

# Eco-Certification Programs for Hotels in California: Determining Consumer Preferences for Green Hotels

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## **I. Abstract**

This research study aims to evaluate the perception of hotel eco-certification by consumers in order to provide recommendations to the hotel industry as to the tangible and perceived benefits of eco-certification to consumers. Our team developed and administered a survey questionnaire on consumer preferences with respect to green hotel practices. The results of this survey illustrate a general lack of consumer knowledge regarding eco-certification programs, especially in terms of what they are and how they function. Although consumer awareness is low, the interest in eco-certification in the hotel industry is not. The authors of this study recommend that hotels pursue eco-certification in conjunction with increased marketing and educational outreach in order to most effectively reduce operating costs while simultaneously increasing attractiveness to potential customers.

## **II. Introduction**

With a recent increase in environmental awareness among the general public in the last decade, many industries have seen a growing demand for sustainable products and green marketing. In the last few years, “going green” has allegedly been an attractive trait for a business to possess, giving it an additional edge over its competitors. More than two-hundred million visitors come to California each year, causing the hotel industry to play an integral role in tourism and the economic functioning of the state as a whole (Visit California, 2011). Therefore, it is no surprise that the hospitality industry has been interested in joining the eco-certification trend (Nord, 2006).

While current literature says that there are a variety of reasons for a hotel to become eco-certified, this study focuses on how consumers respond to green practices in hotels, and what effects eco-certification have on consumer attitudes toward the hotel. The hotel and hospitality industry is responsible for significant amounts of waste as well as intensive resource consumption (primarily water and energy) each year. Social responsibility suggests that the hospitality sector should be heavily invested in reducing this burden to the environment, yet many hotel managers are wary as to the ways in which customers will react to the implementation of green practices.

Through a survey questionnaire we aimed to assess consumer attitudes toward eco-certification and general green practices within hotels. Our goal was to determine if consumers are open to the idea of eco-certification in hotels and our report our findings to our client.

## **III. Literature Review**

### ***A. Terminology***

Because environmental safety and sustainability is still a relatively new topic, many people are unaware of the terms associated with it. For the purpose of this report, the term “green” means environmentally friendly, that is, doing business in a way that “reduces waste, conserves energy, and generally promotes sustainability and environmental health” (Rahman et al., 2011).

## ***B. Eco-certification Programs***

There are various eco-certification programs in the hotel industry, such as Green Seal, the Sustainable Tourism Eco-Certification Program (STEP), and the Green Lodging Program. Each program has its own criteria for certification: some are self-audited, while others are strictly third-party regulated. Others feature a hybrid model that includes both a self-audit and third-party regulations. Due to the wide variety of certification programs available, it is difficult to assess the key practices that contribute to running a green hotel because there is no definitive regulatory body that governs eco-certification in the United States. In this section we will briefly describe a few of the many eco-certification programs currently in place for the hotel industry.

In the state of California alone, 15,816 hotels are open for business, with only fourteen earning the Green Seal certification (Trip Advisor, 2011). Green Seal is a performance-based program that presents bronze, silver or gold awards corresponding to the level of sustainability achieved by the participant. Each award provides a criteria background, suggestions on how the requirements can be improved upon in the hotel, as well as necessary documentation to prove the sustainability programs actually exist and are in place. Usually, an on-site audit is also performed to ensure that the hotel is complying with the guidelines required for the given level of achievement (Green Seal, 2009).

The Sustainable Tourism Eco-Certification Program (STEP), put forth by Sustainable Travel International (STI), is a combination of the self-assessment and on-site auditor methods, (Hansen, 2007). The STEP program gives a one-star rating to all companies who fulfill the bare minimum requirements through self-completing policies and documentation, which are then assessed by a second party (Chappell, 2011). The next 2-5 stars are given based off of “a predetermined percentage of the available points” after concluding an on-site assessment by a third-party auditor (Chappell, 2011). Another favorable aspect of the STEP program is STI’s status as a nonprofit organization, which increases STEP’s credibility in the market as being an impartial certifier due to its requirement to report its annual spending to the United States Internal Revenue Service.

One of the most popular eco-certification programs in California is the Green Lodging Program, governmentally funded at a state level. The California Green Lodging Program is a performance-based program that is audited by third-party government staff. Perhaps one of the main reasons this program is so widely used is the fact that it has no enrollment fee. However, the Green Lodging Program does not have a re-certification program currently in place. This voluntary program has two levels of certification: leadership level and participation level (entry-level). Hotels are first initiated into the program with a status of “Certification in Progress” and await a third-party audit to determine their total point score. Hotels are assigned points for seven criteria: waste minimization, reuse and recycling, energy efficiency, conservation and management, freshwater resource management, waste management, hazardous resource management, and environmentally and socially sensitive purchasing policies. The entry-level tends to consist of hotels that are in the process of creating environmental programs, have a field survey score of 250-300, meet some of the seven criteria, and are allowed three years to reach the leadership level. Hotels that have achieved the leadership level have written environmental policies in place, comply with all seven of the program’s criteria, and have a minimum field survey score of 300 (Statewide Travel and Meeting Management Program, 2011).

These three eco-certification programs are just a few of many existing certifications for hotels. They each have different criteria for qualification as well as different methods of evaluation. Indeed this disparity extends across the myriad certification programs. Some private party certifications may award a certification upon a pledge to improve sustainability and a fee, while others may have a more rigorous process of self-audit followed by on-site audit and implementation of an environmental action plan. With such a wide variety in program types, it is no surprise that hotels have many options in obtaining a certification. In the following section we will explore the factors that might drive a hotel in obtaining a certification from any number of these programs.

### ***C. Management-side Driving Factors for Eco-Certification***

#### ***1. Reducing Operating Costs***

One of the most important determinants for the eco-certification of hotels is the potential economic benefit for the hoteliers. Several studies indicate adopting green practices can greatly reduce daily operating costs. According to Graci and Doods, financial savings are important for hotel businesses that operate in a highly competitive market. Hotels spend a large amount of money in energy, water, and waste disposal. By switching to sustainable practices, it is estimated that a hotel can reduce its resource consumption by 20-40% without decreasing operational performance (Graci and Doods, 2008). Therefore, it is no surprise that a study on environmental management decisions in certified hotels found that cost reduction played a major role in the decision to eco-certify Spanish hotels (Bonilla Priego et al., 2011).

Although there have been documented instances where energy costs amount to over half of the total operation and maintenance costs, energy costs typically make up 3-6% of the total operation and maintenance costs for a hotel (Bohdanowicz, 2001). Maintaining resource-efficient facilities can be a tremendous source of cost savings for a hotel, with estimated energy savings ranging from 10-25% (Bohdanowicz, 2006). To lower energy costs as well as meet eco-label standards, a hotel can implement simple practices including the improved insulation, passive space conditioning and lighting technologies. Other examples include: reducing the amount of consumer-generated waste through recycling bins in rooms, encouraging reuse of linens and towels, and the implementation of refillable shampoo dispensers (Millar and Baloglu, 2011). An excellent model of this is the Crestwood Corporate Centre Building No. 8 in Richmond, British Columbia, Canada. The building was designed to meet the environmental requirements set by the Advanced Buildings Program and currently operates at less than 50% of the annual energy use of an ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) reference building (Bohdanowicz et al., 2001). These are just a few of many instances of energy saving techniques that were used to help a hotel maintain its eco-label and concurrently reduce operational costs.

#### ***2. Government legislation***

Other than reducing operating costs and meeting customers' expectations, Chan and Wong suggest that government legislation plays an important role in causing the hotels to become eco-certified. Governments in various countries implement laws and subsidies to encourage hotels to become sustainable (Chan and Wong, 2006). The Singaporean government

subsidizes up to 70% of the cost of obtaining the International Organization for Standardization (ISO) 14001 certificate, a management tool that allows an organization to monitor the environmental impact of its products or services, while also being able to continually make modifications to lessen its environmental impact (ISO, 2011). Other governments such as Austria have also incorporated the ISO 14001 into national legislation, which requires the hotel industries to meet national standards in their daily operations (ISO, 2011).

Growing regulatory pressures impose extra motivation for hotels to comply with legislation. Though hotel facilities are not directly regulated, they are affected by regulatory charges such as fees and bans on certain disposal products. For instance, hotels are mandated to implement certain environmental initiatives in California, recycle certain products in Chicago, and reduce waste in Florida (Graci, 2002). These regulatory changes have led to the implementation of permanent waste recycling and reduction programs in hotels. Although governmental regulation is a powerful initiator of environmental policies, some hotels may find meeting these regulatory standards an annoyance, as they must incur extra costs to cover the employment of a group of specialists that formulate new management policies in order to meet eco-certification standards.

### *3. Customer Expectations*

Another reason for hotels to pursue eco-certification is to meet increasing demand from customers. Due to increasing public awareness of environmental issues, more and more customers tend to consider environmentally responsible hotels. According to a report by the International Ecotourism Society, more than 25 million German tourists thought that choosing an environmentally friendly accommodation is important (IES, 2005). Although choosing an eco-certified hotel may cost more, an increasing trend shows that customers are willing to pay more for environmentally friendly products and services (Han et. al., 2009). The International Ecotourism Society reports that surveyed British tourists were willing to pay an additional six to seven pounds (nine to eleven American dollars) for eco-friendly businesses when they travelled. In another survey by the Instituto Nacional de Ecologia of Mexico, two-fifths of the tourists said they would pay an average of US\$30 to US\$50 more for eco-certified lodging (Munoz and Rivera, 2002). With strong support from tourists for green certification initiatives along with a growing market, hotels with eco-certification will definitely play a leading role in the tourism industry in the future (IES, 2005).

Companies may assist customers in making “better informed purchasing decisions” by improving their marketing of eco-certification programs and explaining what they are about (Han et al., 2010). Guests often feel a sense of pride and satisfaction once they are educated and make more informed choices about environmental activities, such as recycling or waste reduction (Enz and Siguaw, 1999). Some hotels even give private tours of the environmental operations around the hotel, which may influence visitors to come back to the hotel in the future and recommend it to their friends, all of which brings more business to the hotel (Han and Kim, 2010).

## ***D. Consumer-side Driving Factors for Eco-Certification***

### *1. Environmentalism*

While numerous factors make eco-certification appealing to hoteliers, it is important to identify what makes eco-certification appealing to consumers. Public awareness is one of the main obstacles to the successful implementation of sustainable practices in hotels. Solutions for increasing awareness could be to supply consumers with the tools necessary to identify the least environmentally-damaging practices, creating a market for green alternatives. Research has demonstrated that corporations who actively explained environmental issues in their hotels successfully encouraged their customers to pay for the services that come with a green hotel (Han et al., 2011). Additionally, evidence for anthropogenic contribution to global climate change has recently been reflected in public opinion. As the public becomes wearier of the potential harm to the environment, consumers will make lifestyle changes mirroring their attitudes (Han et al., 2011). With this shift in mindset, consumer habits and spending preferences have changed to reflect environmental influences. Accordingly, numerous studies have shown that awareness of environmental conditions has changed consumers' purchasing tendencies (Han et al., 2009).

Word-of-mouth recommendations also influence the growth of the eco-hotel industry. In a follow-up study about greenness of lodging customers, Han et al. examined how the environmentally-friendly attitudes of hotel guests influenced their recommendations to other travelers by word-of-mouth (Han et al., 2011). Using a regression analysis, they demonstrated that the perceived importance of environmentally-friendly actions was the best measure of a traveler's desire to stay at a green hotel and spread positive opinions about it (Han et al., 2011). Additionally, the results indicated that female and older customers who were already eco-friendly in their daily lifestyle opted primarily for eco-friendly hotels, were more willing to pay a premium, and had a higher probability of recommending it to others (Han et al., 2011). The fact that consumer environmental attitudes are shifting towards increasing environmental responsibility, suggests that the growth of the market by personal endorsements appears to be favorable.

## *2. Cost*

As with any alternatives, cost cannot be ignored as a significant deciding factor between hotels. There is often a price premium included to cover the upfront costs of implementing environmental management systems or retrofitting current buildings to meet eco-certification standards. In many studies, consumers are often unwilling to pay the premium fares that coincide with eco-certified hotels, unless they have an equal or greater number of amenities or quality measures as competing hotels (Oines and Assenov, 2006). By choosing a certification program that holds sustainability as only one of several other evaluation criteria including business ethics, marketing, and customer satisfaction, eco-certified hotels should hold a competitive advantage over non-certified hotels (Haaland and Aas, 2010). In this manner, eco-certification can be advertised as a certificate of quality in a variety of other fields that may be more appealing to the customer, while still retaining the benefits of environmental management programs for the hotel or resort. Furthermore, the reputation of eco-certified businesses as having better customer service resulting from having better-trained staff can be particularly appealing in the hotel industry where customer service is expected to be exemplary (Melo and Wolf, 2005).

In certain instances, a premium might not even need to be implemented. For instance, the timber industry has observed that individual customers' unwillingness to pay premiums is often superseded by environmental commitments made by major retailers and distributors of timber

(Melo and Wolf, 2005). If this is true for the hotel industry, we can assume that larger chain hotels (especially international) often make environmental commitments without directly charging the customer a ‘premium.’ In other words, the corporation subsidizes the premium in order to maintain its reputation as eco-friendly, and the premium charged to the consumer becomes transparent. Millar and Baloglu offer further evidence by claiming that hotels can justify their use of refillable shampoo dispensers (a cost-saving and sustainability measure) to disapproving guests by providing brand-name shampoo, thereby restoring the customer’s faith in the hotel’s ability to “pamper” its guests (Kirk, 1995).

### ***E. Problems with Hotel Eco-Certification***

Eco-certification is rapidly gaining attention worldwide due to the increased benefits for both the environment and businesses. Yet, eco-certification has a few problems that stop hoteliers from participating. Primarily, the lack of awareness of hotel eco-certification program is the main drawback of hotel eco-certification. Many hoteliers do not have a profound understanding of sustainability and environmental management, so the participation in eco-certification programs remains low. According to an email interview with Guido Bauer, the CEO of Green Globe Certification, many hoteliers of the United States are not familiar with the concept of sustainability, creating an insignificant market in the U.S. that Green Globe chooses not to pursue (Bauer, 2011).

Furthermore, most consumers are unfamiliar with hotel eco-certification programs. The rapid increase in the number of eco-certification programs makes it difficult for consumers to familiarize and discern between programs. Many new eco-labels are also untrustworthy, and the consumers’ ability to recognize authentic programs is diminishing (Chafe, 2005). As an example, a majority of German tourists are familiar with product labels, but only 3%-19% can recognize German tourism eco-labels (Chafe, 2005). A similar trend can be seen in Australia and Costa Rica (Chafe, 2005). These examples demonstrate that if consumers are not aware of eco-labels and environmental issues, they may not be drawn to an eco-certified hotel. With low public awareness levels, hotels feel reduced external pressure to put in the effort to fully commit to eco-certification (Chafe, 2005).

The second problem is the high capital investment associated with implementation. According to Chan, the main reason that hotels choose not to undergo eco-certification is the large overhead cost (Chan, 2008). Freeman indicates that the cost of an ISO 14001 eco-certification (see Section II.C.3) is from US\$10,000 to US\$128,000 and an additional US\$5,000 to US\$10,000 per year to maintain the certification (Freeman, 1997). Hotels also have to expend resources in order to adopt environmental management practices, such as upgrading to energy-efficient appliances and equipment or purchasing eco-friendly but more-expensive cleaning products. Although being eco-certified can reduce internal costs of businesses, the price of certification might offset the financial benefits, as the payback period may be very long, especially for smaller businesses (Fiorino, 2006). Fundamentally, the initial costs associated with applying sustainable practices in order to obtain and maintain an eco-certification can be a financial burden for hotels.

Uncertain financial benefit is another problem. A study found that Costa Rican hotels that did participate in the Certification for Sustainable Tourism passed the cost to their customers in the form of elevated room prices (Chafe, 2005). Higher room rates may increase a hotel’s revenue per customer, but it may lead to a decrease the volume of customers. Since a majority of



customers are unwilling to pay more for eco-hotels, higher room rates might drive customers to cheaper hotels that are not eco-certified. The International Ecotourism Society (IES) indicates that some Australian hotels complained that participating in green certification did not bring the expected market impacts (IES, 2005). These hotels may have unrealistically high expectations, but any negative attitudes regarding eco-certification programs may prevent continued participation from hotels.

Lastly, some green certifications are simply not as credible as others. For example, certain eco-certification programs do not have third-party audits, which are crucial because hotels may not provide honest measurements of energy use, or operational procedures. These programs, like Green Key Eco-Rating Program, and Eco Crown Hospitality's, provide awards to hotels based only off of self-assessment questionnaires without any third-party verification. In addition, not all the eco-programs inspect the awarded hotels regularly, if at all. This lack of due diligence can lead to a decline in the hotel's environmental performance over time, which renders the eco-certification meaningless (Fiorino, 2006).

### *F. Summary of Literature*

While numerous studies have shown that consumers prefer green alternatives, other reports have found conflicting conclusions. By conducting our own survey of hotel customers, we hoped to shed more light on consumer attitudes toward green hotel practices in order to make recommendations to hotels interested in seeking eco-certification. It is apparent that as environmental issues become better known, it will be more common for hotel customers to take green practices into account when selecting a hotel. Hotels may then be motivated to maintain their competitiveness and reputation within the industry by incorporating sustainable practices into their business. These changes not only increase the profits of hotels by attracting more eco-conscious customer groups, but they also reduce operating costs. The authors of this study hope to identify consumer responses to green practices in hotels as well as their knowledge and attitudes with respect to various eco-certification labels for the hotel and hospitality industry.

## **IV. Methodology**

### *A. Literature Review*

Our research methodology initially required us to gather data from various literatures with respect to eco-certification in the hotel industry. This preliminary literature review helped our team broaden our understanding of the field and help us find any trends both nationally and internationally. This research shed light on our initial proposed research questions:

#### **a) How do consumers respond to green hotel practices?**

We would like to see if there is evidence to show how consumers react to various eco-friendly practices and if there are any preferences, or aversions. This is the overarching focus of our study and the question we ultimately hope to answer.

#### **b) Are customers willing to pay more to stay at green hotels?**

Does literature suggest that revenue increases as a result of obtaining an eco-certification? For example, have companies been successful charging a premium for their sustainable practices? Have customers shown signs of a willingness to pay more for sustainable hotels?

**c) What green trade-offs are consumers willing to make during their stay?**

We aim to find middle ground where consumers are willing to adapt an eco-friendly practice in exchange for an increase or decrease in some other hotel practice.

**d) Is there anything that these hotel consumers would like to see in their hotels?**

We would like to see if the consumers are environmentally aware and would like to see certain green practices implemented in hotels. We expect to answer this question via our data collection more than our literature review.

## ***B. Green Lodging Program Review***

To assist with our survey design we began by assessing current trends in hotel sustainability practices. We were able to obtain copies of hotel self-audits that were submitted for review to the California Green Lodging Program. By analyzing this data, we identified current trends in green hotel practices. We used this knowledge to assist us in designing our survey questions to gauge the consumers' understanding of eco-certification programs.

## ***C. Data Collection***

In order to further our investigation and answer our research questions, we designed a survey to understand opinions of the general public. The survey was conducted using SurveyMonkey, an online survey service to compose and administer surveys, collect data and present initial results. We also used Microsoft Excel for additional analyses. We emailed friends and family and used Facebook to notify people about our project and our survey. Additionally, we sent out emails to the various List Serves on the UCLA campus for different majors, to professors to forward it to their classes, and to the faculty and staff list serve for the Institute of Environment and Sustainability. In order to attract a large pool of respondents, we established an optional raffle for twelve Amazon gift cards to attract more potential respondents. We were aware that our approach to publicize our survey would most likely cater to the younger (college students) population, because much of the older population is not within our networks on social networking sites. Regardless, we encouraged our personal networks to forward the survey along to their own networks. Ultimately, we were satisfied with our use of social media and the raffle because we were able to generate 1,075 responses and gather sufficient data.

The survey included twenty-three questions and guaranteed anonymity to respondents. Our survey questions are shown in the Appendix 1. Although some respondents did not finish the whole survey, most of the respondents, about 90%, answered all the questions. Our survey comprised two sections. The first section (questions 1-14) asked questions about sustainable practices and eco-certifications in the hotel industry. The second section (questions 15-23) asked for information about the respondent. We analyze the second section of questions to see if different demographic groups have different opinions on eco certification in the hotel industry.

## V. Results and Discussions

As stated before, we mainly used electronic social media to publicize our survey and reach out to as many people as possible. We understood that by using this approach, the makeup of our respondents might differ from that of the general population in California. As it turned out, this was the case. We have highlighted some of the key differences between California's general population and our subjects in the chart below.

*Note: The following data regarding California's population was obtained through the Census and California Basic Educational Data System.*

Population Characteristics	Survey Respondents	California Population (2010)
Gender		
Male	35.9%	49.7%
Female	64.1%	50.3%
Age		
0-17	0%	25.0%
18-44	86.4%	38.7%
45-64	11.1%	24.9%
66+	2.5%	11.4%
Current Students (high school, college, or graduate)	69.3%	(estimates) 17.9%
Completed Education		
High School	38.1%	21.0%
Associate Degree	8.5%	7.7%
Bachelor's Degree	33.5	19.2%
Graduate/Professional	19.2%	10.8%
Annual Household Income		(estimates)
Under \$39,999	36.0%	32.2%
\$40,000-59,999	11.0%	15.5%
\$60,000-79,999	9.8%	13.1%
\$80,000-149,999	25.0%	25.2%
\$150,000 +	18.0%	12.9%

An overwhelming majority (69.3%) of our survey respondents were students. This is why 69.8% of the subjects were between the ages of 18-24 and that 36.0% of them have an annual household income of less than \$39,999. Our survey also differs from the California population in that overall, the subjects of the survey have completed more education. Therefore, we expected

that the results we obtained to be skewed in comparison to California’s general population. We believe that this will not render our results meaningless. Because our respondents are more educated than California’s population, we anticipate that they are more likely to over-represent awareness of eco-certifications in the hotel industry. So since our respondents do not have much knowledge of eco-certification, we assume that this trend is common throughout California.

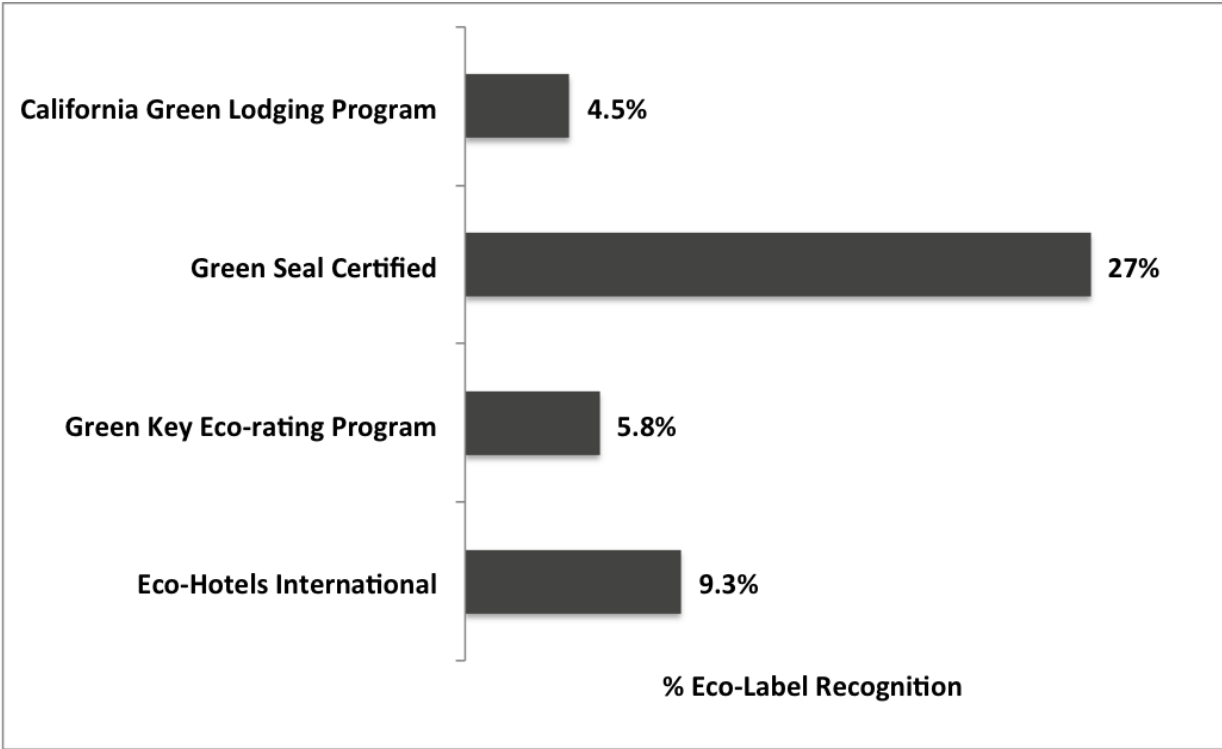
***A. How aware are consumers of Eco-Labels?***

Besides the lack of awareness of environmental impacts, most people are also not aware of the various existing hotel eco-labels. Question 4, 5, 6, 7, and 8 asked respondents about the eco-labels shown in Figure 1. Three of the eco-labels (California Green Lodging Program, Green Seal, and Green Key) were chosen from actual eco-certification programs. California Green Lodging Program is a local eco-certification program that only issues certifications to hotels in California. Green Seal is a national eco-label provider that certifies not only hotels, but also other products, such as cleaning products, paints, and cleaning services. Green Key is an international eco-certification program. Eco-hotel International, however, is a fake label created by our team. We wanted to examine people’s familiarity with eco-labels by presenting both real and fake labels.



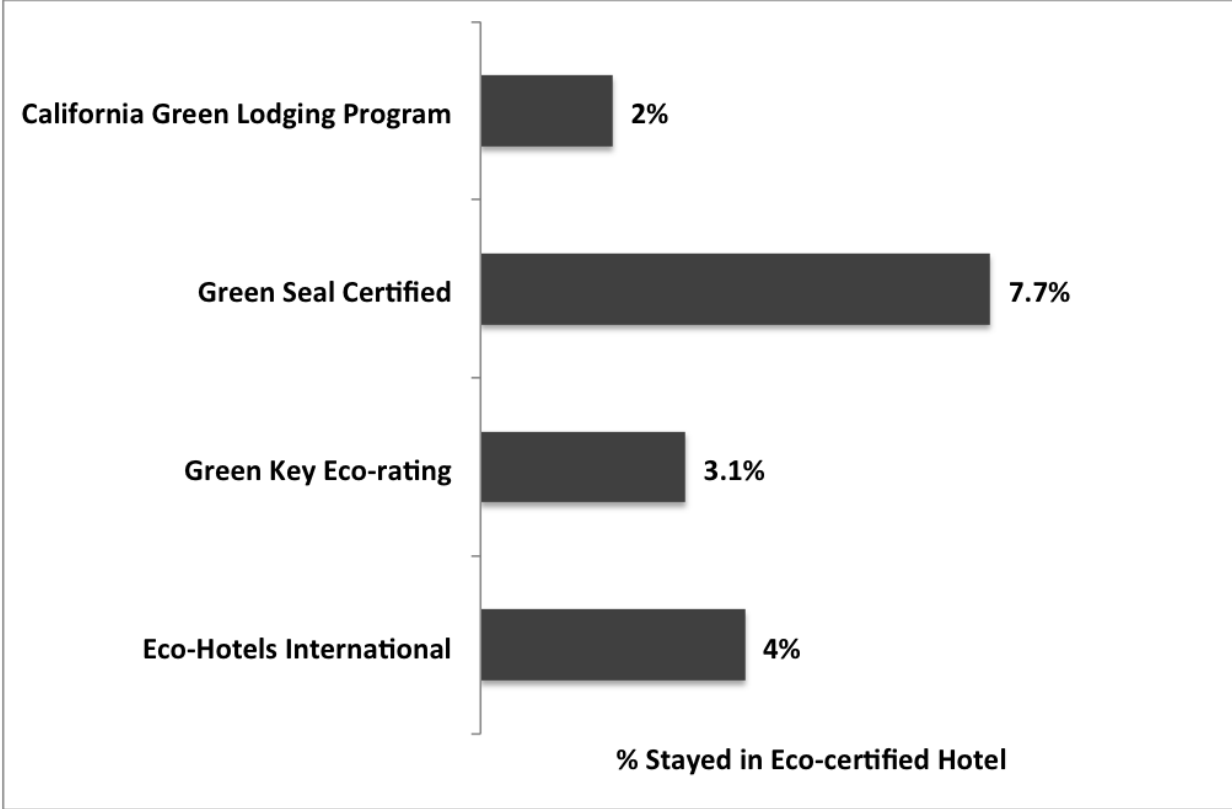
**Figure 1.** Awareness of four different eco-labels was assessed using these logos. Respondents were shown this figure for the pertaining questions. [Q. 4, 5, 6, 7, 8]

Question 4 (Figure 2) shows the inability of most people to recognize some of the most popular hotel eco-labels in California. Interestingly, more respondents claimed to have seen our pseudo label, “Eco-Hotels International,” than the California Green Lodging Program label or the Green Key Eco-Rating Program label. This clearly reveals that people are unfamiliar with various eco-labels.



**Figure 2.** Visibility of four different eco-labels. [Q. 4]

Similar to Question 4, Question 5 asked “Have you ever stayed at a hotel accredited by any of the following eco-certification programs?” The results, as illustrated in Figure 3, show that over 70 % of the survey respondents do not know if they have stayed in hotels accredited by the four eco-labels. This result is not surprising, as from the results of Question 4, where approximately 80% of our survey respondents have not seen these eco-labels before. This also reflects the low visibility of eco-certification programs amongst those hotels that may be accredited. Some hotel customers are not sure whether they are staying in an eco-certified hotel because hotels do not advertise the eco-certification program that they take part in.



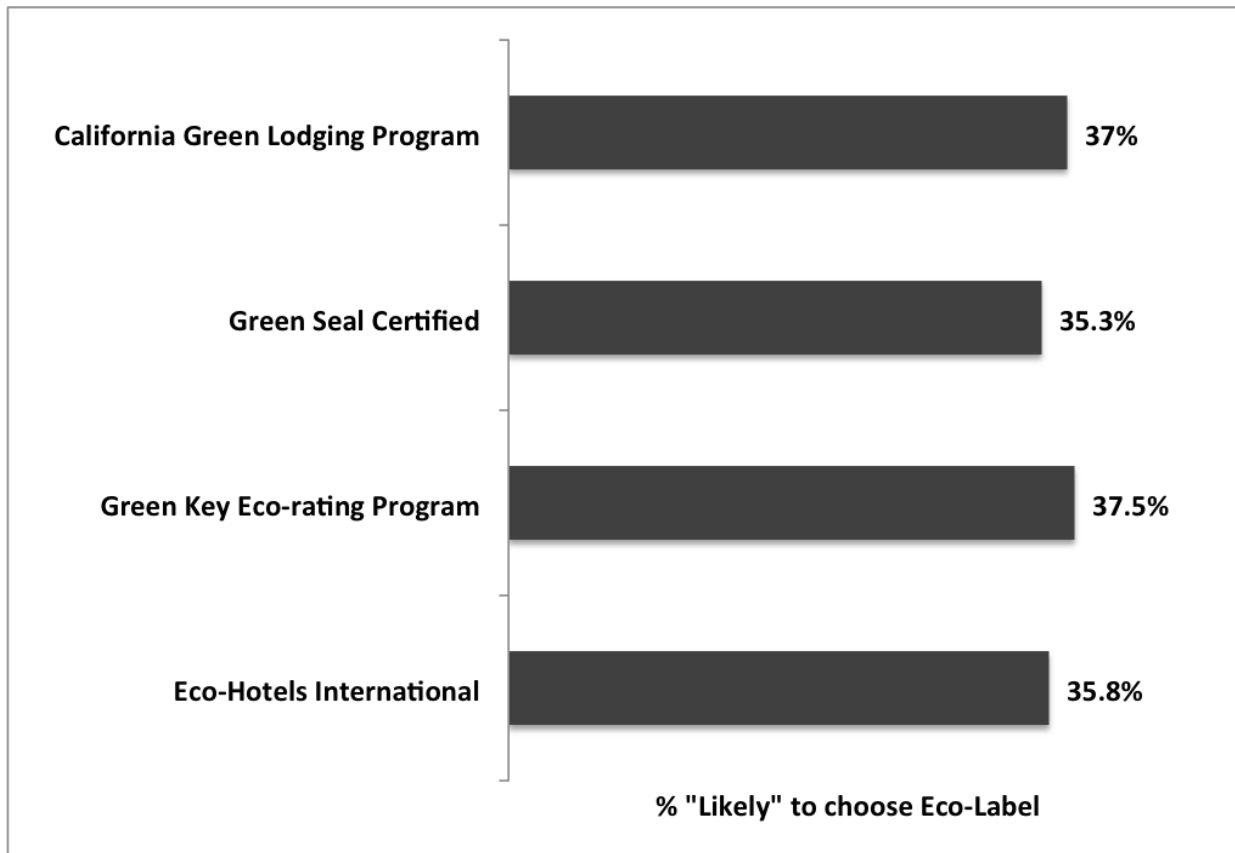
**Figure 3.** Second test of eco-label awareness. [Q. 5]

From the results of these two questions, we see that it is important to advertise eco-labels in order to raise awareness. Awarding entities should implement stronger marketing efforts about the organization and eco-labels, so that the public can be made more aware of different eco-labels. Hotel owners can consider putting the eco-certificates at the reception, so guests can clearly see the certificates when they check in. Additionally, hotels can promote their eco-certifications on their websites and in the hotel itself. This can help capture consumers’ attention and thus take the sustainable certification in account when they choose hotels as they will grow to associate the hotel with its reduced environmental impact. Question 7 goes hand in hand with Question 4 and 5, where the majority of participants either said “no” or that they weren’t sure if they had ever seen the corresponding labels. Although this question is somewhat different from these two previous questions (Question 4 and 5), it still has the underlying criteria of having some sort of familiarity or awareness of these labels, which consumers do not base on the responses from Question 4 and 5. According to Figure 4, it is clear that participants have little to no understanding of what these labels actually represent. One reason for the respondents stating they had some or little understanding could be that they knew that these labels stood for sustainability in hotel practices but lacked specifics, so those responses may not be substantial. Again, Question 7 shows similar responses as Question 4 and 5, and all three of these questions reflect the importance of environmental education.



**Figure 4.** Consumers’ understanding of eco-labels. (Percentage of respondents indicating “good” or “very good” understanding of four different eco-labels) [Q. 7]

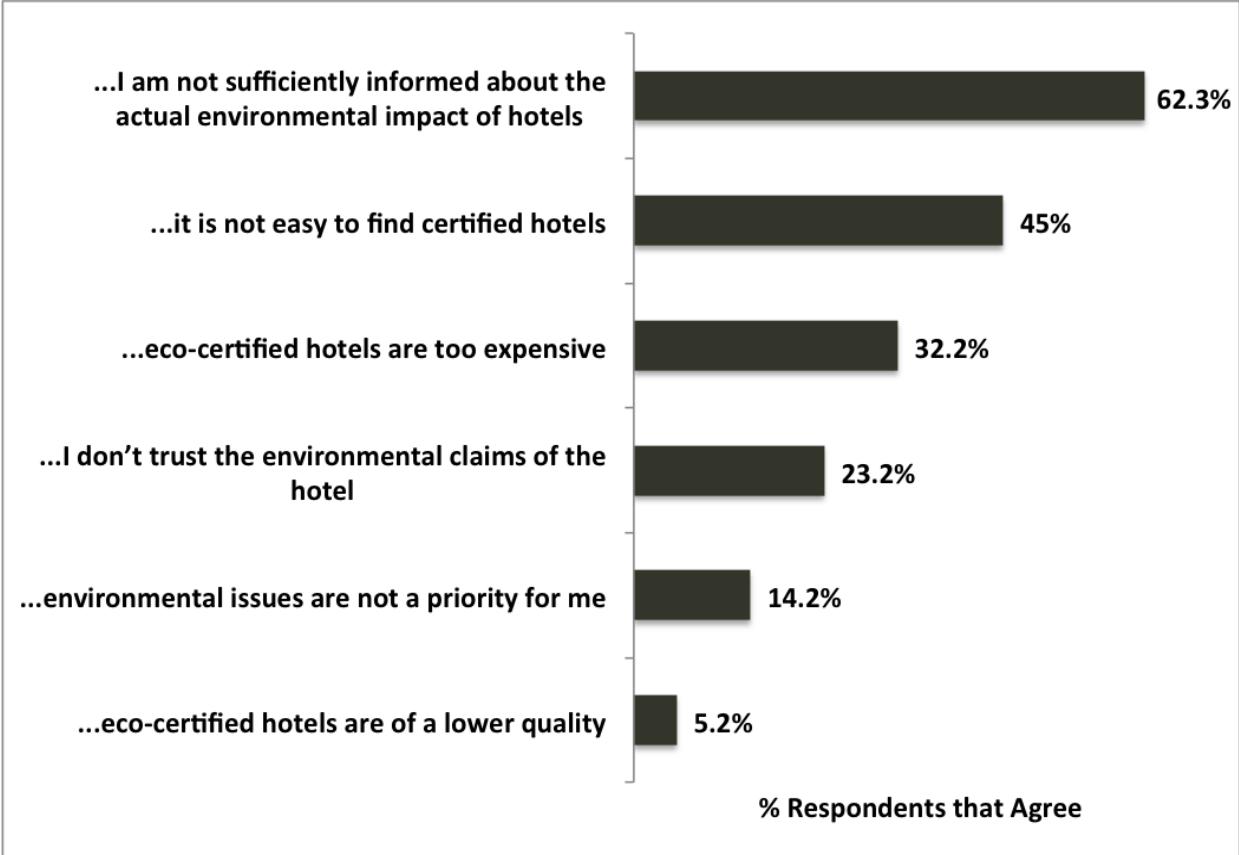
Question 8 asked participants about their likeliness in choosing the eco-certification programs listed in the survey. As Figure 5 demonstrates, the majority of respondents indicated that they were likely or somewhat likely to stay in an eco-certified hotel despite not having recognized any of the labels. From the responses, it is immediately apparent that people are willing to give eco-certified hotels a chance even without full awareness. Consumers are not being driven away by eco-labels and may be attracted to them for a variety of other reasons that may coincide with their eco-certified status.



**Figure 5.** Consumers' reported likelihood of choosing an eco-certification program. [Q. 8]

In addition to examining whether consumers were aware of the different eco-labels, we identified that most consumers lack awareness of the environmental impacts of hotels from our survey results. Question 12 asked participants about their reasons for not choosing eco-labels, and most participants mentioned that they were not aware of the environmental impacts of hotels, as illustrated in Figure 6.

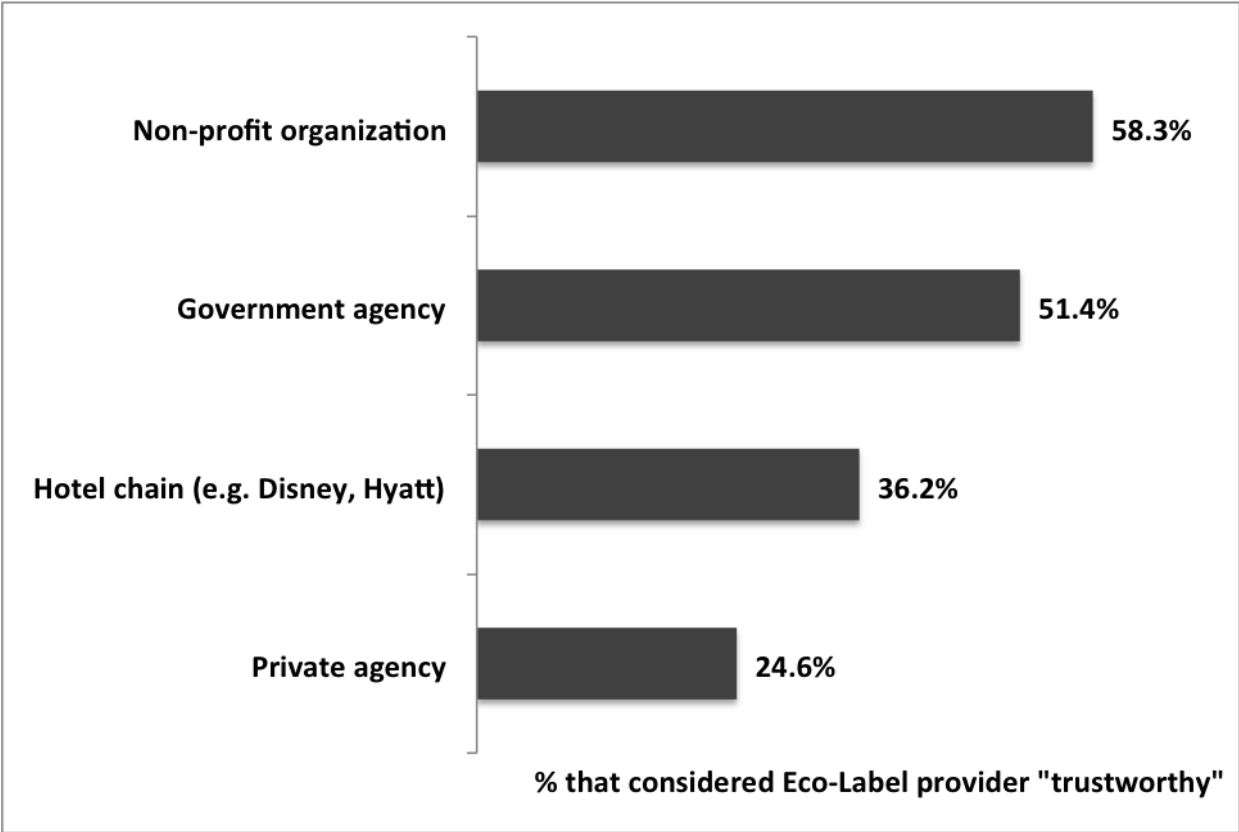




**Figure 6.** Percentages of survey participants indicating “somewhat agree” or “strongly agree” for the listed statements. [Q. 12]

From these results, we infer that a reduction in a hotel’s environmental impact may not be enticing consumers because a majority of respondents agree that they are not sufficiently informed about the environmental impacts of hotels, or how to find eco-certified hotels. Not only are environmental issues a priority to people, but people do not think that eco-certified hotels are of a lower quality. These ideas lead us to believe that there is a potential market for green hotels. However, in order to access this market, hotels will need to promote their eco-labels to increase public awareness.

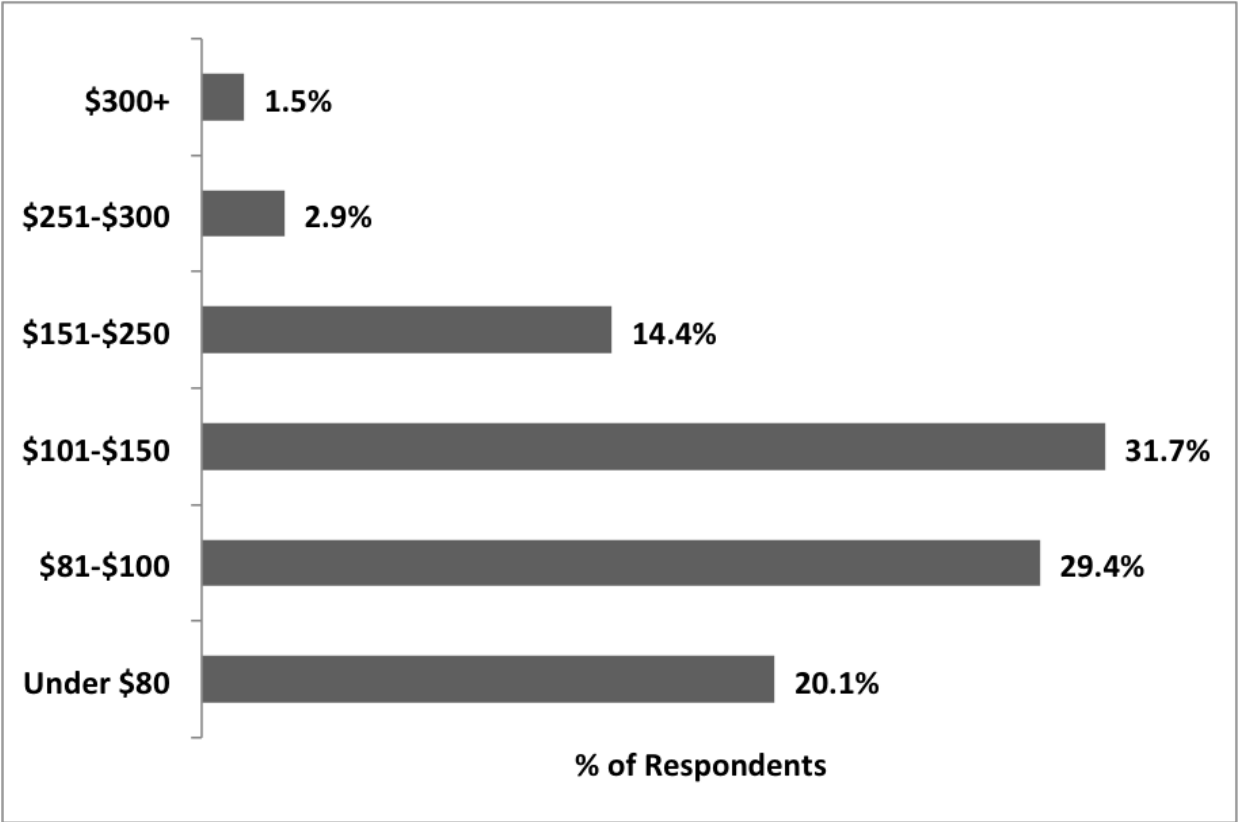
For question 9 (on the following page), we asked respondents how credible they found each type administrator of eco-labels, including non-profit organizations, government agencies, hotel chains, and private agencies. As Figure 7 shows, government and non-profit organizations are seen as more trustworthy eco-certifiers, compared to hired private agencies, or a hotel's own eco-certification program. Non-profit organizations are associated with honesty because they do not have monetary gains. Government agencies on the other hand provide transparency, so the public is informed of how the agency is being run. Consumers do not have much confidence in private agencies, as they do not know what the standard is for the specific hotel certification program. Hotel chains, like Hyatt and Disney, also have their own eco-certification programs. Similar to private agencies, consumers question the credibility of their sustainable programs since they conduct the auditing processes on their own. Consumers will feel more at ease staying at an eco-certified hotel that has been certified by an agency that they can trust, and in this case these seem to be nonprofit or government agencies.



**Figure 7.** Consumers’ perceived credibility of different eco-certification providers. [Q. 9]

***B. Consumer Response to Eco-labels***

Even if consumers were aware of eco-certification programs, would they prefer to stay at a hotel that is eco-certified? Several questions in our survey aimed at obtaining a better understanding of what people look for when staying at a hotel. These questions were important because they allowed us to understand what current consumers value most when choosing a hotel. In Question 2 (Figure 8) on the following page, our participants were generally shown to pay between \$81 to \$150 per night for a hotel stay. It is crucial to consider that a majority of our respondents are college students who have very limited availability of funds. Only less than 5% of our survey respondents chose to stay in hotels for \$250 or above. Although college students might care for the environment, their financial situation could be one of the main reasons that they would choose a cheaper, non eco-certified hotel over a more expensive, eco-certified hotel.

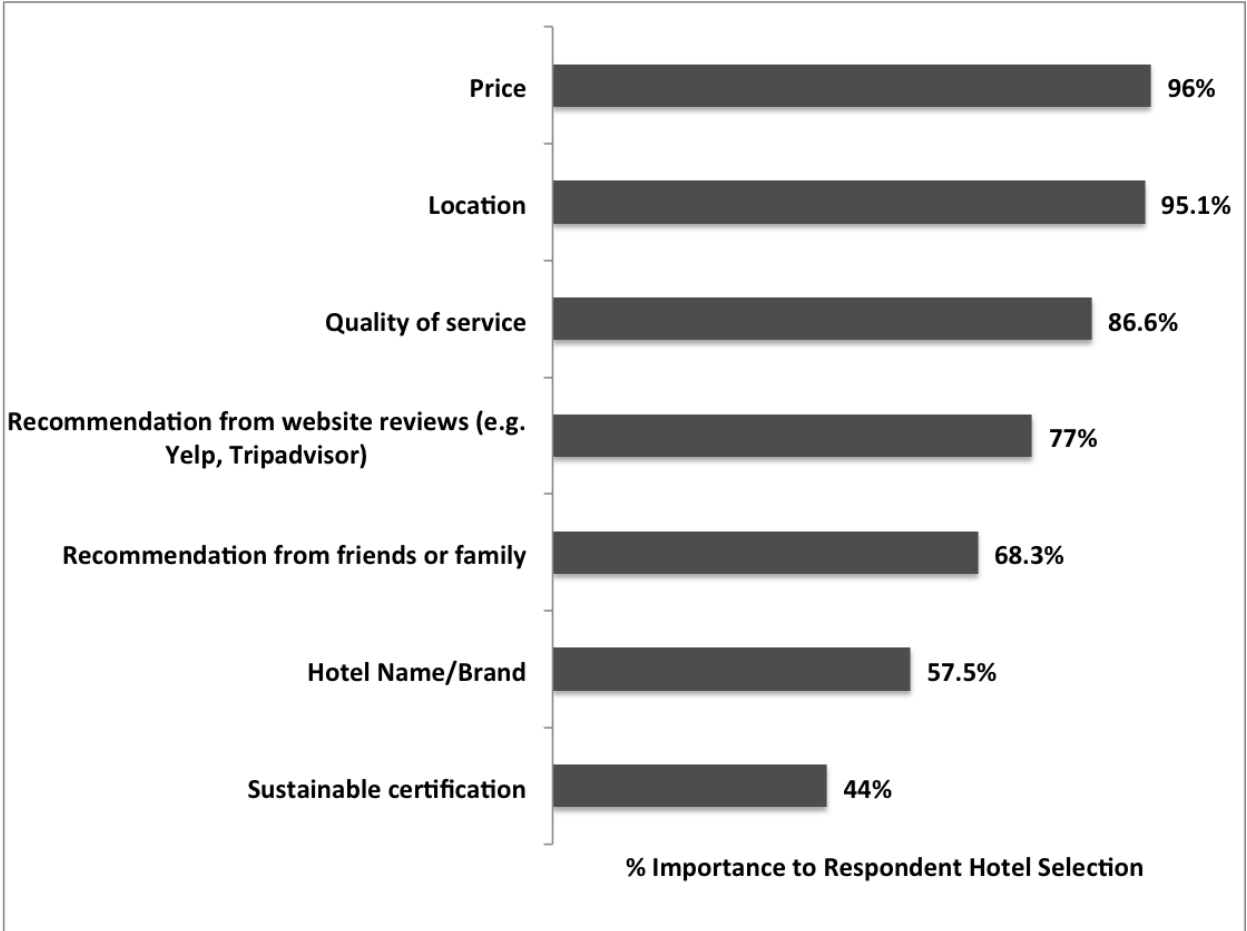


**Figure 8.** Typical hotel room price as indicated by survey respondents. [Q. 2]

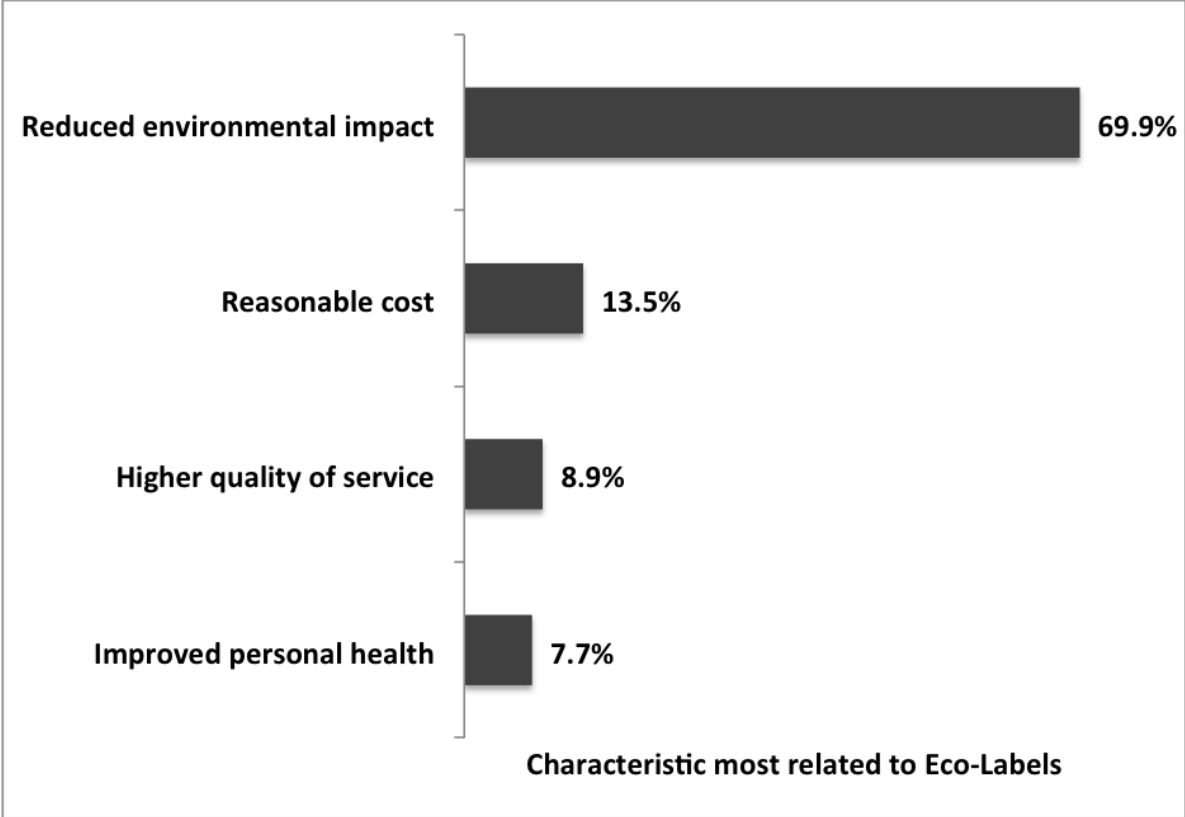
Question 3 (Figure 9) on the following page shows that respondents rate price, location, and quality of service as the main factors that influence hotel selection. “Sustainable Certification” was ranked as the least important of all of our factors. We attribute this to the lack of knowledge of consumers. Question 6 (Figure 10) on pg. 22, asks respondents what they find to be the main characteristics of current hotel eco-labels. From these two questions we are able to determine the discrepancies between what consumers want and what is currently being offered. The majority of respondents, as expected, chose reduced environmental impact as the most related. Improved personal health was second most related. Both higher quality of service and reasonable cost have similar, but lower rankings. Question 3 and Question 6 signify that respondents chose the determining factors for hotel selection as being price, location, and quality of service, but they currently do not readily associate price nor quality of service with eco-certified hotels. Thus, by evaluating Questions 3 and 6, we are able to gain a sense of understanding as to why consumers do not readily choose eco-certified hotels. Although we are merely speculating as to the reasons why this might be, we have not reached a definitive answer on why consumers would not choose eco-certified hotels.

For a more direct answer to our question, we asked respondents for their reasons for not staying at an eco-certified hotel. The top three statements clearly show that consumers are not informed about the environmental impacts of hotels. Eco-certified hotels are usually more expensive, but higher cost is not the main reason that consumers do not choose an eco-certified hotel. In fact, as stated in the previous section, the lack of information about a hotel’s eco-certification is the most influential reason. Since consumers are not aware of the impact of hotels, consumers would not spend extra money or effort to find an eco-certified hotel that has less

environmental impact. Also, due to the low visibility, it is difficult to find an eco-certified hotel. Current hotels that are eco-certified often do not advertise the eco-labels to inform their customers, causing customers to be oblivious to the existence of these green hotels even if they've stayed in one or when searching for lodging. Thus, it might not necessarily mean that consumers simply do not care about the environment. Rather, visibility issues might exist which prevent consumers from choosing to stay at the more environmentally-friendly hotels. From these responses, we have begun to elucidate the importance of environmental education and advertisement to the expansion of green-certification in the hotel industry.

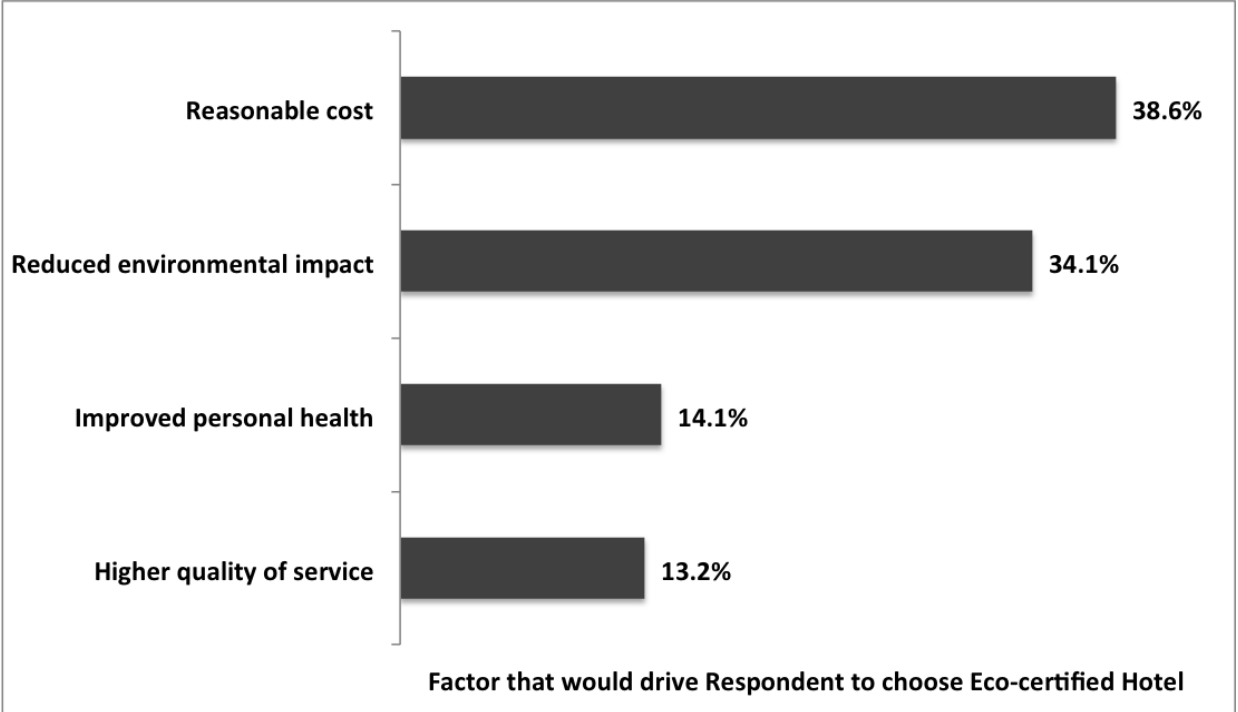


**Figure 9.** Percentage of survey participants indicating various hotel factors as “important”. Participants were asked to rate along a 5-point scale, “How important are the following factors in your decision to stay at a specific hotel?” [Q. 3]



**Figure 10.** Percentage of survey respondents indicating the characteristic they believed was most-related to current eco-certification labels. [Q. 6]

From the results in Question 12 (Figure 6), we are able to understand what discourages consumers from choosing to stay at an eco-certified hotel and what drives consumers to choose a green hotel over a conventional hotel. Question 13 (Figure 11) asked respondents to rank the factors that would drive them to choose an eco-certified hotel. Our results indicate that reasonable costs will attract more people to choose an eco-certified hotel. This might be due to the overrepresentation of college students in our respondents who have limited financial means. In an economically dominant society, cost plays a crucial role in most people’s daily lives. Higher cost of eco-certified hotels could possibly drive some customers away, especially those with low or medium household income. It seems likely that if eco-certified hotels and traditional hotels had similar prices, the main discrepancy between these two types of hotels would be eliminated, further creating greater demand for these hotels. Therefore, reasonable cost could be the most influential driver for consumers to choose eco-labels. Essentially, from Question 3, 6, 12, and 13, we learned that cost is one of the most important factors.



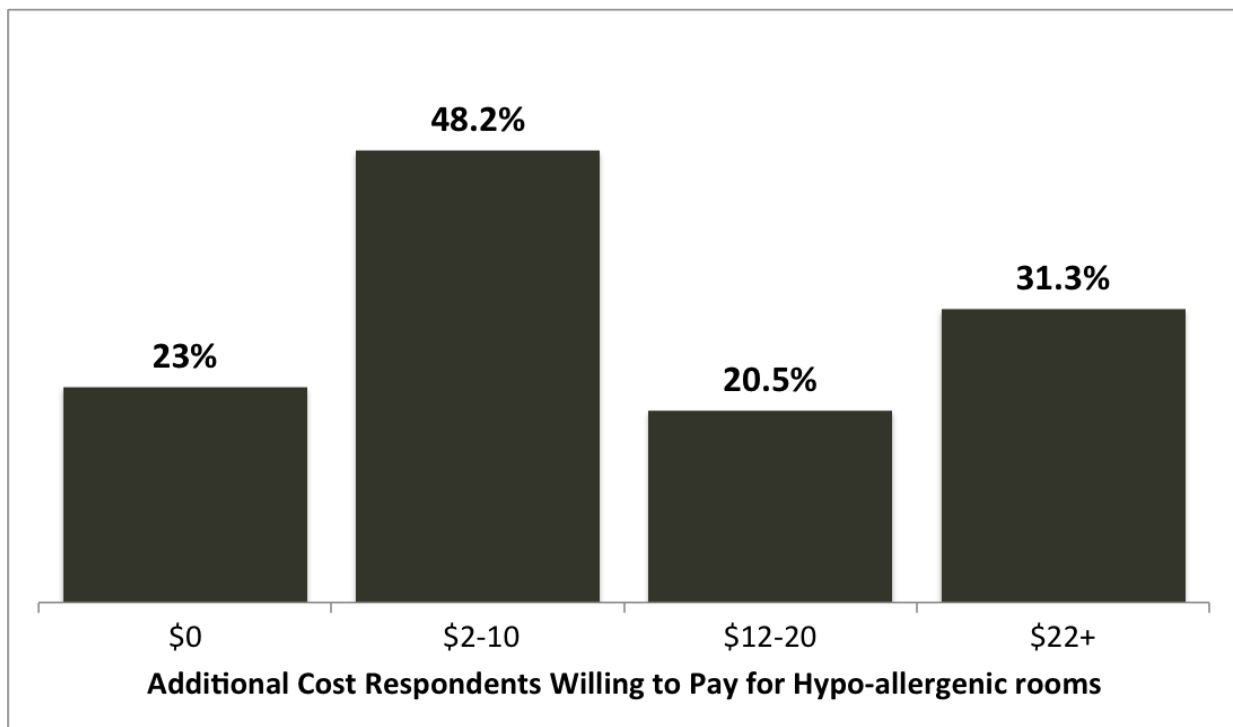
**Figure 11.** Characteristics that would drive survey respondents to choose an eco-certified hotel. The percentage of survey respondents indicating “most important” for each of the listed factors is shown. [Q. 13]

Lastly, Question 14 examines survey respondents’ behavior and attitude towards our society and correlates them to our previous analysis. From the correlation, we get more information on factors that would motivate an individual to choose an eco-certified hotel. According to Question 13, reasonable cost and reducing environmental impacts are the most important reasons that participants indicated would cause them to choose eco-certified hotels. From the result of Question 14, a majority of respondents also feel a moral obligation to preserve our environment and take care of the needy. In fact, 80% of respondents agree that contributions to community organizations can greatly improve the lives of others; 70% respondents agree that “it is my duty to help other people when they are unable to help themselves”; 80% respondents agree that “my personal actions can greatly improve the well-being of people I don’t know”; and 80% respondents agree selfish actions result in societal problems. Many respondents somewhat disagree with the statement “I worry about conserving energy when it lowers utility bills”. All these results demonstrate that moral obligations are the underlying causes to drive people to care about their surroundings and the environment. While many respondents claimed that reasonable cost is the most attractive driver, the result of Question 14 does not show the same trend. Most respondents “strongly” or “somewhat disagree” with the statement “I worry about conserving energy only when it helps to lower my utility bills”. Therefore, money is not the biggest factor when people make “green” decisions. Because of moral obligations, many consumers may choose to stay in eco-certified hotels instead of the non-certified hotels. With better information about the hotel eco-certification programs, more and more people are able to switch from traditional hotels to eco-certified hotels. Again, environmental education is a significant means of promoting eco-labels and eco-certified hotels.

### *C. Trends and Analysis*

In Figure 6, we examined the likeliness of consumers choosing an eco-certification program. Respondents were asked, “When choosing a hotel, how likely are you to choose a hotel certified from the following programs?” A majority of respondents indicated that they were somewhat likely to stay in an eco-certified hotel despite not having recognized any of the labels. This may indicate that consumers have an interest in staying in an eco-certified hotel because of what they associate with eco-certification (discussed in Question 6, Figure 10). What is immediately apparent from the responses are that people are willing to give eco-certified hotels a chance and that they are not being driven away by the hotel being certified. Additionally, a statistical analysis that was performed on this question indicated that respondents, who were found to be more environmentally friendly, were more likely to stay at an eco-certified hotel.

We also wanted to examine the influence of eco-certification to a hotel’s profit. From the literature review, one of the potential benefits of obtaining an eco-label is to generate more profit to hotels by attracting more environmentally-friendly customers. For Question 11(Figure 12), we asked the amount that customers are willing to pay for a hypoallergenic room, which uses non-toxic cleaning supplies and thus is very similar to the standard of an eco-certified hotel. By knowing the additional cost that consumers are paying for a hypoallergenic room, we can know whether eco-certifications bring in more profit for hotels. From the result, we can see that majority of the respondents, about 77%, are willing to pay more for hypoallergenic rooms. Around 31% of respondents, however, are willing to pay an additional 10 dollars for the hypoallergenic rooms, so eco-certification might not be able to generate a significant increase of profit for hotels. Yet, this might be the result of the biased pool of participants. About 70% of our respondents are 18 to 24 years old, who are college students or just get entry-level jobs, so they are not financially independent enough to afford a more expensive hypoallergenic room.

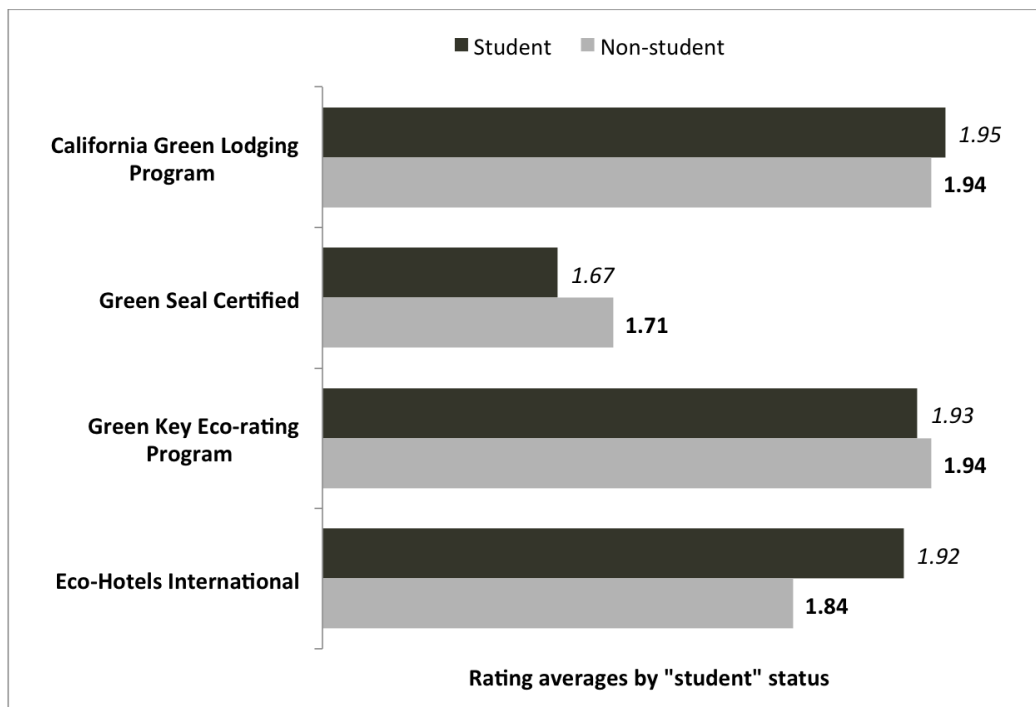


**Figure 11.** Additional cost survey respondents were willing to pay for hypoallergenic rooms. [Q. 11]

Interestingly, 46% of males marked that they would pay less than ten dollars, or no additional cost altogether, for a hypoallergenic room. Only 32% of females marked these same values. Through a statistical analysis, we learned that these results are significant because males are less likely to pay an additional value for a hypo-allergenic room (with a P value of 0.04 using 95% confidence).

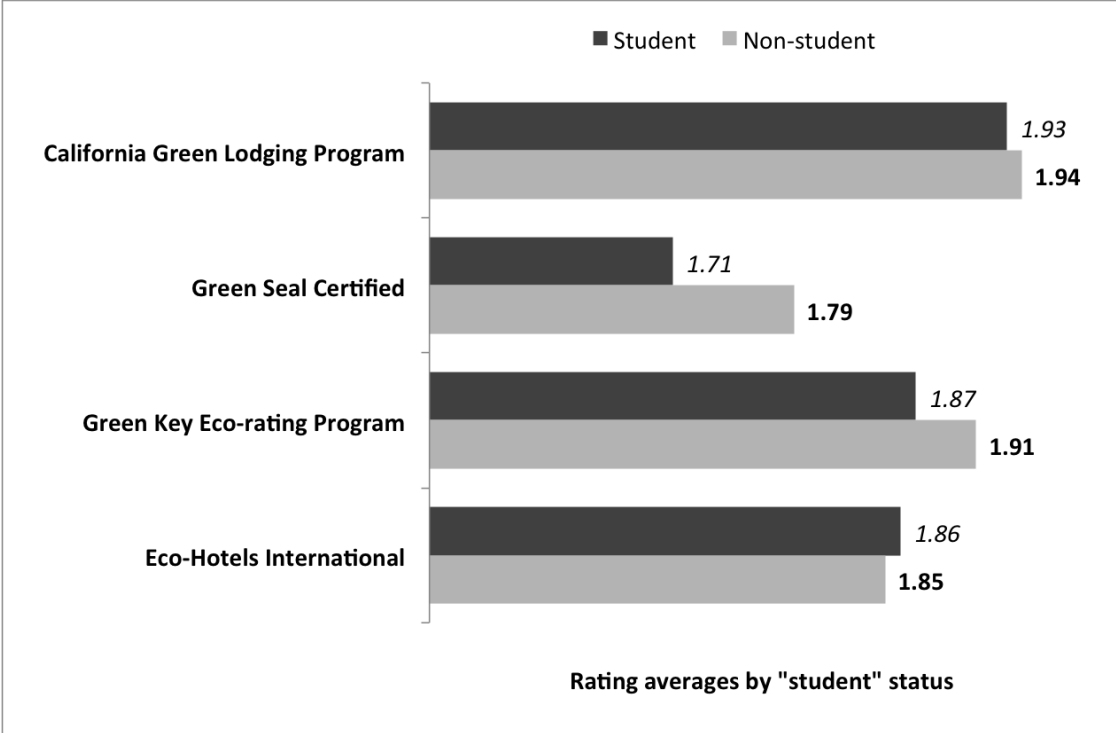
Furthermore, the statistical analysis also found that those with lower education levels (Less than Grade 12, High School Diploma and Associate’s Degree) were much more likely to spend money on hypo-allergenic rooms than those with a university Bachelor’s or Graduate degree. Surprisingly, this data shows an inverse relationship between education and willingness to pay for a hypo-allergenic room—the more educated the respondents were, they were less likely to spend additional money for the sake of a hypo-allergenic room.

As stated in Section B, Question 14 examines respondents’ behavior and attitude towards our society. The data analysis exemplified that those respondents who were members of an environmental organization were most likely to choose reduced environmental impact as their number one factor, along with those who were determined to be more environmentally friendly (by creating a summation factor of the questions asked in question 14). Additionally, those respondents whose highest level of education was an associate’s degree were more likely to consider a high quality of service as the most important factor. Conversely, those respondents who were more environmentally-friendly (again using the composite “green factor” determined from Question 14), were least likely to consider the quality of service as the most important factor. Respondents who held a graduate degree were least likely to consider cost as the most important factor.

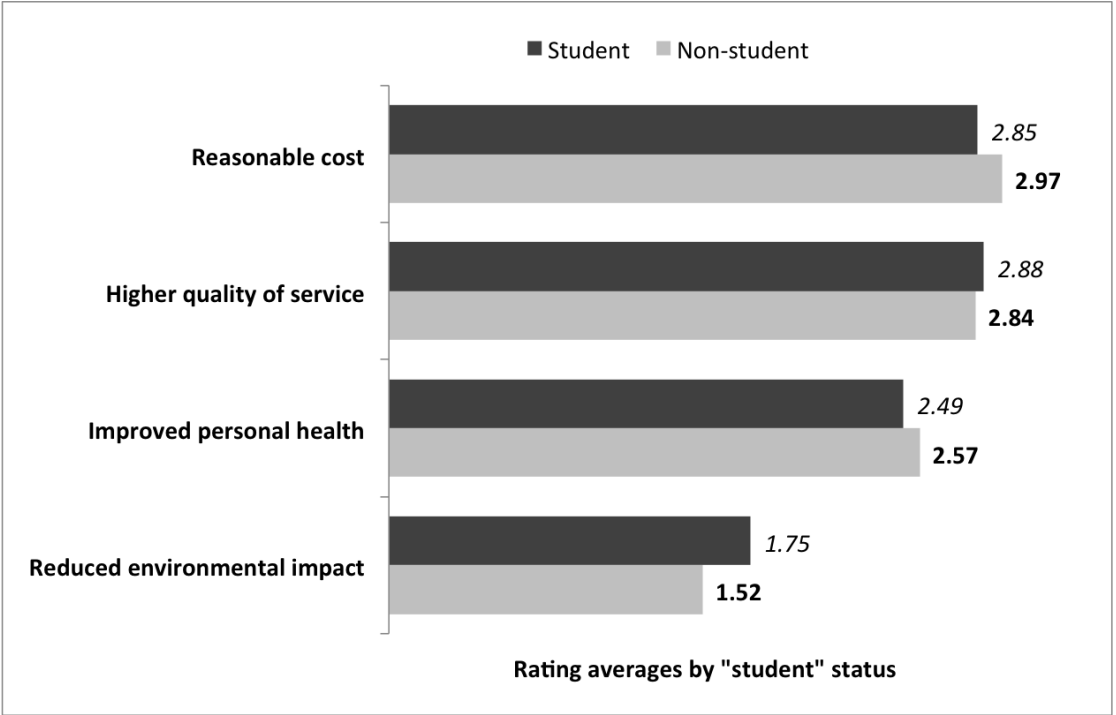


Crosstab student [Q. 4]

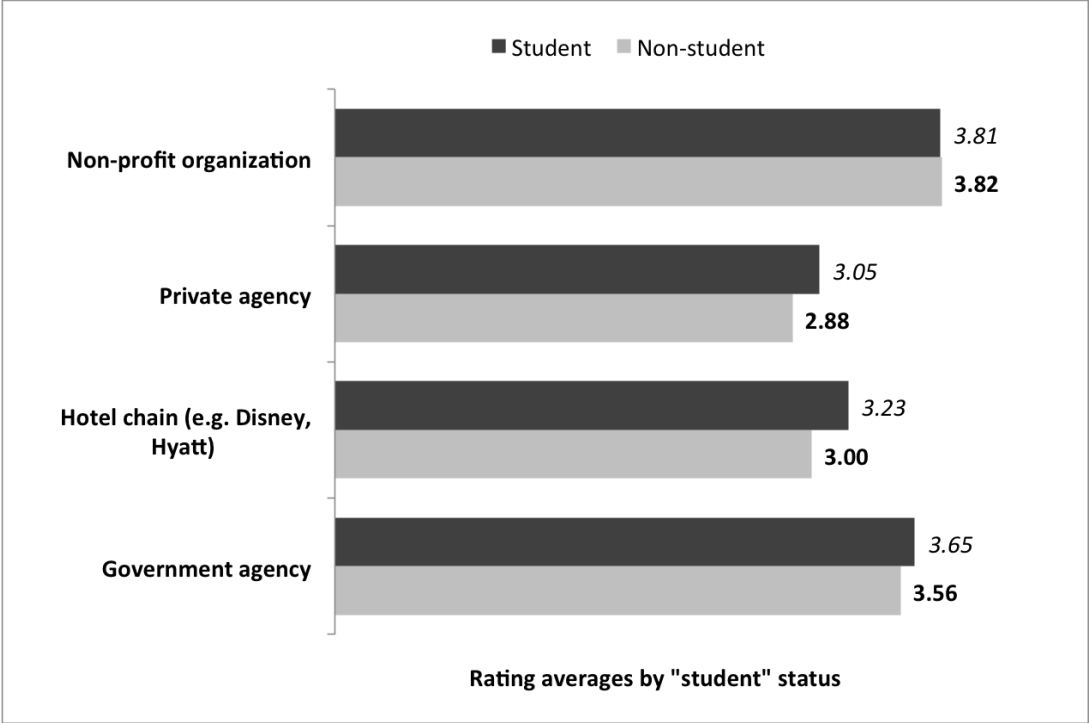




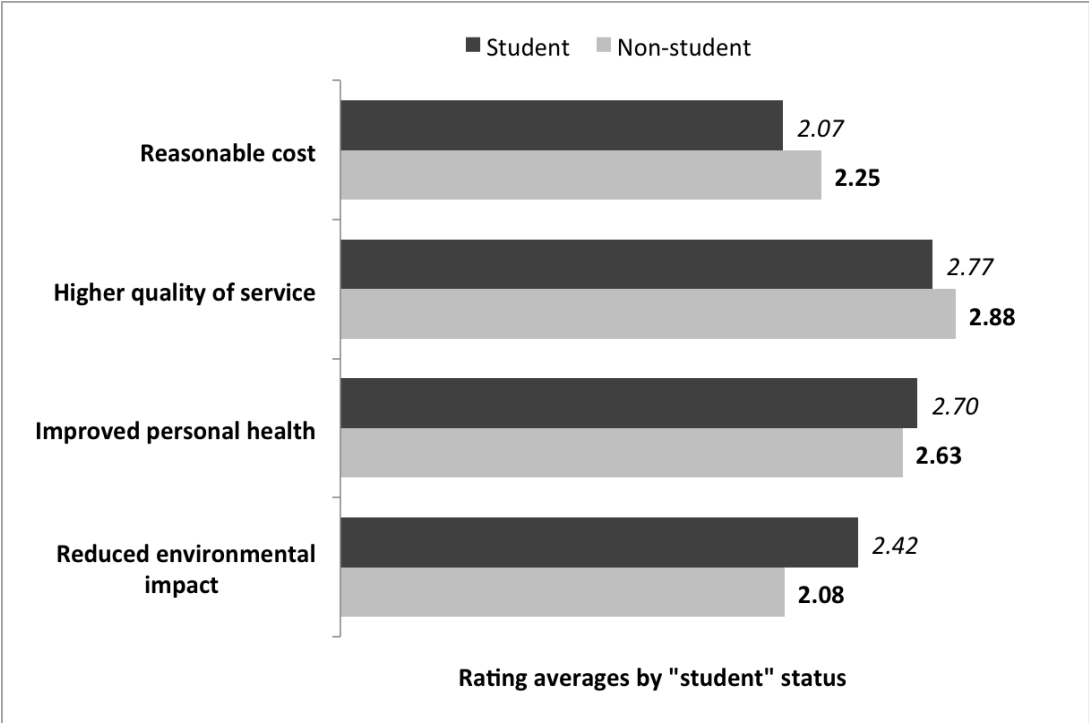
Crosstab student [Q. 5]



Crosstab student [Q. 6]



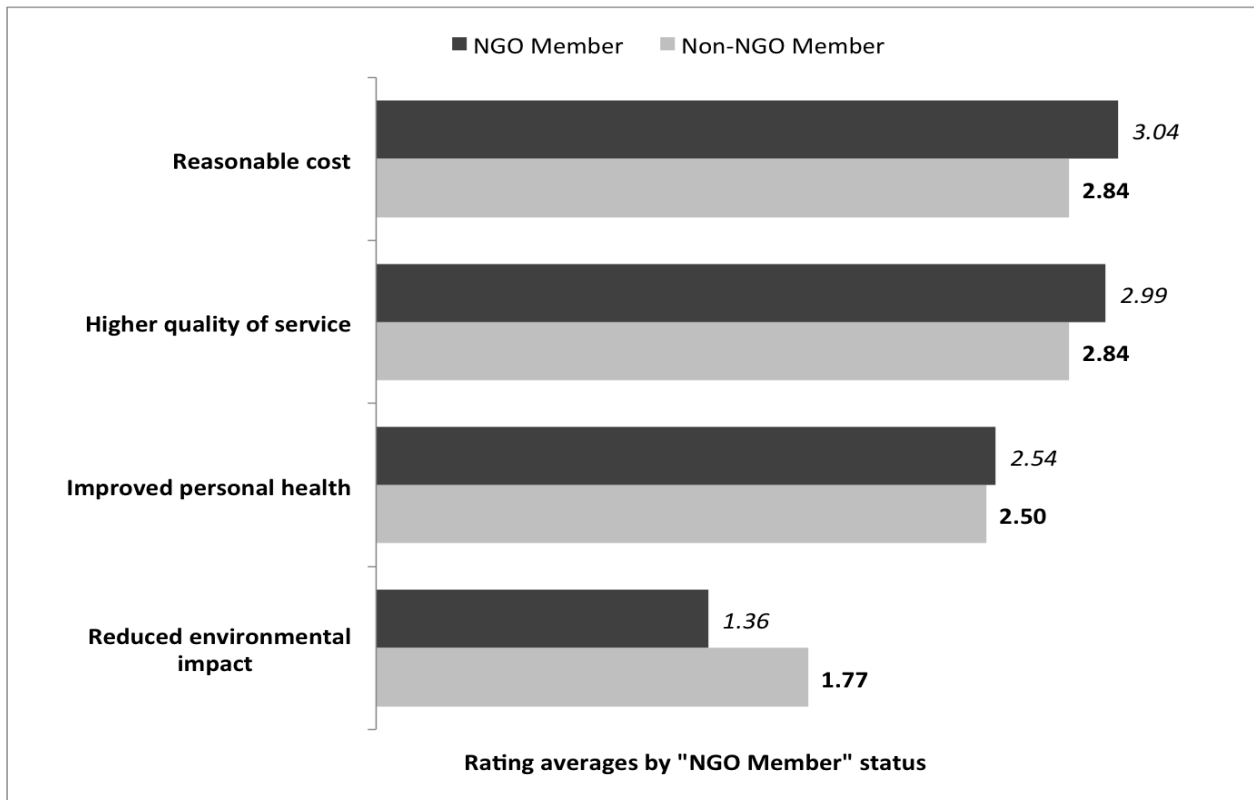
Crosstab student [Q. 9]



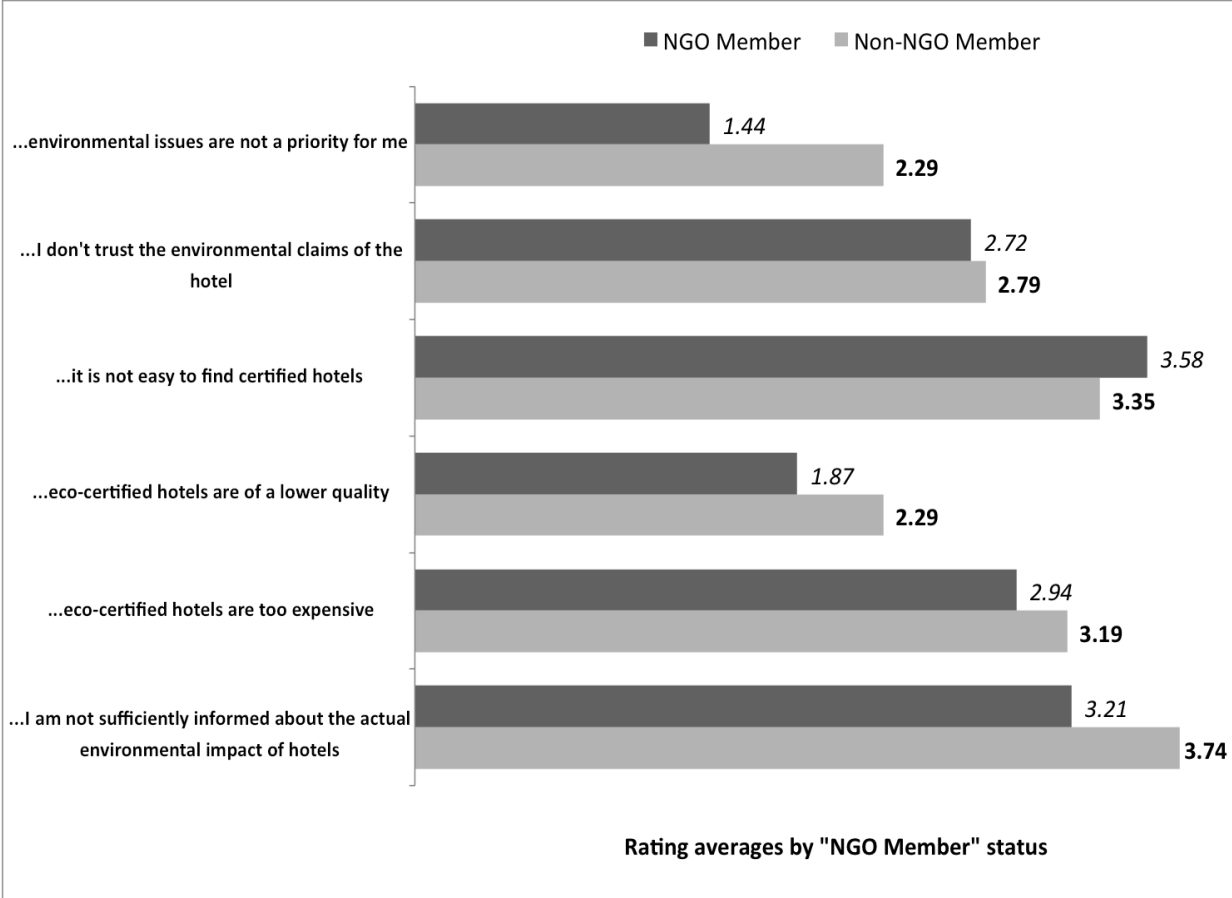
Crosstab student [Q. 13]

When we distributed our survey, we tried to extend the degree of separation. We wanted to diversify our pool of respondents, yet, due to time constraints, about 70% of respondents were students. Even though students are overrepresented in the respondent pool, as the crosstab graphs

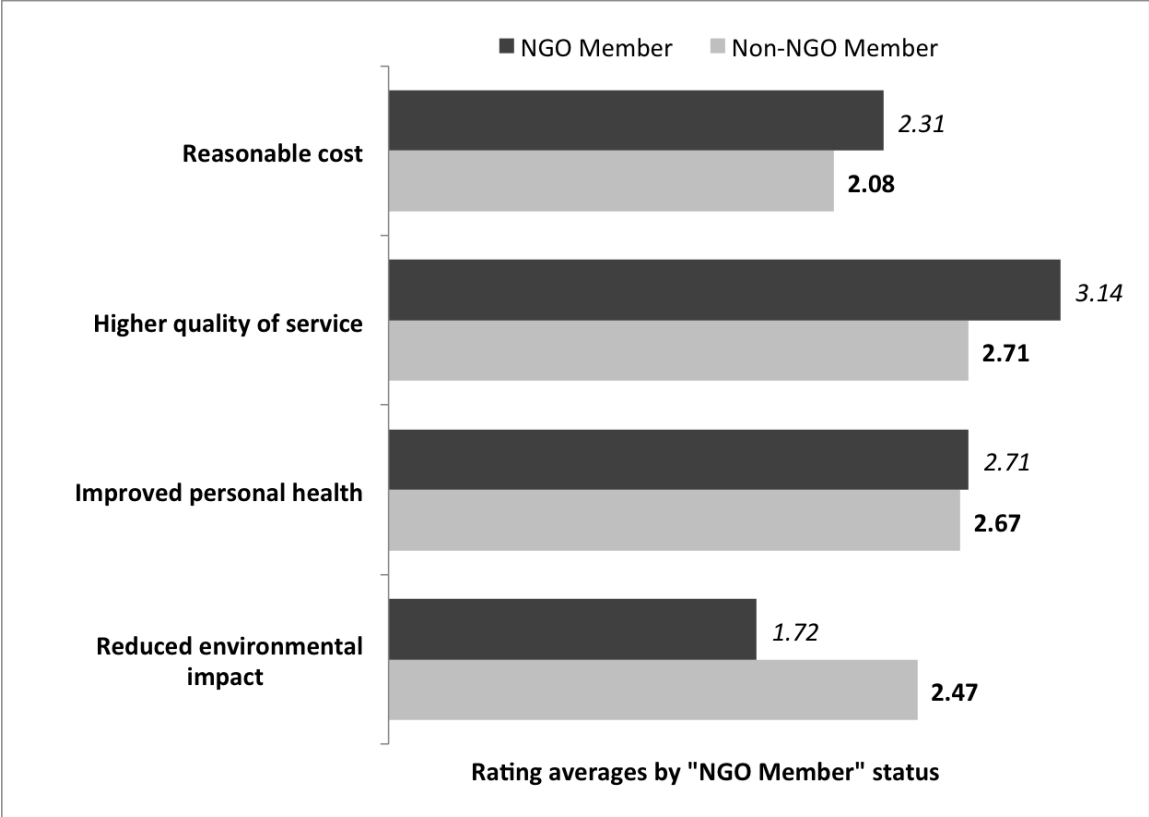
of Question 4, 5, 6, 9, and 13 illustrated, student and non-student respondents do not show statistically significant differences. For instance, neither students nor non-students recognized different hotel eco-certifications for Question 4. Furthermore, Question 6 asked about the credibility of various eco-certifiers, and students and non-students had very similar perception. Thus, having a respondent pool predominantly made up of students does not make our results biased. More importantly, students represent the population with education background. If this group of people is unfamiliar with the environmental impacts of hotels and eco-certification programs, we assume it is less likely that the less educated people will have better understanding. Therefore, the overrepresented student group of the respondents does not overestimate the result. In fact, it reflects our concern that more people in the society lack awareness of environmental issues and hotel eco-certification programs than our results showed.



Crosstab NGO [Q. 6]



Crosstab NGO [Q. 12]



Crosstab NGO [Q. 13]

This graph demonstrates that belonging to an environmental group had a statistical impact on the overall results of the survey. As shown in Question 13, because of their beliefs, environmentalists ranked “reduced environmental impact” as the most important factor while the non-environmentalists thought “reasonable cost” is the most important. On the other hand, both the environmentalists and the general public have similar rankings in aspects of reasonable cost, higher quality of service and public health. According to Question 12, the environmentalists do care about our surroundings more than the general public and have a better understanding of eco-certification. Given their educational and working background, environmentalists will give their first priority to environmental issues when they choose hotels, which will then be followed by the other determining factors. Also, members of environmental groups do not believe that eco-certified hotels are of a lower quality. Education is perhaps the best tool to increase people’s understanding on their impact on environment. When the general public is informed about its negative influence on the surroundings, it will certainly take environment into account while making their hotel reservations.

## VI. Conclusion

After conducting our research experiment survey and analyzing the current literature regarding eco-certification of hotels, we have determined a list of recommendations for our client. Firstly, eco-certification for hotels is more intriguing to consumers than we had originally assumed. Although, many of our survey respondents, especially in the “*Additional Comments*” section mentioned that they wanted more information to be publicly available and advertised, so they could better decide on hotels. Therefore, we would like to suggest that hotels publicize their commitment to the environment through eco-certification programs on their websites and other websites where they have listings for hotels, such as Hotels.com or Tripadvisor.com. Furthermore, the hotels should provide detailed information about the specific green practices they have undertaken and should highlight the more unique ones. Such unique practices might perhaps be xeriscape gardens, composting efforts, etc.

From our survey, we learned that many respondents did not remember or recognize if the hotels they stayed at in the past were eco-certified. We believe it would promote more awareness and would better the name of the hotel by having such certifications. Even though eco-certifications are important, a hotel must not settle for any certification program. Within our survey, we learned that the majority of the consumers prefer a hotel that is accredited through a non-profit or governmental organization. A small number of consumers have faith in hotel-owned or private chain eco-certification program, because they might feel these certifications have biased opinions. Thus, one of our main recommendations would be to obtain an eco-certification through a non-profit organization to better the name of the hotel as it is deemed to be more legitimate. Interestingly, many of our survey respondents deemed eco-certified hotels to have more reasonable costs. These costs could be justified to hotels due to the energy saving fixtures that might be installed. Eco-certification is a great option for hotels to look into, especially those that are trying to stand out amongst the plethora available. The hoteliers, though, must realize that they need to spend an adequate amount of time in marketing and educating the new environmental initiative to garner the support of consumers in the community and from outside.

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## VIII. Appendix

### A. Survey Questions

The survey questions are as follows:

\* Represents a required question.

- \*1. How many nights per year do you typically stay in a hotel?
- \*2. How much do you typically spend per night on your hotel stay (price of the room)?
- \*3. How important are the following factors in your decision to stay at a specific hotel?
- \*4. Have you ever seen the following labels?
- \*5. Have you ever stayed at a hotel accredited by any of the following eco-certification programs?
- \*6. According to YOU, what are the main characteristics of current hotel eco-labels? Please rank with "1" being the most related and "4" being the least related.
- \*7. How well do you understand what these labels represent?
- \*8. When choosing a hotel, how likely are you to choose a hotel certified from the following programs?
- \*9. How trustworthy do you find these different providers of eco-certification?
- \*10. "In comparison to conventional cleaning supplies, biodegradable and non-toxic cleaning supplies are":
- \*11. "For every night you stay at a hotel, what is the additional cost you would be willing to pay for a hypo-allergenic (low in allergens) room?" (Assume base cost of the hotel room is \$100)
- \*12. How much do you agree or disagree with the following statements?

I DON'T choose eco-certified hotels because...

- a) ...I don't trust the environmental claims of the hotel
- b) ...it is not easy to find certified hotels
- c) ...eco-certified hotels are too expensive
- d) ...I am not sufficiently informed about the actual environmental impact of hotels
- e) ...eco-certified hotels are of a lower quality
- f) ...environmental issues are not a priority for me

\*13. Please rank the factors that would drive YOU to choose eco-certified hotels, with "1" being first and "4" being last.

\*14. How much do you agree or disagree with the following statements?

- a) Households like mine should not be blamed for environmental problems caused by energy production and use
- b) My responsibility is to provide only for my family and myself
- c) Many of society's problems result from selfish behavior
- d) It is my duty to help other people when they are unable to help themselves
- e) My personal actions can greatly improve the wellbeing of people I don't know
- f) I worry about conserving energy only when it helps to lower my utility bills
- g) Contributions to community organizations can greatly improve the lives of others
- h) The individual alone is responsible for his or her satisfaction in life

\*15. What is your gender:

\*16. What is your age:

17. What is your household's annual income?

18. What is the highest level of formal education that you have completed?

19. What is your country of residency?

20. What is your five-digit zip code?

\*21. Are you a member of an environmental organization?

\*22. Are you currently a student?

23. Please provide any general comments you might have about this survey

**B. Question 10**

**Figure 10.** Perceived efficiency of biodegradable/ non-toxic cleaning supplies. Survey takers were asked, "In comparison to conventional cleaning supplies, biodegradable and non-toxic cleaning supplies are:"

[Q. 10]

