

Customers' perceptions and expectations of green hotels in  
China: A case study

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## **Attestation of Authorship**

“I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.”

Signed: \_\_\_\_\_

Yimeng Huang

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## **Abstract**

Hotel operations consume a great deal of energy and resources that negatively influence the natural environment (Bohdanowicz, 2006; Kim & Jiang, 2015; Shen & Zheng, 2009). Perhaps as a result, hotels' environmental image can affect customers' decision-making when they choose which hotel to stay in (Gustin & Weaver, 1996; Lee, Hsu, Han, & Kim, 2010). However, there are few studies of green hotels in underdeveloped areas of China, especially from customers' perspectives, so it is not yet known how much influence hotels' image have on potential customers. This study was therefore conducted in an underdeveloped city of China—Suzhou, Anhui Province - with two main objectives: (1) to identify customers' perceptions of what a 'green hotel' is; and (2) to explore the extent to which customers expect hotels to make green efforts.

The study focused on customers' expectations in a Chinese context, and aims to provide guidance for hoteliers to develop appropriate environmentally friendly strategies, and therefore make a positive contribution to the environment. A quantitative survey questionnaire was administered in two hotels in Suzhou, from December 2015 to January 2016, to solicit data from hotel customers. In total, 204 valid questionnaires were collected: 103 from a budget hotel and 101 from an upscale hotel.

As illustrated in Chapter Four, respondents had concerns and specific expectations related to hotels' energy-saving and resource-saving initiatives. However, over half still expected hotels to provide disposable chopsticks and disposable amenities (e.g. toothbrush). This study produced unique findings in that respondents particularly expressed concern about food safety and cleanliness in a hotel living environment in the context of sustainability. They also showed willingness to get involved in environmental activities and expected hotels' green activities to be practical. No significant correlation was found between the demographic factors of respondents and their environmental expectations.

The results were successful in fulfilling the objectives of the study, as they added new knowledge to the existing literature of customers' attitudes towards green hotels. The findings can provide assistance to hoteliers to better understand customers' needs and make changes to environmental practices accordingly.



## **Chapter One: Introduction**

### **1.1 Introduction**

This chapter provides an overview of the study, starting with background information related to the key concepts that underpin the research. It then introduces the purposes of the study and its two major objectives. The synopsis of the method and structure of the dissertation are also presented.

### **1.2 Background to the research**

Over the past few years, many people have become concerned about the damage and waste of environmental resources caused by business activities (Manaktola & Jauhari, 2007). As hotel operations rely heavily on resources such as water and electricity, hotel consumption is likely to put a great deal of pressure on environmental sustainability (Jiang & Kim, 2015; Shen & Zheng, 2009; Suki & Suki, 2015), exacerbating this problem and their image with customers.

In the 1980s, the concept of ‘environmentally friendly’ appeared in some European countries and the United States of America (USA). In 1993, the Green Hotel Association (GHA) was founded to improve hotels’ interest in the environment. In the same year, the International Hotels Environment Initiative (IHEI) was established to regulate and standardise hotel environmental-friendliness. Eleven hotel groups (Accor, Forte PLC, Hilton, Holiday Inn, Inter-Continental, Sheraton, Conrad International, Marriott, Meridien, Ramada International Hotels and Resorts, and Omni International) united to conduct environmentally-friendly management programmes. Hotel certification programmes were also developed along with accreditation schemes such as ISO14001 and LEED (Leadership in Energy and Environmental Design).

Currently, there is no unified definition of a “green hotel”. According to Kim and Han (2010, p. 999), ‘green’ is construed as ‘eco-friendly’, ‘environmentally responsible’, ‘environmentally friendly’ and ‘sustainable’. According to Chen and Chen (2012), the fundamental orientations of a green hotel include: ‘recycled material, recyclable, low-polluting and energy-saving’ (p.212); these interpretations assist with understanding perceptions about ‘green’ hotels.

In developed countries, some studies have endeavoured to identify perceptions around green hotel benefits and customers' attitudes towards green hotels. According to Bohdanowicz's European research (2005), a business can be more profitable by adopting environmental initiatives since activities such as waste management and energy saving can lead to hotel cost reductions. Hays and Ozretic-Dosen (2014) conducted a case study in three developed countries and found that by implementing green management practices, a hotel can boost its image and reduce costs; employees can be more satisfied with their work and feel involved; and the strategies can help build customers' loyalty. Similarly, Jiang and Kim (2015) analysed data from Korean passengers at Incheon Airport and found that guests can have a 'safer and healthier experience' (p. 313) if their hotel provides organic food and eco-friendly bedding. It is therefore clear that hotel customers have particular views around the environmental responsibilities of hotels, which are likely to affect their decision-making.

However, the 'green' hotel label does not always have a positive influence, and customers' attitudes can vary significantly in different social contexts. Studies in India and the USA have shown that most guests are unwilling to pay more to stay in a 'green' hotel (Kang, Stein, Heo, & Lee, 2012; Manaktola & Jauhari, 2007). Some customers may perceive 'green' as representative of a lower comfort level and some inconveniences, such as reusing towels (Han & Chan, 2013; Kim & Han, 2010).

In China, the country's rapid industrialisation and economic boom were achieved at the expense of the environment and people's health (China's Environmental Crisis, 2016). Most of the energy in China comes from burning coal; 'China burns about half the world's supplies' ('The East is grey', 2013), and between 350,000 and 500,000 people die prematurely in China each year because of lethal air pollution (Moore, 2014). Thus it is urgent for Chinese enterprises to undertake environmental initiatives. However, the development of green hotels in China lags behind that in Western countries (Lo, Chan, & Zhang, 2014). According to Graci (2008), green practices in Chinese hotels are mostly related to energy and water conservation to reduce costs rather than out of concern for the environment. Many studies have discussed how hotels can save energy and reduce costs by implementing environmental techniques and energy-saving strategies. Furthermore,

green practices in China have been strongly affected by government policy (Gu, Ryan, Bin, & Wei, 2013; Gu, Ryan, & Chon, 2009). Gu et al. (2009) surveyed 121 hotel managers in China and found that their concerns about environmental issues mainly arose because energy-saving was important for reducing costs and complying with governmental regulations, and those operating hotels near tourist attractions worried that pollution would negatively affect their businesses.

An overview of the literature shows that studies of green expectations from the perspective of Chinese customers, especially in relatively underdeveloped areas are scarce. China is currently facing serious environmental problems, which calls for studies to push enterprises to adopt environmentally friendly practices. Since customers' attitudes vary considerably according to hotel quality standards and locations (due to political, economic, environmental context, etc.), this study focuses on customer expectations of green hotels in the relatively undeveloped city of Suzhou, in Anhui Province.

### **1.3 Purpose of the research**

The purpose of this study is to add to knowledge about green hotels in underdeveloped areas in China. Suzhou was chosen because there are few studies conducted in cities that have similar weak economic development. The differences between budget hotels and upscale hotels were also taken into consideration.

This study expects to offer benefits to many parties. It is expected that customers' voices will be heard, and the research will provide guidance for hotels' environmentally friendly strategies. The implementation of 'green' strategies involves stakeholders such as employees, customers and society. The study also aims to provide some future development direction for the tourism and hospitality industry and thereby make a positive contribution to the environment.

The overall aim of this study therefore is to explore customers' expectations of 'being green' in terms of hotel operations. The study has two major objectives:

1. Identify customers' perceptions of a 'green hotel'; and
2. Explore the extent to which customers expect hotels to make green efforts.

#### **1.4 Synopsis of the method**

The study adopted a positivist theoretical paradigm using a deductive approach. Data collection was undertaken between December 2015 and January 2016. There was no hypothesis to be tested and information was collected from a variety of participants to obtain different perspectives. Two case studies were used: an upscale hotel, and a budget hotel. Hotel managers were helpful in supporting the research. Data were collected using questionnaires completed by hotel guests; the questionnaire included both close-ended questions and open-ended questions. Overall there were 204 questionnaires completed (103 in the budget hotel and 101 in the upscale hotel). Using a positivist approach, the study was able to develop an understanding of Chinese ‘green hotels’ through both the analysis of literature and data from the two cases.

The study employed a quantitative approach, and SPSS (Statistical Package for Social Sciences) statistics software version 23 was used to analyse the data. Firstly, a frequency analysis was undertaken to determine the distribution of responses for each question, then, a correlation analysis, to determine any influence of demographic characteristics (e.g. age, travel purposes) on responses.

#### **1.5 Structure of the dissertation**

This dissertation is divided into six chapters. This chapter has outlined the research background, identified the aims of the study, and introduced the methodology employed. The second chapter reviews the literature in the areas of conceptualising ‘green hotels’ and green practices globally; the influences of green hotels on customer preferences; customers’ attitudes towards green hotels; and ‘green’ development in the Chinese hospitality industry. Chapter three details the methodology and research design, and the results are analysed and discussed in Chapter four. Finally, Chapter five discusses some implications of the study and highlights the contributions to both the literature and practice. Suggestions for future research are also provided. The dissertation concludes with a reference list and appendices.

## **Chapter Two: Literature Review**

### **2.1 Introduction**

This chapter begins by reviewing literature related to the green hotels concept and practices globally, and then explains the perceived environmental benefits for hotels and customers' attitudes to green hotels. The gap that this study aims to fill is then identified. The literature review is then followed by a summary of green development in the Chinese hospitality industry, which provides the background and justification for this study.

### **2.2 The concept of 'green hotels'**

The development of hotels, especially for those located around tourist attractions, greatly depends on the utilisation of natural resources (Bohdanowicz, 2005). Hotel construction, fixtures and furniture consumes a lot of non-durable materials such as carpet and wood (Barber, 2014). Hotel operation also requires significant energy and water consumption (Kim & Han, 2010; Shen & Zheng, 2009). This resource consumption is likely to generate pollution if waste are not disposed of properly, therefore threatening environmental sustainability (Bohdanowicz, 2005; Han & Chan, 2013). Along with the general public's concerns for environmental degradation and its expectations for higher living quality, some hotels have started to address environmental sustainability issues (Chen & Chen, 2012). The appearance of the 'green hotels' concept is therefore an important improvement in the hospitality industry in terms of environmental sustainability development (Hemmelskamp & Brockmann, 1997).

According to Kim and Han (2010), 'green' is also synonymous with 'environmentally friendly' (p. 999). The first time the concept of 'environmentally friendly' emerged was in the 1980s in developed countries in Europe as well as in the USA. Some hotels began to show their concern towards the environment. Accordingly, the Green Hotel Association (GHA) was founded in 1993, to improve hotels' interests in environmental protection. They defined green hotels as 'environmentally friendly properties whose managers were eager to institute programs that save water, save energy and reduce solid waste—while saving money—to help protect our one and only earth' (Green Hotels Association, n.d.). In the same year, the International Hotels Environment Initiative (IHEI) was established, catalysing the green campaign in the hospitality industry (Han &

Chan, 2013). It offered a standardised method for hotel environmental friendliness measurement and stimulated hotels to be aware of their operations' environmental effects (Sustainable Development Knowledge Platform, n.d.). Gradually, environmentally friendly management emerged (Bohdanowicz, 2005), and growing public concerns encouraged hotels to provide 'green-label' products (Shen & Zheng, 2009). It was reported that such changes were helpful for some hotels to reduce energy costs, and some movements have reduced hotel operations' harmful impacts on the environment (e.g. recycling, which reuses non-renewable resources, thereby decreasing the release of pollutants into the soil, air, and water) (Bohdanowicz, 2006; Green Hotels Association, n.d.; Han, Hsu, & Lee, 2009; Kassinis & Soteriou, 2003).

Currently, there are no unified principles for green hotels. According to Erdogan and Baris (2007), a green hotel should consider surrounding ecological conditions before its construction, with principles including 'harmony of the facility with nature, the choice of materials used in construction, the selection and use of landscape elements...' (p. 608). For example, in Japan, many green hotels use recycled materials (e.g. aluminium, glass, iron) in construction and consider the natural lighting in the building designs (Chen & Chen, 2012).

The American environmental partnership programme, Green Hotels in the Green Mountain State (n.d.), suggests that hotels should implement sophisticated environmental management practices, such as reducing material use, fuel use and water use to reduce environmental damage and save money. Both hotel staff and customers should be encouraged to become involved in the process. It was reported that in 2012, 86 green hotels in the USA saved 41,190,000 gallons of water, 4,210,000 kWh of electricity and saved 4,410 metric tons of carbon dioxide equivalents (Green Hotels in the Green Mountain State, n.d.).

Apart from environmental issues, Kasim (2004) thinks that the concept 'green' also includes a social responsibility factor. He defined a 'socio-environmentally friendly hotel' as a hotel that 'operates in a responsible manner towards its employees, the local community, the local culture and the surrounding ecology' (p. 10).

To summarise, the core indices recommended for green hotels to incorporate are construction (material selection), facilities operation, resource consumption, low levels of pollution and sustainable thinking in all aspects (Chen & Chen, 2012; Han & Chan, 2013; Kasim, 2004; Shen & Zheng, 2009).

### 2.3 Green practices globally

The most frequently implemented environmentally friendly initiatives by green hotels are energy saving, water saving and waste reduction (Ogbeide, 2012). Kassinis and Soteriou (2003) explained that given the high-contact nature of service industries, environmental technologies for hospitality organisations are often limited to pollution prevention measures such as ‘source reduction, reusing and recycling programs’ (2003, p. 389), while pollution control solutions such as filters are mostly available only to the manufacturing industry. Other studies are consistent with their statements. Sánchez-Ollero, García-Pozo and Marchante-Mera (2014) undertook a survey in 232 hotels in Andalusia (southern Spain) and found that 75.6% of hotels in their sample had applied energy and water-saving measures and 66.9% had established recycling measures. Other studies have also found a range of hotel environmental measures regarding energy saving, water saving and waste management (See Table 2-1).

**Table 2-1: Energy-saving, water-saving and waste management measures in hotels**

Brand and location	Measures	Authors
France	<ul style="list-style-type: none"> <li>• Energy-saving lamps, low consumption appliances, rational heating/cooling system</li> <li>• Low-flow shower heads and taps</li> <li>• Organic food, minimal packaging and recycling, biodegradable cleaning products</li> </ul>	Hays & Ozretic-Dosen (2014)
Marriott, USA	<ul style="list-style-type: none"> <li>• Installed outdoor signs with LED and fibre optic technology</li> <li>• Smoke-free policy in order to reduce energy usage caused by air treatment</li> </ul>	Zhu (2011)
Hotel Inter-Continental Miami, USA	<ul style="list-style-type: none"> <li>• Reuse of laundry water for gardens</li> <li>• Energy efficiency measures (e.g. motion sensors and timers for the lighting)</li> <li>• ‘Inter-cycle’ waste management system</li> </ul>	(International Hotel & Restaurant Association, 1996)

Australia	<ul style="list-style-type: none"> <li>• Purchases electricity from wind energy</li> <li>• Collects rain water for gardening, cleaning and toilet flushing</li> <li>• Double glazing to reduce heat loss</li> <li>• Eco-friendly chemicals for cleaning</li> <li>• Oil is collected from the kitchen and converted into biodiesel</li> </ul>	Hays & Ozretic-Dosen (2014)
Virginia, USA	<ul style="list-style-type: none"> <li>• Preventative maintenance of drips and leaks for water conservation</li> <li>• High-efficiency dishwashers</li> <li>• High-efficiency heating, air conditioning and lights</li> <li>• Recycling and waste reduction such as use of crockery and glassware instead of disposables</li> </ul>	Kuminoff, Zhang, & Rudi (2010)

The environmental measures most commonly utilised (Table 2-1) show a strong emphasis on energy saving, water saving and waste management. However it has been argued that the reason for this apparent enthusiasm for environmental issues, is that such measures reduce operational costs (Manaktola & Jauhari, 2007).

Environmentally friendly initiatives in hotels have also been introduced to improve employee loyalty and customer satisfaction. Sánchez-Ollero et al.'s (2014) survey in Andalusia discovered that approximately one-third of the hotels in their study provided training to employees on environmental issues and encouraged employees to improve environmental awareness through meetings. In Canada, Hays and Ozretic-Dosen (2014) used a case study approach to examine a hotel operating a green partnership programme and encouraging both customers and employees to interact and participate in the programme. This hotel organised green weddings and provides 'Luxury Green Packages' (p. 95), which included eco cars, organic food and a close-to-nature trip for customers. This case exemplifies a developing trend that hotels' green practices are motivating increasingly more groups in society to get involved in environmental protection.

## **2.4 Perceived green hotel benefits and customers' attitudes**

### ***2.4.1 Positive attitudes on hotels' environmental practices***

Many studies have explored the influences of hotel green practices and customers' attitudes toward green hotels, and some have revealed different results from hotels of different types. One study's results showed that the majority of participants from three



American airports (Atlanta, Dulles and Washington) had a positive attitude towards staying in a hotel that with environmentally friendly practices (Gustin & Weaver, 1996). Furthermore, around 83% of holidaymakers in England are willing to choose a hotel with a green image (Lee, Hsu, Han, & Kim, 2010). Consequently, customers' preferences for staying in hotels that implement environmentally friendly initiatives are likely to result in higher hotel room rates. A study in Kenya, which used an interviewer-administered questionnaire, showed that 66.5% of respondents were willing to pay a premium for green hotel products or services (Masau & Prideaux, 2003). Similarly, using an online survey, Kang, Stein, Heo and Lee (2012) found a similar result among USA hotel consumers, and found that consumers' willingness to pay premiums were particularly strong amongst luxury and mid-priced hotels as compared to those staying in economy hotels. Customers tend to view environmental-related attributes as important parts of their hotel experiences (Han & Chan, 2013). According to Sánchez-Ollero et al. (2014), each kind of environmental initiative can result in a 5.15% room rate increase in mid- and upscale hotels. In another USA study, Kuminoff et al. (2010) found that customers can expect to pay US\$8.87 to US\$25.43 more for each standard room in a hotel that uses environmentally friendly practices.

Not only can a green hotel expect guests to pay premiums, but studies also show that by implementing green practices, hotels are able to save costs on energy usage, water usage and waste disposal, thus becoming more profitable (Bohdanowicz, 2005; Gustin & Weaver, 1996; Kuminoff et al., 2010; Wolfe & Shanklin, 2001). Hays and Ozretic-Dosen (2014) conducted case studies in three hotels in the USA, France and Australia that varied in size, categorisation and target market. Their result showed that the green management of hotels can be a win-win scenario for hotels, employees and customers "no matter their size or target audience" (p. 85). By implementing green management, hotels can boost their images, reduce costs, improve employee satisfaction and involvement, and build customer loyalty.

According to Kim and Yang (2015), green hotel practices can offer multi-dimensional benefits to consumers. For example, by using non-toxic materials and serving organic food, not only will there be less negative effects on the environment, but also customers

will have a safer and healthier experience, and a better perception of hotel product value. Customers may get ‘existence value’ (Sánchez-Ollero et al., 2014, p. 32) and the sense of satisfaction that they made a contribution to the environment and are leaving a better planet for the next generation (Hotel Online, n.d.; Kuminoff et al., 2010). An increasingly strong desire for emotional benefits has been shown among hotel customers (Robinot & Giannelloni, 2010). In addition, studies found that customers can also obtain ‘status-enhancing benefit[s]’ (Jiang & Kim, 2015, p. 313) and tend to believe that they will leave a good impression on others by choosing green hotels. Therefore, Suki and Suki (2015) claimed that hotels should inform customers of the efforts they have made to take the environmental responsibilities, increase customers’ knowledge about being ‘green’ and utilise mass media services to attract more customers (Chen & Chen, 2012).

#### ***2.4.2 Other voices***

Despite the positive perceptions and influences towards hotel green practices stated above, there are conflicting views in regards to the same issue. Robinot and Giannelloni (2010) conducted qualitative research in France using the Tetraclass model methodology explain to explore the relationship between ‘green’ hotel attributes and customer satisfaction. They found that ‘green’ does not have positive effects on customers’ attitudes but ‘un-green’ will lead to lower levels of customer satisfaction, so environmentally friendly attributes can only be considered as ‘basic’ (p. 165) requirements. Sweeney and Soutar (2001) stated that although quality has a positive impact on perceived value, price has a negative impact. Despite the fact that customers have shown a preference to stay in green hotels, not all are willing to pay a premium, and their attitudes vary significantly in different social contexts. Studies in India showed that only 15% of the guests are willing to pay more for staying in a green hotel (Manaktola & Jauhari, 2007). Millar and Baloglu (2011) examined 571 samples of business and leisure travellers in the USA, and found that only 18% of the business travellers expressed willingness to pay a premium and the percentage was even lower for leisure travellers (9.8%). The majority of respondents thought that there should be no price difference between environmentally friendly hotels and traditional hotels, and some respondents even expected lower costs for green lodging (Millar & Baloglu, 2011; Ogbeide, 2012).

In addition to customers' negative attitudes in terms of cost, some studies indicated customers' negative impressions of green hotel products and experiences. Some green hotel initiatives such as refillable soap and shampoo dispensers; low-flow showerheads; and linen reuse programmes were considered as unfavourable because they may be perceived as less sanitary or comfortable, or as an inconvenience (Kasim, 2004; Yunhi Kim & Han, 2010; Manaktola & Jauhari, 2007; Robinot & Giannelloni, 2010). Although customers often appreciate if hotels are making contributions to protect the environment, they are generally unwilling to sacrifice their standards of living and comfort levels (Han & Chan, 2013). Furthermore, even if customers have higher perceptions of a hotel's environmental-related benefits, this does not always lead to actual purchasing decisions. Kasim (2004) found that when customers were choosing which hotel to stay in, their focuses were service, price and architecture instead of a hotel's environmentally friendly image. Thus, Robinot and Giannelloni (2010) suggested that hotels should not inform customers about the green initiatives they adopted, to avoid the risk of being unfavourably estimated.

As inconsistencies have been highlighted in the literature about green hotels' economic influence and the extent to which hotels' environmental efforts affect customers' decisions, further research is needed to clarify customers' attitudes. It is also important to note that previous studies discussed above have covered Western countries from Europe and North America to Australia. However, green hotel development in a Chinese context is lacking in systematic research and needs to be discussed separately.

## **2.5. The Chinese context**

### ***2.5.1 Introduction***

The previous section identified the influences of hotel green practices and customers' attitudes globally. However, there is little research on Chinese customers' attitudes and expectations, so these need to be further explored. This section addresses the history of green hotel development in China to provide a background to the study. Challenges for Chinese green hotels are also overviewed to emphasise the importance of this study and provide insight for hotels to make operational changes accordingly.

### ***2.5.2 History of Chinese green hotel development***

The concept of ‘green hotels’ was introduced into China in the mid-1990s. In 1997, some foreign-owned, joint-ventures and international hotels started to adopt some environmentally friendly practices that helped them be more competitive (Gu et al., 2009), but these hotels appeared only in major cities such as Beijing, Shanghai and Guangzhou. Then in 1999, the China National Tourism Administration (CNTA) announced the year as ‘Year of Eco-Environment Tourism’ and encouraged the development of ecological tourism products. Meanwhile, the Zhejiang Tourism Bureau launched the first provincial-level green hotel standard in China, and many hotels in the Zhejiang Province initiated environmentally friendly practices and activities as a response. The first ‘green hotels’ emerged. After that, local green hotel standards appeared in other provinces and cities throughout China, especially in relatively developed regions (Gu et al., 2009).

In 2003, the China National Commerce Commission created the first national standard ‘Green Hotel Classification and Rating Regulation’ and categorised hotels from 1A to 5A according to their ‘green attributes’. The purpose of this standard was to improve hotels’ awareness of green management and environmental protection, and as a result many hotels started to put effort into green practices (National Tourism Administration of The People’s Republic of China, n.d.). For example, the BTG-Jianguo Hotel, an affiliate of the renowned hotel group, BTG Hotels, launched a ‘green action’ campaign in 2004, and all of its 13 chain hotels signed a ‘Declaration of Green Action’, which included measures to reduce disposable amenities usage, and reduce energy and water consumption by upgrading water and power systems with high-tech equipment (BTG Hotels, n.d.).

Based on the experiences of these hotels and the green hotels standard of Zhejiang Province, a new and more sophisticated national standard—Green Hotel Standard (LB/T007-2006) was issued by the CNTA in 2006 (National Tourism Administration of The People’s Republic of China, n.d.). This is the standard that has been widely adopted as a supporting document of China star tourist hotel classification and rating standard (Gu et al., 2009; Shen & Zheng, 2009). The standard proposed four principles that green

hotels should follow (Table 2-2) and six dimensions for green hotel ratings (Table 2-3). It offered a practical guide for hotels to implement sustainable practices.

**Table 2-2 Four Principles for Green Hotels in China**

Principle	Practice
Reduction	Reduce raw materials usage and energy inputs (without affecting product and service quality). Reduce products' volume and weight, and simplify product packaging in order to decrease costs and waste output.
Reuse	Change from single use to multi-use products; reduce the amount of disposable goods.
Recycle	Recycle items after usage; make full use of renewable resources.
Non-polluting/Renewable	In order to save resources and reduce pollution, hotels should use non-polluting items or renewable items as alternatives for certain products.

*Note.* Translated and adapted from the Green Hotel Standard (LB/T007-2006) rating criteria (Green Hotel Standard (LB/T007-2006), 2011). Copyright 2006 by China National Tourism Administration.

**Table 2-3 The Six Dimensions of the Chinese Green Hotel Rating**

<b>Dimensions</b>	<b>Details</b>
Green Design	<p>Give consideration of local natural landscape protection and biodiversity in hotel design; cause no deterioration to local vegetation or ecological systems.</p> <p>Architecture: fully consider the design and usage of natural lighting; choose proper thermal insulation material; doors and windows should be effectively insulate noise; use environmental decorative materials.</p> <p>New energy: according to local conditions, utilise new energy and renewable energy resources such as wind, hydropower, solar, biomass and geothermal power, etc.</p> <p>Water Conservation: adopt combined cooling heating and power system; adopt rainwater collection systems and reclaimed water systems; install water-saving toilets; reduce pollution emissions.</p>
Energy Management	<p>Establish energy-consuming equipment classification and metering account.</p> <p>Install water-, electricity- and steam-metering by department, and set up accounts separately.</p> <p>Establish energy-use statistics system with a comparative analysis of energy consumption.</p> <p>Build an energy consumption quota appraisal and rewards/punishment system.</p> <p>Actively implement new energy-saving (e.g. utilise solar energy) and water-saving technologies.</p>
Environmental Protection	<p>Pollution control: install equipment for sewage treatment; install lampblack purification equipment in the kitchen; control boiler dust emissions or use central heating system.</p> <p>Use environmental protection equipment: lithium bromide absorption chillers; Freon-free refrigerators and air conditioners; non-halon (F1211) fire extinguishers.</p> <p>Indoor environment: adopt measures to reduce harmful substances after renovation or decoration; use decorative materials with eco-marks.</p>

Reduce Consumption	<p>Guest rooms: reduce frequency washing of cotton linens; reduce quantities of room items supply (e.g. shampoo, soap); cancel or simplify products' packaging.</p> <p>Dining: no disposable tableware; utilise the offcut material in food producing process.</p> <p>Save paper.</p> <p>Classify washing materials to save detergent.</p>
Green products and services	<p>Green guest rooms: designate no smoking rooms and floors; install central ventilation system; reduce frequency of changing guest items; supply filtered drinking water; decorate rooms with plants.</p> <p>Green food: provide organic food and fresh vegetables; guarantee raw food safety; establish no smoking canteen; do not sell food made from endangered animals; not using products made by companies that damage the environment.</p>
Socio-economic and environmental benefits	<p>Socio-environmental benefits: adopt systematic publicity measures; get positive feedback from society (by media report) and guests; increase green room occupancy rate.</p> <p>Socio-economic benefits: decrease annual energy costs percentage (e.g. power, water, fuel, etc.).</p> <p>Build green management system; provide green training for employees.</p>

*Note.* Translated and adapted from the Green Hotel Standard (LB/T007-2006) rating criteria (Green Hotel Standard (LB/T007-2006), 2011). Copyright 2006 by China National Tourism Administration.

As a result of this standard being put in place, by 2007, in Beijing alone, 143 hotels were awarded 'Green Hotels' status, which included 81 Golden-ginkgo biloba green hotels and 62 silver-ginkgo biloba green hotels (Top Hotels In Beijing Fail To Become Green Hotels, 2007).

### ***2.5.3 Challenges of Chinese green hotel development***

In recent decades, China has experienced a rapid modernisation and economic development process with average annual GDP (Gross Domestic Product) growth of 8% (National Bureau of Statistics of China, 2013). China has become the second largest economy in the world and also the second largest energy consumer (National Bureau of

Statistics of China, 2013; Zhu, 2011). However, such rapid economic development has dangerously accelerated damage to the environment (Chan & Welford, 2005). The World Bank (2007) indicated that growth puts significant pressure on long-term sustainability, especially regarding air and water pollution. A fragile environment and its large population makes China 'environmentally more risky than Western countries' (Chan & Welford, 2005, p. 88). It is estimated that over 38,000 square miles of China's cultivated land has been polluted, and tens of million tons of grain are contaminated each year by soil contamination. Industrial pollutants have led to serious air and water pollution, which have caused widespread public health problems (Chen, 2007; Pollution in China, 2016).

In order to avoid the previous development approach of 'pollution and destruction first, treatment later' (BBC, 2006, as cited in Frost, 2006, p. 307), Chinese authorities have taken steps to improve the public's environmental awareness and encourage the general public to monitor corporations' actions (Gu et al., 2009). Reports claim that a new Chinese standard of Corporate Social Responsibility will be developed, which will include environmental benchmarks, and the government will provide active support to promote these standards (Frost, 2006; Gu et al., 2009).

Studies have found that although most people are aware of the importance of environment protection, actual environmental movements in businesses are not prevalent (Graci & Dodds, 2008). Hills' research (2005) in Hong Kong discovered that most businesses there showed little interest in green practices that go beyond government regulations. Corporations failed to view environmental protection as a social responsibility, but instead, viewed it as a burden and compliance rather than an environmental issue. The direct influence of the government's policies was commented on in many studies (Graci, 2008; Gu et al., 2013, 2009; Zhu, 2011). For example, in 2008, hotels were asked to implement power-saving initiatives in order to be a part of the 'Green Olympics' (Chinese capital urges hotels to save energy as part of 'green' Olympics, 2004). Graci (2008) posited that the reason for this 'policy-driven environmental protection' in the Chinese hospitality industry is the high proportion of state-owned properties while chain-operated hotels only make up a small percentage.



Apart from the impact of regulations, green practices in Chinese hotels are mostly related to energy and water conservation to reduce costs instead of an environmental commitment (Graci, 2008; Zhu, 2011). Many studies have discussed ways hotels can save energy and reduce costs by implementing environmental techniques and energy-saving strategies. Reducing the use of disposable amenities, water reuse, and increasing low-energy consumption appliances are the most commonly adopted green practices in Chinese hotels (Chan, Wong, & Lo, 2009; Li, 2011; Shen & Zheng, 2009; Zhu, 2011). Through a survey of 121 hotel managers in China, Gu et al. (2009) found that the reasons hotel managers were concerned about environmental issues was mainly because energy saving reduces costs, compliance with governmental regulations, and for hotels located near tourist attractions, they were worried that pollution would negatively affect business.

In China, economic development has been recognised as the fundamental path of ‘invigorating our nation’ and ‘achieving political stability of our party’ (Wang, 2011). Environmental protection has given way to economic development, thus the establishment of green hotels in China lags behind Western countries (Lo et al., 2014). The main barriers to the development of green practices in the Chinese hospitality industry are as follows:

- Lack of environmental awareness;
- Lack of experience in relevant technology and management;
- Inconsistent policies and regulations;
- Corporate structure (high percentage of state-owned properties);
- Customers’ demands are not clear and need to be further identified.

*Modified from Zhu (2011).*

Therefore, this research is designed to explore customers’ demands, and it is hoped that the results may encourage hotels in China to consider environmentally friendly practices from a new perspective.

## **2.6 Summary**

This chapter reviewed literature on global green hotel development before discussing this in a Chinese context. As discussed, studies in Western countries have investigated customers’ attitudes towards green hotel practices, but no similar studies have been

undertaken in a Chinese context. Environmental problems caused by rapid economic development are threatening Chinese people's health and safety, but currently, green hotel practices in China are mostly motivated by policy compliance and reducing costs instead of environmental commitments. Thus it is necessary for Chinese hotels to make more environmental efforts, and a clearer understanding of Chinese customers' perceptions and expectations is therefore needed. The next chapter will introduce the methodology adopted in this research in order to fill this gap.

## **Chapter Three: Research Methodology**

### **3.1 Introduction**

This chapter elaborates on the research methodology employed to fill the knowledge gap identified in Chapter two. It begins with a brief overview of the research objectives, followed by an outline of the research paradigm. The chapter then describes and justifies the research instrument and structure. The participation selection process, sample size, ethical considerations and data collection process will also be explained. The final section of the chapter will discuss data analysis techniques for this study.

### **3.2 Research objectives**

As outlined in Chapter one, the aim of this study is to explore customers' expectations of 'being green' in regards to hotel operations. The study has two major objectives:

1. To identify customers' perceptions of what a 'green hotel' is; and
2. To explore the extent to which customers expect hotels to make green efforts.

The differences between budget hotels and upscale hotels were also taken into consideration. The objectives were developed due to the gap identified in the literature review regarding hotel customers' attitudes in a Chinese context. More information is needed in the study of Chinese green hotels, especially in underdeveloped areas, because previous Chinese green hotel studies have been located in developed areas. The city of Suzhou was chosen because there are no studies of this kind that have been conducted in cities where economic development is relatively slow. Suzhou is located in northern Anhui Province with a population of six million and annual per capita disposable income of only 21,775 RMB (approximately NZ\$4,510) (Suzhou government, 2015), which is significantly lower than developed cities such as Shanghai where the annual per capita disposable income was 52,962 RMB (approximately NZ\$10,970) in 2015 (Shanghai News, 2016). Studying perceptions about green hotels in less developed areas provides an opportunity to examine perceptions about environmentalism where the problem is less extreme (i.e. than in Beijing).

### **3.3 Research paradigm**

A paradigm is a model or framework derived from a worldview or belief system about the nature of knowledge and existence. It is shared by a scientific community and guides

how a community of researchers act with regard to inquiry (Qualitative Research Guidelines Project, 2008). It provides a conceptual and philosophical framework for a study (Ponterotto, 2005). Therefore, it is essential for research to engage with an appropriate paradigm in order to achieve its research objectives. Positivism is ‘an epistemological position that advocates the application of the methods of the natural sciences to the study of social reality’ (Alotaibi, 2011, p. 97). A tenet of this framework is that valid knowledge is only found in derived knowledge (e.g. sensory experiences or those interpreted through reason and logic) (Larrain, 1979). Positivism requires a rigorous method of systematic investigation of sources and enables quantifiable findings to be developed (Altinay & Paraskevas, 2008; DiVanna, 2010). The current study is designed to collect customers’ understandings and expectations of specific green hotel practices; so a positivistic paradigm is appropriate for this study and the results will be expressed quantitatively.

As research related to customers’ perceptions and expectations in China, especially in underdeveloped areas, is not sufficient, two case studies located in a Chinese underdeveloped area were selected for this research. This decision is consistent with Woodside, Ko, and Huan’s statement (2012) that a case study is useful for understanding management practices using a positivist paradigm, and ‘can form the basis for the development of more general, nomothetic theories’ (Babbie, 2013, p. 298). A questionnaire is the most-often adopted information gathering strategy in the hospitality and tourism industry (Finn, Elliott-White, & Walton, 2000), and can help the researcher meet objectives in a systematic manner (Altinay & Paraskevas, 2008). Using a questionnaire to conduct a survey enables a quantity of primary data to be effectively collected from target groups, and the results can be illustrated in tables and charts, which are more readable (Hair, Wolfinbarger, Money, Samouel, & Page, 2015; Mat Yusof, Poulston, & Liu, 2014).

### **3.4 Research instrument and structure**

#### ***3.4.1 Research instrument***

The research instrument employed in this study was a questionnaire. The reasons for using a questionnaire are as follows:

- Questionnaires are considered the most preferred research instrument to collect opinions from a large number of target groups in a short period of time (Altinay & Paraskevas, 2008; Collis & Hussey, 2014), and in a relatively cost effective way (Popper, 1992).
- The responses can be gathered in an identical format, so questionnaires are more objective compared to interviews (Milne, 1999).
- Questionnaires allow participants to express their opinions at a time when they prefer. The data collection can be carried out without the researcher's presence, which provides flexibility for both participants and the researcher; anonymity can also be guaranteed (Ackroyd & Hughes, 1981; Hair et al., 2015; Milne, 1999; Popper, 1992).
- The responses from a questionnaire can be easily coded and quantified, so the research results can be used to recognise changes and differences compared to previous studies (Ackroyd & Hughes, 1981; Gray, 2014; Popper, 1992).

The study targeted two different levels of hotels (i.e. an upscale hotel and budget hotel) and solicited the views of customers staying in the relatively underdeveloped area of Suzhou, Anhui Province, China. The purpose of this study is to explore and reveal customers' attitudes instead of generating data. Thus, the questionnaire approach is appropriate for this study to gather the necessary information, and it enables the researcher to analyse and interpret the results.

#### ***3.4.2 Structure and content of the questionnaire***

The development of a good questionnaire is essential for a study to achieve its objectives (Altinay & Paraskevas, 2008). The questionnaire designed for this research contained 18 questions which were estimated to take 10 to 15 minutes to complete. The criteria of questionnaire development were: keeping the questions as simple and readable as possible, in order to encourage customers to participate; at the same time, the question structure needed to reflect the methodology and address the research objectives. In this research, the questionnaire was designed with mostly close-ended questions that provided alternatives for participants so that they could choose the answer they felt was most appropriate. For the purpose of collecting rich and detailed data, one open-ended question

was included in the middle of the questionnaire with three more open-ended questions at the end.

The questionnaire consisted of three main sections: demographic section; a section that assessed respondents' definitions of 'green hotels'; and a section to identify what kind of 'green' practices respondents expect to see in hotels. Each of these sections is discussed below.

The first three demographic questions aimed to identify participants' personal background information and their experience with green hotels. The information gathered included the purpose of stay, age group and their experience about whether they had heard of and/or stayed in a green hotel before. This section revealed the relationship between participants' characteristics and their responses towards green hotel practices.

The second section concerned participants' perceptions of 'green hotels'. This part of the questionnaire consisted of 12 statements about green hotel practices and participants chose whether they thought those practices were necessary or not according to their own definitions of a 'green hotel'. The statements were developed based on the Chinese Green Hotel Standard (LB/T007-2006) (see Table 2-3 in 2.5.2), which includes practices in regards to construction, operations, interior decoration, etc. Table 3-1 shows some examples of the questions in this section (see Appendix A for full questionnaire). An extra space was included at the end of this section for participants to add more information, in case they had other understandings of the definition of green hotels.

**Table 3-1 Selected Sample questions in Section Two of the questionnaire**

	<b>Necessary</b>	<b>Not necessary</b>
Use energy-saving equipment (e.g. energy-saving lights).		
Recycle water.		
Use green construction materials.		
Provide reusable amenities, not disposable ones.		
Provide organic food.		
Cultivate an environment with green plants and decorations.		

Participants' expectations of green practices in the hotels in which they were currently staying were investigated in the third section of the questionnaire. In this section, ten

statements of green practices were listed, and participants were asked to express their attitudes towards these practices. The ten statements were also generated based on the 'green hotels' dimensions in the Chinese Green Hotel Standard (LB/T007-2006) (see Table 2-3 in 2.5.1). The first three questions in this section were about energy-saving equipment, waste sorting and water recycling, which related to 'Energy Management' and 'Environmental Protection' in the Green Hotel Standard. The next three questions were in regards to disposable chopsticks, disposable amenities and bedding change frequency, which referred to 'Reduce Consumption' in the Green Hotel Standard; to provide organic food, be smoke free and have green plants referred to 'Green Products and Services'; and lastly, the statement about green training for hotel employees referred to 'Socio-economic and environmental benefits'. Multiple choices were offered in this section to identify participants' attitudes. For example, regarding whether or not hotels should provide disposable amenities, participants could choose 'Yes, disposable products are convenient' or 'No, they should provide non-disposable amenities', or 'It depends', and then tick the amenities they thought were necessary (e.g. toothbrush, comb, shampoo, etc.). In addition, three open-ended questions were given to provide participants more opportunities to express their views of hotels' current environmentally friendly practices and what they expect to see in the future. Copies of the questionnaire in English and Chinese are attached in Appendix A and B, respectively.

### **3.5 Population selection and sample size**

A research population is an entire group of individuals or objects that is the focus of a study (Sekaran, 2003). The population for this study is hotel customers who stay in hotels in underdeveloped areas in China. However, it is impossible to test all the individuals because of the large size of the population. Therefore, a sampling technique was used. Sampling methods are usually divided into two types: probability sampling and non-probability sampling. The core characteristic of non-probability sampling is that the samples are chosen on the basis of subjective judgement of the researcher, and it is practical and particularly useful in exploratory research (Babbie & Kreuger, 2003). Common non-probability sampling techniques include quota sampling, convenience sampling, purposive (judgmental) sampling, self-selection sampling and snowball sampling (Babbie, 2013; Non-probability sampling, n.d.). In this study, the samples were

selected by adopting the purposive sampling method because it enabled the researcher to achieve the target sample size and gather representative information in a relatively less time-consuming and more cost-effective way (Babbie, 2013).

Two hotels in Suzhou were selected as the sample population—a budget hotel and an upscale hotel. Respondents were required to be customers who were staying in either of the two hotels during the data collection. People under 20 years old were excluded from the survey because it was considered that adults would have a better understanding of green issues. The participation selection criteria were stated in the Participant Information Sheet (PIS), which was provided for all the participants along with the questionnaire. The English and Chinese versions of the PIS are presented in Appendix C and D, respectively.

According to Jennings (2010), when the overall population is under 1,000, a sample size of 30% of the population should be able to ensure research reliability. Considering the budget hotel had 43 guest rooms and the hotel managers indicated the average occupancy rate was around 30%, it was anticipated that during the data collection process with limited time and budget, there would be a research population of around 300. Thus, a sample size of at least 90 would be needed. In order to make better comparisons between the two cases, it was deemed necessary to obtain 100 valid questionnaires from each hotel. At the end of data collection, 204 valid questionnaires were collected in total with 103 from the budget hotel and 101 from the upscale hotel.

### **3.6 Ethical considerations**

The research data collection process involved human participants, but given the nature of the study, the ethical risks to the participants were considered to be minimal.

Questionnaires were placed in customers' rooms before they checked in so there was no direct contact between the researcher and participants. The informed consent information was given at the beginning of the questionnaire and participants were able to answer honestly and without risk, persuasion or influence (see Appendix A and Appendix B). All customers over 20 years old staying in the hotels during the period of the study had the opportunity to participate anonymously in this research. A self-completion questionnaire was used, and participants had the right not only to participate in the research but also to decide which information to provide as part of the research.



Because the research targeted customers in Chinese hotels, there was a possible risk of misunderstandings caused by incorrect translation of the study materials. Thus, the survey questionnaire protocols were written in English and translated into Chinese. Both English and Chinese protocols were submitted to Auckland University of Technology of Ethics Committee (AUTEC) and proofread in advance, to minimise the risk of incorrect translation.

The data collection process, questionnaire design (both English and Chinese versions), and Participant Information Sheet (both English version and Chinese version) for this study all obtained approval from AUTEC on 1st December 2015 with AUTEC reference number 15/425. The ethics approval form is attached in Appendix E.

### **3.7 Data collection process**

A purposive (judgemental) sampling method was adopted based on the researcher's background and judgement. The Suzhou International Hotel was chosen because it is the only upscale hotel in Suzhou (with a four-star rating) and the capacity of 350 rooms was considered to make data collection less time consuming. The budget hotel chosen was Xiangfuju Hotel, located in the city centre of Suzhou, with 43 rooms. According to hotel managers' feedback and the researcher's personal background and observation, customers who stayed in the two hotels were mostly from nearby regions with very similar socio-economic backgrounds.

The managers of both hotels were supportive of this research because it provided a way for customers' voices to be heard and the research would provide guidance for hotels' environmentally friendly strategies and make a positive contribution to the environment. Questionnaires were put into customers' rooms in advance of their arrival by the hotel receptionist, until 100 completed surveys were received from each hotel. Thus data collection finished when all the distributed questionnaires had been completed.

Participants could read the attached information sheet and choose whether to participate in the research or not. If they decided to participate, they were asked to leave their completed questionnaire at reception at check out; a box was left at the reception area for this purpose.

During the data collection process, the largest obstacle the researcher encountered was the low participation rate. Many questionnaires were left in the rooms or neglected by customers. Therefore, in order to increase the response rate, guests were reminded to fill in the questionnaires by the receptionist when checking in or by the housekeeping staff. Eventually, 204 valid questionnaires were collected. The data collection process took around eight weeks from 2 December 2015 to 28 January 2016.

### **3.8 Data analysis method**

The study used a quantitative approach. Once the data were collected, they were coded and analysed with IBM SPSS (Statistical Package for the Social Science) statistics software version 23. Descriptive statistical analysis was employed to describe the data, as it enables the data to be presented in tables, which helps to identify data distribution patterns (Babbie, 2013; Blaxter, Hughes, & Tight, 2010; Collis & Hussey, 2014).

All the data were coded and manually entered into the software programme. For example, 1 was coded as ‘business’ customers, 2 was coded as customer on ‘holiday’, 3 was coded as customers ‘visiting friends or family’, and 4 was coded for customers who had other purposes of their stay. Unanswered questions were treated as missing data. After data entry was completed, two data analysis techniques were adopted: frequency distribution analysis and correlation analysis.

#### ***3.8.1 Frequency distribution analysis***

A frequency table allows the researcher ‘to summarise the data by counting the number of times each value or category of a particular variable occurs’ (Acton, Miller, Fullerton, & Maltby, 2009, p. 54). Bar charts are used to represent percentages. The ‘base for percentaging’ (Rubin & Babbie, 2013, p. 240) is the total number of respondents in this survey (including respondents who failed to give responses for some questions), because the main purpose of this study was to find out customers’ attitudes in general rather than comparing the differences among individuals (Rubin & Babbie, 2013).

A frequency distribution analysis was carried out for every close-ended question. For the demographic section (refer to 3.4.2), the analysis revealed customers’ general characteristics and backgrounds. The second section focused on what was perceived that a green hotel should do/have by ranking response frequencies of twelve ‘green hotels’

statements. In the third section, the technique helped to identify customers' expectations of hotel green practices. By using frequency distribution tables, a large volume of data were produced into understandable and readable forms, which helped the researcher to analyse the data collected.

### ***3.8.2 Correlation analysis***

Correlation analysis can 'provide information needed to determine the nature and extent of the relationship' between two variables (Babbie, 2013, p. 451). In order to discover any possible relationships between customers' demographic attributes (i.e. purpose of stay and age) and their expectations so that the results could be further generalised, a correlation analysis technique was used. All of the responses in the third section of the questionnaire (which included ten close-ended questions, see 3.4.2 or Appendix A) were recoded after the frequency distribution analysis, and created as ten new variables according to the level of environmental concern/expectations. Lower coding numbers represent lower environmental expectations, and vice versa. For example, the question 'Should the hotel use energy-saving equipment (e.g. energy-saving lights)?' was originally described as the variable 'Energysaving', but in this section, another variable was constructed for 'RC Energysaving', and the answer 'no' was recoded as 1, which represented the lowest environmental expectation. Similarly, responses of 'I don't mind either way' were recoded as 2, and 'yes' was recoded as 3, because they represented moderate and high-level environmentally-friendly expectations. The other nine close-ended questions in this section were also recoded so that '1' represented the lowest environmental expectation and higher numbers referred to higher degrees of environmental concern. The recoding scheme can be found in Appendix F. Following that, a new variable—'Environmental Concern'—was created by collapsing all ten recoded variables into one.

There were ten questions; the highest code for one question was 4 and for the other nine questions, 3. The lowest code for each of the ten questions was 1. Therefore, the possible range of 'Environmental Concern' from the questionnaire was 10 to 31. However, the range of the collected responses was from 21 to 30. In order to provide a clearer and more understandable format for the results, another variable—'EnvironmentalConcern2'—was

created by taking away 21 from 'Environmental Concern' so that it ranged from 0 to 9. Then correlation analysis was adopted by using Spearman's rho to test the relationship between the variable 'age' and 'EnvironmentalConcern2'. Another demographic variable—'purpose of stay'—was a nominal variable, Phi & Cramer's V were adopted to find out the strength of possible correlations between customers' purpose of stay and their environmental expectations. All of the bivariate tables employed two-tailed tests with cross-tabulations. The level of significance indicates 'the degree of likelihood that an observed, empirical relationship could be attributable to sampling error' (p. 465) and the significance of less than 0.05 was considered as reliable (Babbie, 2013).

There were also four open-ended questions in the questionnaire. The answers to these were analysed manually because the data were limited and therefore manageable. Responses were recorded by the patterns discovered in each topic. These qualitative data added useful extra information to the results of this research.

By using the data analysis techniques explained above, respondents' attitudes could be efficiently recognised and the possible relationship between their demographic characteristics and expectations could be explored.

### **3.9 Summary**

This chapter explained that this study adopted a positivistic paradigm and used a questionnaire for hotel customers to collect data. Purposive (judgmental) sampling was chosen to obtain representative data in a relatively time- and cost-efficient way. The quantitative data were analysed using a frequency distribution technique and bivariate analysis technique with the use of SPSS software. The results of the data analysis will be described in Chapter four.

## **Chapter Four: Results and Discussion**

### **4.1 Introduction**

This chapter presents the data analysis which relates to the two main objectives of this study. Results for the responses of all the participants and differences between the two cases (a budget hotel and an upscale hotel) are described. The results will add more information to the existing literature with respect to customers' attitudes towards green hotels in underdeveloped areas in China. The chapter begins with the profile (i.e. purpose of stay, age and personal experience) of the respondents, followed by their definitions of green hotels based on their answers to 12 statements.

The chapter then presents the results of the third section of the questionnaire, which explored customers' expectations of hotels. Results of the correlation analysis in terms of the influences of demographics on customers' expectations of green hotels are also presented.

### **4.2 Results, analysis and discussion**

#### ***4.2.1 Respondents' profile***

This section presents the demographic profiles of respondents: their purpose of stay, age, and their awareness and experience of green hotels (see Table 4-1). Of the 204 completed questionnaires received, 103 were from the budget hotel and 101 from the upscale hotel.

The frequency distribution analysis of respondents' characteristics shows holiday customers were the largest proportion (38.2%), and customers in the hotels for the purposes of business, visiting friends or family, or other reasons comprised the rest of the population relatively equally, accounting for 21.1%, 19.1% and 20.6% of respondents, respectively. The largest age cohort was 36 to 50 (44.6% of respondents), and 39.7% were 20 to 35 years old. Just 15.7% of the respondents were over 50.

Most respondents did not have any prior experience of staying in a green hotel. Specifically, only 8.8% had stayed in a green hotel before, 42.6% had never heard of the concept of 'green hotels', and 47.1% had heard about green hotels but had not stayed in one (the remaining 1.5 per cent did not answer this question).

Customers' insufficient knowledge and experience of green hotels may be associated with the local economic situation. As outlined in Chapter two, green hotels in China are commonly foreign-owned, joint-ventures or international hotels in well-developed areas (Gu et al., 2009). However, the hotels in this study were in an underdeveloped city. Under the local economic conditions, environmentally friendly policies and regulations for hotels are not sophisticated and related environmental-protection publicity needs to be further developed.

**Table 4-1 Descriptive statistics of respondents' profiles**

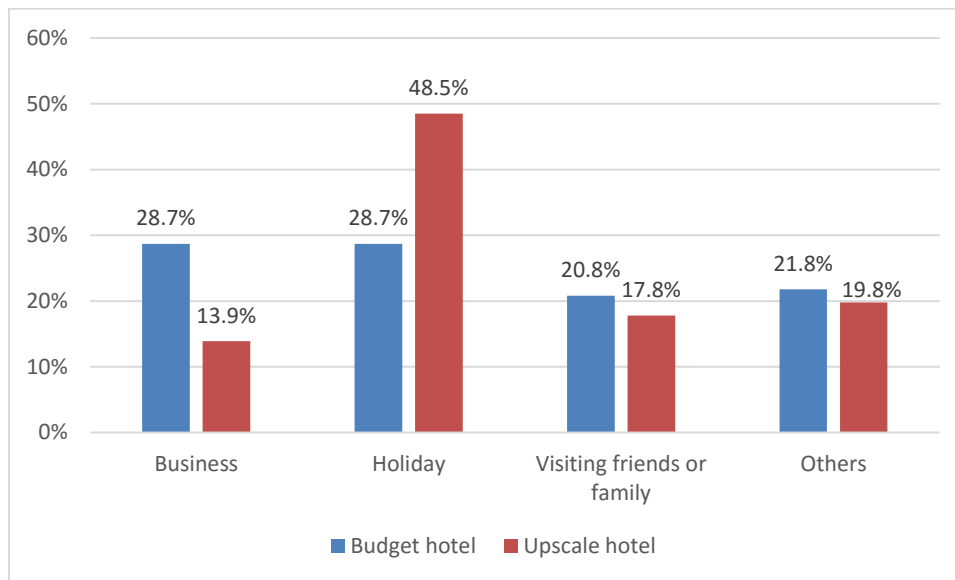
Variable		Count	Percent
<b>Purpose of stay</b>			
	Business	43	21.1
	Holiday	78	38.2
	Visiting friends or family	39	19.1
	Other	42	20.6
	Missing data	2	1.0
	Total	204	100.0
<b>Age</b>			
	20-35	81	39.7
	36-50	91	44.6
	Over 50	32	15.7
	Total	204	100.0
<b>Awareness of and experience with green hotels</b>			
	Never heard of them	87	42.6
	Heard about them but never stayed in one	96	47.1
	Heard about them and have stayed in one	18	8.8
	Missing data	3	1.5
	Total	204	100.0

The demographic profile variances between two hotels can be observed by breaking down the data of two cases. Among the upscale hotel respondents, those aged 36 to 50 made up the largest proportion (46.5%) and 36.6% of the sample were between 20 and 35 years old. For budget hotel respondents, the percentages of those aged 20-35 and 36-50 were both 42.7%.

In terms of respondents' purpose of stay, Figure 4-1 shows that almost half (48.5%) the upscale hotel respondents were on holiday, and business customers were the smallest

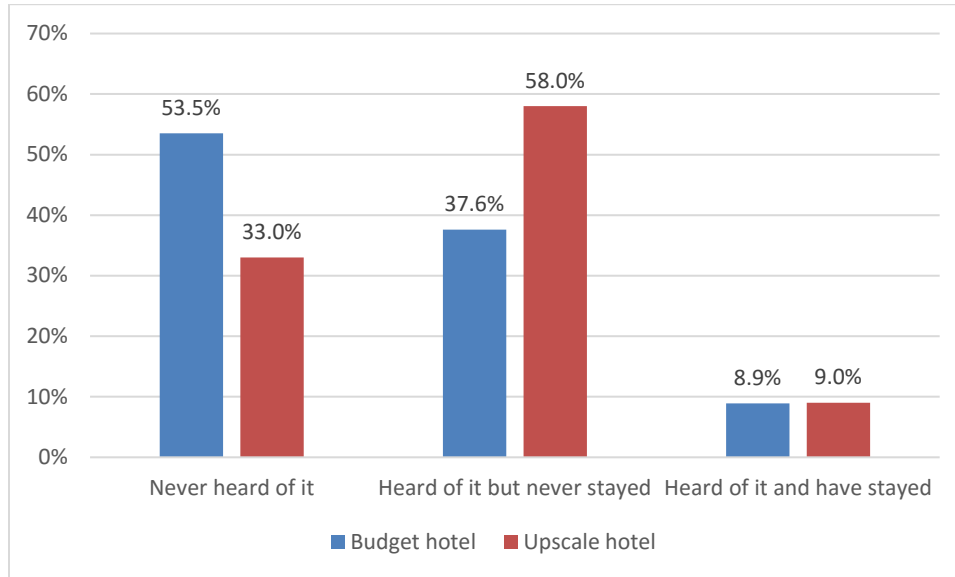
group (13.9%). There were 17.8% of the respondents staying to visit friends or family, and the remaining 19.8% were at the hotel for other purposes. In contrast, the distribution of customers' purpose of stay was more even for the budget hotel. Participants who stayed in the hotel for business and holiday both accounted for 28.7%, and around one fifth (20.8%) of the respondents were visiting friends or family.

**Figure 4-1 Percentage distribution of purpose of stay for budget and upscale hotel respondents**



In regards to customers' awareness of and experience with green hotels, there was a more noticeable difference in responses (see Figure 4-2). Over half of budget hotel respondents (53.5%) had no knowledge of green hotels, and 37.6% of them had heard of them but never stayed in one before. Although there were only around 9% of the respondents who had green hotel stay experiences (8.9% and 9.0% for the budget hotel and the upscale hotel, respectively), more than half of upscale hotel respondents (58%) had heard of 'green hotels'.

**Figure 4-2 Percentage distribution of awareness of and experience with green hotels**



#### ***4.2.2 Respondents' perceptions of 'green hotels'***

This section reveals respondents' perceptions of 'green hotels', which refers to the second section of the questionnaire (see Appendix A). There were twelve statements provided to assess customers' thoughts on what a green hotel should do or have. Table 4-2 presents the frequencies of respondents' answers to the statements.

**Table 4-2 Customers' views on what a green hotel should do or have**

<b>Green hotels should do or have</b>	<b>Agree</b>
Use energy-saving equipment (e.g. energy-saving lights)	94.6%
Reduce waste and pollution	93.6%
Sort waste	90.7%
Use green construction materials	90.2%
Cultivate an environment with green plants and decorations	89.7%
Recycle water	86.8%
Be smoke-free	86.3%
Provide organic food	79.9%
Have green certification granted by the government or green organizations	79.9%
Provide reusable chopsticks, not disposable ones	73.5%
Not change bedding or towels daily	65.2%
Provide reusable amenities, not disposable ones	62.3%



As presented in Table 4-2, positive answers were provided by over half the respondents for all the statements, which indicates that in general, respondents had a high environmental awareness. ‘Use energy-saving equipment (e.g. energy-saving lights)’, ‘reduce waste and pollution’ and ‘sort waste’ were perceived as necessities for a green hotel by over 90% of the respondents. Agreement with these three statements concerned with energy and resource usage was consistent with Susskind and Verma’s findings (2011) that energy- and resource-saving efforts are perceived as very important by green hotel guests.

The importance to ‘cultivate an environment with green plants and decorations’, ‘recycle water’ and ‘be smoke-free’ were recognised by over 85% of the respondents. Similarly, the percentages of respondents who think it is ‘necessary’ for a green hotel to ‘provide organic food’ and ‘have green certification granted by the government or green organizations’ were also very high, with both accounting for 79.9%.

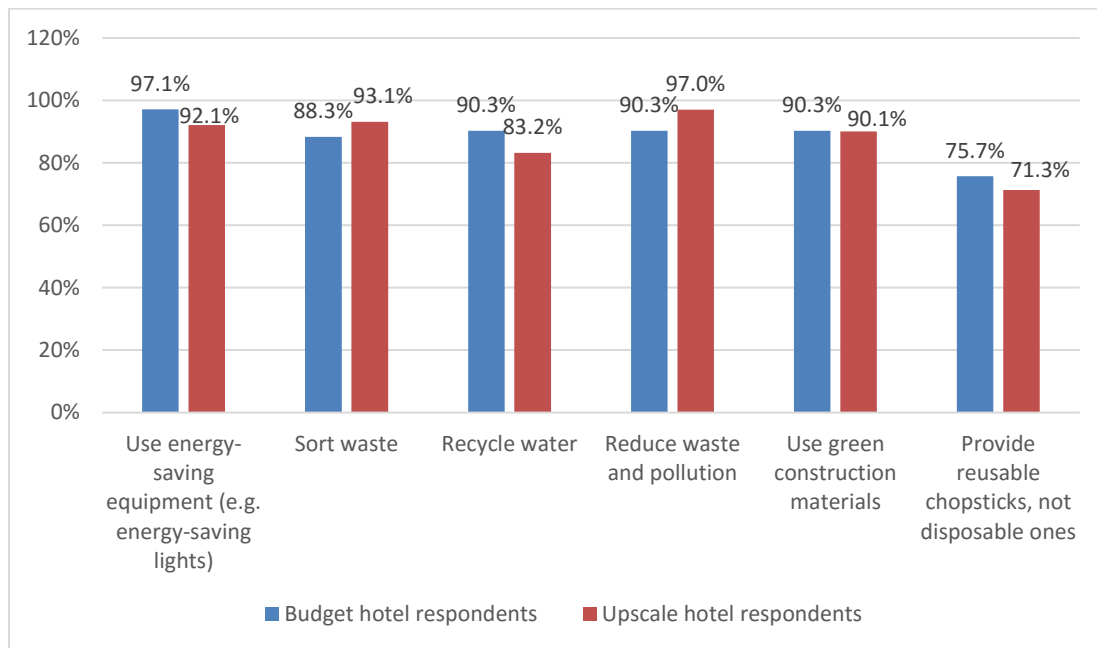
There were only three features that over a quarter of the respondents did not perceive as necessary for a green hotel: ‘provide reusable chopsticks, not disposable ones’, ‘not change bedding or towels daily’ and ‘provide reusable amenities, not disposable ones’. It is notable that these three statements regard resource reuse, and the results may reflect customers’ perceptions that using non-disposable products and not changing bedding daily as inconvenient or less sanitary. This finding is consistent with those of Kasim (2004) and Robinot and Giannelloni (2010), who claimed that green initiatives such as refillable soap and shampoo dispensers may result in lower comfort levels and therefore be perceived as unnecessary or even unfavourable by customers.

A data breakdown for the two cases has also been included in this section (see Figure 4-3 and Figure 4-4), but the difference between the two cases was not significant.

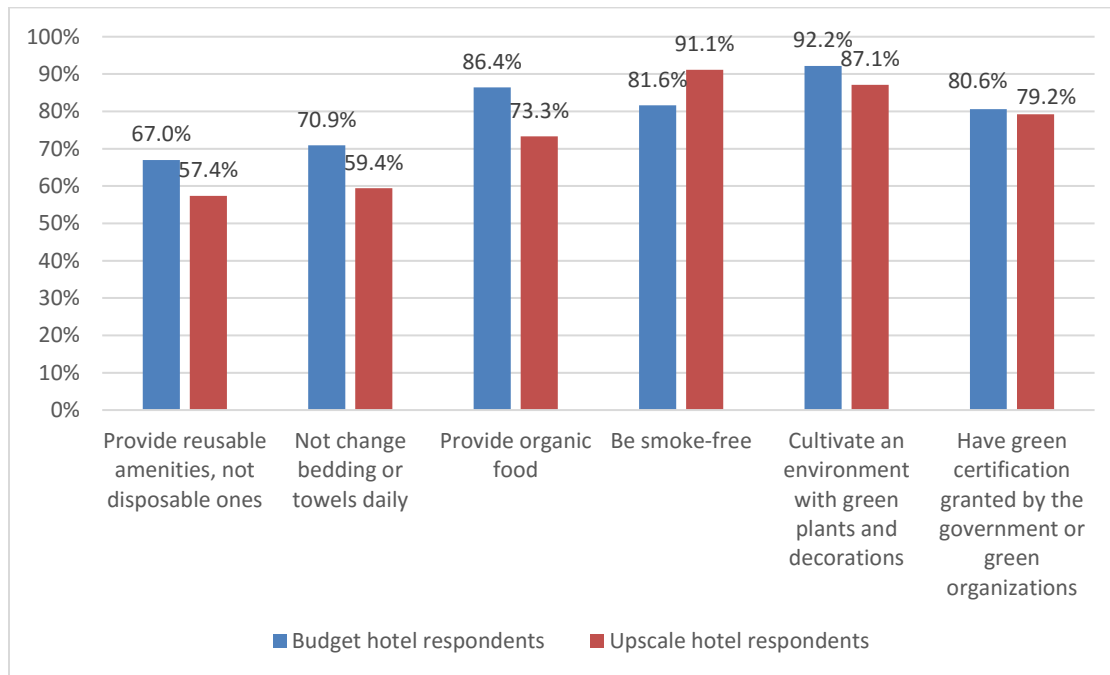
Interestingly, more budget hotel respondents than upscale hotel respondents agreed with nine statements out of 12. Especially for the statements ‘not change bedding or towels daily’ and ‘provide organic food’, the percentage of budget hotel respondents who answered ‘necessary’ was over 10% higher than upscale hotel respondents, which stands at 76% versus 64.5% and 90.8% versus 80.4%, respectively. This difference may be due to upscale hotel customers having more emphasis on living experience while less bedding

change frequency is perceived as of lower comfort level. However, it is also possible that the reason that not as many upscale hotel customers ticked ‘necessary’ on those statements is because they tend to believe those environmental initiatives should be adopted by all the hotels instead of just hotels designated as ‘green hotels’. This assumption needs to be further explored in future studies. In fact, the percentage of all respondents who answered ‘necessary’ was very high and the sample size of this study was limited, thus the differences revealed in the results may not necessarily represent a significant difference of green hotel perceptions amongst the two hotels.

**Figure 4-3 The percentage distribution of customers’ perceptions of what ‘green hotels’ should do or have (refer to the questionnaire statements 1 to 6)**



**Figure 4-4 The percentage distribution of customers' perceptions of what 'green hotels' should do or have (refer to the questionnaire statements 7 to 12)**



In this section of the questionnaire, an open-ended question was included that the respondents could add more information if they had other perceptions of green hotels other than the 12 statements shown in Figure 4-3 and Figure 4-4. Out of 204 respondents, 63 of them answered the open-ended question. The responses can be summarised into three categories based on the patterns of the answers.

The first category comprised of responses in regards to resource use. 'Utilise wind or solar energy to generate electricity' was mentioned by four respondents. Some respondents considered that it was necessary to 'reduce consumption of energy and resources' and 'improve resource-use efficiency'. For example:

- *green hotels should install good ventilation system and make full use of natural lighting in order to reduce the waste of non-renewable resources*
- *products' unnecessary packaging or wrappings should be removed*
- *lavish interior design should be avoided*
- *hotels should use environmentally friendly decoration materials*
- *recycled materials such as batteries should be classified more specifically*
- *leftovers from the kitchen can be used as organic fertiliser instead of being thrown away.*

In total, 30 responses were included into this category.

These responses confirmed the previous claims that energy-saving and resource-saving practices are perceived as crucial by customers (Han & Chan, 2013; Susskind & Verma, 2011). Responses also matched the ‘Reduction’, ‘Reuse’ and ‘Recycle’ principles for green hotels in China (Table 2-2) (‘Green Hotel Standard (LB/T007-2006)’, 2011).

Zhu (2011) and Chan and Welford (2005) claimed that the large population in China has led to a huge amount of resource consumption, which has put a great deal of pressure on environment sustainability, and there are concerns over air and water pollution. Their observations may explain respondents’ concerns for resource use and beliefs that reducing consumption and reducing waste are essential for resource sustainability and environmental protection. An alternative explanation may be that less resource consumption often implies cost saving, and the respondents in this study tended to put cost reduction into consideration.

The second category highlighted respondents’ concerns about a safe and healthy diet and living environment. Nine respondents emphasised the importance to ‘*ensure the safety of food supplies*’. One respondent claimed that ‘*green hotels should show evidence that they have employed advanced sterilising equipment for cutlery*’. At the same time, the quality of the indoor environment also affected respondents’ perceptions of a green hotel. Two respondents said ‘*air purifying equipment is needed in guests’ rooms*’, while three other respondents believed that having ‘*smoke-free guests’ rooms is necessary for a green hotel, but there should still be a smoking area set aside specially for smokers*’. In a similar vein, two respondents voiced concerns about ‘noise pollution’. They tended to believe that a green hotel should be noise free: ‘*A green hotel should be quiet*’ and ‘*good sound-proof material should be used*’.

Respondents’ concerns around health and safety revealed in this category were possibly due to the frequent media reports on air and water pollution, and food safety scandals in China (The East is grey, 2013). As a result, Chinese people tend to be anxious about their living environments. As noted by Kim and Yang (2015), non-toxic products and organic food can offer customers a safer experience and enhance their perceptions of a hotel’s value, which may explain the respondents’ concerns in relation to this category.

The third category related to hotels' initiatives that improved customers' environmental awareness and participation. There were respondents who stated that *'green hotels should post big signs to inform customers what they can do to be a part of green activities'* and *'hotels should hold green exhibitions to help customers to understand the importance of environment protection'*. Another respondent said *'green hotels should conduct a subsequent survey to customers after they check-out, and ask for advice in order to make more environmental progress.'* Responses included in this category all highlighted the importance of green hotels encouraging customer involvement. According to Hills (2005), Graci (2008) and Zhu (2011), Chinese hotels' current green practices are mostly designed to comply with policies rather than demonstrate an environmental commitment. However, responses revealed in this question showed that customers perceived 'green hotels' as organisations that should provide channels and platforms for customers to participate in environmentally friendly practices, and 'greenwashing' (i.e. claiming engagement with sustainable practices to make the company appear to be more environmentally friendly than it really is) was not acknowledged by respondents.

To summarise the results of this section of the questionnaire, the majority of respondents perceived 'green hotels' as those that utilise energy and resources efficiently and effectively, and provide a safe and healthy environment for customers. Encouraging more customer involvement was also perceived by many customers as something green hotels should do. The distinction between different levels of hotels and customers' contradictory views on product reuse still need to be further explored.

#### ***4.2.3 Respondents' expectations of green practices***

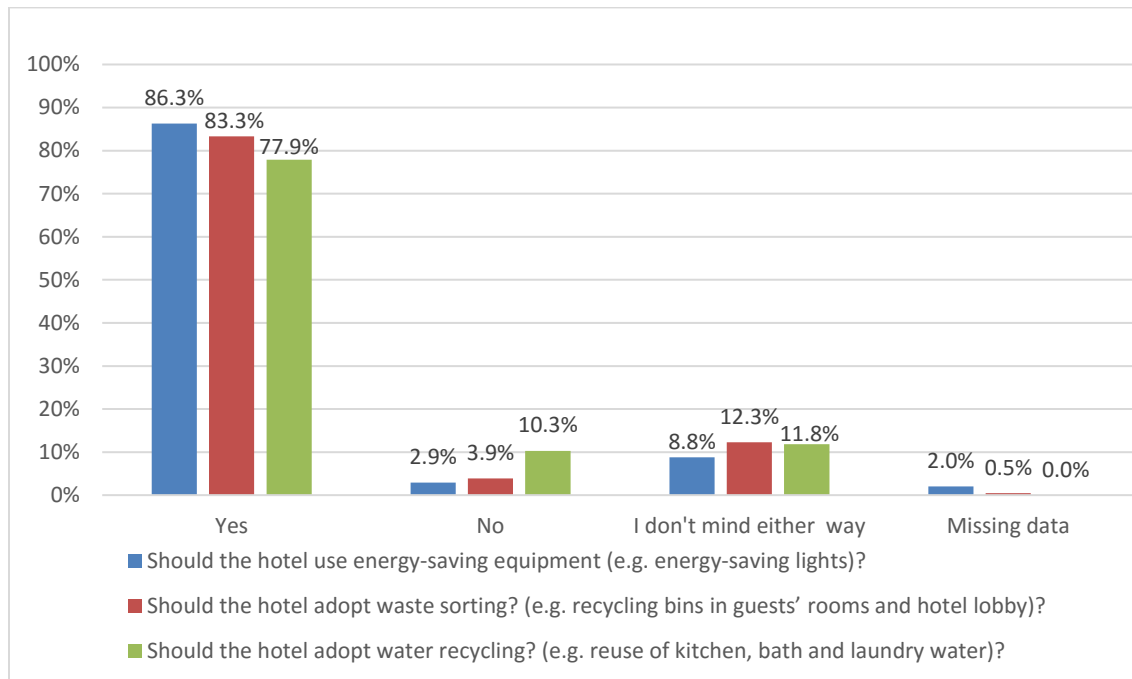
This section identifies respondents' expectations in terms of environmentally friendly initiatives. Data are from Section Three of the questionnaire (see Appendix A) which included ten close-ended questions and three open-ended questions. As mentioned in Chapter three (see 3.4.2), the ten close-ended questions can be categorised into 'Energy saving and resource management', 'Reducing consumption', 'Green products and services' and 'Green training for employees' based on the 'green hotels' dimensions in the Chinese Green Hotel Standard (LB/T007-2006):

### *1) Energy saving and resource management*

Three questions related to ‘Energy saving and resource management’. As shown in Figure 4-5, results for these three questions were very similar. Around 80% of respondents thought that hotels should ‘use energy-saving equipment’, ‘adopt waste sorting’ and ‘adopt water recycling’. Approximately 10% of respondents expressed that they were not concerned about the issues, and only a very small proportion of the respondents thought the hotel should not employ these energy and resource management initiatives (2.9%, 3.9% and 10.3% for the three questions, respectively). Apart from a gradually increasing environmental awareness, respondents’ favour for energy saving and resource saving was likely to be affected by the local economic situation. Because of the lower economic status in the study location, many children will have been educated to save energy or resources by turning off lights when leaving the house or saving recyclables to sell. At the same time, as energy-saving practices are relatively common in hotels, it is possible that customers view these efforts as basic requirements.

This result is likely to motivate hotels to implement more sophisticated energy-saving and resource management practices, and contributes to the current insufficient literature on Chinese customers’ expectations. As illustrated in Table 2-1, current hotels’ green practices were found to be focused on energy saving, water saving and waste management. Furthermore, the study found that customers were very supportive of those practices (Susskind & Verma, 2011). However, the motivations and incentives of hotels implementing those practices are not always the same. Lee and Rhee (2007) stated that the commitment of general managers and their analysis of threats and opportunities are important factors. Element Hotel in the USA, which belongs to the Starwood Hotels & Resorts Worldwide chain, states that its philosophy is to satisfy guests as well as protect the environment (Element Makes a Difference, 2011). However in China, the literature shows that hotels’ energy-saving and resource-saving measures have only been for the purpose of cost reduction and policy compliance (Chan et al., 2009; Graci, 2008; Li, 2011; Shen & Zheng, 2009; Zhu, 2011), but the findings in this study indicate that hotels will also meet customers’ expectations by implementing a practical energy and resource management system.

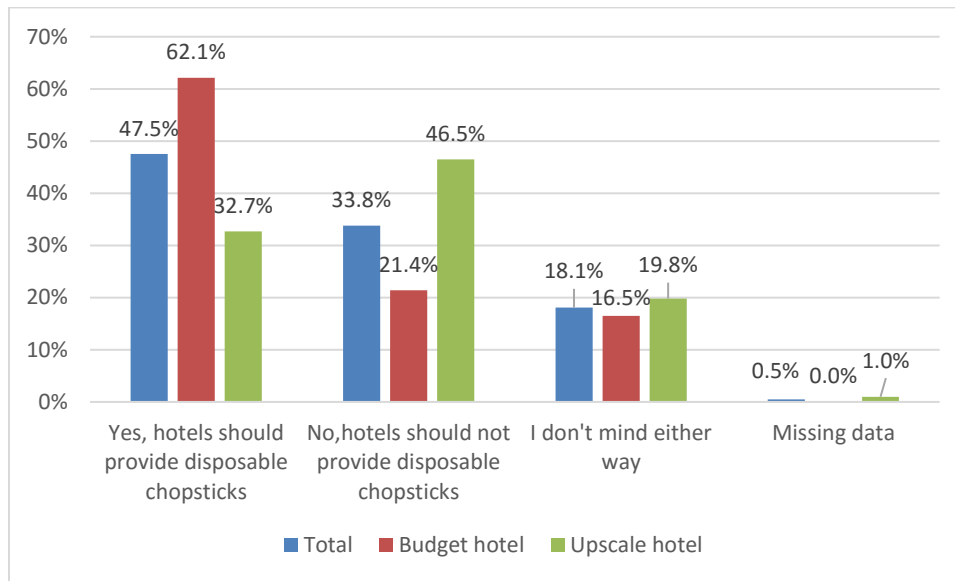
**Figure 4-5 Percentage distribution of customers' expectations of hotels' energy saving and resource management**



## 2) Reducing consumption

The next three questions in the questionnaire were related to disposable products (chopsticks and amenities) and bedding change frequency, which were categorised as 'Reducing consumption'. Figure 4-6 shows the frequency distribution of the first question in this category, which indicates whether or not respondents thought the hotel should provide disposable chopsticks.

**Figure 4-6 Percentage distribution of customers' expectations of hotel disposable chopsticks**



Chopsticks are the most commonly used eating utensils for Chinese people, yet few studies have explored customers' expectations of disposable chopstick usage. Most disposable chopsticks are made of wood, and nearly five million cubic meters of wood are consumed every year in order to produce disposable chopsticks (Baidu Encyclopedia, n.d.). It is further concerning to note that an unnecessarily large number of trees have been cut down because the efficiency of wood resource usage was low (Baidu Encyclopedia, n.d.). However, as seen in Figure 4-6, almost half the respondents (47.8%) viewed disposable chopsticks as necessary, 33.8% thought they were not necessary, and the remainder were neutral. The preference for disposable chopsticks in China very likely relates to concerns about the safety of reusable chopsticks, because it was reported that a large proportion of reusable chopsticks in restaurants were not sterilised, and had spread germs (Are sterilized chopsticks really non-toxic?, 2016). Also, many customers find that disposable chopsticks are more convenient, especially for takeaway foods (Baidu Encyclopedia, n.d.).

The variance between participants' responses at the two hotels was significant. Approximately two-thirds of the respondents (62.1%) at the budget hotel expected the hotel to provide disposable chopsticks; in contrast, only 32.7% of the upscale hotel

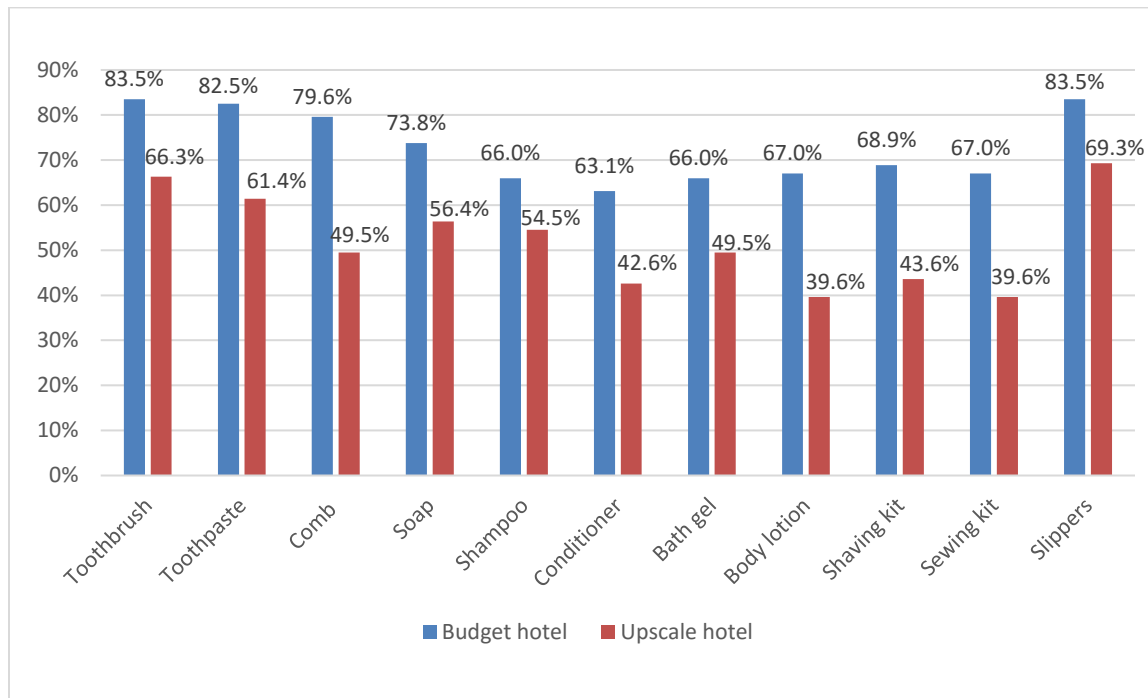


respondents this. Almost half (46.5%) of the upscale hotel respondents thought the hotel should not provide disposable chopsticks. Upscale hotel customers in this study showed a greater environmental awareness in terms of the harmful effects of using disposable chopsticks.

The next question in this category was ‘Should the hotel provide disposable amenities’. The results showed that 52% of the respondents answered ‘Yes’ and 12.7% of the population claimed that ‘No, they should provide non-disposable amenities’. There were 34.3% of respondents who thought it depended on the type of amenities. That is to say, the majority of respondents still expected at least some kind of disposable products to be available. This result is contradictory to that of Millar and Baloglu’s study in the USA (2011), which found that the customers were supportive of hotels’ non-disposable products. According to Han, Hsu, and Sheu (2010) and Kalafatis et al. (1999), people tend to reduce the use of disposable products when they realise the seriousness of environmental issues. Thus, the reason for the contradiction in the findings might be related to consumers’ different environmental awareness in the USA and China. A case study in Heibei Province, China (Shen & Zheng, 2009) found that consumers lacked environmental awareness, believed that amenities such as toothbrushes and toothpaste are inconvenient to carry, and they also did not support the use of refilled products (e.g. refilled shampoo). The result in this study confirmed Manaktola and Jauhari’s finding (2007) that some customers are not prepared to sacrifice convenience for environmental considerations.

The results of frequency distribution analysis of eleven amenity items listed in the questionnaire are presented in Figure 4-7. If respondents answered ‘Yes, disposable products are convenient’, they were viewed to expect all of the eleven amenity items; if they answered ‘No, they should provide non-disposable amenities’, they were treated as selecting none of those eleven items; if they ticked ‘It depends’, results were recorded according to the boxes they ticked for individual items.

**Figure 4-7 Percentage distribution of customers who expect hotel disposable amenities to be available**



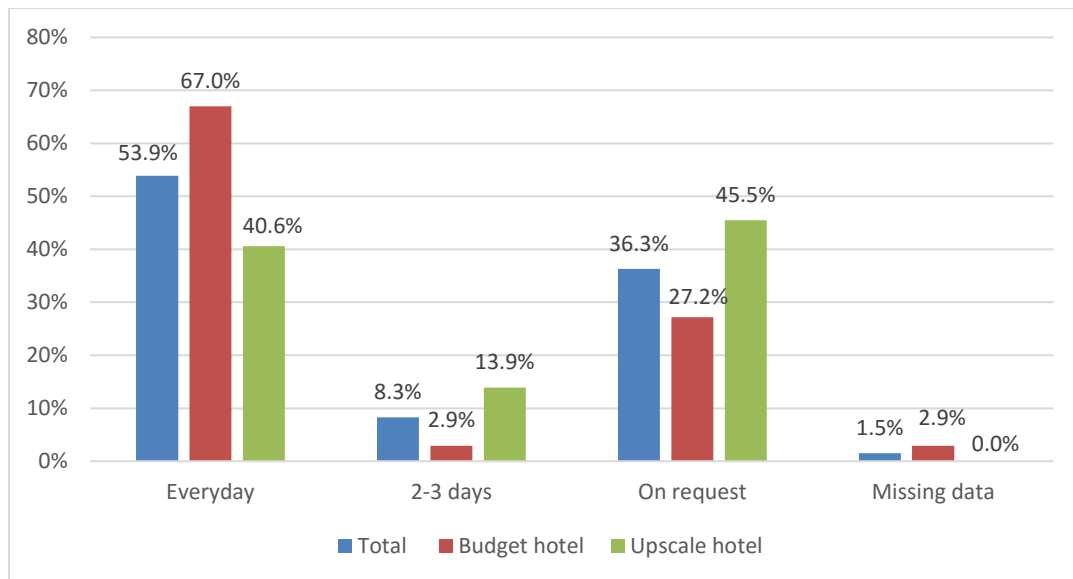
As presented in Figure 4-7, the percentage of budget hotel respondents who expected disposable amenities was significantly higher than upscale hotel respondents for all of the eleven items. However, the research found that in both two hotels, the top three disposable items customers expected were slippers, toothbrushes and toothpaste. Thus, these three items are recommended for hotels in Suzhou to provide.

Customers of both hotels had relatively low expectations towards the availability of disposable sewing kits, body lotion and conditioner. Seven respondents also expected other disposable amenities apart from the eleven items mentioned in the questionnaire, including disposable cups and disposable shoe covers. The expectations of shoe covers might be related to the local custom in which households provide shoe covers for guests to avoid the inconvenience of removing dirty shoes to keep the floor clean.

Another important question about bedding change frequency was also categorised as ‘reduce consumption’. According to the Green Hotel Standard (LB/T007-2006), to change bedding frequently requires high quantities of detergent which will have a negative environmental influence. Currently, the industrial requirement for hotel bedding

is ‘to change in a timely manner’ (China Hotel Association, 2008). As shown in Figure 4-8, of all respondents, around half (53.9%) expected hotels to change bedding every day. There were 36.3% of the respondents who thought the hotel did not need to change bedding unless customers requested it. In contrast with the budget hotel customer responses, it is notable that upscale hotel respondents expected a relatively lower bedding change frequency, which was consistent with the previous results that upscale customers tend to expect practices with a better environmental outcome.

**Figure 4-8 Percentage distribution of customers’ expectations of bedding change frequency**



### 3) *Green products and services*

The third category in the third section of the questionnaire covers green products and services. It refers to questions related to ‘organic food’, being ‘smoke-free’, and ‘green plants and decorations’.

Previous studies have shown inconsistent results regarding customers’ attitudes to green products and services and their willingness to pay a premium for these. For example, research conducted in Kenya, Virginia USA, Canada, and southern Spain, all indicated that customers had a high demand for green goods and services, and were willing to pay more for them (Kang et al., 2012; Laroche, Bergeron, & Barbaro-Forleo, 2001; Masau & Prideaux, 2003; Sánchez-Ollero et al., 2014). In contrast, a study conducted in California,

USA revealed that very few customers were willing to pay a premium regardless if they were business travellers or leisure travellers (Millar & Baloglu, 2011). Another study in India reported a similar result that although customers were expecting green products and services, only 15% of them were willing to pay more (Manaktola & Jauhari, 2007). Figure 4-9 reveals that, in this study, over two-thirds of the respondents (70.1%) expected organic food to be provided in the hotels they were staying at but most of those respondents were unwilling to pay extra for it. For the remaining respondents, 12.4% thought conventional food was sufficient and 17.4% were not concerned about this issue.

**Figure 4-9 Percentage distribution of customers' expectations of organic food availability in hotels**

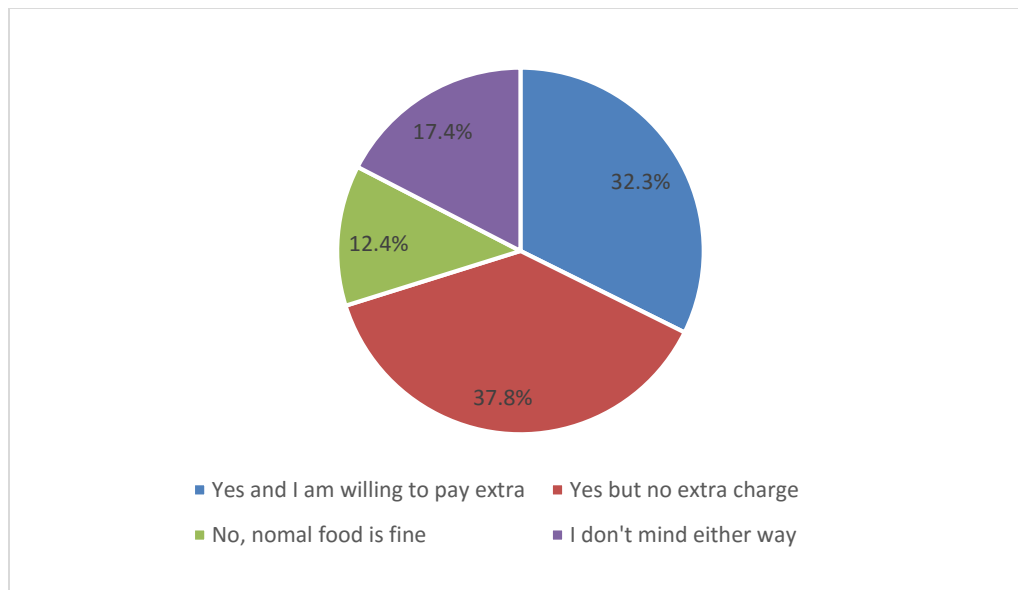
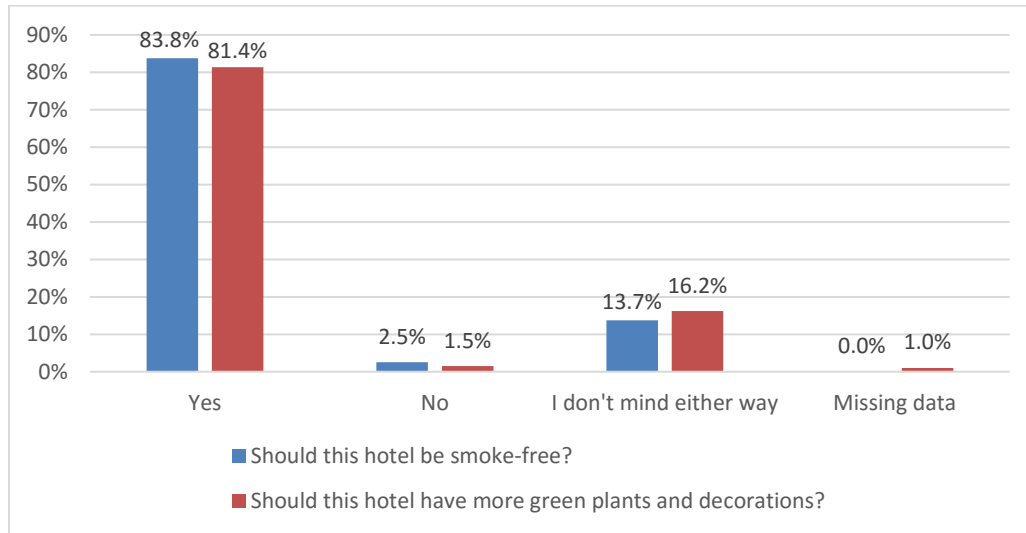


Figure 4-10 presents respondents' expectations of green services such as being smoke-free, having green plants, and using decorations in general. It can be seen that most of the

respondents expected the hotels to be smoke-free, and they also wanted to see more green plants and decorations in the hotels (83.8% and 81.4%, respectively).

**Figure 4-10 Percentage distribution of customers' expectations of green services**



Customers' responses in this category were similar to those in Manaktola and Jauhari's (2007) research in India that customers had a high expectation towards green products and services but the percentage of people who were willing to pay extra was relatively low. According to Welford (2005), North Americans have a higher level of environmental concern than those in Asian countries; and customers' willingness to pay a premium has a positive relationship with their degree of environmental concern (Kang et al., 2012). Thus, the location factor and level of economic development may partially explain the similarity of the results between this study and Manaktola and Jauhari's study since China and India are both developing countries and located in Asia. However, each area has its own stage of economic development and social culture, which may explain the contradictory results in Virginia and California although they are both located in the USA (Kuminoff et al., 2010; Millar & Baloglu, 2011).

For the three questions in this 'green products and services' category, the differences between the two hotels were not obvious, which was inconsistent with the finding of Kang et al. (2012) who found that there was a significantly stronger environmental concern and willingness to pay premiums among upscale and mid-scale hotel customers than economy hotel customers. The difference between the two studies can be explained

because in relatively underdeveloped areas the social status gap is not as significant as in developed areas, thus the gap between different people's awareness and attitudes is also not as significant.

#### *4) Green training for employees*

The last close-ended question in the questionnaire asked customers whether the hotel should provide training for staff related to energy saving and pollution prevention. The research found that 90.7% of the overall respondents said 'yes' and only 0.5% answered 'no'. The remaining 8.8% expressed 'I don't mind either way'. Respondents from both hotels provided similar responses to this question. The results may imply that customers tend to think that hotels' current green management needs improved. Apart from good facilities, customers and employees from all levels should work together to contribute to green hotels development. This question refers to the 'Socio-economic and environmental benefits' dimension in the Green Hotel Standard (LB/T007-2006) stated in Chapter two (Table 2-3), because the training for employees will stimulate hotels' green initiative development and generate greater social and economic benefits.

#### *5) Additional statements*

There were three open-ended questions at the end of the questionnaire. The first question asked participants to list examples of what good green practices the hotels had adopted. Respondents' statements and the frequency of each statement from the two hotels are presented in Table 4-3.

**Table 4-3 Examples of two hotels' good green practices**

<b>Practices</b> <b>N = 70</b>	<b>Agree frequency count</b>	
	<b>Budget hotel</b>	<b>Upscale hotel</b>
Use energy-saving lights	12	13
Automatically turn power off after customers leave rooms	10	4
Ask customers to put towels that need to be replaced separately	5	3
Do not use disposable cutlery or cups/Charge extra for disposable chopsticks	0	8
Have green plants in guest rooms	0	6

Remind customers to take a small amount of food from the buffet	1	4
Have smoke-free signs in the lobby	0	5
Separate recycling/rubbish bins in the lobby	0	3

The second open-ended question asked participants about the ‘non-green’ practices the hotels use that urgently need to be changed. Their statements are presented in Table 4-4.

**Table 4-4 Examples of two hotels’ ‘non-green’ practices**

<b>Practices</b> <b>N=153</b>	<b>Agree frequency count</b>	
	<b>Budget hotel</b>	<b>Upscale hotel</b>
Failed to recycle (although there were specified bins)	7	18
Too much waste caused by disposable amenities	7	17
Failed to be smoke-free in customers’ rooms/ Smoking areas should be designated	6	15
Wasted water (e.g. water leaking from the tap/showerhead; too much water used for flushing the toilet)	4	7
Temperature of air-conditioners/heating was too high in winter and too low in summer	2	5
Lack of green plants in both indoors and outdoors	3	4
Overuse of plastic (e.g. plastic bags, plastic cups)	3	3
Poor-ventilation in the rooms leading to higher energy use (caused by fan usage) and health concerns	3	3
Food wastage (should encourage customers to order proper amount of dishes and take away leftovers)	1	4
Paper wastage (e.g. brochures)	1	3
Excessive/lavish decorations	0	3

When the responses of these two questions are combined, it becomes evident that hotels should devote more time and energy on recycling, and create better indoor environments (e.g. smoke-free; green plants). Currently, Chinese people have a weak awareness of waste classification and many do not know what is recyclable (Garbage classification: Long way to go in China CCTV News, n.d.; Wen et al., 2013). Findings of this study show that customers have started to become aware of the issues and want to make some changes. Therefore, it is recommended for hotels to further explain the process of recycling for customers, for example, pictures and literal explanations can be illustrated on bins to encourage customers’ participation and raise their awareness.

To designate specific smoking areas and provide smoke-free rooms was also advised by many respondents, given that smoking is very prevalent in China; 68% of Chinese men are smokers (Goldhill, n.d.; Leo, 2006). The results in this study indicate that customers have started to pay attention to the harm of smoking and expected hotels to make some good efforts.

As shown in the responses, customers gave a lot of credit to the two hotels for their energy-saving and resource-saving initiatives such as using energy-saving lightbulbs and automatic power-off when the room is vacant, but it was clear that they expected more in terms of higher efficiency and effectiveness of water, paper and power usage. The results indicated that by adopting relevant energy- and resource-saving practices, customers' needs can be met, hotels' images can be improved, and it is very likely that hotels can be more profitable because of the cost-saving and better reputations. This result is consistent with findings in previous studies (Bohdanowicz, 2005; Gustin & Weaver, 1996; Kuminoff et al., 2010; Wolfe & Shanklin, 2001).

The last open-ended question in the questionnaire was designed for participants to express any additional information relevant to green hotels. Responses in this question provided suggestions for future green hotel development.

There were 16 respondents who said that the safety and freshness of food supplied had to be assured, and one of the respondents claimed that '*hotels should have their own vegetable garden*'. There were three other respondents who mentioned their expectations of '*more coarse grain food*' and another one said '*hotels should not serve wild animals or fish*'. Customers' attention on food is likely to be associated with the traditional Chinese proverb 'Bread comes first, hunger breeds discontent', as food and food styles are very important to Chinese people. Also, numerous food safety scandals (Phillips, 2013; Shanghaiist, 2013) have caused panics among the general public. For all hotels, the supply fresh and safe food should therefore be a basic requirement. The respondents' statements provided a guideline for hotels that a healthy and natural diet is sought by many customers.

Apart from food, respondents were also interested in the cleanliness of hotels. Respondents gave suggestions such as '*install air purifier around places with trash bins*,



*and trash bins should be cleaned more often*'; and *'hotels should use real plants as decorations instead of plastic (fake) ones'* (i.e. to improve air cleanliness). One respondent considered that *'carpet should not be used because it is dirty and very hard to clean'*. This may reflect the custom of most Chinese households to have hard floors instead of carpet because they consider carpet inconvenient (hard to clean) and expensive (Chinanews, 2014). These statements revealed customers' expectations of a tidy and fresh physical environment. Thus this study suggests that hotels should clean waste regularly, maintain good ventilation and decorate with more plants in order to have better air quality and also to create a pleasant visual environment.

In addition to the above responses, eight more statements were given by other respondents:

- *Let customers take disposable amenities themselves, so they can only take the amount they need.*
- *Use paper bags instead of plastic bags.*
- *Use recycled paper, and print information on both the front and back page; or use electronic devices to replace paper usage.*
- *Customised service—ask customers whether they want to change bedding frequently when they check-in.*
- *Use detergent that does not contain phosphates and reduce washing frequency.*
- *Use solar hot water heaters instead of electric ones.*
- *Although energy-saving is important, customers' comfort cannot be compromised. There should be hot water for showers anytime when we need it, and the rooms should be warm when customers go in.*
- *There is still a long way to go for hotels to be green. Hotels should not be just a 'face-saving project' or just 'pay lip service', feasible operation standards need to be set up.'*

These views were consistent with other findings in this study in which customers emphasised energy-saving and resource-saving initiatives, which fitted hotels interest that although their current relevant practices are cost-driven and policy-oriented (Graci, 2008; Zhu, 2011), customers' expectations can also be met by implementing these practices.

However, some statements also confirmed past studies that some customers are not prepared to sacrifice convenience (Kasim, 2004; Yunhi Kim & Han, 2010; Manaktola & Jauhari, 2007; Robinot & Giannelloni, 2010). Therefore, hotels need to strike a balance between satisfying customers' needs and being environmentally friendly. Customised services and advanced equipment should be considered. The statement about setting up feasible operation standards showed customers' expectations of hotels' environmentally friendly practices to be 'down to earth'. This could be because it was reported that many organisations in China only conducted superficial and temporary practices to pass inspections from authorities (China Green Times, 2014). The responses in this study revealed that customers expect hotels to follow practical environmental standards, take environmental responsibility and make a real contribution to the environment.

#### ***4.2.4 Influences of demographics on customers' expectations of green hotels***

Although hotels' marketing strategies had a significant effect on customers' expectations, demographic factors are also likely to have an important role in formulating customers' attitudes. As explained in 3.8.2, a correlation analysis was therefore used to test the relationship between demographic factors (i.e. age and purpose of stay) and customers' expectations. The variable 'environmental expectations' was created by adding up recoded answers in the third section of the questionnaire according to the level of environmental concern. In this section, a correlation analysis was conducted by both combining responses to the questions, then separating them by property. However, no significant differences were found between responses from the budget hotel and those from the upscale hotel. The overall results are discussed below:

Spearman's rho (correlation coefficient) was used to find out the possible connection between a customer's age and the level of their environmental expectation. The closer the result was to 0, the less correlation there was between the two variables. The direction of association can be observed by the sign of the result (Lehman, O'Rourke, Hatcher, & Stepanski, 2005). Thus, the result of -0.169 presented in Table 4-5 implies that there was a slight negative correlation between age and customers' environmental expectations which means the older the customers were, the less environmental expectations they had.

According to Babbie, a significance of less than 0.05 is considered reliable (2013). The significance level of 0.035 in this study justified the reliability of the results.

The differences in levels of environmental concern between the age groups in this study may be due to the local educational environment that younger generations tend to receive more schooling about environmental protection. However, this finding was inconsistent with those in previous studies. Wiernik, Ones and Dilchert (2013) claimed that although the relationships between age and environmental concerns were small, generally, older people were more passionate about environmental protection. Chung and Poon (1994), Strong (1998) and Aminrad (2011) found that older people had significantly higher environmental awareness than younger generations, which may be due to the information they received from the media or their richer life experiences. The difference of locations between the current study and previous studies may partially explain the inconsistent results.

**Table 4-5 Cross-tabulation of age and customers' environmental expectations**

Spearman's rho		EnvironConcern2
Age of respondent	Correlation Coefficient	-.169*
	Sig. (2-tailed)	0.035
	N	155

As stated in 3.8.2, the other demographic factor 'purpose of stay' is a nominal variable, thus Phi and Cramer's V was used to examine the influence of customers' purpose of stay on their environmental expectations. The results of 0.371 and 0.214 in Table 4-6 indicated that there were no statistically significant associations between the two (Phi and Cramer's V vary between 0 and 1; the closer to 1, the stronger correlation). The significance of 0.782 indicated that the result was not reliable. That is, there was no evidence to show that there was any relationship between customers' purpose of stay and their environmental expectations. This is consistent with Millar and Baloglu's finding (2011) in the USA that business travellers and leisure travellers tend to show similar preferences towards environmental attributes. However, the sample size in this study was relatively small, which led to the high significance value; thus further explorations are still needed in future studies.

**Table 4-6 Correlations between customers' purpose of stay and environmental expectations**

		Value	Approximate Significance
<b>Nominal by Nominal</b>	<b>Phi</b>	0.371	0.782
	<b>Cramer's V</b>	0.214	0.782
<b>N of Valid Cases</b>		153	

### 4.3 Summary

In this study, holiday respondents accounted for the largest proportion of respondents, and respondents aged 36 to 50 occupied almost half of the sample. Although the majority of respondents did not have green hotel experience, over half of the upscale hotel respondents had some knowledge of green hotels.

In regards to respondents' perceptions of green hotels, the difference between the two case study hotels was not significant. The results showed that using energy and resources efficiently and effectively; and providing a safe and healthy dining and living environment for customers were perceived as things a green hotel should do. In addition, to have green certifications and encourage customers' environmental participation were also recognised as necessary for green hotels by the majority of the respondents. However, the study found that a relatively lower percentage of respondents perceived resource reuse initiatives (e.g. using reusable chopsticks and amenities) as necessary.

Respondents had high expectations of energy-saving and resource management practices. Organic food, being smoke-free, green plants and green decorations, and green training for staff were expected by most of the respondents. However, around half expected disposable chopsticks to be available and most viewed disposable amenities as needed.

Budget hotel respondents had more expectations of disposable products than upscale hotel respondents, and they also tended to expect a relatively lower bedding change frequency, which implied that upscale hotel customers had higher levels of environmental concern. For the other two demographic factors, a slight negative correlation between age and customers' environmental expectations was found: the older the customers were, the

less environmental expectations they had. No relationship was found between customers' purpose of stay and their environmental expectations.

This chapter presented results of the data analysis, and compared the results with those of previous studies. In the next chapter, the results will be summarised to show how they met the study's objectives, and conclusions and implications drawn from the results will be discussed. Limitations of this study and indications for future studies will also be provided.

## **Chapter Five: Conclusion**

### **5.1 Introduction**

Firstly, this chapter will discuss the conclusions in relation to the research objectives. Secondly, implications of the study will provide practical guidance for the stakeholders of green hotels. Finally, the contribution of this study and its limitations will be discussed, as well as directions for future studies.

### **5.2 Research objectives**

This study has been able to fill the gap in the literature exploring customers' attitudes towards hotel environmental practices in a Chinese context. By undertaking research in two Chinese hotels, the study identified customers' perceptions and expectations of green hotels, thus both research objectives have been met. The main conclusions are summarised by themes as follows:

(1) Hotel guests in this study perceived energy-saving and resource-saving practices as something green hotels should do, and they had high expectations for hotels to implement more relevant practices (see sections 4.2.2 and 4.2.3). This finding demonstrated that in a Chinese context, energy and resource saving should receive more attention from hotels in order to improve customers' satisfaction, not simply to reduce operational costs or comply with policy.

(2) Hotel guests in this study thought that green hotels should provide a clean and safe dining and living environment. As presented in Table 4-2, 'Reduce waste and pollution', 'Cultivate an environment with green plants and decorations', 'Be smoke-free' and 'Provide organic food' were perceived by most customers as products and services green hotels should offer. Customers also had clear statements in 5) of section 4.2.3 that they expected hotels to guarantee food safety and hotel cleanliness. These findings do not only contribute to research on customers' perceptions and expectations of green hotels, but also present new perspectives for hospitality management and environmental development in China. In the past, the focus on economic growth enabled Chinese enterprises to thrive and become financially stronger. However, this development at the expense of environment has led to serious pollution, which is threatening people's health. According to Maslow's hierarchy of needs, a person's physical health and safety needs

are basic requirements (Simply Psychology, 2007). As an accommodation provider, it is extremely important for hotels to fulfil customers' basic needs.

(3) Hotel guests in this study had concerns over practices that might lead to inconvenience or discomfort. However it is notable that upscale hotel customers had less concern over this issue than budget hotel customers and upscale customers had higher expectations of environmentalism. This finding is reflected in customers' preferences for disposable products in 2) of section 4.2.3. In general, more than half of the customers still expect disposable products because of their convenience, but upscale hotel customers had higher expectations of the availability of reusable chopsticks and amenities than budget hotel customers. As guests in the upscale hotel were likely to have higher incomes than those in the budget hotel, this result was consistent with Fairbrother's study across many countries (2012) that richer people are more concerned about the environment than poor people. Environmental awareness reflects the pursuing of harmony between people and the natural environment, which refers to the highest level of 'spiritual health' in Maslow's hierarchy of needs (Simply Psychology, 2007) . However, for budget hotel customers in underdeveloped areas, physical needs (e.g. convenience) are still the priority consideration.

(4) Hotel guests in this study had high expectations of hotels providing training to employees on environmental issue and they expected more involvement in green practices. Some hotels labelled as 'green' in China have been greenwashing instead of taking real environmental actions because of a lack of supervision and low environmental awareness (Marquis & Chen, 2013). The finding in this study illustrated that many customers have realised the deceptiveness of greenwashing and expect hotels to adopt practical green initiatives to make a positive difference.

### **5.3 Implications**

#### ***5.3.1 For hoteliers***

##### *(1) Implementing energy-saving and resource-saving practices*

Results highlighted customers' perceptions and strong expectations of energy-saving and resource-saving practices no matter which level of hotel they stay in. This suggests that hotels in China could develop more efficient and effective energy-saving and resource-

saving strategies, set up appropriate plans, and implement relevant practices. As revealed in 4.2.2, some respondents considered energy-saving equipment and green construction materials necessary. Some old equipment such as air-conditioning, may lead to a high energy consumption, thus building and equipment renovation could be considered. Since power and water are the two most important factors of energy and resource usage, it is recommended for hotels to investigate their main usage sources, update strategies accordingly, and install high energy-efficient/water-efficient equipment. Respondents' statements presented in 5) of 4.2.3 also provided some directions for hotel strategies. Hotels could cater to customers' needs and at the same time save operational costs by adopting these practices.

The current rubbish disposal system in the research area failed to make full use of recyclable materials, which caused a great deal of resource waste. This study suggests hotels conduct a more sophisticated rubbish classification system, such as categorising rubbish into kitchen waste, household waste and recyclables, and dispose of each separately. Hotels could provide thorough explanations of the rubbish disposal process for employees and customers through training and brochures in order to improve their environmental awareness and participation.

*(2) Adopting advanced technological equipment and utilising Internet technology*

It was revealed that some customers have concerns about the inconvenience caused by some environmental initiatives. In order to strike a balance between maintaining the standard of customers' experiences and making hotels more 'green', advanced technological equipment could be adopted. For example, hotels could install frequency conversion control systems to supply constant water pressure (Shen & Zheng, 2009); frequency-converter air-conditioning to enhance power efficiency and keep rooms at a proper temperature; thermal insulation material to avoid unnecessary energy waste; and setting default room temperatures at an energy-efficient level but giving customers the freedom to make adjustments themselves. Hotels could also implement advanced technologies and make full use of renewable energy such as solar and wind power.

Many customers now obtain hotel information on the Internet, thus this can be an avenue for hotels to promote their environmental initiatives. At the same time, the Internet is a



more cost-efficient and less time-consuming way for hotels to communicate with customers compared to traditional paper methods (Van Hoof & Combrink, 1998), and the reduced use of paper improves the green image of hotels. It is suggested that hotels in China carry out environmentally friendly promotion programmes through social media tools such as QQ, sina-microblog, etc., in order to attract more attention and have better communication with customers about the knowledge and benefits of green practices.

### *(3) Training for employees*

Hotel guests in this study expected hotels to conduct more thorough training for employees on environmentally friendly practices. Employees play an important role in hotel operation and communication with customers. It is important for hotels to provide training for employees to improve their consciousness of environmentally friendly initiatives and skills in using related equipment. Hotel managers and staff could adhere to the Green Hotel Standards (Table 2-2), and make every effort to put ‘Reduction’, ‘Reuse’, ‘Recycle’ and ‘Non-polluting/Renewable’ into practice.

A green hotel culture can be cultivated only when employees support environmentally friendly initiatives. In order to achieve this green education from the management level could be conducted, and hotels could also encourage employees’ involvement and listen to their feedback. A corresponding reward and incentive system could be created when the employees make good efforts and provide suggestions on green management, so that employees can be encouraged to devote their passion into green practices.

### *(4) Communication with customers*

Although guests in this study were generally unfamiliar with green hotels (see 4.2.1), they nevertheless had high expectations of environmentally friendly initiatives. Thus, efficient and effective communications are important for hotels to improve their attractiveness.

Hotels could launch campaigns that allow customers to fully understand how green practices would benefit them in order to arouse their interest. Hotels can provide more options for customers, and provide personalised products and services. For example, hotels can encourage customers to use reusable products and offer a discount in return.

For customers who stay longer than one day, hotels could change bedding only on request rather than every day.

The results of this study showed that an important reason for people to choose disposable products was their concern of safety and cleanliness of the items. Thus, effective information exchange among hotels and customers could help in this regard. Hotels could provide guarantees about their hygiene and safety of the living environment. The communication between hotels and customers could be 'simple and to the point' (Kim & Jiang, 2015, p. 327).

Hotels could also provide multi-communication channels so that customers' feedback can be heard. The study revealed that customers expected more involvement of green practices and they expect hotels' practices to be practical. Thus, hotels could encourage customers to give suggestions for improved practices, which would also help evaluate customers' experiences. Rewards could be offered to customers who make suggestions, which will also help hotels improve customer satisfaction.

### ***5.3.2 For the government***

The findings of customers' high expectations of environmentally friendly initiatives and the literature on hotels' low environmental commitment (see Graci, 2008; Zhu, 2011) indicates that there is still a long way to go for Chinese green hotel development. Thus, this study recommends that government and environmental organisations conduct public education in order to increase the general knowledge and awareness of environmentally friendly practices. Specialised conferences and seminars could be held regularly for senior hotel staff to share experiences and exchange information. The government could put into place more practical regulations and policies to encourage hotels to use upgraded technologies and implement green practices.

However, the use of new energy-saving equipment and technologies may lead to high costs, and some hotels maybe unwilling to pay. Thus, the government could develop policies to pass on benefits to hotels who are willing to make environmental efforts. For example, the government can provide a better loan policy or tax reduction for those enterprises. Power and water use by businesses could be charged based on usage, so hotels would be able to link environmental initiatives to operational costs and improve

their competitiveness. For hotels who adopted sophisticated environmentally friendly systems, the government could also issue certificates or set them as the ‘benchmark’ to encourage other hotels to follow.

In China, government policies have a significant direct influence on business development (Graci, 2008; Gu et al., 2013, 2009; Zhu, 2011). Therefore, it is very crucial for the government to take environmental protection seriously; invest in and support green hotel construction and development; and avoid corruption and bureaucracy during the policy implementation process.

## **5.4 Contributions and limitations of the study**

### ***5.4.1 Contributions to the literature***

This study aimed to explore customers’ perceptions and expectations of green hotels in China. The most significant contribution of this study is that the results provide guidelines for hotels’ environmentally friendly development from the viewpoint of customers instead of relying on hotel managers’ decisions. Extant literature was largely focused on the influence of green initiatives on hotels’ operational costs (Bohdanowicz, 2005; Gustin & Weaver, 1996; Kuminoff et al., 2010; Wolfe & Shanklin, 2001), and customers’ acceptance and willingness to pay for hotels’ green practices (Gustin & Weaver, 1996; Manaktola & Jauhari, 2007; Masau & Prideaux, 2003; Sweeney & Soutar, 2001). However, this study revealed customers’ expectations, and that by making changes, hotels can be greener and at the same time enhance customer satisfaction.

The other important contribution to this study is that it adds to the knowledge of green hotel development in underdeveloped areas in China. Past studies have mostly been conducted in developed countries, or foreign-owned joint-ventures or international hotels in developed parts of China (Chen & Chen, 2012; Gu et al., 2013; Zhu, 2011). This study has showed its uniqueness in regards to the research location and the findings reflected local economic and social backgrounds. For example, the results showed hotel guests’ weak knowledge but high expectations of recycling, with over half the respondents still expecting disposable chopsticks and disposable amenities. In particular, respondents in this study highlighted the importance of food and safety of the living environment. The respondents included sanitary and safety levels into their perceptions and expectations of

green hotels, which was notably different from past studies in which reuse and reduce consumption were the most commonly mentioned by customers (Kang et al., 2012; Kuminoff et al., 2010; Zhu, 2011).

In general, this study contributes to the current literature with respect to customers' viewpoints of green hotels in a Chinese underdeveloped area context. Future studies can build on these findings and further explore the nature of customers' attitudes in different contexts.

#### ***5.4.2 Limitations of the study***

Although this study contributed to the existing knowledge of green hotels, several limitations can be identified. Firstly, the study adopted non-probability sampling techniques. Given the large population in Chinese underdeveloped areas, the valid sample size of 204 in this study for two hotels may not represent the population very well. The generalisability of the results is therefore confined.

Secondly, the study was conducted from December 2015 to January 2016, which was winter in China. This was off-peak hotel season so responses may have been affected by seasonal factors. For example, the prevalence of smog in China during the fieldwork period may have aroused people's attention on environmental protection, leading to respondents' high expectations of hotels' environmentally friendly initiatives, especially their focus on the safety and cleanliness of living environment. The findings would be more reliable if the respondents could be tracked for longer time periods or the research could be conducted in other seasons.

Thirdly, the development of the questionnaire could be improved. In this study, the questionnaire was four pages long and some questions in Section Three were found to be similar to those in Section Two, which may have led to some impatience and confusion. Some of the responses were difficult to recognise and there were many questions left unanswered.

Additionally, the findings were based on participants' questionnaire responses rather than reality, so there could be some self-report bias (Kim, Murrmann, & Lee, 2009, p. 618), where participants might have just ticked the 'right' box instead of the 'real' one. It is

possible that some respondents may have had little environmental concern in daily life yet still ticked all the 'yes' boxes on the questionnaire and 'expected' hotels to improve their practices.

Lastly, the results were limited to customers' expectations. Hotel managers' reactions and the feasibility of customers' expectations (e.g. financial foundation; governmental policy support) were not included in this study, which limited the application of the findings but also provided more directions for future studies.

### **5.5 Directions for future studies**

This research shed some light on customers' perceptions and expectations towards environmentally friendly issues within the Chinese hospitality sector. Some questions raised by the findings and the limitations of this study suggest that future studies can be carried out in the following directions:

- The study adopted a quantitative survey questionnaire to collect the data and the results were mainly descriptive. It is recommended that future studies utilise a qualitative approach to produce more in-depth findings. For example, interviews with customers might enable the researcher to find out the reasons behind their responses (e.g. their reliance on disposable chopsticks and some disposable amenities). In-depth interviews with hotel managers are also recommended in order to gauge their willingness to change practices based on customer feedback. The implementation of hotels' environmentally friendly practices involves a lot of money and resources, but customers' acceptable price range is still unclear. It is important for future studies to investigate the financial costs and benefits for implementing green practices, and to identify customers' attitudes towards the corresponding price changes, so that the hotels would be able to provide more accurate and mutual-beneficial green products and services.
- The results of this study showed only a slight association between age and customers' environmental concern; and no relationship was found between customers' purpose of stay and their environmental concern. In addition, the response difference between the two case studies was not very significant in general. These results were inconsistent with several previous studies which

indicated that some demographic factors (e.g. gender, age, hotel levels) have a strong influence on people's environmental concern (Aminrad, 2011; Chung & Poon, 1994; Kang et al., 2012). Thus, further explorations are needed to investigate the influence of demographics.

- Although the study found that customers have shown high expectations of hotels' environmental practices in the research area, it is not clear as to what extent these expectations will affect actual decision-making. Therefore, it is recommended for future researchers to explore the influence of a hotel's green image on customers' actual purchasing behaviour.

## **5.6 Summary**

This chapter highlighted practical implications for hoteliers and the government based on the findings of this study. It covered contributions and limitations of this research, and also provided indications for future studies in this field. In general, this research has examined Chinese customers' perceptions and expectations of green hotels, which provide guidance for hotels' environmentally friendly strategies and this study will make a contribution to the environment. As outlined in the introduction, this study contributes new knowledge to the literature and provides directions for sustainable development in the tourism and hospitality industries.

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## Appendices

### Appendix A---English Version Questionnaire



## QUESTIONNAIRE ABOUT GREEN HOTELS

### Information for Participants

Hello, I am Yimeng Huang, a Master degree student currently studying at Auckland University of Technology in New Zealand. The purpose of my research is to identify Chinese customers' perceptions and expectations of green (environmentally friendly) hotels. Your feedback may make a contribution to saving the environment. This study is expected to result in a dissertation, conference paper, and journal article.

Your participation in the study will be voluntary and anonymous. I cannot know who you are. You have the right to decide whether to participate or not and you can decide what information to provide.

Your contact details will not be needed. We would appreciate it if you could complete the questionnaire as accurately as possible. It will take you ten to fifteen minutes to answer the questions. By taking the survey you are giving consent to be part of this research.

If you are over 20 years and decide to participate, please leave your completed questionnaire at the hotel reception when you check out. A box is provided at the reception for this purpose. Please do not leave it in the room.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEK, Kate O'Connor, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), +64 9 921 9999 ext 6038.

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Approved by the Auckland University of Technology Ethics Committee on 01/12/2015, AUTEK Reference number 15/425.

## QUESTIONNAIRE

### Section One

The first three questions are about your personal background and experience.

1. The purpose of your stay

☐ Business   ☐ Holiday   ☐ Visiting friends or family   ☐ Other\_\_\_\_\_

2. Your age

☐ 20-35   ☐ 36-50   ☐ Over 50

3. Have you heard of a 'green hotel' (environmentally friendly hotel)?

☐ Never   ☐ Heard about it but never stayed   ☐ Heard about it and have stayed

### Section Two

The next two questions are about your definition of green hotels.

4. What do you think a green hotel should have or do? Please tick the correct column.

	Necessary	Not necessary
1. Use energy-saving equipment (e.g. energy-saving lights)		
2. Sort waste		
3. Recycle water		
4. Reduce waste and pollution		
5. Use green construction materials		
6. Provide reusable chopsticks, not disposable ones		
7. Provide reusable amenities, not disposable ones		
8. Not change bedding or towels daily		
9. Provide organic food		
10. Be smoke-free		
11. Cultivate an environment with green plants and decorations		
12. Have green certification granted by the government or green organizations		

5. Is there anything else that you think a "green hotel" should have or do?

---

### Section Three

The following questions relate to your expectations about the hotel that you are staying in.

6. Should the hotel use energy-saving equipment (e.g. energy-saving lights)?



☐ Yes                      ☐ No                      ☐ I don't mind either way

7. Should the hotel adopt waste sorting? (e.g. recycling bins in guests' rooms and hotel lobby)

☐ Yes                      ☐ No                      ☐ I don't mind either way

8. Should the hotel adopt water recycling? (e.g. reuse of kitchen, bath and laundry water)

☐ Yes                      ☐ No                      ☐ I don't mind either way

9. Should the hotel provide disposable chopsticks?

☐ Yes                      ☐ No                      ☐ I don't mind either way

10. Should the hotel provide disposable amenities? (e.g. toothbrush, toothpaste, comb, soap, shampoo etc.)?

☐ Yes, disposable products are convenient

☐ No, they should provide non-disposable amenities

☐ It depends. They should provide only the following disposable amenities (please tick the ones that apply):

☐ Toothbrush    ☐ Toothpaste    ☐ Comb    ☐ Soap    ☐ Shampoo    ☐ Conditioner

☐ Bath gel    ☐ Body lotion    ☐ Shaving kit    ☐ Sewing kit    ☐ Slippers

☐ Other \_\_\_\_\_

11. How often should this hotel change the bedding?

☐ Every day    ☐ 2-3days    ☐ On request

12. Should this hotel provide organic food?

☐ Yes and I am willing to pay extra

☐ Yes, but at the same cost as other food, no more extra charge

☐ No, normal food is fine

☐ I don't mind either way

13. Should this hotel be smoke free?

☐ Yes                      ☐ No                      ☐ I don't mind either way

14. Should this hotel have more green plants and decorations?

☐ Yes                      ☐ No                      ☐ I don't mind either way

15. Should this hotel provide training for staff related to energy saving and pollution prevention?

☐ Yes                      ☐ No                      ☐ I don't mind either way

16. Do you think this hotel has some good green practices? If so, please provide some examples.

---

17. In this hotel, is there anything that urgently needs to change to make this hotel more 'green'?

---

18. Is there anything else you want to say about green hotels?

---

Thank you for your time and participation!

## Appendix B---Chinese Version Questionnaire



# 绿色酒店调查问卷

## 给参与者的信

您好，我是黄一萌，一名新西兰奥克兰理工大学在读研究生。我此项调查的目的是了解中国酒店顾客对绿色（环境友好型）酒店的看法和期望。您的反馈将对环境保护做出积极的贡献。本研究将成为一篇学位论文，会议论文及期刊论文。

您的参与将是自愿且匿名的。您有权选择是否参与以及选择提供的信息。

您并不需要提供个人联系方式。如果您等尽可能准确地回答这份问卷，我们将充满感激。此问卷将耗费您约 10 到 15 分钟，回答问卷中的问题将表明您同意参与此项调查。

如果您年满 20 岁并决定参与此项研究，请在退房时将完成后的问卷投入酒店前台专门设置的反馈箱内。请不要将问卷留在房间里。

如果您对调查的开展有任何疑问，请联系 AUTEK 行政秘书 Kate O' Connor，邮箱地址 [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz)，联系电话 921 9999 ext 6038.

如果您想了解更多信息，可以联系以下项目研究者：

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此研究已得到 AUTEK 的批准。批准日期：2015 年 12 月 1 日 批准序列号：15/425

## 问卷

开始的三个问题是关于您个人的信息及经历的。请任选其一。

1. 此次入住的目的

☐ 商旅      ☐ 度假      ☐ 探亲访友      ☐ 其他

2. 您的年龄

☐ 20-35      ☐ 35-50      ☐ 50 岁以上

3. 您听说过绿色酒店吗（环境友好型酒店）？

☐ 没听说过      ☐ 听说过，但是没有住过      ☐ 听说过且曾经住过

接下来的两个问题是关于您对于绿色酒店的定义的看法。

4. 您认为绿色酒店应该包含以下哪些？请在恰当的选项中打钩。

	必要	不必要
1. 使用节能设备（如节能灯）		
2. 垃圾分类		
3. 水循环利用		
4. 减少浪费和污染		
5. 使用绿色建筑材料		
6. 使用非一次性筷子		
7. 使用非一次性卫生用品		
8. 不每日更换床上用品及毛巾		
9. 提供有机食品		
10. 禁烟		
11. 使用绿色的植物及装饰来营造绿色的氛围		
12. 获得由政府或环保组织授予的“绿色”证书		

5. 除了上文所提到的，还有什么您认为“绿色酒店”应该具备或者应该做的？

---

接下来的问题将涉及到您对于现在所入住酒店的期望。请任选其一。

6. 您认为现在入住的酒店应该使用节能设备吗（如节能灯）？

☐ 应该      ☐ 不应该      ☐ 无所谓

7. 您认为现在入住的酒店应该实施垃圾分类吗（如在酒店大堂及房间内设置可回收垃圾箱）？

☐应该                      ☐不应该                      ☐无所谓

8. 您认为现在入住的酒店应该实施水循环利用吗（如厨房，淋浴，洗衣房水资源再利用）？

☐应该                      ☐不应该                      ☐无所谓

9. 您认为现在入住的酒店应该提供一次性筷子吗？

☐应该                      ☐不应该                      ☐无所谓

10. 您认为现在入住的酒店应该提供一次性卫生用品吗（如牙刷，牙膏，肥皂，洗发水等）？

☐应该，一次性卫生用品很方便

☐不应该，酒店应提供非一次性卫生用品

☐看情况，酒店应该提供以下一次性产品：

☐牙刷   ☐牙膏   ☐梳子   ☐肥皂   ☐洗发水   ☐护发素   ☐沐浴露   ☐润肤霜

☐剃须套装   ☐针线包   ☐拖鞋   ☐其他\_\_\_\_\_

11. 您认为酒店应该多久更换一次床上用品？

☐每日更换   ☐2-3 天   ☐只需在我提出要求时更换即可

12. 您认为现在入住的应该提供有机食品吗？

☐应该，并且我愿意多付一部分                      ☐应该，但是不能额外收费

☐不需要，普通食品对我足够了                      ☐无所谓

13. 您认为现在入住的酒店应该禁烟吗？

☐应该                      ☐不应该                      ☐无所谓

14. 您认为现在入住的酒店需要更多的绿色植物和装饰吗？

☐应该                      ☐不应该                      ☐无所谓

15. 您认为现在入住的酒店应该对员工实施更多关于节能和减少污染的培训吗？

☐应该                      ☐不应该                      ☐无所谓

16. 您认为现在的酒店有没有正在实施一些好的环保举措？如果有，请给出一些例子。

---

17. 您认为现在酒店有哪些不环保的行为需要马上做出改变？

---

18. 您对于绿色酒店还有什么其他要说的吗？

---

感谢您的参与！

## Appendix C---English Version Participant Information Sheet



### Participant Information Sheet

#### Date Information Sheet Produced:

29/10/2015

#### Project Title

Customers' perceptions and expectations of green hotels in China: A case study

#### An Invitation

My name is Yimeng Huang, I am a postgraduate student from Auckland University of Technology in New Zealand. I invite you to participate in a study of green hotels in China. Your participation in the study will be voluntary and anonymous. There will be no pain or discomfort involved with your participation. You have the right to decide whether to participate or not and you can decide what information to provide.

#### What is the purpose of this research?

The purpose of this questionnaire is to identify Chinese customers' perceptions and expectations towards green (environmentally friendly) hotels. Your feedback may make a contribution to saving the environment. This study is expected to result in a dissertation, conference paper, and journal article.

#### How was I identified and why am I being invited to participate in this research?

Two hotels were selected in Suzhou, Anhui Province. The questionnaires were designed to study hotel customers' attitudes towards green hotels. You are invited for research participation because you are a customer from these two hotels.

#### What will happen in this research?

With the hotel manager's approval, I have placed a questionnaire in your room before you checked-in. You have the right to choose whether to answer the questionnaire or not. If you are over 20 years and decide to participate, you may leave your completed questionnaire at the hotel reception when you check-out. A box will be provided there for this purpose.

#### What are the discomforts and risks?

There are no anticipated discomforts or risks for you.

#### How will these discomforts and risks be alleviated?

There are no anticipated discomforts or risks for you.

**What are the benefits?**

Your feedback may make a contribution to saving the environment. This study is expected to result in a dissertation, conference paper, and journal article.

**What compensation is available for injury or negligence?**

None.

**How will my privacy be protected?**

Your contact details will not be required. The information provided by you is confidential.

**What are the costs of participating in this research?**

It will take you ten to fifteen minutes to answer the questionnaire.

**What opportunity do I have to consider this invitation?**

You can consider the invitation before and during the check-out time.

**How do I agree to participate in this research?**

The completion of the questionnaire indicates your consent.

**Will I receive feedback on the results of this research?**

Yes, if you want to see the final report, please email Dr. Claire Liu to request it. Email: [Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz). When the research is completed, we can email the result to you.

**What do I do if I have concerns about this research?**

Any concerns about the research, please contact Yimeng Huang, [ghs9491@autuni.ac.nz](mailto:ghs9491@autuni.ac.nz), +64211468367.

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr. Claire Liu, [Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz), +64 9 921 9999 ext 6431.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTECH, Kate O'Connor, [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), 921 9999 ext 6038.

**Whom do I contact for further information about this research?*****Researcher Contact Details:***

Yimeng Huang, [ghs9491@autuni.ac.nz](mailto:ghs9491@autuni.ac.nz).

***Project Supervisor Contact Details:***

Dr Claire Liu, [Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz).

Dr Jill Poulston, [jill.poulston@aut.ac.nz](mailto:jill.poulston@aut.ac.nz).

Approved by the Auckland University of Technology Ethics Committee on 01/12/2015, AUTECH Reference number type the 15/425.



## Appendix D---Chinese Version Participant Information Sheet



### 参与信息表

信息表生成日期:

29/10/2015

项目标题

中国酒店顾客对绿色酒店的认知和期待：案例研究

邀请信

我是黄一萌，是一名来自新西兰奥克兰理工大学的在读研究生。我在此邀请您参与此项关于中国绿色酒店的研究。您的参与将是自愿且匿名的。您的此次参与不会带来任何痛苦和不适。您有权选择是否参与以及选择提供的信息。

此项调查的目的是什么？

本问卷的目的是了解中国酒店顾客对绿色（环境友好型）酒店的认知和期待。您的反馈将帮助酒店做出相应改进，并对环境保护做出贡献。本研究可能将成为一篇学位论文，会议论文及期刊论文。

我的身份是如何被识别的？为何我会被邀请参与此项调查？

本调查选取了安徽宿州的两家酒店作为样本。问卷的设计是为了分析酒店顾客对绿色酒店的态度。您被邀请参与此项调查是因为您是该酒店的顾客。

调查中会发生什么？

在得到酒店经理的允许后，我在您入住之前将问卷放入了您的房间里。您有权选择是否回答该问卷。如果您超过 20 岁并决定参与，您可以在退房时将完成后的问卷放入前台专门设置的反馈箱中。

调查会产生任何不适或者危险吗？

本调查将不会对您造成任何程度的不适或危险。

这些不适合危险将如何被缓解？

本调查将不会对您造成任何程度的不适或危险。

我的参与有什么益处吗？

您的反馈将帮助酒店做出相应改进，并对环境保护做出贡献。本研究可能将成为一篇学位论文，会议论文及期刊论文。

**如果有受伤或者误伤，我将得到怎样的补偿？**

不适用于本研究。

**我的隐私将如何被保护？**

本调查不需要您提供个人联系方式。您提供的信息将会是保密的。

**我的参与将会花费什么成本？**

本调查将花费您 10 到 15 分钟的时间来回答问卷中的问题。

**我有何种机会考虑是否参与？**

您可以在退房之前考虑是否参与此项调查。

**我如何表明自己愿意参与调查？**

完成问卷将表明您同意参与调查。

**我会收到调查的结果吗？**

如果您想了解调查结果，请向 Claire Liu 博士发电子邮箱提出申请。Email 地址：[Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz)。当调查完成时，我们将会将调查结果发送给您。

**如果对此项研究有疑问如何处理？**

如果对调查有任何疑问，请联系黄一萌, 邮箱地址 [ghs9491@autuni.ac.nz](mailto:ghs9491@autuni.ac.nz), 联系电话 +64211468367.

如果对调查性质有任何疑问，请联系项目主管 Claire Liu 博士, 邮箱地址 [Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz), 联系电话 +64 9 921 9999 ext 6431.

如果对调查的开展有任何疑问，请联系 AUTEK 行政秘书 Kate O' Connor, 邮箱地址 [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz), 联系电话 921 9999 ext 6038.

**调查者联系方式:**

黄一萌, [ghs9491@autuni.ac.nz](mailto:ghs9491@autuni.ac.nz).

**项目主管联系方式:**

Claire Liu 博士, [Claire.liu@aut.ac.nz](mailto:Claire.liu@aut.ac.nz).

Jill Poulston 博士, [jill.poulston@aut.ac.nz](mailto:jill.poulston@aut.ac.nz).

此研究已得到 AUTEK 的批准。批准日期: 01/12/2015。批准序列号: 15/425

## Appendix E---Ethics Approval Form



1 December 2015

Claire Liu  
Faculty of Culture and Society

Dear Claire

Re Ethics Application: **15/425 Customers' perceptions and expectations of green hotels in China: A case study**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Sub Committee (AUTEC).

Your ethics application has been approved for three years until 1 December 2018.

As part of the ethics approval process, you are required to submit the following to AUTEC:

- A brief annual progress report using form EA2, which is available online through <http://www.aut.ac.nz/researchethics>. When necessary this form may also be used to request an extension of the approval at least one month prior to its expiry on 1 December 2018;
- A brief report on the status of the project using form EA3, which is available online through <http://www.aut.ac.nz/researchethics>. This report is to be submitted either when the approval expires on 1 December 2018 or on completion of the project.

It is a condition of approval that AUTEC is notified of any adverse events or if the research does not commence. AUTEC approval needs to be sought for any alteration to the research, including any alteration of or addition to any documents that are provided to participants. You are responsible for ensuring that research undertaken under this approval occurs within the parameters outlined in the approved application.

AUTEC grants ethical approval only. If you require management approval from an institution or organisation for your research, then you will need to obtain this. If your research is undertaken within a jurisdiction outside New Zealand, you will need to make the arrangements necessary to meet the legal and ethical requirements that apply there.

To enable us to provide you with efficient service, please use the application number and study title in all correspondence with us. If you have any enquiries about this application, or anything else, please do contact us at [ethics@aut.ac.nz](mailto:ethics@aut.ac.nz).

All the very best with your research,

A handwritten signature in black ink, which appears to read 'K O'Connor', is written over a light blue horizontal line.

Kate O'Connor  
Executive Secretary  
**Auckland University of Technology Ethics Committee**

Cc: Yimeng Huang 352948592@qq.com, Jill Poulston

## Appendix F---Recoding Scheme

### Section Three

6. Should the hotel use energy-saving equipment (e.g. energy-saving lights)?

☐ Yes --3                      ☐ No --1                      ☐ I don't mind either way --2

7. Should the hotel adopt waste sorting? (e.g. recycling bins in guests' rooms and hotel lobby)

☐ Yes --3                      ☐ No --1                      ☐ I don't mind either way --2

8. Should the hotel adopt water recycling? (e.g. reuse of kitchen, bath and laundry water)

☐ Yes --3                      ☐ No --1                      ☐ I don't mind either way --2

9. Should the hotel provide disposable chopsticks?

☐ Yes --1                      ☐ No --3                      ☐ I don't mind either way --2

10. Should the hotel provide disposable amenities? (e.g. toothbrush, toothpaste, comb, soap, shampoo etc.)?

☐ Yes, disposable products are convenient --1

☐ No, they should provide non-disposable amenities --3

☐ It depends. They should provide only the following disposable amenities (please tick the ones that apply) --2

11. How often should this hotel change the bedding?

☐ Every day --1                      ☐ 2-3days --2                      ☐ On request --3

12. Should this hotel provide organic food?

☐ Yes and I am willing to pay extra --4

☐ Yes, but at the same cost as other food, no more extra charge --3

☐ No, normal food is fine --1

☐ I don't mind either way --2

13. Should this hotel be smoke free?

☐ Yes --3                      ☐ No --2                      ☐ I don't mind either way --1

14. Should this hotel have more green plants and decorations?

☐ Yes --3

☐ No --2

☐ I don't mind either way --1

15. Should this hotel provide training for staff related to energy saving and pollution prevention?

☐ Yes --3

☐ No --2

☐ I don't mind either way --1