hotels among the major decision-making factors of price, satisfaction and location. Final results will help hoteliers to better understand the difference between green hotels and conventional hotels, formulate a more suitable development strategy, and therefore attract more consumers to choose green hotels.

What is more, this research is linked closely with the field of sustainable leisure management. First, green hotels can minimize the ecological footprint, which promotes environmental sustainability. Second, green hotels benefit the development of sustainable tourism, which encourages economic sustainability. Last, green hotels promotion can increase consumers sustainable concern, which advances social sustainability.

1.5. Overview of the Thesis Components

This thesis is comprised of 5 chapters. Chapter 2 provides a review of previous research on green hotel, motivation for consumer choice of a green hotel, and influencing factors of consumers' hotel choice. Chapter 3 describes the research methods adopted in this study. Chapter 4 presents the findings of the study and the answers of each research hypothesis. Chapter 5 summarizes the content presented in this study and offers recommendations for future research.

Chapter 2. Literature Review

2.1. What is a Green Hotel

In the past decade the hospitality industry's standard definition of a green hotel has continually been discussed. EcoGreen (2010) pointed out that "most sustainable industries professional definition of a green hotel include: green policies and procedures in place that at a minimum, take into account energy, water, waste streams, indoor air quality, and green cleaning". Green Hotel Association (2015) defined the green hotel as an environmentally friendly hotel that performs green practices (e.g., efficient use of the energy, water, and materials) to protect the environment and to improve the hotel's effectiveness (e.g., cost saving). This definition has been widely used in recent years.

2.1.1. What is the Green Hotel Certification System?

Green hotel certification provides the opportunity to hoteliers to label and rate their hotel based on predetermined environmental practices and policies (Millar, 2010). Different certification programs have different evaluation criteria. The following five green hotel certification systems are commonly used around the world:

- **Green Key Global:** Mostly focused on North America, this program aims to enhance the sustainable initiatives support, overall fiscal performance and community relations improvement of the lodging and meeting industries (Green Key Global, 2015).
- **Green Seal:** A nonprofit organization, which enables consumers, purchasers, and companies to build a sustainable world through the science-based programs provided by Green Seal (Green Seal, 2015).
- **Audubon Green Leaf:** This program provides third-party verification to hotel properties, which have met a specific set of environmental standards (Audubon International, 2015).
- **Green Globe International:** Green Globe, using third-party independent auditors to

conduct fair analysis on the lodging properties, is a commonly used standard for travel and tourism businesses and their supply chain partners around the world (Green Globe, 2015).

- Leadership in Energy and Environmental Design (LEED): LEED, which promotes renewable and clean energy, is regarded as the gold standard for green building construction in the United States (Parisi & Burger, 2013).

2.1.2. What is Green Key Global?

The Green Key Eco-Rating Program is the mainstream green hotel certification system in Canada, and in recent years, extended its border south to include the United States. The mission of the Green Key is “to be recognized by the lodging industry as a leader in corporate social responsibility certification through educational, collaborative and promotional efforts,” (Green Key Global, 2015). Green Key awards a hotel rating from one to five Green Keys based on a comprehensive environmental self-assessment. Green Key members are given guidance on how to maintain and improve their key level. The audit administered by Green Key assesses sustainable hotel operations in five main operational areas including:

- Corporate environmental management
- Housekeeping
- F&B operations
- Conference and meeting facilities
- Engineering (Green Key Global, 2015).

The program also covers nine sustainable practices, namely: water conservation, energy conservation, hazardous waste management, solid waste management, indoor air quality, community outreach, building infrastructure, land use and environmental management. Moreover, the lodging properties in the Green Key program will be randomly, (20%), audited each year, and the lodging properties will undergo recertification every two years. (Green Key Global, 2015).

2.2. Motivation for Consumers Choice of a Green Hotel

Many consumers directly express a preference for environmentally friendly products, by purchasing green products, or indirectly, by recycling or contributing to environmental causes (Laroche *et al*, 2001; Schubert *et al*, 2010). The International Hotels Environment Initiative and Accor found out that 90% of leisure travelers would prefer to select a hotel that adopts green practices (Mensah, 2004). Also, studies have shown that 75% of hotel guests are willing to participate in their hotel's green initiative in North America (Butler, 2008). Eighty-three percent of English vacationers would choose a green hotel (Lee *et al*, 2010).

2.2.1. Environmentally Friendly Attitude

With the consumers' growing concerns about the environmental impact of various business activities, Lee and Moscardo (2005) noted that the consumers' environmental awareness may correlate positively with their environmental behavior. Han and Chan (2013) also found hotel choice is influenced by environmental concerns.

The social identity theory (Tajfel & Turner, 1986) was used by Kang *et al* (2012) as a background theory to explain the positive relationship between consumers' levels of environmental concerns, and willingness to pay for a company's green initiative. The theory indicated that people prefer to select organizations which have an enduring and distinctive identity, and a consumer's self-esteem enhancement capability (Bhattacharya & Sen, 2004). Where consumers have a higher concern for environmental issues, there is a higher possibility they will identify with a corporation that practices intensive green initiatives. A high congruence level of environmental concern between consumers and companies creates a positive evaluation of green initiatives for those companies, and leads to the consumer's willingness to pay for these initiatives in turn (Kang *et al*, 2012).

The theory of Planned Behavior (Ajzen, 1991) provides another theoretical foundation for the relationship between consumers' attitudes and intentions to select green hotels. It presumes

three conceptually independent determinants of behavioral intention, namely: attitude toward a behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). This theory was first used in a green hotel setting by Han *et al* (2010) to identify the influencing factors of hotel guests' behavioral intentions to choose green hotels. Research shows that an attitude toward a behavior, subjective norm and perceived behavioral control positively influenced 'behavioral intention' to choose a green hotel, and subjective norm notably influenced hotel guests' intention through attitudes (Chen & Tung, 2014; Han *et al*, 2010; Teng, 2011; Teng *et al*, 2013).

However, there may be a disconnection between a consumer's expressed environmental attitude and their actual behavior when the consumer's concern in some areas is stronger than in other areas, because of the multiple dimensions of environmentally friendly attitudes (Baker *et al*, 2013). Environmentally friendly attitudes involve four dimensions: perceived severity of environmental problems, inconvenience of being environmentally friendly, importance of being environmentally friendly, and level of corporate responsibility (Laroche *et al*, 2001). A perceived severity of an environmental problem may relate to such a notion as resource limitation. The inconvenience of being environmentally friendly associates with the additional effort caused by green activities. The importance of being environmentally friendly deals with the idea that particular green activities could reduce pollution or protect the environment. Lastly, corporate responsibility notes that businesses should be concerned about the environment (Laroche *et al*, 2001).

2.2.2. Overall Image

The overall image has increasingly attracted the attention of academia as well as the industry, and is regarded as playing a critical role in the customer's decision-making processes (Han *et al*, 2009; Han & Kim, 2010). The overall image defined by a combination of impressions, thoughts, and beliefs are generated by consumer perceptions toward company/product/service attributes (Han *et al*, 2009). In other words: hotel guest perceptions and experiences toward a green hotel's image are dependent on the existing hotel's attributes and

amenities, and the information the guest may be able to acquire (Chen, 2015).

Numerous studies have supported the influence of the overall image on a customer's decision-making process (e.g., Han *et al*, 2009; Lee *et al*, 2010; Prendergast & Man, 2002; Ryu *et al*, 2008). Prendergast and Man (2002) pointed out that a firm's image influences a customer's behavioral intention. Ryu *et al* (2008) indicated that customers' willingness to revisit and spread favor of the hospitality by word-of-mouth can increase the hotel's positive image. Han *et al* (2009) suggested that there is a positive relationship between consumers' overall images of green hotels and their intentions to buy green hotel products, to recommend them, and to pay for the services. Similarly, Lee *et al* (2010) found out that a green hotel's image will contribute to the intention to make a positive recommendation as well as to revisit the hotel in the future.

2.3. Influencing Factors of Consumers' Hotel Choices

2.3.1. Price

Zeithaml (1988) defined price as "what is given up or sacrificed to obtain a product" (p. 10). Hotel price is affected by numerous factors, such as star rating, location, management type, size, and amenities (Collins & Parsa, 2006). Prospect theory (Kahneman & Tversky, 1979) was used by Roe and Repetti (2014) to explain the relationship between price and consumers' decisions. The theory indicated that consumer behavior was influenced by hotel policies and pricing (Kahneman & Tversky, 1979). Consumers would look at the reference price instead of the final total price, and rate additional costs as gains or losses from the reference point in their decision process (Roe & Repetti, 2014).

Consumers use the price as an external cue to assess the product/service performance when they have little previous experience with the product (Grewal *et al*, 1998; Mattila & O'Neill, 2003; Parguel *et al*, 2016). When a price cue is paired with another consistent extrinsic cue, there will be a stronger relationship between price and perceived quality (Miyazaki *et al*, 2005). Price will be evaluated by most of the consumers in purchase decision-making because it is a major

consideration in the decision process (Chiang & Jang, 2007; Kim *et al*, 2006). Consumers usually have a range of prices instead of a single price that is acceptable in their purchase (Lien *et al*, 2015). Rheem (2010) pointed out that 43% of consumers will leave the booking website when the total price is higher than their prospective price. Meanwhile, Chiange and Jang (2007) indicated that a consumer will show a higher intention to purchase a hotel room when the provided price is lower than the internal price standard. Price is also a significant predictor of overall hotel guest satisfaction (Mattila and O'Neill, 2003). The online rating of product value recorded by the customer is biased by price (Li & Hitt, 2010).

Even though consumers show a preference for choosing green hotels, not all of them are ready to pay an additional cost for the green practices (Han & Chan, 2013). Masau and Prideaux (2003) reported that 67% of the consumers in Kenya are willing to pay more for green hotels. Consumers in Greece and the United States have the same response as the consumers in Kenya (Choi *et al*, 2009). Consumers in India who are willing to pay a higher price believe that a price increase lower 6% is reasonable and acceptable (Manaktola & Jauhari, 2007). However, Ogbeide (2012) found out that the majority of the consumers believe that green hotels should not charge premiums, and even charge less than conventional hotels. Only 15% of Indian hotel guests (Manaktola & Jauhari, 2007) and 30% of American hotel guests (Kang *et al*, 2012) are willing to pay premiums to stay in a green hotel.

2.3.2. Star Rating

The star classification system is commonly used to rate hotels around the world (Lee, 2013). Star ratings, which are primarily determined by the facilities and services quality of the hotel, are a reflection of the degree of hotel luxury and is an effective provider of prestige among international hotels (Ingram & Roberts, 2000). Forbes Travel Guide's Star system (formerly known as Mobil Travel Guide's Star system) and American Automobile Association's (AAA) Diamond system are employed in Canada to distinguish levels of service in the hotel industry (Minazzi, 2010). This study briefly reviews the Star rating system because TripAdvisor.com

adopts the Star system to measure the hotel service level (Jeong & Mindy, 2008),

The Star rating system utilizes a consistent and credible method to assess the availability and quality of hotel facilities, service, atmosphere, and price (Jeong & Mindy, 2008). According to Forbes Travel Guide (2015), the system classifies hotels into five different categories from 1 star to 5 stars based on 800 objective standards, and higher star ratings means more luxury. The hotels rated in the first three levels pay more attention to the physical facilities, they offer basic hospitality service as well as clean and well-maintained accommodations in a safe and secure environment. Meanwhile, 4 and 5 star hotels focus more on intensive and high level services, they provide maximum requirements for physical attributes and professional services to their customers (Forbes Travel Guide, 2015).

Consumers can perceive quality inferences according to the star rating of hotels (Lee, 2013). Hotel rating helps customers to raise or lower their expectations on hotel attributes based on the rating results (Rhee & Yang, 2015). In reflection of the overall quality of hotel facilities, the star rating system can predict a typical customer experience (Radojevic *et al*, 2015). Ryan and Gu (2007) indicated that the star rating of hotels is a major influencing factor for hotel guest satisfaction.

2.3.3. Environmental Certification

The Environmental Certification Program is a primary method to designate a property as “green” and to convey environmental stewardship to consumers (Taillon, 2015). With the Environmental Certification Program, consumers can easily recognize which hotel is eco-friendly (Verma & Chandra, 2016). Manaktola and Jauhari (2007) indicated that Consumers’ attitudes toward environmental certification programs are significantly related to their purchase intentions. Kim *et al* (2012) also suggested that Environmental Certification Programs positively influence the consumer’s buying behaviour.

There are over 400 available certification programs around the world and nearly 100 available to North American hoteliers (Taillon, 2015). Since the Green Key Global is the

mainstream certification program in Canada, this study will employ Green Key rating to measure the level of green hotels.

2.3.4. Customer Satisfaction

Customer satisfaction is an attitude or evaluation formed by the customer's comparison of their prepurchase expectations and their performance perceptions (Oliver, 1980). The ability of continually and consistently satisfying customers needs is widely recognized as the standard for measuring a company's success (Amin *et al*, 2013). The satisfaction of the customer is a key driver of financial performance, there is a positive relationship between satisfaction and profitability (Matzler *et al*, 2006; Yeung & Ennew, 2000). Also, higher customer satisfaction leads to customer loyalty (Loke. 2011).

Cleanliness, price, location, security, personal service, physical attractiveness, opportunities for relaxation, standard of services, appealing image, and reputation are recognized as critical determining factors of hotel satisfaction (Chaves *et al*, 2012; Choi & Chu, 2001; Gu & Ryan, 2008; Mattila & O'Neill, 2003; Matzler *et al*, 2006; Radojevic *et al*, 2015). Choi and Chu (2001) indicated that room quality, staff quality, and value for money are the main determinants of the hotel guests' satisfaction, while Gu and Ryan (2008) concluded that the external environment, reputation, and cleanliness of the rooms were the most prevalent factors. Meanwhile, Chaves *et al* (2012) pointed out that rooms, location, and staff are the factors most frequently used to qualify the concepts of customer satisfaction.

2.3.4.1. TripAdvisor Rating

Online sale of products and/or services, and feedback collected on the e-commerce platforms are increasingly popular (Schuckert *et al*, 2015). The largest portion of the revenue in the hospitality and tourism industry was found in the online sales of airline tickets and hotel rooms (Buhalis & Law, 2008). Customers often give feedback online after returning home from their travels, and the feedback, through numerous online reviews and ratings, influence the potential

online customer's purchase decisions (Schuckert *et al*, 2015). Ye *et al* (2011) found that customers always prefer, and follow, the high-rated hotels. Potential customers spend time reading online reviews before making a decision and would choose the hotel with positive comments, because they want to find the suitable place and be sure about it (McCarthy *et al*, 2010; Zhu and Zhang, 2010). Consumers increasingly trust and rely on online reviews when they search for information to make purchase decisions (Mauri & Minazzi, 2013; Yacouel & Fleischer, 2012). The online reviews and ratings are a reflection of customer satisfaction (Schuckert *et al*, 2015).

In this study, a particular e-commerce platform (TripAdvisor) will be used to measure the customer satisfaction of a hotel in Vancouver. As the world's largest travel site, TripAdvisor currently reaches 350 million monthly visitors, 320 million reviews and opinions, which covers more than 6.2 million accommodations, restaurants, and attractions (TripAdvisor, 2015). TripAdvisor allows reviewers to give both an overall rating and a specific rating at one time. Reviewers can give an overall rating for a property as well as a specific rating for: service, value, sleep quality, cleanliness, location, and rooms. There are five rating levels, namely, excellent, very good, average, poor, and terrible (TripAdvisor, 2015).

2.3.5. Amenities

Amenities “are commonly used to identify luxury items that a hotel gives away to its guests at no extra charge, although the cost of those items is often hidden in the room rate” (Jones, 2007, p. 135). As a competitive tool, amenities help hotels differentiate themselves in the competitive market (Kandampully *et al*, 2001). Harrison (2010) found out that hotels now provide extra amenities such as yoga mats and women-only floors because female guests have a strong loyalty and willingness to pay higher prices to meet their needs. Jay (2011) believed that the amenities of hotels are important influencing factors when hotel guests make an accommodation choice.

Although consumers appreciate the environmentally friendly practices performed by hotels,

they are not ready to sacrifice service quality or living comfort with a hotel's green practices (Han & Chan, 2013; Manaktola & Jauhari, 2007). A 2007 study by Element Hotels found that 75% guest respondents were unwilling to give up daily hotel room service activities (Element, 2007). Customers prefer to be pampered with fresh towels and clean sheets daily (Tzschentke *et al*, 2008). Such green practices as refilling soap containers and shampoo dispensers, and the use of low flow showerheads are perceived by consumers as being less sanitary or comfortable (Millar & Baloglu, 2008). Consumers may be unwilling to be involved in green practices since it interferes with their enjoyment while staying in the hotel (Manaktola & Jauhari, 2007).

2.3.6. Location

The location of the hotel determines the position of the hotel in the competitive market and influences the hotel's profitability (Lado-Sestayo, 2016). Hotels rely heavily on location to succeed in their competition for guests, and to attract more consumers (Yang *et al*, 2012). A convenient location gives hotel guests a feeling of ease; being close to restaurants, public transportation, tourist attractions, and businesses are specific advantages, which may describe an appropriate location (Barsky & Nash, 2003).

Location is an essential factor that strongly influences consumers' hotel selection (Dubé and Renaghan, 2000; Lockyer, 2005). Chan and Wong (2006) also found that convenient hotel location is a key influencing factor in a frequent individual traveler's final selection of a hotel. Both business tourists and leisure tourists place high priority on location when they consider accommodation (Chu & Choi, 2000). Dolnicar and Otter (2003) confirmed hotel location is the second priority after reviewing 21 studies.

Chapter 3. Methodology

3.1. Study Area

The research area of this study is the city of Vancouver (see Figure 1), a seaport city and the largest urban center of British Columbia, which is located on the western half of the Burrard Peninsula, surrounded by mountains, sea, and river (Berelowitz, 2010; City of Vancouver, 2015; Smith, 2003). Vancouver attracts tourists in its natural environment, diverse culture, and gateway to North America or the Canadian experience (Larson, 2013). Greater Vancouver has over two million inhabitants, while the City of Vancouver has around six hundred thousand inhabitants (Berelowitz, 2010). It is young and the third most livable city in the world (City of Vancouver, 2015).

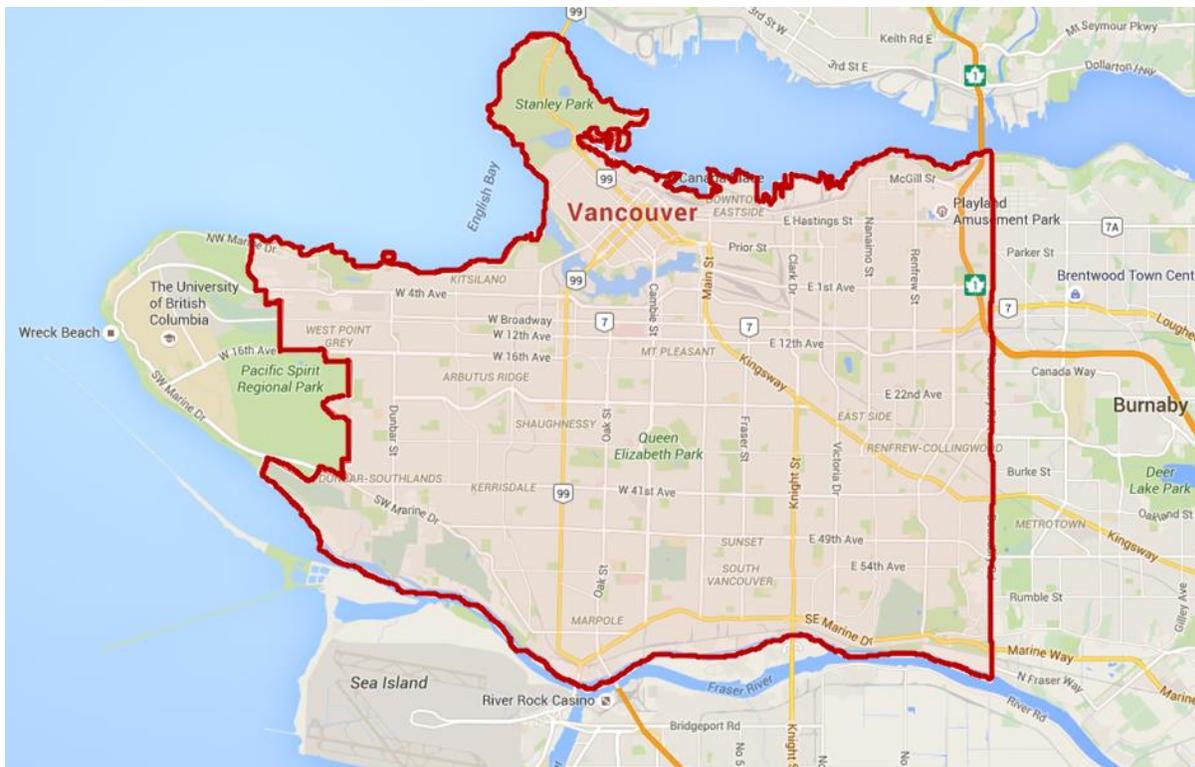


Figure 1. Map of the city of Vancouver, British Columbia. Data from City of Vancouver (2015).

Vancouver is known as a popular tourist attraction around the world with its spectacular scenic views, mild climate, and kindly people. This coastal city offers abundant green spaces,

various cultural events, and great nightlife to its visitors (Tourism Vancouver, 2015). Vancouver is also a city of ethnic and linguistic diversity, 52% of the population speak a first language other than English (City of Vancouver, 2015). In 2010, Vancouver hosted the Winter Olympics and Winter Paralympics, which stimulated its economy and enhanced its competitiveness in the global tourism marketplace (Boukas *et al*, 2013; Williams & Elkhatab, 2012). Vancouver has attracted nearly 9 million visitors a year and more than 60% of them were domestic visitors (Vancouver Economic Commission, 2015). More specifically, it attracted 8.97 million overnight visitors in 2014, and expected 9.3 million overnight visitors in 2015 (Bellett, 2015). There was a \$600 million income and 1.9 million hotel nights purchased in Vancouver, raised by conventions and business meetings in 2008, and, there was an expected increase of hotel nights by over 50%, by 2015 (Vancouver Economic Commission, 2012). The United States is considered the most important international tourism market in Canada (Smith, 2003). The United States is the top international marketing priority of most Canadian tourism businesses (Tourism Industry Association of Canada, 2014). There are two million America visitors who travel to Vancouver every year (Vancouver Economic Commission, 2012). The number of visitors from other countries, such as China, Australia, India, and Mexico, is showing an upward trend in recent years (Tourism Vancouver, 2015; Vancouver Economic Commission, 2012). The goal of the Government of British Columbia is to double tourist revenues by 2015, and to make Vancouver the most accessible city in North America (Vancouver Economic Commission, 2012).

A goal set by the City of Vancouver in 2011 was to become the greenest city in the world by 2020 (City of Vancouver, 2015). The 'Greenest City 2020' aims to maintain sustainability through a set of measurable and attainable targets and goals, while developing a strong local economy, and to make Vancouver an internationally recognized green city. One of the targets is to double the number of companies recorded in 2011, that actively perform green practices, by 2020. And one of the goals is to encourage development and improved processes in businesses and organizations through adoption of varied environmental measures (City of Vancouver, 2015). When it comes to the hotel industry, the contributions of 'green hotels' are irreplaceable in

achieving these targets and goals. In 2015, nearly half of the hotels in the city of Vancouver had been certificated by Green Key Global (Green Key Global, 2015).

3.2. Data Collection

This study selected data that was collected by TripAdvisor and Green Key Goble to examine the above hypotheses. The reason for using secondary data was because it was time saving, accessible and sufficient. TripAdvisor is one of the largest hotel review databases and is easy to access. Hotels in Vancouver are presented comprehensively in TripAdvisor. Reviewers in TripAdvisor are represented by different genders, different ages, and the reviews come from different parts of the world. However, there were some disadvantages in using secondary data. The credibility of the reviewer decides the credibility of the review (Xu, 2014). Since every person can write a review on TripAdvisor, whether they stayed at a hotel or not, there is a possibility for fake reviews and the mistrust in credibility may increase.

Data was collected during a five-day period from 14th March to 18th March 2016. The following six variables were involved in each property data collection:

- Price for a basic room: The hotel room price fluctuated with changes in dates, so this study selected the price on Monday in 11th April, 2016 to compare the different hotel room rates. Because hotels have various types of rooms, this study only compared the price for a basic room. All the prices collected were from TripAdvisor.
- Star rating: There were 79 hotels rated from two to five stars in Vancouver. Hotels were catalogued by stars. Star rating was collected from TripAdvisor.
- Green Key rating: Green hotels perform environmentally friendly practices to protect the environment (Green Hotel Association, 2015), while non-green hotels usually link to environmental damage or resource waste (Barber, 2014). This study defines a green hotel as a hotel that has Green Key Global certification. A hotel without the Green Key Global certification is considered a conventional hotel. There were 39 green hotels from two to five green keys in Vancouver. Hotels were catalogued by Green Keys. Green Key

ratings were collected from Green Key Global.

- Customer satisfaction: The TripAdvisor rating was divided into two parts. The first part was the overall rating, the second part was specific ratings for service, value, sleep quality, cleanliness, location, and rooms. The TripAdvisor rating was collected from TripAdvisor.
- Amenities: 22 kinds of amenities were collected, namely: air conditioning, airport transportation, bar/lounge, beach, business services, concierge, fitness center, free breakfast, free parking, free Wifi, internet, kitchenette, meeting room, non-smoking hotel, pets allowed, pool, reduced mobility rooms, restaurant, room service, spa, suites, and wheelchair access. These were collected from TripAdvisor.
- Distance from downtown Vancouver: TripAdvisor identifies Downtown Vancouver as the intersection of W Georgia Street and Granville Street. This was collected from TripAdvisor.
- Sustainable concerns of customers: This data is based on over 200,000 customer reviews posted on the TripAdvisor hotel pages.

3.3. Data Analysis

The aim of the secondary analysis was threefold: 1) to compare the price, satisfaction, and location between green hotels and conventional hotels, 2) to identify the relationship between price and the green reward level of the green hotel, 3) to identify the difference in satisfaction among green reward levels. Analysis of the data was conducted through the use of SPSS software. A series of t-tests were conducted to verify H1, H2, and H3: whether significant differences existed in price, customer satisfaction, and location between green hotels and conventional hotels. ANOVAs and Pearson correlation tests were applied to verify H4: the ANOVA examined if there is a significant difference in price among green reward levels, and the correlation test pointed out what kind of relationship existed between green hotel price and green reward level. ANOVAs were used to verify H5: whether there was a significant difference in

consumer satisfaction among green reward levels. Lastly, all the individual qualitative consumer hotel reviews were assessed for references to sustainability by searching for “sustain*” to explore levels of consumer concern for sustainability. A high percentage of consumer reviews related to sustainability would imply is a high level of consumer concern for sustainability.

Chapter 4. Results

This chapter presents the results of the research and is generally organized by research hypotheses divided into several sections. Section 4.1 provides a basic description of hotels in Vancouver. Section 4.2 presents average daily hotel prices to evaluate if the price of green hotels are higher than the price of conventional hotels. Section 4.3 compares the average amount of amenities in green hotels and conventional hotels to test if green hotels provide a lower level of satisfaction than that of conventional hotels. Section 4.4 presents results to assess if location of green hotels are less desirable than that of conventional hotels. Section 4.5 describes the price ranges in green hotels and shows if there is a positive correlation between the price of green hotels and the green reward level of green hotels. Section 4.6 presents results to assess if there is a difference in green hotel satisfaction among the different green reward levels. Section 4.7 analyzes the guest reviews on TripAdvisor to measure the level of consumer concern for sustainability.

4.1. Profile of Analyzed Hotels

A total of 79 hotels in Vancouver were included in this study. As can be seen in Table 1, nearly 50% of the hotels in Vancouver are green hotels; there were 39 green hotels and 40 conventional hotels. Most of the conventional hotels were 2 star hotels (53%) followed by 3 star (22%) and 4 star (20%), and only 5% of conventional hotels were 5 star. Conversely, most green hotels in Vancouver were 3 star (49%) and 4 star (36%), and only 10% were 2 star. Half of the green hotels were certified at the 4 green key level (49%), 36% had 3 green keys, 13% had 5 green keys, and only 1 green hotel had 2 green keys.

Table 1. Amount of different types of hotels in Vancouver (N=79)

	Green Hotels (N=39)		Conventional Hotels (N=40)		
Green Key Rating		Star Rating		Star Rating	
5 keys	5 (13%)	5 stars	2 (5%)	5 stars	2 (5%)
4 keys	19 (49%)	4 stars	14 (36%)	4 stars	8 (20%)
3 keys	14 (36%)	3 stars	19 (49%)	3 stars	9 (22%)
2 keys	1 (2%)	2 stars	4 (10%)	2 stars	21 (53%)
Total	39	Total	39	Total	40

Note. Data for green key rating from Green Key Global (2015), for star rating from TripAdvisor (2016).

As shown in Table 2, most of the reviews were regarding green hotels (59%). Most consumers of green hotels were couples (40%), followed by families (22%), business (22%), and friends (9%), and solo trip only 7%. Conventional hotel consumers were similar to green hotel consumers, wehre most were couples (43%), followed by families (21%), business (17%), and friends (10%), and solo trip was only 9%. Chi-square test was used to examine whether a difference in travel type between green hotels and conventional hotels. There was no significant difference in travel type between green hotels and conventional hotels.

Table 2. Traveler type reviewing Vancouver hotels (N=85,458, Chi2=78.45, p=0.511)

Traveler Type	Green Hotels (59%; N=50,165)	Conventional Hotels (41%; N=35,293)
Families	10,992 (22%)	7,554 (21%)
Couples	19,946 (40%)	15,302 (43%)
Solo	3,477 (7%)	2,991 (9%)
Business	10,977 (22%)	5,924 (17%)
Friends	4,773 (9%)	3,522 (10%)

Note. Data from TripAdvisor (2016).

4.2. Price Comparison of Green Hotels and Conventional Hotels

The overall average daily price comparison shows that consumers pay more for green hotels. As shown in table 3, consumers pay more for green hotels in 5 star and 3 star while they pay much more for conventional hotels in 4 star and 2 star. In order to better analyze the price

difference between green hotels and conventional hotels, this study employed t-test statistical test. According to table 3, all the p-value of green hotel price versus conventional hotel price are above 0.05, which obviously shows that there is no statistical distribution difference between green hotel price and conventional hotel price. In other words, the data founded in this study do not show that green hotels are more expensive than conventional hotels in Vancouver. Therefore, Hypothesis 1 is rejected, the price of green hotels are the same as that of conventional hotels.

Table 3. *T-test results of average daily price (CAD \$)*

Star Rating	Green Hotels	Conventional Hotels	Difference	t-score	p-value	Sig.
5 stars	643.5	632.5	11	0.156	0.891	None
4 stars	309.7	327.1	-17.4	-0.602	0.554	None
3 stars	185.5	171.8	13.7	0.500	0.621	None
2 stars	93.5	129.3	-35.8	-1.028	0.315	None
All	244.1	203.6	40.5	1.309	0.194	None

Note. Data from TripAdvisor (2016). Statistical significance is attained when the p-value is less than 0.05.

4.3. Satisfaction Comparison of Green Hotel and Conventional Hotel

The average number of amenities were compared to find out whether differences exist between green hotels and of conventional hotels in terms of the number of services offered. The average amenity comparison of green hotels and conventional hotels show that green hotels provide only slightly more amenities than conventional hotels in Vancouver (Table 4). That is to say, green hotels only do marginally better than conventional hotels in terms of amenity quantity.

Table 4. *Average amount of amenities among Vancouver hotels*

Star Rating	Green Hotels	Conventional Hotels	Difference
5 stars	15	15	0
4 stars	14.2	14	0.2
3 stars	12.1	11.3	0.8
2 stars	7.7	7.4	0.3
All	12.5	10	2.5

Note. Data from TripAdvisor (2016).

A series of t-tests were used to determine if there is a difference between green and conventional hotels in terms of overall rating, service rating, sleep quality rating, cleanliness rating and location rating (Table 5). There were no significant differences between green and conventional hotels in terms of overall rating. Green hotels outperformed conventional hotels in terms of service rating ($p=0.033$), conventional hotels scored higher than green hotels among 5 and 4 star levels, while green hotels did better among 2 stars. There were no differences in terms of value rating. There was no significant difference in overall sleep quality rating, but 4 star conventional hotels outperformed 4 star green hotels. Green hotels scored significantly higher in terms of overall cleanliness rating, however, 4 star conventional hotels outperformed 4 star green hotels. There was no significant difference between green and conventional hotels in terms of overall location rating; however 4 star conventional hotels again outperformed the 4 star green hotels. There were no significant differences between green and conventional hotels in terms of rooms rating. In conclusion, even though green hotels gain lower ratings in some star levels and gain higher ratings in other star levels than conventional hotels, the satisfaction of green hotel experience and that of conventional hotels had no big difference in general. Therefore, Hypothesis 2 is rejected.

Table 5. Comparison of green and conventional hotels among TripAdvisor rating

Type of Rating	Green Hotels	Conventional Hotels	Difference	t-score	p-value	Sig.
Overall Rating	4.141	3.875	0.266	1.961	0.054	None
5 stars	4.500	5.000	-0.5			None
4 stars	4.393	4.563	-0.17	-1.497	0.150	None
3 stars	4.026	3.889	0.137	0.765	0.451	None
2 stars	3.625	3.500	0.125	0.344	0.734	None
Service Rating	4.333	4.063	0.27	2.187	0.033	Attained
5 stars	4.500	5.000	-0.5			None
4 stars	4.429	4.750	-0.321	-3.026	0.012	Attained
3 stars	4.289	4.222	0.067	0.440	0.664	None
2 stars	4.125	3.643	0.482	2.499	0.026	Attained
Value Rating	4.115	3.938	0.177	1.785	0.079	None
5 stars	4.250	4.500	-0.25	-1.000	0.500	None
4 stars	4.143	4.313	-0.17	-1.574	0.131	None
3 stars	4.132	4.111	0.021	0.142	0.888	None
2 stars	3.875	3.667	0.208	0.700	0.491	None
Sleep Quality Rating	4.179	3.950	0.229	1.759	0.083	None
5 stars	4.500	5.000	-0.5			None
4 stars	4.464	4.688	-0.224	-2.273	0.049	Attained
3 stars	4.105	4.000	0.105	0.731	0.471	None
2 stars	3.375	3.548	-0.173	-0.532	0.600	None
Cleanliness Rating	4.372	4.075	0.297	2.303	0.025	Attained
5 stars	4.750	5.000	-0.25	-1.000	0.500	None
4 stars	4.500	4.813	-0.313	-3.416	0.011	Attained
3 stars	4.368	4.167	0.201	1.209	0.238	None
2 stars	3.750	3.667	0.083	0.245	0.808	None
Location Rating	4.500	4.488	0.012	1.114	0.909	None
5 stars	5.000	5.000	0			None
4 stars	4.714	4.938	-0.224	-2.405	0.026	Attained
3 stars	4.447	4.667	-0.22	-1.766	0.089	None
2 stars	3.750	4.190	-0.44	-1.465	0.157	None
Rooms Rating	4.103	3.813	0.29	0.055	0.055	None
5 stars	4.750	5.000	-0.25	-1.000	0.500	None
4 stars	4.393	4.500	-0.107	-0.858	0.401	None
3 stars	3.974	3.889	0.085	0.450	0.656	None
2 stars	3.375	3.405	-0.03	-0.142	0.889	None

Note. Data from TripAdvisor (2016). Statistical significance is attained when the p-value is less than 0.05. T-test of overall rating, service rating, sleep quality rating, and location rating in 5 star hotels cannot be computed because the stander deviations of both green hotel group and conventional hotel group are 0.

4.4. Location Comparison of Green Hotel and Conventional Hotel

A hotel's distance from Downtown Vancouver was the standard to measure whether a hotel's location was desirable for consumers in this study. Most (81%) of the hotels are located within 2 kilometers from Vancouver Downtown, and there is no difference between green and conventional hotels in terms of location (Figure 2). Based on the results of a series of t-test (Table 6), there is no statistical difference between green and conventional hotels in terms of location. That is to say, this study did not show that green hotel location is less desirable than that of conventional hotels in Vancouver. Therefore, hypothesis 3 is rejected; the location of green hotels is just as desirable as that of conventional hotels.

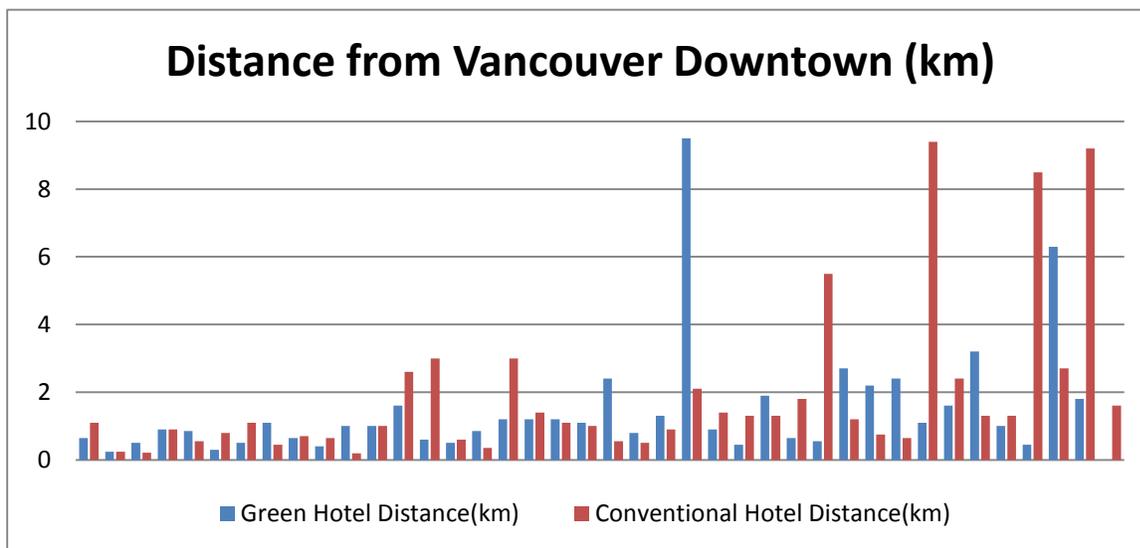


Figure 2. Hotel location. Data from TripAdvisor (2016).

Table 6. Comparison of green and conventional hotels in terms of location from downtown

Star Rating	Green Hotels	Conventional Hotels	Difference	t-score	P-value	Sig.
5 stars	0.445	0.670	-0.225	-0.472	0.699	None
4 stars	0.768	0.670	0.098	0.684	0.502	None
3 stars	1.913	1.471	0.442	0.617	0.543	None
2 stars	2.388	2.636	-0.248	-0.159	0.875	None
All	1.475	1.882	-0.407	-0.896	0.373	None

Note. Data from TripAdvisor (2016). Statistical significance is considered 0.05 p-value or less.

4.6. Difference in Green Hotel Satisfaction among Green Reward Levels

Hotels with higher Green Key ratings also tended to provide more hotel amenities. Hotels with 5 Green Key hotels had 14 amenities on average, hotels with 4 Green Keys had 13.8 amenities, hotels with 3 Green Keys had 10.5, and hotels with 2 Green Keys had 10. Providing a decreasing amount of amenities may also lead to diminishing levels of satisfaction. Therefore, there may be a difference in green hotel satisfaction among Green Reward Levels.

The ANOVA statistical test was used to further verify the Hypothesis 5 that levels of Green Key certification have different levels of satisfaction (Table 7) (the sole 2 key hotel was excluded). Satisfaction was measured as the various ratings of Overall, Service, Value, Sleep Quality, Cleanliness, Location, and Rooms. Results indicate higher levels of satisfaction within the higher certified hotels in terms of sleep quality rating ($p=0.040$), cleanliness rating ($p=0.017$), and rooms rating ($p=0.046$). Moreover, means of sleep quality rating, cleanliness rating, and rooms rating shows a downward trend with the Green Reward Level down. In general, Hypothesis 5 is accepted, there is a difference in green hotel satisfaction among Green Reward Levels.

Table 7. ANOVA results of TripAdvisor rating

Rating type	5 key	4 key	3 key	F-score	p-value
Overall Rating	4.500	4.132	4.036	2.277	0.118
Service Rating	4.500	4.316	4.286	1.038	0.365
Value Rating	4.200	4.053	4.143	0.693	0.507
Sleep quality Rating	4.500	4.263	3.964	3.530	0.040
Cleanliness Rating	4.700	4.421	4.179	4.574	0.017
Location Rating	4.800	4.553	4.357	2.505	0.096
Rooms Rating	4.500	4.158	3.893	3.363	0.046

Note. Data from TripAdvisor (2016).

4.7. Sustainable Concern of Consumers

This study investigated the consumer concerns for sustainability by analyzing individual customer reviews posted on the TripAdvisor website. “Sustain*” was used as an identify reviews

that mention sustainability. Out of 228,716 reviews, only 34 referred to sustainability. Only 0.015% of all reviews addressed issues related to sustainable practices.

There were five green hotels and four conventional hotels that had customer reviews which mentioned sustainability, and most compliments belonged to green hotels (Table 8). The Listel Hotel Vancouver, a 5 Green Key hotel, received the most compliments (n=15) on its green practices. The Four Seasons Hotel Vancouver, also a 5 Green Key hotel, only received 3 compliments on its sustainable action. Hotel BLU, a 4 star conventional hotel, received 5 compliments on its environmentally friendly practices. One of the 4 star conventional hotels had 2 critiques of its ecological footprint.

Table 8. *Amount of TripAdvisor reviews mentioning sustainable practices (N=228,716)*

Hotel Name	Star Rating	Green Key Rating	Compliments	Critiques
The Listel Hotel Vancouver	3	5	15	
Hotel BLU	4		5	
Four Seasons Hotel Vancouver	5	5	3	
Fairmont Waterfront	4	4	3	
The Westin Bayshore Vancouver	4	4	2	
Coast Coal Harbour Hotel	3	4	1	
Century Plaza Hotel Spa	3		1	
Fairmont Pacific Rim	5		1	
Fairmont Hotel Vancouver	4		1	2

Note. Data from TripAdvisor (2016).

Overall, hotel guests appreciated commitment to sustainability and efforts made by hotels to reduce their ecological footprint. Examples included, hotels that insist on choosing local food. The Listel Hotel Vancouver was complimented because “The restaurants attached feature locally grown or sourced food and drinks, which adds to the hotel's charm and promises of sustainability”. Four Seasons Hotel Vancouver was complimented because “Celebrated Chef Ned works to utilize only sustainable and thoughtfully managed stocks and vegetables that are as fresh and organic as possible”. The Fairmont Waterfront was complimented because “The honey from the hotel's apiary is an unusual and lovely touch and is evidence of their commitment to

sustainability”. Hotels were also complimented on their recycling and composting initiatives. The Listel Hotel Vancouver was complimented because “there were recycling and composting bins next to the trash and artwork all around the hotel including each room” and “I appreciated all the sustainability programming they incorporate into their business (such as zero waste / recycling, local food)”. Hotels using renewable energy were also complimented. The Listel Hotel Vancouver was “the most sustainable hotel in the city”, because “the hotel is also run partly on solar power, which the facility installed in the last 5 years in another attempt to reduce their carbon footprint”. Hotel BLU “has great beds, a good breakfast, & sustainable practices with use of renewable energy”. Moreover, a few hotel guests stated the sustainable practice of a hotel are one of their reasons to revisit, for example, “love the art, the great food, the commitment to sustainability, the live jazz (love Laura Crema!) and the free wine! I’ll be back” (The Listel Hotel Vancouver reviewer).

Meanwhile, some negative critiques pertained to conventional hotels where guests pointed out hotels behaving in unsustainable ways. For example the Fairmont Hotel Vancouver was critiques because it “uses so much electricity in order to keep 19 degrees in a room”, and “my bath towels were changed even though I had hung them up as requested for reuse”.

Chapter 5. Conclusion and Discussion

This study compared green hotels to conventional hotels in Vancouver through an examination of the difference between green hotels and conventional hotels among the major decision-making factors of price, satisfaction and location. The importance of this study include: 1) examine whether the consumer's perceived barriers of green hotel choice correspond to reality; 2) help hoteliers to better understand the difference between green hotels and conventional hotels and formulate a more suitable development strategy in order to attract more green hotel buying; 3) more green hotel buying can not only stimulate green hotel development but also promote sustainable tourism development; 4) green hotels play an important role in sustainable development due to its environmental, economic and social benefits. The following hypotheses guided the research:

Hypothesis 1 (H1): The price of a green hotel is higher than the price of a conventional hotel.

Hypothesis 2 (H2): The satisfaction of a green hotel experience is lower than that of a conventional hotel.

Hypothesis 3 (H3): The location of a green hotel is less desirable than that of a conventional hotel.

Hypothesis 4 (H4): There is a positive correlation between the price of a green hotel and the green reward level of a green hotel.

Hypothesis 5 (H5): There is a difference in green hotel satisfaction among green reward levels.

The data were collected from the TripAdvisor and Green Key Global websites. A total of 79 hotels located within the city of Vancouver were included in this study (39 green hotels and 40 conventional hotels). SPSS statistical software was used to analyze the data. This research has made the following contributions: 1) a better understanding of green hotel development in the city of Vancouver, 2) information on the difference between green hotels and conventional

hotels, and 3) insights into how much consumers care about sustainability.

This chapter summarizes the findings of this study, including the price, satisfaction and location comparison of green hotels and conventional hotels, and relationships within the green hotel. It then compares this study's findings to other scholars' research. The chapter then provides recommendations for green hotel strategies. The chapter concludes by pointing out the limitations of this study and providing recommendations for future research.

5.1. Comparison of Green Hotels to Conventional Hotels

This study showed that there is no difference between the price of a green hotel and that of a conventional hotel. The price difference between green hotel and conventional hotel can be influenced by the star rating. Consumers pay more for green hotels in 5 star and 3 star while they pay much more for conventional hotels in 4 star and 2 star. T-test statistical test showed that there is no statistical distribution difference between green hotel price and conventional hotel price. This finding reinforces the research of Rahman *et al* (2012), which pointed out that environmental friendly hotels do not necessarily charge additional costs. Scholars also claimed that green and conventional hotels have minimal price difference (Han *et al*, 2009; Manaktola & Jauhari, 2007). This finding also meets the expectation of consumers, because the majority of the consumers believes that green hotels should not charge premiums and even charge less than conventional hotels (Ogbeide, 2012). Affordable price is a factor that encourages consumers to choose a green hotel (Bucan, 2015). What is more, several scholars claimed that not all of the consumer are ready to pay an additional cost for green hotel (Han & Chan, 2013; Masau & Prideaux, 2003). Such worry about the price is unnecessary when the price of a green hotel is the same as the price of a conventional hotel.

The satisfaction of a green hotel experience and that of a conventional hotel has no big difference in general in this study. Manaktola and Jauhari (2007) pointed out that consumers unwilling to choose green hotels because they believe green practices may interfere with their enjoyment. But in terms of amenity quantity, green hotels perform better than conventional

hotels in this study. As Ryan and Gu (2007) said, the star rating of hotels is an influencing factor for hotel guest satisfaction. The level of satisfaction lightly fluctuates according to the star rating in this study. Green hotels gain higher satisfaction level in some star levels and gain lower satisfaction level in other star levels than conventional hotels, in general, the satisfaction level of green hotel is not lower than conventional hotels. This result was consistent with Bruns-Smith *et al* (2015), which found that room, facilities, and food and beverage quality are still the main drivers of satisfaction, and guest satisfaction cannot be diminished by green programs. These findings show a misunderstanding of the green hotel satisfaction level of consumers. Consumers believe that green practices would distract satisfaction (Baker *et al*, 2013; Manaktola & Jauhari, 2007) while the satisfaction level of green hotels is the same as the satisfaction level of conventional hotels in reality.

The location of a green hotel is as desirable as that of a conventional hotel. Most of the hotels are located within 2 kilometers from Vancouver Downtown. Central location is a factor that makes consumers confident to choose a green hotel (Bucan, 2015), location should not be a barrier in green hotel choice since the location of green hotel and the location of conventional hotel did not show significant difference in this study.

5.2. Relationships within the Green Hotel

This study found a positive correlation between the price of a green hotel and the green reward level of a green hotel. Hotel price is affected by numerous factors (Collins & Parsa, 2006). This research showed that green reward level is one of these influencing factors within green hotels. The hotel price increase with the green reward level. The higher the green reward level, the higher the hotel price.

There is a difference in green hotel satisfaction among green reward levels. Higher green reward level means higher standard of hotel overall sustainable performance (Green Key Global, 2015). The average of green hotel amenities shows a downward trend with the green reward level down. More specifically, the satisfaction level of sleep quality, cleanliness, and rooms

significantly reduce when the green reward level goes down.

5.3. Sustainable Concern of Customers

Even though some scholars indicated that customers' environmental concern is growing (Manaktola & Jauhari, 2007) and positively influence their hotel choice (Han & Chan, 2013; Lee & Moscardo, 2005), this study found out that consumers do not care about sustainability as much as they thought. On the TripAdvisor hotel page, which contains 228,716 reviews, only 0.015% of these reviews concerned about sustainable practices. This finding is not surprising, because customers believe that green programs means less comfort, and they do not want to reduce their enjoyment while staying in the hotel (Element, 2007; Manaktola & Jauhari, 2007; Millar & Baloglu, 2008; Tzschentke *et al*, 2008).

While the sustainable concern of customers is weak, and price is the major consideration in the purchase decision process (Chiang & Jang, 2007; Kim *et al*, 2006), the reason why customers do not choose a higher green reward level hotel is because the price of that hotel is higher. This is consistent with the above finding in this study: the higher the green reward level, the higher the hotel price.

5.4. Recommendations for Green Hotel Strategies

Changing consumers' stereotypical perceptions of the green hotel and establishing a positive image is necessary for green hotel development process. As above said, consumers' perception of the price, satisfaction, and location of green hotels are biased. Green hotels need to convey the message that all of the price, satisfaction, and location of green hotels are the same as conventional hotels to their guests. This message can help consumers to build a positive image of the green hotel. And the positive image can lead to more buying intention (Han *et al*, 2009; Lee *et al*, 2010; Prendergast & Man, 2002; Ryu *et al*, 2008).

Educating consumers to enhance their environmental awareness. Posting the green programs that the hotel involving in and promoting the importance of reducing the ecological footprint.

These actions may lead to more green hotel buying because customers' environmental concerns positively influence their hotel choice (Bucan, 2015; Han & Chan, 2013; Lee & Moscardo, 2005).

Providing incentive programs to help customers to involve in green practices. Bruns-Smith *et al* (2015) also claimed that more than 80% of guests who are not participating in hotels' sustainable practices would be willing to try if they were being rewarded.

5.5. Study Limitations and Recommendations for Future Research

The current study has several limitations that provide opportunities for future research. First, the data in this study were collected from Green Key Global and TripAdvisor database. Whether a person stayed at a hotel or not, he/she can write a review on TripAdvisor. The broad sample of the hotel guests was used to enhance the generalizability of the study findings. However, the future study may include the more representative sample in an actual consumption setting to enhance the reliability, for example, interview the actual hotel guests. Second, this study only used consumer satisfaction to measure hotel service. Service quality should be contained in future research in order to obtain a more comprehensive understanding of hotel service, because green practices may distract the service quality. Conducting a survey can be a good way to obtain service quality data. Last, this study defined green hotel as a hotel which has Green Key Reward, but there are over 400 types of green hotel certification systems and nearly 100 available to North American hoteliers (Taillon, 2015). Therefore, it is suggested to consider several types of green hotel certification system when defining the green hotel.

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