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Do hotel guests act according to their intentions as it relates to sustainability in a hotel setting?

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**Do hotel guests act according to their intentions as it relates to
sustainability in a hotel setting?**

Undergraduate Honors Thesis, Spring 2018

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Abstract

As humans continue to use our planet's resources at a rapid pace, we must act quickly to implement solutions and strategies that will create a positive impact on our environment. The hotel industry represents a huge opportunity for increasing sustainability practices, as these establishments tend to consume tremendous amounts of natural resources through energy and water usage; thus creating quite a bit of waste. For this customer-centric industry, change starts with consumer expectations and intentions to act. The purpose of this study was to assess hotel guests' values and intentions for sustainable hotels, and compare how this aligns with their actual behavior during check-in. Although the overall results shed light on consumer behavior, there were no significant differences.

Literature Review

Sustainability is a hot topic in today's global society, with several stakeholders, including consumers, activists, scientists, government officials, and industry professionals (Barr, Shaw, Coles, & Prillwitz, 2010; Prud'homme & Raymond, 2013). With an increasingly knowledgeable and engaged global market, these stakeholders are taking small steps to battle issues such as climate change and pollution (Barber, Kuo, Bishop, & Goodman, 2012). Environmentally-conscious actions like recycling, decreasing waste, using alternative forms of energy, and supporting sustainable development are becoming mainstream among consumers, and these practices are becoming more relevant in the hospitality industry as well (Barber et al., 2012; Bruns-Smith, Choy, Chong, & Verma, 2015; Miao & Wei, 2013; Miller, Rathouse, Scarles, Holmes, & Tribe, 2010).

The Hospitality Industry

Hospitality is an extremely vast, global industry, with sustainability becoming increasingly important among industry leaders (Sirakaya-Turk, Baloglu, & Mercado, 2014; World Travel & Tourism Council, 2015). One study showed that members of the World Travel & Tourism Council (WTTC) have reduced their carbon emissions by twenty percent over one decade (World Travel & Tourism Council, 2015). Though this trend stretches across various segments of the industry (World Travel & Tourism Council, 2015), the present study will narrow in on the hotel industry specifically.

Hotels

Many large hotel chains are stepping up and implementing eco-friendly practices that include linen reuse programs, solar panel installations, LEED certifications, reduced water and energy consumption, soap recycling, and more (Hilton Worldwide, n.d.; Hyatt Corporation, n.d.; Kimpton Hotel and Restaurant Group, n.d.; Marriott International, n.d.). In the aforementioned study conducted by the WTTC, companies like Hyatt Hotels, Hilton Worldwide, and Wyndham Worldwide greatly reduced their carbon footprint from 2005 to 2015, with plans to continue this trend through 2035 (World Travel & Tourism Council, 2015). Sustainability, however, does not only apply to the leading industry brands. In a 2015 Cornell study, researchers surveyed the top 100 environmentally-friendly resorts in the United States, many of whom are independent, to uncover the best practices in the industry (Bruns-Smith et al., 2015). Some of the top sustainability programs included low-flow shower heads, CFL light bulbs, and energy efficient appliances (Bruns-Smith et al., 2015). More expensive and complicated initiatives, such as reflective roofing and gray water usage, were less common (Bruns-Smith et al., 2015). These

findings demonstrate that while sustainability in the industry is on the rise, hoteliers are still averse to high-cost initiatives.

Consumers Environmental Attitudes and Behavior

Dissecting consumers' sustainability values and behaviors spans across multiple disciplines: sustainability, environmental psychology, marketing, and hospitality. While there is extensive research in the field of consumer behavior as it relates to sustainability, researchers are still dissecting how this can be translated to guests' behaviors in a hotel setting. As with most industries, the hotel industry is consumer-driven. If consumers are not demanding sustainable features, hoteliers do not have financial incentive to implement them.

Environmental behavior in the hotel sector is especially challenging. Some research suggests that consumers' pro-environmental behavior is not consistent from when they are at home versus when they are travelling (Barr et al., 2010; Miao & Wei, 2013). Pro-environmental behavior is often seen as a chore or a sacrifice, and hotel guests justify not being environmentally-friendly by the fact that they are trying to relax and have fun (Barr et al., 2010; Miao & Wei, 2013). When presented with a pro-environmental choice that requires a sacrifice to personal comfort or convenience, consumers are highly unlikely to engage in that behavior (Miao & Wei, 2016). Miao and Wei (2013) found that consumers' pro-environmental behaviors differ depending on their situation; especially in terms of tourism. At home, consumers are more engaged in sustainable activities; i.e. reduce, reuse, recycle, and green consumption (Miao & Wei, 2013). Their research also found that consumers at home are motivated by a moral obligation to engage in pro-environmental behavior, whereas guests at a hotel are motivated by whether or not the activity would result in a burden to their personal comfort (Miao & Wei, 2013). These findings demonstrate that consumers' pro-environmental behavior is fluid; their

pro-environmental behavior as hotel guests is not always consistent with their pro-environmental behaviors at home (Miao & Wei, 2013).

Research by Robin, et al. (2016) found that consumers could be separated into three clusters based on their decision-making processes while searching for a hotel. The non-committed cluster are those who place a high importance on subjective-type attributes (hotel's location, attractiveness, and safety) and put a low or zero priority on environmental policies (Robin, et al., 2016). The other extreme is the committed clusters, who are equally concerned with both the subjective-type attributes and environmental policies, including ecological certifications (Robin, et al., 2016). Those who fall between the two are referred to as the influenced cluster, who tend to be indecisive consumers (Robin, et. al, 2016). The influenced cluster can be convinced of the importance of environmental attributes, but is not concerned unless presented with the information and encouraged to act (Robin, et al., 2016). This cluster may suggest that some consumers are malleable in their pro-environmental behavior, and that hotels can influence these guests to consider environmental policies as an important decision-making attribute. Barber and Deale (2014) suggest hoteliers can increase mindfulness by providing information and helpful tips to guests on how they can continue sustainable behaviors while on vacation. This emphasis on increasing mindfulness may be the solution for the influenced cluster.

Willingness to pay

An important piece to this puzzle is whether consumers are willing to pay more for sustainability features in a hotel setting, and if so, how much more. The answer to this question will give an indication to industry leaders to whether implementation of sustainability initiatives at their properties will be profitable and well-received. Susskind's (2014) findings show that

women are more likely to pay for these features than men, older guests are more likely to pay for these features than younger guests, and that this choice is not dependent on income level.

According to a study done by Millar and Baloglu (2011), hotel guests indicated that they would not be willing to pay more for sustainability practices; in fact, most believed there should be no price difference. Another study conducted in India by Manaktola and Jauhari (2007) found that merely 15% were willing to pay more for sustainability features. It should be noted, however, that this study focused on where the burden of sustainability costs should be placed; not necessarily how much consumers will pay for sustainability initiatives alone (Manaktola & Jauhari, 2007). It's imperative to know how much more guests are willing to pay for sustainability in a hotel setting, but without considering the costs to the hotel. Guests become skeptical of sustainability initiatives if they believe the hotel has ulterior motives (i.e. saving costs), and is therefore unlikely to pay more for these features (Rahman, Park, & Chi, 2014).

Due to the nature of the hotel industry, it can be difficult to observe and measure actual consumer behavior. This is why past research focuses on measuring and evaluating consumer motivations and intentions. While this type of research can be useful in predicting consumers' behaviors, we know from the aforementioned studies that consumers' intentions do not always match their actual behaviors. This is especially true when it comes to choosing to physically spend more money on a certain product or service. In one study, researchers studied actual behavior of purchasing organic wine using an auction method (N. A. Barber, Bishop, & Gruen, 2014). Not only could the consumers be segmented by their actual behaviors and willingness-to-pay, but researchers could also see how their values and intentions aligned with their actual decision-making processes (N. A. Barber et al., 2014). This type of study that observes actual

behavior can provide valuable insights about what consumers are likely to do in a particular setting.

Research Questions

The main objective of this study is to measure hotel guests' values and intentions of being sustainable at a hotel, and compare how this aligns with their actual behavior during check-in. It also aims to draw conclusions based upon their environmental concern using the guests' usual eco-friendly behaviors and viewpoints. Lastly, this research will point to which sustainable hotel features are most important to guests. This study aspires to reveal useful implications to hoteliers about the general profitability and demand of sustainability initiatives. Based upon the discussion above, this study aims to answer the following questions:

1. What are the values and intentions of hotel guests in terms of sustainable behavior?
2. What are the actual sustainable behaviors of hotel guests during their stay?
 - a. Are guests willing to pay more for sustainable features when asked?
 - b. Is this consistent with their values and intentions?

Methodology

Study Design

The researcher received approval from the Institutional Research Board at the University of New Hampshire. The researcher also worked closely with a privately-owned, national hotel company to execute this study.

Measurement Items

The survey began with an introductory paragraph explaining the study. The final section collected respondents' demographics (gender, education, and level of income). See Appendix A for complete survey constructs.

Environmental behavior measured how often guests act sustainably at home and at a hotel through everyday actions tested by Dolnicar and Leisch (2008). The five behaviors that were used in this study were chosen due to their commonality both at home and at a hotel.

Attitude toward the behavior and *perceived behavioral control* were used to understand the relationship between the respondent and the behaviors. These tested how much respondents want to engage in these behaviors (i.e. acting sustainably, in the sense of choosing an eco-friendly hotel). These questions were modeled after a study conducted by Kim, Njite, and Hancer (2013). Definitions of an eco-friendly hotel and a non-ecofriendly hotel were developed by the researcher and provided to the respondents to establish a consistent standard.

Environmental values were tested by asking respondents how much they agree or disagree with statements that referred to humans' relation to the environment. Of the many statements recommended by Dolnicar and Leisch (2008), eight were used in this study. Half of these statements referred to the respondents' holistic views of the environment and the remaining half referred to the respondents' individual views of the environment and how their behaviors affect its state of being.

Product offerings considered many product characteristics that influence consumer choice, such as special features, performance, design, and quality. Thus, to measure consumers' preferences for green hotel products, using recommendations from the Green Hotels Association (n.d.) and modifying the quality attributes suggested and tested by Lee et al. (2010) and

Manaktola and Jauhari (2007), a list of 12 items was developed that matched those items most often suggested to be important for green hotels to offer guests. These items covered a wide range of product offerings.

Data Collection

A survey assessing consumers' decision-making values and sustainability values, as well as behavioral intentions and motivations, was created using UNH Qualtrics. Partnering with a national hotel company, they provided access to reservation agents who in turn blasted out a link to the survey via email to all guests who hold a future reservation at one of their properties. Respondents were incentivized with a chance to win a meal voucher for the hotel restaurant. Data was collected over the course of five weeks through experimental design at check-in. When guests arrived for check-in, they were given a form asking if they would be willing to pay more for environmental initiatives, and if so, how much more per room per night. This form stated that this was purely for research purposes for a student project at the University of New Hampshire (*see Appendix B*). The check-in clerk noted whether or not the guest would pay the fee, but no charge actually took place on the guest's credit card. Guests were asked to include their hotel confirmation number during the survey in order for survey data to be matched with behavioral data.

Data Analysis

The data was analyzed using IBM SPSS Statistics 24 to determine the descriptive statistics and to test the research questions.

Results

Results were not as robust as planned [see limitations and future research]. Survey data was compared to behavioral data to determine how intentions relate to actual behavior. Statistics were run using SPSS and data was analyzed via descriptive statistics and independent t-tests. At the conclusion of the study, the researcher had obtained 33 usable survey responses and 19 check-in responses. Of the 19 check-in responses, three corresponded to confirmation numbers given in the survey.

Demographics

As shown on Table 1, the survey pool was almost evenly split by gender, but leaned more towards males, at 54.5% of respondents. 54.5% of respondents are from New England (ME, NH, VT, MA, RI, CT), and of those, 67% are from Maine. The remaining respondents are from outside the region, including New York, New Jersey, Illinois, Indiana, Maryland, Mississippi, Pennsylvania, Texas, and Washington. There was one respondent from outside the U.S. (Canada). All respondents have completed some college-level education, with a majority holding at least a bachelor's degree. Over half of the respondents are employed full-time, just under a quarter are self-employed, and the remaining are either retired or unemployed and not seeking work.

Assessing Research Questions

The pre-check-in survey inquired about environmental behavior, values, and intentions in order to answer research question 1 [What are the values and intentions of hotel guests in terms of sustainable behavior?]. Table 2 outlines the mean results in total and by gender. Using independent t-test analysis, it was found that there is widely no significant difference between female and male responses except in the case of hotel product offerings.

Environmental behavior. At home, guests act sustainably by switching off the light when leaving a room and recycling cans and bottles. However, when it comes to conserving water, using refillable containers, and turning off the heat/air-conditioning, guests are less sustainable. Guests act similarly at home as they do when at a hotel, though they are more likely to use refillable containers while at a hotel than at home.

Environmental values. In general, respondents are concerned about the environment. They feel that the well-being of the environment is important and in danger. They also generally believe that humans negatively affect the environment and that individuals' daily actions can have an impact.

Attitude toward and perception of the behavior. In terms of choosing an eco-friendly hotel over a non-eco-friendly hotel, respondents believe that they would prefer to choose an eco-friendly hotel and that others should as well, however, they do not feel much societal pressure to do so. Respondents stated that they generally have the ability and intention to choose to stay at an eco-friendly hotel.

Product offerings. The survey asked guests to rate sustainable hotel product offerings from most important (1) to least important (12), with (6) being the most neutral rating. Generally, respondents favored the following actions by hotels: buying amenities in bulk; buying fair-trade/organic amenities; and donating leftover amenities to charities. Those rated the least important include: using sensors/timers for lighting; switching to LED lightbulbs; and providing reusable items. The t-test of significance indicated that females value low-flow toilets more so than males, and males value the donation of used soap more so than females.

Behavioral Data

Table 3 (*see Appendix E*) demonstrates the responses collected at check-in about willingness-to-pay for sustainability initiatives and answers research question 2a [Are guests willing to pay more for sustainable features when asked?]. Guests were asked how much more they would be willing to pay per room per night (*see Appendix B*). Most guests were willing to pay \$0 or \$5 more, with the average being \$4.74. While this does not seem like a high number, it does show that guests do place enough value on sustainability to pay a bit more for it while travelling.

Survey Data vs. Behavioral Data

To answer research question 2b [Is this consistent with their values and intentions?], survey data was compared to behavioral data using guests' confirmation numbers (*see Appendix F*). As mentioned previously, only three check-in responses matched accordingly to the survey responses. Check-in responses were collected for five weeks, whereas the survey was sent to all guests with a reservation for any future date. Additionally, confirmation numbers must have been provided by the guest during the survey, and many respondents did not supply a confirmation number, leaving the researcher unable to match to any possible check-in response.

However, with these three responses, Table 4 shows how intention relates to actual behavior. Overall, these respondents are neutral, but lean slightly towards the intention of acting sustainably while travelling. On average, these respondents are willing to pay \$3.33 more per room per night for sustainable initiatives. Their intentions of acting sustainably match well with their actual behaviors, both of which are fairly neutral. There is not a strong desire before or during the stay to be sustainable. Therefore, the answer to research question 2b is yes, guests' intentions are comparable to their actual behaviors.

Conclusions

Despite the low sample size, hoteliers should consider some of the important findings. First, that guests do generally value sustainability and understand the impact they have on the environment. Guests appreciate eco-friendly initiatives, but do not seem to be seeking out eco-friendly hotels when looking for places to stay.

In general, the results showed that environmental behaviors from home carry over when staying at a hotel. Some behaviors, such as recycling and switching off lights when leaving the room, are enacted most often. Hoteliers should be sure to tap into these routine behaviors by providing recycling bins in guest rooms and public areas and keep light switches by guest room exits. However, behaviors that are enacted less frequently should not be ignored. To improve those infrequent behaviors, hoteliers might consider including informational pamphlets or notecards that explain the impact of these behaviors (i.e. conserving shower water).

Hoteliers that intend to implement sustainable features at their property should consider the most highly-rated product offerings from this study. Results show that guests ranked the following as most important: buying amenities in bulk, purchasing organic/fair-trade/cruelty-free

products, and donating leftover items to charities. Not only should hoteliers implement these initiatives, but also advertise these practices on the hotel website and in public areas. Though this study did not test how important these initiatives are in the search process, they could be persuasive to guests who think they are most important. Other features that were ranked as less important should still be implemented if possible, as results showed consumers do value sustainability.

Profitability is an important topic for hoteliers who are interested in implementing sustainability. Behavioral data from this study suggests that some guests are willing to pay more for sustainability initiatives, but not much more. For guests, sustainability initiatives justify an average increase of less than \$5 per room per night. Hoteliers should consider these findings when creating a pricing strategy for their sustainable rooms.

Limitations & Future Research

This study faced a few limitations. Due to constrained resources, hoteliers were not able to deploy the survey and check-in procedure across multiple properties. Additionally, the study was conducted during the participating hotel's slow season, causing a lower survey response rate than desired. The low response rate makes it difficult to apply these findings to a larger population, however the findings were used to draw some thoughtful conclusions and are good starting points for future research.

It would have been interesting to see how these responses varied by age. Other researchers should replicate the idea of this study on a larger scale and in different areas to see how environmental values and intentions vary across demographics. It would also be interesting to segment respondents into target markets that are willing to pay more and build a profile of

those consumers. This would help hoteliers further understand their most profitable potential guests and cater to their expectations.

Another idea for a future study is to have guests choose a hotel from a presented list with varied product offerings. This could show whether consumers are looking for eco-friendly initiatives during the search process, or if it is simply an added bonus. Additionally, exploring the impact of different marketing tactics that showcase hotel sustainability initiatives may show some interesting results. Similar studies could also be replicated to other segments of the hospitality industry (i.e. restaurants, clubs, etc.).

This study serves as a small piece in a larger, complex research area. There is still much to learn in the field of sustainable consumer behavior in the hospitality industry. Once hoteliers can fully understand the values of their markets, they will be able to move forward with initiatives that support the future of their business and our planet.

References

- Barber, N. A. (2014). Profiling the potential “green” hotel guest: Who are they and what do they want? *Journal of Hospitality & Tourism Research*, *38*(3), 361-387.
- Barber, N. A., Bishop, M., & Gruen, T. (2014). Who pays more (or less) for pro-environmental consumer goods? Using the auction method to assess actual willingness-to-pay. *Journal of Environmental Psychology*, *40*, 218–227. <https://doi.org/10.1016/j.jenvp.2014.06.010>
- Barber, N. A., & Deale, C. (2014). Tapping Mindfulness to Shape Hotel Guests’ Sustainable Behavior. *Cornell Hospitality Quarterly*, *55*(1), 100–114.
<https://doi.org/10.1177/1938965513496315>
- Barber, N., Kuo, P., Bishop, M., & Goodman, R. (2012). Measuring psychographics to assess purchase intention and willingness to pay. *Journal of Consumer Marketing*, *29*(4), 280–292.
<https://doi.org/10.1108/07363761211237353>
- Barr, S., Shaw, G., Coles, T., & Prillwitz, J. (2010). “A holiday is a holiday”: practicing sustainability, home and away. *Journal of Transport Geography*, *18*(3), 474–481.
<https://doi.org/10.1016/j.jtrangeo.2009.08.007>
- Bruns-Smith, A., Choy, V., Chong, H., & Verma, R. (2015). Environmental sustainability in the hospitality industry: Best practices, guest participation, and customer satisfaction. *Cornell Hospitality Report*, *15*(3), 6–16. <https://doi.org/10.1017/CBO9781107415324.004>
- Dolnicar, S., & Leisch, F. (2008). Selective marketing for environmentally sustainable tourism. *Tourism Management*, *4*(29), 672–680.
- Green Hotels Association. (n.d.). Retrieved from <http://greenhotels.com/index.php>

Hilton Worldwide. (n.d.). Preserving Environment. Retrieved from

<http://cr.hiltonworldwide.com/environments/>

Hyatt Corporation. (n.d.). Our Planet. Retrieved from [https://thrive.hyatt.com/en/thrive/our-](https://thrive.hyatt.com/en/thrive/our-planet/overview.html)

[planet/overview.html](https://thrive.hyatt.com/en/thrive/our-planet/overview.html)

Kim, Y. J., Njite, D., & Hancer, M. (2013). Anticipated emotion in consumers' intentions to select eco-friendly restaurants: Augmenting the theory of planned behavior. *International Journal of Hospitality Management*, 34(1), 255–262.

<https://doi.org/10.1016/j.ijhm.2013.04.004>

Kimpton Hotel and Restaurant Group. (n.d.). Environment. Retrieved from

<https://www.kimptonhotels.com/kimpton-cares/environment>

Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitude and behaviour towards green practices in the lodging industry in India. *International Journal of Contemporary Hospitality Management*, 19(5), 364–377. <https://doi.org/10.1108/09596110710757534>

<https://doi.org/10.1108/09596110710757534>

Marriott International. (n.d.). Environment. Retrieved from <http://www.marriott.com/corporate-social-responsibility/corporate-environmental-responsibility.mi>

Miao, L., & Wei, W. (2013). Consumers' pro-environmental behavior and the underlying motivations: A comparison between household and hotel settings. *International Journal of Hospitality Management*, 32(1), 102–112. <https://doi.org/10.1016/j.ijhm.2012.04.008>

Miao, L., & Wei, W. (2016). Consumers' Pro-Environmental Behavior and Its Determinants in the Lodging Segment. *Journal of Hospitality & Tourism Research*, 40(3), 319–338.

<https://doi.org/10.1177/1096348013495699>

- Millar, M., & Baloglu, S. (2011). Hotel Guests' Preferences for Green Guest Room Attributes. *Cornell Hospitality Quarterly*, 52(3), 302–311. <https://doi.org/10.1177/1938965511409031>
- Miller, G., Rathouse, K., Scarles, C., Holmes, K., & Tribe, J. (2010). Public understanding of sustainable tourism. *Annals of Tourism Research*, 37(3), 627–645. <https://doi.org/10.1016/j.annals.2009.12.002>
- Prud'homme, B., & Raymond, L. (2013). Sustainable development practices in the hospitality industry: An empirical study of their impact on customer satisfaction and intentions. *International Journal of Hospitality Management*, 34(1), 116–126. <https://doi.org/10.1016/j.ijhm.2013.03.003>
- Rahman, I., Park, J., & Chi, C. G. (2014). Consequences of “greenwashing”: consumers' reactions to hotels' green initiatives. *International Journal of Contemporary Hospitality Management*, 27(6), 1054–1081.
- Robin, C. F., Valencia, J. C., Muñoz, G. J., Astorga, P. S., & Martínez, D. Y. (2016). Attitude and Behavior on Hotel Choice in Function of the Perception of Sustainable Practices. *Tourism & Management Studies*, 12(1), 60–66. <https://doi.org/10.18089/tms.2016.12106>
- Sirakaya-Turk, E., Baloglu, S., & Mercado, H. U. (2014). The Efficacy of Sustainability Values in Predicting Travelers' Choices for Sustainable Hospitality Businesses. *Cornell Hospitality Quarterly*, 55(1), 115–126. <https://doi.org/10.1177/1938965513499822>
- Susskind, A. M. (2014). Guests' Reactions to In-Room Sustainability Initiatives. *Cornell Hospitality Quarterly*, 55(3), 228–238. <https://doi.org/10.1177/1938965514533744>
- World Travel & Tourism Council. (2015). World Travel & Tourism Council: “Travel & Tourism

2015: Connecting Global Climate Action”. Retrieved from <https://www.wttc.org/-/media/files/reports/policy-research/tt-2015--connecting-global-climate-action-a4-28pp-web.pdf>

Yu, Yixiu; Li, Xu; Jai, Tun-Min (Catherine) (2017). The impact of green experience on customer satisfaction: evidence from TripAdvisor, *International Journal of Contemporary Hospitality Management*, 29(5), 1340-1361.

Appendix A – Survey Questions

SURVEY QUESTIONS

a. Environmental Behavior – At Home

(Always, Often, Sometimes, Rarely, Never)

1. I switch off the light whenever leaving a room.
2. I limit my shower time to conserve water.
3. I use refillable containers (i.e. for shampoo).
4. I recycle cans or bottles.
5. I turn off heating/air-conditioning before leaving for the day.

b. Humans' Relation to the Environment

(Strongly agree, Somewhat agree, Unsure, Somewhat disagree, Strongly disagree)

Holistic View

1. The so-called “ecological crisis” facing humankind has been greatly exaggerated.
2. Humans are severely abusing the environment.
3. The earth has plenty of natural resources if we just learn how to develop them.
4. When humans interfere with nature, it often produces disastrous consequences.

Individual View

5. My actions affect the well-being of the environment.
6. The daily actions of individuals are not to blame for environmental issues.
7. I consider myself in favor of defending the environment.
8. I am concerned about the situation of the environment in general.

c. Definitions

An ECO-FRIENDLY hotel property operates sustainably by implementing practices that are beneficial to the environment. These practices include but are not limited to:

- Towel re-use programs
- Utilizing refillable shampoo/conditioner dispensers
- Low-flow shower heads to reduce water consumption
- Providing recycling bins in rooms and common spaces
- Using energy-efficient lighting

A NON-ECO-FRIENDLY hotel property operates traditionally, with little to no environmentally sustainable practices in place.

d. Attitude toward the behavior

1. For me, selecting an eco-friendly hotel for an overnight stay, compared to a non-eco-friendly hotel is...
 - Scale: Undesirable to desirable
 - Scale: Unpleasant to pleasant

- Scale: Unfavorable to favorable
- Scale: Unenjoyable to enjoyable

e. **Prescriptive norms**

(Agree, Unsure, Disagree)

1. I should choose to stay at an eco-friendly hotel when traveling.
2. I should be willing to pay more for eco-friendly hotel rooms.
3. People in general should choose to stay at an eco-friendly hotel when traveling.
4. People in general should be willing to pay more for eco-friendly hotel rooms.
5. Overall, I feel pressure to stay at an eco-friendly hotel when traveling.

f. **Perceived behavioral control**

(Agree, Unsure, Disagree)

1. Selecting an eco-friendly hotel for an overnight stay, compared to a non-eco-friendly hotel, is completely up to me
2. I am confident that if I want, I can select an eco-friendly hotel for an overnight stay, compared to a non-eco-friendly hotel
3. I have enough money to select an eco-friendly hotel for an overnight stay
4. I have enough time to select an eco-friendly hotel for an overnight stay

g. **Intention**

(Agree, Unsure, Disagree)

When given the choice between a non-eco-friendly hotel and an eco-friendly hotel...

1. I would consider staying at an eco-friendly hotel.
2. I intend to book an overnight stay at an eco-friendly hotel.
3. I plan on booking an overnight stay at an eco-friendly hotel.
4. I am interested in staying overnight at an eco-friendly hotel.

h. **Environmental Behavior – At Hotel**

(Always, Often, Sometimes, Rarely, Never, N/A)

1. I switched off the light whenever leaving a room.
2. I limited my shower time to conserve water.
3. I used refillable containers (i.e. for shampoo).
4. I recycled cans or bottles.
5. I turned off heating/air-conditioning before leaving for the day.

i. **Product Offerings**

Please rate the following twelve (12) eco-friendly features from most important to least important when selecting a hotel.

- Buys guest amenities in bulk (i.e., uses refillable hair and skin care dispensers)
- Buys organic, fair-trade, cruelty-free guest amenity products whenever possible (e.g., bedding, hair and body care)
- Donates leftover guest amenities, old furniture, and appliances to charities.

- Donates used soap and shampoo to people in need.
- Has a linen (both towels and sheets) reuse program in all guest rooms.
- Has installed low-flow showerheads and sink aerators.
- Has switched to LED light bulbs in guest rooms, lobbies, and hallways.
- Has switched to low-flow toilets or installed toilet tank fill diverters.
- Provides guests with bicycles, walking maps, and/or information on public transportation.
- Provides recycling bins in public areas (e.g., poolside) and in the kitchen, guestrooms, and back office (including one at each desk).
- Provides reusable items such as cloth napkins, glass cups, ceramic dishes, and so on with all food and beverage services.
- Uses sensors and/or timers for areas that are infrequently used.

j. Demographics

1. For which property do you have a reservation?
2. Please indicate the gender to which you most identify.
 - a. Female
 - b. Male
 - c. Non-conforming
 - d. Not listed: _____
3. What is the highest level of school you have completed? *If currently enrolled, highest degree received.*
 - a. Less than a high school diploma
 - b. High school diploma or equivalent
 - c. Some college, no degree
 - d. Associate degree
 - e. Bachelor's degree
 - f. Graduate/Professional degree
4. What is your current employment status?
 - a. Employed full-time
 - b. Employed part-time
 - c. Unemployed and seeking work
 - d. Unemployed and not seeking work
 - e. Retired
 - f. Self-employed
 - g. Unable to work

Appendix B – Check-in Questionnaire Form

To support environmental initiatives, how much more would you be willing to pay per room night at this hotel? Check which applies.

- \$0
- \$5
- \$10
- \$ _____

Reservation/Confirmation Number _____

Disclaimer: Thank you for completing the short form. We are working with a University of New Hampshire, Hospitality Management Program, and honors thesis student to help understand hotel guest behavior. This data is only used for that purpose and no individual data will be provided to the student.

*Appendix C – Table 1***Table 1. Demographics (n = 33)**

	% of Total
GENDER	
Female	45.5%
Male	54.5%
STATE OF ORIGIN	
Canada	3.0%
Connecticut	3.0%
Illinois	6.1%
Indiana	3.0%
Maine	36.4%
Maryland	3.0%
Massachusetts	9.1%
Mississippi	3.0%
New Hampshire	3.0%
New Jersey	6.1%
New York	9.1%
Pennsylvania	3.0%
Rhode Island	3.0%
Texas	6.1%
Washington	3.0%
EDUCATION	
Some College	15.2%
Associate Degree	3.0%
Bachelor's Degree	54.5%
Graduate/Professional Degree	27.3%
EMPLOYMENT	
Employed full-time	54.5%
Unemployed and not seeking work	3.0%
Retired	18.2%
Self-employed	24.2%

*Appendix D – Table 2***Table 2. Survey Data (n = 33)**

	Total	Gender		t-test p < .05
		Female	Male	
Environmental Behavior				
<i>At Home</i>				
I switch off the light whenever leaving a room.	1.7	1.6	1.8	No significance
I limit my shower time to conserve water.	2.5	2.4	2.6	No significance
I use refillable containers (i.e. for shampoo).	3.1	3	3.1	No significance
I recycle cans or bottles.	1.6	1.9	1.3	No significance
I turn off heating/air-conditioning before leaving for the day.	2.4	2.1	2.6	No significance
<i>At Hotel</i>				
I switch off the light whenever leaving a room.	1.6	1.8	1.5	No significance
I limit my shower time to conserve water.	2.4	2.4	2.4	No significance
I use refillable containers (i.e. for shampoo).	2.5	2.1	2.9	No significance
I recycle cans or bottles.	1.7	1.7	1.6	No significance
I turn off heating/air-conditioning before leaving for the day.	2.1	2.1	2.2	No significance
Humans' Relation to the Environment				
<i>Holistic View</i>				
The so-called “ecological crisis” facing humankind has been greatly exaggerated.	3.1	2.9	3.2	No significance
Humans are severely abusing the environment.	1.9	1.8	2.0	No significance
The earth has plenty of natural resources if we just learn how to develop them.	2.6	2.5	2.7	No significance
When humans interfere with nature, it often produces disastrous consequences.	2.0	2.1	2.0	No significance
<i>Individual View</i>				
My actions affect the well-being of the environment.	1.8	1.7	1.9	No significance
The daily actions of individuals are not to blame for environmental issues.	4.0	3.9	4.2	No significance
I consider myself in favor of defending the environment.	1.8	1.8	1.7	No significance
I am concerned about the situation of the environment in general.	1.7	1.8	1.7	No significance
Attitude Toward the Behavior				
Desirability	1.8	1.9	1.7	No significance
Pleasantness	1.9	1.9	1.8	No significance
Favorability	1.9	1.9	1.9	No significance
Enjoyability	2.1	2.3	2.0	No significance

Prescriptive Norms				
I should choose to stay at an eco-friendly hotel when traveling.	2.0	1.9	2.1	No significance
I should be willing to pay more for eco-friendly hotel rooms.	2.5	2.4	2.6	No significance
People in general should choose to stay at an eco-friendly hotel when traveling.	2.0	1.8	2.1	No significance
People in general should be willing to pay more for eco-friendly hotel rooms.	2.6	2.3	2.7	No significance
Overall, I feel pressure to stay at an eco-friendly hotel when traveling.	3.5	3.6	3.4	No significance
Perceived Behavioral Control				
Selecting an eco-friendly hotel... is completely up to me.	2	2.0	1.9	No significance
I am confident that if I want, I can select an eco-friendly hotel...	2.2	2.1	2.4	No significance
I have enough money to select an eco-friendly hotel...	1.9	1.8	1.9	No significance
I have enough time to select an eco-friendly hotel...	2	2.2	1.8	No significance
Intention				
I would consider staying at an eco-friendly hotel.	1.6	1.7	1.6	No significance
I intend to book an overnight stay at an eco-friendly hotel.	2.2	2.1	2.2	No significance
I plan on booking an overnight stay at an eco-friendly hotel.	2.2	2.2	2.2	No significance
I am interested in staying overnight at an eco-friendly hotel.	1.8	1.9	1.7	No significance
Product Offerings				
Buys guest amenities in bulk.	4.6	4.2	4.9	No significance
Buys organic, fair-trade, cruelty-free guest amenity products whenever possible.	4.3	4.4	4.2	No significance
Donates leftover guest amenities, old furniture, and appliances to charities.	4.1	3.8	4.3	No significance
Donates used soap and shampoo to people in need.	4.9	3.5	5.9	Significant, $t = 2.05$ (df 31), $p < .05$
Has a linen reuse program in all guest rooms.	6.8	6.3	7.2	No significance
Has installed low-flow showerheads and sink aerators.	6.3	6.7	6	No significance
Has switched to LED light bulbs in guest rooms, lobbies, and hallways.	7.1	7.9	6.4	No significance
Has switched to low-flow toilets or installed toilet tank fill diverters.	5.5	6.5	4.6	Significant, $t = 2.48$ (df 310), $p < .05$
Provides guests with bicycles, walking maps, and/or information on public transportation.	6.9	7.4	6.7	No significance
Provides recycling bins in public areas and in the kitchen, guestrooms, and back office.	5.8	6.3	5.3	No significance
Provides reusable items such as cloth napkins, glass cups, ceramic dishes, and so on with all food and beverage services.	7.1	7.7	6.7	No significance
Uses sensors and/or timers for areas that are infrequently used.	8.0	8.9	7.3	No significance

*Appendix E – Table 3***Table 3. Behavioral Data (n=19)**

ID	Confirmation Number(s)	WTP More
1	1907974	\$5.00
2	7579889/7579890	\$5.00
3	7581078	\$5.00
4	7579143/7579144	\$5.00
5	1899512/1899513/1899514	\$5.00
6	1912437	\$5.00
7	1905371	\$5.00
8	1932122	\$5.00
9	1918545	\$5.00
10	1921569	\$0.00
11	1905281/1905286/1932924	\$5.00
12	1907269	\$5.00
13	1898857/1947514	\$0.00
14	1905719/1905727	\$5.00
15	1897514	\$10.00
16	1917837	\$5.00
17	1910009	\$5.00
18	1898709	\$10.00
19	1910974	\$0.00
		\$4.74

*Appendix F – Table 4***Table 4. Survey Data vs. Behavioral Data (n = 3)**

1 = Strongly Agree; 2 = Somewhat Agree; 3 = Neither Agree/Disagree; 4 = Somewhat Disagree; 5 = Strongly Disagree

Guest ID	I would consider staying at an eco-friendly hotel.	I intend to book an overnight stay at an eco-friendly hotel.	I plan on booking an overnight stay at an eco-friendly hotel.	I am interested in staying overnight at an eco-friendly hotel.	Average	Conf. #	WTP More
5	2	3	3	3	2.8	1910009	\$5.00
1	2	3	3	3	2.8	1898857	\$0.00
2	1	3	3	1	2.0	1898507	\$5.00
					2.5		\$3.33