INTENTION TO STAY AND CUSTOMERS' PERCEPTIONS ABOUT THE EFFECTIVENESS AND THE COMPONENTS OF ENVIRONMENTALLY FRIENDLY PROGRAMS IN HOTELS

By

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DEDICATION

To my parents, Chung-soo Kim and Ok-sim Hwang.

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CHAPTER I

INTRODUCTION

Overview

Concerns to the environment are evident in the ecologically conscious marketplace in recent studies (Laroche, Bergeron, & Barbaro-Forleo, 2001). One study found that raised environmental consciousness is a reality and change of attitude may indirectly lead to increased market share options (D'Souza, Taghian, Lamb, & Peretiatkos, 2006). With this trend, ecotourism is making big gains in the consciousness of many travelers: where ecotourism means responsible travel to natural areas that conserves the environment and improves the well-being of local people (The International Ecotourism Society [TIES], 2006). For instance, in the U.S. more than three-quarters of travelers "feel it is important that their visits not damage the environment," according to a 2003 study (TIES, 2006). This study estimated that 17 million American travelers consider environmental factors first when deciding which travel companies to patronize.

In the hotel industry, therefore, there has been a shift in the customers' expectations and demands over the past 20 years (The Prince of Wales International Business Leaders Forum [IBLF], 2005). IBLF found that the typical hotel guest today is more knowledgeable and more confident about what he or she wants out of the hotel

experience so that guests are more likely to be concerned about environmental and social issues, and are probably recycling bottles, cans and paper at home or making greener 'lifestyle' purchases such as organic vegetables or fuel-efficient cars. For that reason, travelers need 'green' hotel that are properties whose managers are eager to institute programs that save water, save energy and reduce solid waste, while saving money, to help protect our one and only earth (Green Hotels Association [GHA], 2006). According to Watkins (1994), about 70 percent of survey respondents said that they are likely or extremely likely to stay at a hotel with an environmentally friendly strategy. Consequently, environmentally friendly concept is an opportunity to hotels since this concept could be a portal to hospitality success in the future (Hendrie, 2006). In terms of suppliers, preserving high environmental quality is one of the main concerns on the business agenda as advocated by environmentalism in the hotel industry (Enz & Siguaw, 1999; Paulina, 2005). As an successful example of their efforts, one hotel, Gaia Napa Valley Hotel and Spa of Altman Hospitality Group Inc., has achieved a 46% reduction in water through low flow showers and toilets, and the property's pond uses recycled water from the site, which is filtered and cleaned prior to entering the pond (Butler, 2007).

In spite of the above successes, hotels are not reaching their full potential for the development of environmentally friendliness. Conner (2000) stated that "despite the fact that more and more consumers regularly consider environmental criteria in their purchasing decisions, the U.S. Lodging Industry in general has failed to respond to this potential niche market." According to Stipanuk (2001), some hotels were not particularly more energy efficient than those of 10 years earlier even though the green hotel development boom started in the mid 1990's. Simon (2007) suggested that research is

needed to further explore what properties in the hospitality industry should do to implement existing and new for developing environmentally friendly programs.

Problem statement

There is little research conducted about environmentally friendly hotels (Osland & Mackoy, 2004). In other words, little management theory or empirical results exist to guide hotels in maximizing their efforts to successfully implement environmental friendly programs. Typically the hotel industry has been poor at evaluating environmental issues. Hence, there is a profound need to understand how the effort to become green is perceived by the hotel customers in order to develop appropriate marketing strategies for the future.

Objectives of the study

This study is aimed to identify the customers' perceptions about the components of environmentally friendly programs in hotels and to examine their intention to stay at an environmentally friendly hotel. Specially, the objectives are as follows,

1) To measure the effectiveness of twenty-two environmentally friendly action programs used in hotels from the perspectives of the hotel customers.
2) To develop a list of critical environmentally friendly factors through a synthesis of customers' perceptions of the effectiveness of the environmentally friendly programs used in hotels.
3) To identify the importance of each factor with respect to the customers' intention to stay at an environmentally friendly hotel.
4) To determine the effects of socio-demographic factors on customers' intention

to stay at an environmentally friendly hotel.

Scope of the study

The scope of this study will be limited to evaluating the customers' perceptions of the effectiveness of the twenty-two environmentally friendly action programs commonly used in hotels. The implied relationship between the customers' awareness of such programs or their prior experience with such programs, and their potential impact on their perceptions will not be explored.

Organization of the study

This study is composed of five Chapters. An overview of the study including problem statement, objectives of the study, scope of the study, and organization of the study is first presented in Chapter I. In Chapter II, theoretical background of environmentally friendly programs in hotels and the proposed variables used in the study are reviewed. Chapters III and IV include the methodology and result of the study respectively. Finally, summaries and implications for this study with limitations and suggestions for future research are elaborated in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

Environmental marketing

Environmental definition

Faulk (2000) defined sustainable development as wider philosophy of development that includes social and natural carrying capacities. According to Kirk (1995), "sustainable development covered a broad range of areas from the maintenance of physical resources, the protection of biological systems, plant and animal species and natural habitats and the preservation of cultures." Meanwhile, being environmentally friendly is a less strict term (Faulk 2000). Also, Faulk (2000) suggested that environmentally friendly is often used synonymously with green, environmentally sensitive, ecologically sound, and so forth.

Environmental friendliness relates to all actions that involve the environment (Stipanuk, 1996). On the other hand, environmental friendliness means that the product is designed to reduce its negative environmental impact in some way (Pujari & Wright, 1999). Pujari and Wright (1999) observed that environmentally friendly products are typically specified as providing measurable improvements throughout the entire product lifecycle.

In the hotel industry, environmentally friendly hotels and green hotels are defined

as lodging establishments that have made a commitment to diverse ecologically sound practices such as saving water, energy, and reducing solid waste (Manaktola & Jauhari, 2007). Meanwhile, environmentally friendly hotels or green hotels differ from other concept such as eco-lodges. According to Osland and Mackoy (2004), "eco-lodges are the accommodation facilities and services established in, or very near, natural areas visited by eco-tourists." Another research defines eco-lodges as nature-dependent lodges that meet the philosophy and principles of ecotourism (Russell, Bottrill, & Meredith, 1995).

Environmental marketing concept

Environmental marketing has been referred to as green marketing or sustainable marketing (Fuller, 1999). Fuller (1999) defined environmental marketing as "the process of planning, implementing, and controlling the development, pricing, promotion, and distribution of products in a manner that satisfies the following three goals: (1) customer needs are met, (2) organizational goals are attained, and (3) the process is compatible with the ecosystems." According to Kotler (1991), green marketing is under the societal marketing concept. Kotler (1991) stated that the major components of green marketing are focused not only on customers' needs but also on society's or the public's needs. One research defined green marketing as a root of the fundamental tension between modern mass consumption and environmentalism (Mackoy, Calantone, & DrOge, 1995). Mackoy, Calantone, and DrOge (1995) claimed that green marketing was developed to address the needs and wants of a segment of consumers who express environmental concerns.

Environmental marketing drivers

Forte & Lamont (1998) stated that being green is a good business practice as this strategy has a tendency to promote profitability, improve employee motivation and commitment in addition to increasing customer loyalty. On the other hand, environmental marketing is perceived as being instrumental in the development of a positive corporate image and an element to the success of a business enterprise (D'Souza, Taghian, Lamb, & Peretiatkos, 2006).

According to Foster (2000), the hospitality industry is under pressure to become more environmentally friendly because of the following forces: consumer demand, increasing environmental regulation, managerial concern with ethics, customer satisfaction, maintenance issues, and the need for aesthetics. D'Souza, Taghian, Lamb, & Peretiatkos (2006) suggested that the drivers toward environmental marketing are:

- to build a strong competitive advantage for the product;
- to develop and project a positive and ethical corporate image;
- to gain and benefit from the support of the employees; and
- to meet customers' expectations, improve market share and achieve longer term profit potentials.

Environmentally friendly programs in hotels

In the hospitality industry, hotels have been interested in the reduction of solid waste, water consumption, energy consumption and air pollution for environmentally friendly efforts (Shanklin, 1993). An environmentally sensitive hotel is one that has altered its equipment, policies, and practices to minimize its damage on the environment

(Iwanowski & Rushmore, 1994). In addition, Iwanowski and Rushmore (1994) stated that a careful examination of existing systems and operational procedures, especially in the areas of energy management, solid-waste management, and water conservation, reveal an abundance of possible modifications that cost nothing or will pay for themselves in a few years. Among various programs, the researcher reviewed four major categories (energy, solidwaste, water, and biodiversity) of management programs that a hotel can implement to become an environmentally friendly hotel.

Energy program

The world's total primary energy supply has doubled in 35 years and buildings represent 40% of this consumption (The Accor Group, 2006). The hotel industry consumes over $1 billion worth of energy per year and most hotels could reduce energy consumption by 20 to 40 percent while maintaining guest comfort ([IBLF], 2005). In order to monitor and improve performance in terms of energy savings, the hotel needs an energy management program such as monitoring temperature controls, switching off unnecessary lights, and replacing devices with more-efficient, cost saving equipment (Iwanowski & Rushmore, 1994). An energy program coordinator of UNEP (United Nations Environment Program) suggested that consuming less energy and adopting energy efficient technologies reduces the need for investment in energy infrastructures and increases the competitiveness of businesses (The Accor Group, 2006).

Solid waste program

A solid waste management program is aimed at reducing the volume and toxicity

of the garbage being sent to the landfill (Iwanowski & Rushmore, 1994). According to Accor (2006), on average 11.6 pounds (5.3kg) of waste is produced per person per day in OECD countries and waste recycling worldwide is below 10%. Most hotels pay twice for the waste they produce - initially for product packaging and later for waste disposal. Across the world, landfill sites for waste disposal are becoming harder to find and increasingly expensive to use. As a result of higher waste disposal costs in many industrial countries through mechanisms such as landfill and incineration taxes, many companies view waste as lost profits ([IBLF], 2005). Kirk (1995) suggested that waste should be recycled either by reusing products, or by recycling the materials, or by minimizing waste in operations.

Water program

Excessive water use can degrade or destroy local water resources, threatening the availability of water for local needs (The Center for Environmental Leadership in Business & The Tour Operator' Initiative for Sustainable Tourism Development [CELB & TOI], 2003). Water accounts for up to 15 percent of total utility bill in most hotels and up to 95 percent of fresh water is wasted. Most hotels pay for the water they consume twice initially to purchase fresh water and then to dispose of it as waste water ([IBLF], 2005). Effective water conservation is available by reducing the amount of water that comes out of a faucet or showerhead or that is used to flush a toilet and by encouraging guests to use their towels and linens for more than one day (Iwanowski & Rushmore, 1994; [CELB & TOI], 2003).

Biodiversity program

According to CELB & TOI (2003), "hotels can seek opportunities to benefit biodiversity by contributing to improving the state of the environment at a local, regional, or national level. Such action can be particularly important in countries where capacity and resources for environmental conservation are limited." The decline in the world's biodiversity over the past 50 years is a phenomenon which has never been equaled. For example, 25% of mammals, 11% of birds, 20% of fish and 13% of plants are threatened with extinction (The Accor Group, 2006). Accor suggested that at local level, hotels can contribute to the preservation of their local biodiversity by maintaining, for instance, their green spaces and by taking positive actions to preserve the environment. In addition, beyond those green spaces, hotels can take various actions to preserve the natural environment and the plant and animal species that live there (The Accor Group, 2006).

Customer characteristics and purchase intention

The literature shows several studies that tried to identify the linkage between customers' purchase intention and customers' characteristics, specifically with regards to gender, income, and age. (Exter, 1986; Homburg & Giering, 2001; Uncles & Ehrenberg, 1990).

The impact of gender on buying behavior has also attracted some research interests (Slama & Tashchian, 1985). Women are thought to be strongly influenced by their evaluation of personal interaction processes and are more involved in the purchasing activity than men are, paying more attention to the services offered by the service provider (Gilbert & Warren 1995). One study of financial services suggested that men are

three times more likely to complain than women (Burton, 1995). This argument leads us to intuitively conclude that men are usually less satisfied than women with the service they receive. Women are seen as more friendly, unselfish and concerned for others while men are seen as more independent, masterful and assertive (Franke, Crown & Spake, 1997).

Homburg and Giering (2001) suggested that people with higher incomes usually engage in more information processing prior to making a decision. Jaffe and Hyde (2000) found that lower income individuals would be more inclined toward personal interaction. One study found that people with higher socioeconomic status tend to process more information and examine more attributes and alternatives than their counterparts (Schaninger & Sciglimapaglia, 1981). The fact that they have more choices to evaluate gives them the impetus for higher expectations from a service.

According to Szmigin and Carrigan (2001), young people tend to be more willing to try new brands engaging in more switching brand which can affect their loyalty intention. One study found younger consumers tend to process more information and examine more attributes and alternatives than their older counterparts (Schaninger & Sciglimapaglia, 1981). On the other hand, seniors tend to make decisions based on their experience and wisdom and are more inclined to analyzed producers (Koco, 2001).

Meanwhile, one research found that customers consider environmentally friendly products' functional performance, quality, convenience and price when they purchase those (Ottman, 1995). However, even though customers' concerns about performance and quality, Ottman (1995) claimed that some marketers have missed this. Product performance has influence for consumer to purchase environmental friendly products so

when consumer have pessimism of the relative performance of environmental friendly products or a performance gap exists, this could robustly influence the customers' decision to purchase (Wong, Turner, & Stoneman, 1996). Therefore, measuring performances may be principally important for green markets in order to know the influence to customers' purchasing intention.

CHAPTER III

METHODOLOGY

Research design

This study was a descriptive cross-sectional research project that utilized an online survey to collect data. A self-administrated, closed-ended questionnaire with ordered choices was used to survey a sample of travel industry customers.

Measurement and scale

The questionnaire comprised of 39 variables divided into four major sections: 1) general information about patronizing hotels; 2) rating on a five-point scale for effectiveness of environmentally friendly action programs in hotels; 3) intention to stay at an environmentally friendly hotel; and, 4) a customer demographic profile. The environmentally friendly action programs selected are based on a previous environmental checklist developed for the lodging industry (DeFranco & Weatherspoon, 1996) and Accor hotels environment charter (The Accor Group, 2006). Although DeFranco and Weatherspoon developed a comprehensive list of environmentally friendly programs for hotels, it was not used for research. Therefore, this study not only modifies the list but also uses it for empirical research. This is a theoretical contribution made by this research.

Sample and data collection

The sampling population is online travel community members in MSN, Yahoo, and Google. The researcher select members of online travel community as the subjects of this survey since they are prospective hotel customers and they could have a lot of experiences with staying at hotels to be able to answer the questions of the survey. An online travel community is a group of people who have a similar interest in travel and who are governed by norms and policies. The 63 groups were selected based on the description of the group's main activities or interests provided on the group's home page. In order to find the participants, first, operators of online communities were contacted by the researcher. Then, permission was granted by the moderators and the researcher posted the invitation e-mails on each group's bulletin or message board with a request for participation, an introduction explaining the purpose of the survey, and the link to the web-based survey. The responses were automatically stored in an electronic database created for this study that can be accessible to the researcher only. The data were collected from August 29, 2007 to October 30, 2007. Out of 165 useable responses, 22 were eliminated because of an excessive amount of missing data. After elimination, 133 questionnaires (80.6%) were coded and analyzed for the empirical investigation.

Research questions and hypotheses

1. Which of the twenty two commonly used environmentally friendly action programs in hotels are most effective as perceived by the customers?

H1. *Ho*: Using energy efficient lighting would be the most effective environmentally friendly action program from the perspective of the

hotel customers.

Ha: Using energy efficient lighting would not be the most effective environmentally friendly action program from the perspective of the hotel customers.

2. What are the critical factors of environmentally friendly programs at a hotel from the perspective of the customers?

H2. *Ho*: Energy program would be the most critical factor of environmentally friendly programs at a hotel from the perspective of the customers.

Ha: Energy program would not be the most critical factor of environmentally friendly programs at a hotel from the perspective of the customers.

3. What is the relationship between critical factors of environmentally friendly program at hotels and the customers' intention to stay at the hotel?

H3. *Ho*: Energy program would be more strongly related to customers' intention to stay at an environmentally friendly hotel compared to other critical environmentally friendly programs at the hotel.

Ha: Energy program would not be more strongly related to customers' intention to stay at an environmentally friendly hotel compared to other critical environmentally friendly programs at the hotel.

4. Is there a relationship between customers' demographic and socio-economic factors and their intention to stay at an environmentally friendly hotel?

H4-1. *Ho*: Males would be more likely to stay at an environmentally friendly hotel compared to females.

Ha: Males would not be more likely to stay at an environmentally friendly hotel compared to females.

H4-2. *Ho*: Customers who are over 55 years old would be more likely to stay at an environmentally friendly hotel compared to all other age groups.

Ha: Customers who are over 55 years old would not be more likely to stay at an environmentally friendly hotel compared to all other age groups.

H4-3. *Ho*: Customers with income above $50,000 would be more likely to stay at an environmentally friendly hotel compared to all other income groups.

Ha: Customers with income above $50,000 would not be more likely to stay at an environmentally friendly hotel compared to all other income groups.

Data analysis

The analyses of data for this study included frequency analysis, factor analysis, t-test analysis, one-way ANOVA analysis, and multiple regression analysis using SPSS 14.0. First, frequency analysis was generated to display the distribution of respondents' demographic profiles and characteristics of their hotel. Second, exploratory factor analysis with varimax rotation was employed to identify a set of critical factors of

environmentally friendly programs. Third, regression analysis was conducted to investigate the impact of the extracted factors that influence intention to stay in an environmentally friendly hotel. Finally, independent sample t-test and one-way ANOVA analysis was used to explore how customer' choice intention for an environmentally friendly hotel is related to their demographic characteristics such as gender, income, education, and age and other such variables.

CHAPTER IV

FINDINGS

Respondent characteristics

The respondents for the empirical investigation included a similar distribution of males (48.9%) and females (51.1%) and a broad cross-section of age groups and income groups. About half (48.9%) of respondents had received graduate degree or had been in graduate school while 8.3% of respondents had received high school degrees. Among the 133 respondents, 82% reported that leisure was the main purpose of their staying at a hotel and 18% indicated that business was the main purpose for their stay at the hotel. Out of the 133 respondents, 4.5% had paid $201 or more for a night of stay, while 25.6% had paid $101 – $200, 57.9% $51 – $100, and 12% under $50. In terms of frequency of staying at hotel, 85% had stayed less than 6 times a year while only 15% had stayed 7 times or more a year. Among the 133 respondents, nearly three-fourths (75.2%) of respondents viewed themselves as environmentally minded customers. This is almost same percentage with a previous research in which 73.7% of respondents considered themselves as environmentally minded customers (Watkins, 1994).

Table 1

Descriptive statistics of respondents' characteristics

Variable	**(N = 133)**	**Frequency**	**Percent**
Gender			
Male		65	48.9
Female		68	51.1
Age			
18-24		43	32.3
25-34		44	33.1
35-44		9	6.8
45-54		20	15.0
55-over		17	12.8
Education			
High school		11	8.3
College		57	42.9
Graduate		65	48.9
Annual Income			
$ under 20,000		45	33.8
$ 20,000-49,999		40	30.1
$ 50,000 or more		48	36.1
Purpose			
Business		24	18.0
Leisure		109	82.0
Room cost per night			
$ under 50		16	12.0
$ 51-100		77	57.9
$ 101-200		34	25.6
$ 201 or more		6	4.5
Frequency of staying at hotel per year			
1-2 times		57	42.9
3-6 times		56	42.1
7 times or more		20	15.0
Environmentally minded customer			
Yes		100	75.2
No		33	24.8

Research question 1

Question 1

Which of the twenty two commonly used environmentally friendly action programs in hotels are most effective as perceived by the customers?

Finding of research question 1

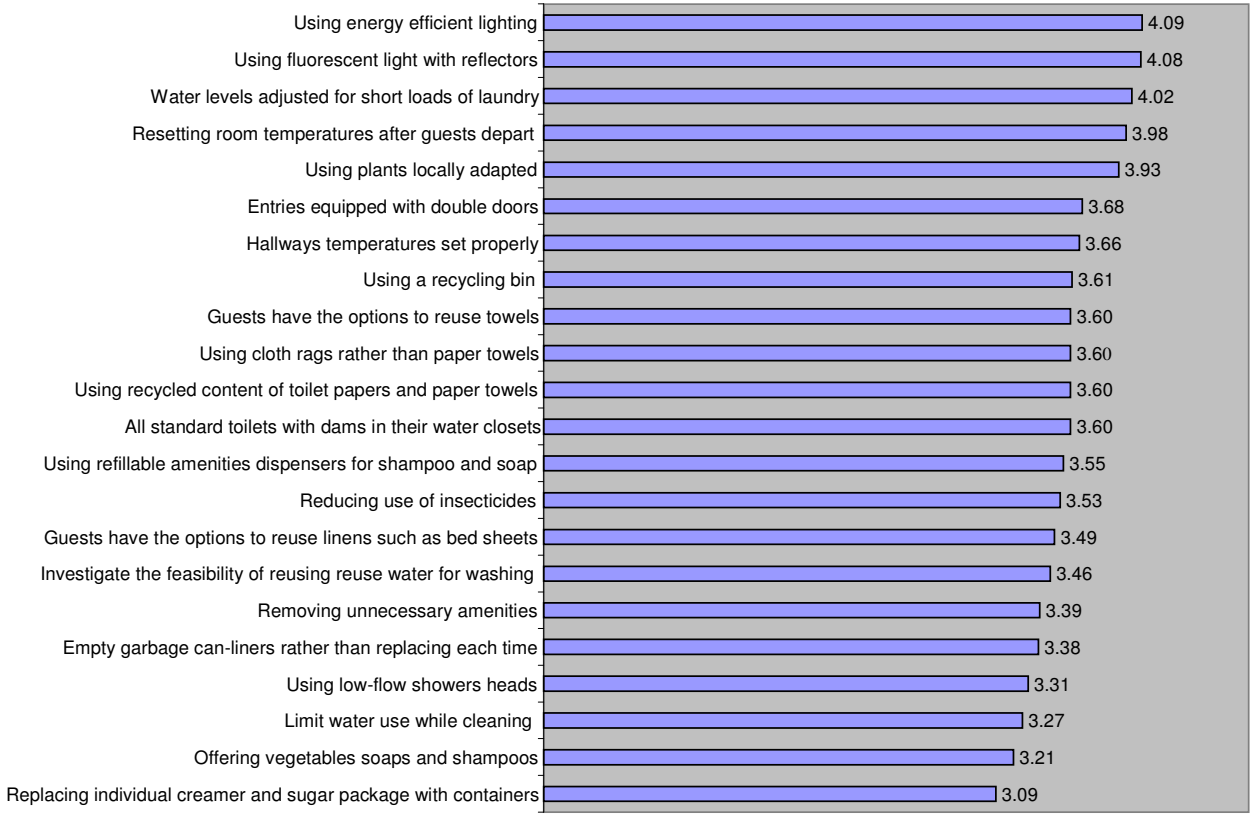
The survey result rating the effectiveness of each determinant using a 5-point Likert scale (1 = not at all effective; 5 = very effective) is presented in Figure 1. Overall, the respondents evaluated twenty-two environmentally friendly action programs and gave an average effectiveness rating of 3.60 out of 5.00. In the top five action programs, Using energy efficient lighting had the highest score (4.09) of effectiveness followed by Using fluorescent light with reflectors (4.08), Water levels adjusted for short loads of laundry (4.02), Resetting room temperatures after guests depart (3.98), and Using plants locally adapted (3.93). On the other end, there were low scored action programs which respondents considered neither effective nor ineffective. Especially, Replacing individual creamer and sugar package with containers (3.09) was ranked at the last showing about one Likert scale unit gap with the highest rated action program.

Conclusion of hypothesis 1

Based on the findings above, Hypothesis 1 – that Using energy efficient lighting would be the most effective environmentally friendly action program from the perspective of the hotel customers – is accepted.

Figure 1

Effectiveness of twenty-two environmentally friendly action programs



Research question 2

Question 2

What are the critical factors of environmentally friendly programs at a hotel from the perspective of the customers?

Finding of research question 2

The 22 determinants were factor analyzed using principal component analysis with orthogonal varimax rotation in order to identify the structure of determinants related to environmentally friendly programs in hotels. Table 2 presents the results relevant to the question of which determinants are important to explain the total variances in all the variables. The number of factors was determined by retaining only the factors with an eigenvalue of 1 or higher.

The first factor, *Solidwaste & water program in guestroom* includes eight items that are implemented in guestroom of hotel for reducing waste and saving water as environmentally friendly programs. The second factor, *Energy program*, consists of six items that are carried out to monitor and improve performance in terms of energy saving in hotel. Out of six items, only one item is related in laundry of hotel for saving water. The third factor, *Solidwaste & water program in housekeeping* includes four items that are performed by housekeeper for reducing waste and saving water. The fourth factor, *Water program by customer' option*, consists of two items which are optional with customer since this program is given options to reuse towels and lines to customer for saving water. Finally, the fifth factor, *Biodiversity program*, includes two items that promote the organic maintenance of planted areas and participated in local preservation

activities. All factor loading scores were higher than 0.40 and the five extracted factors accounted for 65.99% of the variation in the original 22 items. In order to test the reliability and internal consistency of each factor, Cronbach's alpha of each factor was computed. Cronbach's alpha coefficients of all factor dimensions were higher than 0.60 and were found to be reliable (Hair, Anderson, Tatham, & Black, 1995).

Conclusion of hypothesis 2

Findings lead to rejection of Hypothesis 2, which states that Energy program would be the most critical factor of environmentally friendly programs at a hotel from the perspective of the customers.

Table 2

Results of factor analysis

Factor	Mean	SD	Factor loading	Eigen value	Variance explain %
FACTOR 1: *Solidwaste & water program in guestroom* (0.861 [a])				9.19	41.79
Using refillable amenities dispensers for shampoo and soap	3.55	1.38	0.75		
Replacing individual creamer and sugar package with containers	3.09	1.43	0.72		
Using a recycling bin	3.61	1.21	0.71		
Offering vegetables soaps and shampoos	3.21	1.34	0.63		
All standard toilets with dams in their water closets	3.60	1.20	0.59		
Using recycled content of toilet papers and paper towels	3.60	1.36	0.57		
Using low-flow showers heads	3.31	1.37	0.46		
Removing unnecessary amenities	3.39	1.32	0.41		
FACTOR 2: *Energy program* (0.864 [a])				1.57	7.13
Water levels adjusted for short loads of laundry	4.02	1.06	0.77		
Resetting room temperatures after guests depart	3.98	1.10	0.69		
Using fluorescent light with reflectors	4.08	1.13	0.65		
Entries equipped with double doors	3.68	1.10	0.64		
Hallways temperatures set properly	3.66	1.25	0.64		
Using energy efficient lighting	4.09	1.25	0.56		
FACTOR 3: *Solidwaste & water program in housekeeping* (0.813 [a])				1.45	6.61
Empty garbage can-liners rather than replacing each time	3.38	1.32	0.80		
Using cloth rags rather than paper towels	3.60	1.27	0.72		
Limit water use while cleaning	3.27	1.42	0.70		
Investigate the feasibility of reusing reuse water for washing	3.46	1.24	0.63		
FACTOR 4: *Water program by customers' option* (0.954 [a])				1.25	5.69
Guests have the options to reuse towels	3.60	1.40	0.89		
Guests have the options to reuse linens such as bed sheets	3.49	1.45	0.88		
FACTOR 5: *Biodiversity program* (0.813 [a])				1.04	4.75
Reducing use of insecticides	3.53	1.25	0.74		

Using plants locally adapted	3.93	1.10	0.65		
Total variance explained					65.99

[a] Reliability score (Cronbach's α) for each factor grouping is shown in parentheses.

Research question 3

Question 3

What is the relationship between critical factors of environmentally friendly program at hotels and the customers' intention to stay at the hotel?

Finding of research question 3

To determine the importance of each factor to intention to stay at an environmentally friendly hotel, multiple regression analysis was conducted. Intention to stay at an environmentally friendly hotel was the dependent variable, while the five determinant factors were the independent variables. All variables were entered at the same time. Table 3 reports the results of the multiple regression analysis. Four factors such as *Solidwaste & water program in guestroom, Energy program, Solidwaste & water program in housekeeping and Biodiversity program* significantly influenced intention to stay at an environmentally friendly hotel. Table 3 reveals that *Solidwaste & water program in guestroom* turned out to be the most important factor followed by *Biodiversity program, Energy program, and Solidwaste & water program in housekeeping* but, *Water program by customers' option* was not found to be significant. Overall, the regression results explained 38% (adjusted R^2) of the variance in intention to stay at an environmentally friendly hotel.

Conclusion of hypothesis 3

Based on the finding above, there is partial acceptance of Hypothesis 3, which states that Energy program would be more strongly related to customers' intention to stay

at an environmentally friendly hotel compared to other critical environmentally friendly programs at the hotel.

Table 3

Results of regression analysis

Factor	**Dependent Variable**	
	Intention to stay	
	Std. β	***t (2-tailed)***
FACTOR 1: *Solidwaste & water program in guestroom*	0.462	6.742**
FACTOR 2: *Energy program*	0.212	3.091**
FACTOR 3: *Solidwaste & water program in housekeeping*	0.173	2.523*
FACTOR 4: *Water program by customer' option*	0.051	0.740
FACTOR 5: *Biodiversity program*	0.336	4.897**
		F = 17.181**
		Adjusted R^2 = 0.380

* p<0.05 and ** p<0.01

Research question 4

Question 4

Is there a relationship between customer demographic and socio-economic factors and their intention to stay at an environmentally friendly hotel?

Finding of research question 4

In order to analyze variable differences and their relationship to intention to stay at an environmentally friendly hotel, independent sample t-tests were used for the gender, purpose, and environmentally mind. One way ANOVA analyses were conducted for the other variables: age, education, annual income level, room cost per night, and frequency

of staying at hotel per year. Table 4 shows that there is significant difference in gender at $\alpha = 0.05$ level and in environmentally minds at $\alpha = 0.01$ level with respect to the intention to stay at an environmentally friendly hotel. Females were more likely to stay at environmentally friendly hotels than males and obviously environmentally minded customers were more likely to stay at an environmentally friendly hotel. However, there was no difference in the purpose for visiting hotel on the intention to stay at an environmentally friendly hotel.

Conclusion of hypothesis 4-1

Hypothesis 4-1, which states that Males would be more likely to stay at an environmentally friendly hotel compared to females, is not accepted.

Table 4

T-test results: Intention to stay at an environmentally friendly hotel

Variable	**Mean**	**SD**	**t (2-tail)**	**p-value**
Gender			-2.373	0.019*
Male	3.44	1.13		
Female	3.88	0.98		
Purpose			-0.013	0.990
Business	3.66	1.16		
Leisure	3.66	1.06		
Environmentally minded customer			4.569	0.001**
Yes	3.93	0.89		
No	2.87	1.21		

* $p<0.05$ and ** $p<0.01$

The results of the one-way ANOVA tests are shown in Table 5. Age differences were weakly related to intention to stay at an environmentally friendly hotel at $\alpha = 0.1$ level. The customers who are over 55 years old are less likely to stay at an

environmentally friendly hotel than the customers who are 25 – 34 years old. In addition, income differences showed significant relationship with intention to stay at an environmentally friendly hotel at $\alpha = 0.05$ level. The customers who earned over $50,000 per year are less likely to stay at an environmentally friendly hotel than the customers who earned under $49,999. No differences were found in other variables such as education, room cost per night, and the frequency of staying at hotel per year on the intention to stay at an environmentally friendly hotel.

Table 5

ANOVA results: Intention to stay at an environmentally friendly hotel

Variable	**F**	**p-value**	**Remarks**
Age			
18-24, 25-34, 35-44, 45-54, and 55-over	2.393 (df 4)	0.054*	Tukey test found difference between 25-34 and 55-over
Education			
High school, College, and Graduate	0.054 (df 2)	0.576	
Annual Income			
$ under 20,000, $ 20,000-49,999, and $ 50,000 or more	3.852 (df 2)	0.025**	Tukey test found difference between under $20,000 and $50,000 or more and between $20,000-$49,999 and $50,000 or more
Room cost per night			
$ under 50, $ 51-100, $ 101-200, and $ 201 or more	1.158 (df 3)	0.328	
Frequency of staying at hotel per year			
1-2 times, 3-6 times, and 7 times or more	1.599 (df 2)	0.213	

* $p<0.1$ and ** $p<0.05$

Conclusion of hypothesis 4-2

Based on the findings above, Hypothesis 4-2 – Customers who are over 55 years

old would be more likely to stay at an environmentally friendly hotel compared to all other age groups – is rejected.

Conclusion of hypothesis 4-3

Based on the findings above, Hypothesis 4-3, which states that Customers with income above $50,000 would be more likely to stay at an environmentally friendly hotel compared to all other income groups, is not accepted.

CHAPTER V

CONCLUSION

Summary and implication

Summary of research question 1

Overall, the survey result rating the effectiveness of each determinant using a 5-point Likert scale (1 = not at all effective; 5 = very effective) indicated that the respondents thought that the twenty-two environmentally friendly programs were somewhat effective (Mean: 3.60 out of 5.00). In the 22 programs, some of the high ranked programs can be immediately available for implementation in hotels such as Using energy efficient lighting (4.09), Adjusting water levels for short loads of laundry (4.02), and Resetting room temperatures after guests depart (3.98).

Managerial implication of research question 1

There were relatively low scored programs which respondents considered neither effective nor ineffective, so hotels should consider improving or changing these environmentally friendly programs such as Replacing individual creamer and sugar package with containers (3.09), Offering vegetables soaps and shampoos (3.21), and Using low-flow showers heads (3.31) in order to successfully implement them for satisfying the customers.

Summary of research question 2

The factor analysis revealed that *Solidwaste & water program in guestroom* is considered the most important determinant factor explaining environmentally friendly program in hotels. This indicates that hotel guests are aware of environmentally friendly program in hotels as they can easily perceive them and also use them directly in the guestrooms. *Energy program* is the second most important factor which is related to such issues as electricity and light usage. While electrical and lighting savings efforts are mostly invisible to customers, customers still seem to rank them as a highly important component in environmentally friendly hotels. The next factor, *Solidwaste & water program in housekeeping* is performed by housekeepers, so customers cannot know about them directly. In spite of that, customers still rated them highly. *Water program by customers' option* is considered the fourth factor explaining environmentally friendly program in hotels. Among the five factors, this factor is the only optional program that can be implemented by the guest. *Biodiversity program* is the fifth factor which is not related with the customers. Therefore, the customers may not easily realize the importance of such program.

Summary of research question 3

The multiple regression results suggest that the significant factors that affect intention to stay at an environmentally friendly hotel were *Solidwaste & water program in guestroom, Energy program, Solidwaste & water program in housekeeping and Biodiversity program.* However*, Water program by customers' option* did not influence customers' intention to stay at an environmentally friendly hotel as a previous research

showed in which there was not a majority of respondents likely to stay in a hotel adopting "Not changing towels daily" practice (Watkins, 1994). Customers did not consider *Water program by customers' option* to be as an important factor although they have full control over such issues.

Managerial implication of research question 3

Based on the study's findings, hotel marketers need to focus on developing *Solidwaste & water program in guestroom, Energy program, Solidwaste & water program in housekeeping and Biodiversity program* to attract customers. Those four factors should be highlighted and integrated into the advertising and PR activities with no need to emphasize the *Water program by customers' option*. Since *Biodiversity program* and *Energy program* are ranked second and third most important factors respectively, affecting customers' intention, but are not easily noticeable, the hotels should highlight such programs by creating brochure and posting these practices in the elevator and/or the guestroom in order to increase customers' awareness towards environmentally friendly hotels. Environmental activities undertaken at the facility should be clearly visible to the customer.

Summary of research question 4

This study empirically investigated the differences in demographic and socio-economic characteristics of customers who have intention to stay at an environmentally friendly hotel. Independent sample t-tests and one way ANOVA results presented that there are difference in gender, age, and income. As a previous study showed that female

are willing to pay more for environmentally friendly products (Laroche, Bergeron, & Barbaro-Forleo, 2001), this study found that female are more likely to stay at an environmentally friendly hotel. In terms of age, younger customers who are in 25-34 years are more likely to stay at an environmentally friendly hotel rather than old customers who are over 55 years. In terms of income level, customers who earned over $50,000 per year are less likely to stay at an environmentally friendly hotel than the customers who earned under $49,999.

Managerial implication of research question 4

Based on the differences in demographic and behavioral characteristics of customers, this study portrays customer who have intention to stay at an environmentally friendly hotel as female, young with low income level. Hotel marketers may aim at this segment as their prime target. On the other hand, there are no difference in purpose of staying at hotels, education, cost per night, and frequency of staying at hotels in t-tests and ANOVA results. Hence, hotel marketers do not need to differentiate from business traveler to leisure traveler; from economy hotel to luxury hotel; and from frequent traveler to infrequent traveler in their market segments.

Limitations and future research

The following limitations should be taken into consideration in interpreting the findings of this study. The first limitation to the study includes the use of a convenience sample of respondents who decided that they would like to participate in the survey. Self-selection could result in a non-representative sampling bias. In addition, member

participation and interaction can differ with respect to different types of online community. Second, this study did not take into account the role of some resource factors relevant for intention of staying at an environmentally friendly hotel. Thus, future research can further examine how other resource factors such as customers' value, and knowledge influence the intention to stay at an environmentally friendly hotel.

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APPENDIX

APPENDIX A

SURVEY QUESTIONNAIRE

SAVE OUR EARTH

Dear Participants:

We are conducting a research project to better understand customers' perception toward environmentally friendly hotel. This study will help us know the effectiveness of environmentally friendly programs in hotels.

Your response is vital to the success of this research as well as to the improvement of our environment program. Please take about 10 minutes to complete this survey. Your participation is greatly appreciated.

Your participation is strictly voluntary. There are no known risks associated with this project which are greater than those ordinarily encountered in daily life. There is no penalty for refusing to participate and you are free to withdraw from the survey at any time without penalty. Your responses will remain anonymous and confidential.

If you agree to participate in this survey, please click on the "I agree" button to move to the survey. By clicking on the button, you agree to consent to participate in this survey. For information on subjects' rights, please contact Diana Jacobs. Thank you for your valuable time and cooperation.

Sincerely,

Yongjoong Kim
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Phone: (405) 744-6713
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219 Cordell North Oklahoma State University, Stillwater, OK 74078
Phone: (405) 744-3377
E-mail: diana.jacobs@okstate.edu

Please, check your answer (only one) for the following questions:

1. What is your main purpose of staying at a hotel?

   1. Business 2. Leisure

2. How long do you stay at a hotel usually?

   1. One night 2. 2 – 3 night 3. 4 – 6 nights 4. One week or Over

3. How much do you pay for a night of the hotel?

   1. $ Under 50 2. $ 51 - $ 100 3. $ 101 - $ 200 4. $ 201 or More

4. How many times do you stay at a hotel per year?

   1. 1 - 2 times 2. 3 - 6 times 3. 7 times or Over

5. Do you consider yourself an environmentally minded customer?

   1. Yes 2. No

Management Program

This section is about your perception to environmentally friendly hotels. Please check the number that best describes your opinion.

1 = Not at all effective, 2 = Somewhat ineffective, 3 = Neither effective nor ineffective, 4 = Somewhat effective, 5 = Very effective

Guestroom

	Not at all effective				Very effective
Covering windows in some manner (reflective film, mini-blinds or insulated drapes).	1	2	3	4	5
Using compact fluorescent bulbs.	1	2	3	4	5
Using refillable amenities dispensers rather than individual containers for shampoo, conditioner, soap and the like.	1	2	3	4	5
Removing unnecessary amenities.	1	2	3	4	5
Offering vegetable soaps and shampoos.	1	2	3	4	5
Replacing individual creamer and sugar package with bulk containers.	1	2	3	4	5
Using utensils reusable rather than disposable.	1	2	3	4	5
Using a recycling bin.	1	2	3	4	5
Eliminating refrigerating appliances containing CFCs that are most harmful for the ozone layer.	1	2	3	4	5

	Not at all effective				Very effective
Using recycled content of toilet papers and paper towels (if used).	1	2	3	4	5
All standard toilets with dams in their water closets.	1	2	3	4	5
Using low-flow showerheads	1	2	3	4	5
Guests have the options to reuse towels.	1	2	3	4	5
Guests have the options to reuse linens.	1	2	3	4	5

Housekeeping

	Not at all effective				Very effective
Resetting room temperatures after guests depart.	1	2	3	4	5
Using cloth rags rather than paper towels.	1	2	3	4	5
Empty garbage can-liners rather than replacing each time.	1	2	3	4	5
Limit water use while cleaning.	1	2	3	4	5

Laundry

	Not at all effective				Very effective
Completely fill the washer and the dryer with all loads.	1	2	3	4	5
Investigate the feasibility of reusing rinse water for washing.	1	2	3	4	5
Water levels adjusted for short loads.	1	2	3	4	5
Investigate the use of gray water for irrigation.	1	2	3	4	5

Common areas

	Not at all effective				Very effective
Fluorescent light fixtures equipped with reflectors and fitted with energy efficient bulbs.	1	2	3	4	5
Entries equipped with double doors.	1	2	3	4	5
Hallways temperatures set to be warmer than room temperatures in summer and cooler than rooms in winter.	1	2	3	4	5
Reducing use of insecticides.	1	2	3	4	5
Using plants locally adapted.	1	2	3	4	5

Choice intention for environmentally friendly hotels

	Extremely disagree				Extremely agree
I will consider environmentally friendly hotels my accommodation choice.	1	2	3	4	5
I am more likely to stay at an environmentally friendly hotel rather than a regular hotel in the future.	1	2	3	4	5
It is acceptable to pay 10 percent more for staying at an environmentally friendly hotel.	1	2	3	4	5

About Yourself

This demographic information will be used for research purposes only. Please, check only one of each question.

Gender	____	Male	____	Female
Education	____	Less than high school degree		
	____	High school degree	____	Some college
	____	College graduate	____	Graduate degree
What is your age group?	____	18 - 24	____	25 - 34
	____	35 - 44	____	45 - 54
	____	55 - 64	____	65 or over
Annual household Income	____	$ under 20,000	____	$ 20,000 - 29,999
	____	$ 30,000- 39,999	____	$ 40,000 - 49,999
	____	$ 50,000 - 59,999	____	$ 60,000 or More

Thank you very much!

APPENDIX B

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW (IRB) FORM

Oklahoma State University Institutional Review Board

Date: Friday, August 24, 2007

IRB Application No HE0748

Proposal Title: Customers Perceptions About the Effectiveness of Environentally Friendly Programs in Hotels

Reviewed and Processed as: Exempt

Status Recommended by Reviewer(s): Approved **Protocol Expires: 8/23/2008**

Principal Investigator(s):

Yongjoong Kim
210 HES
Stillwater, OK 74078

Radesh Palakurthi
210E HES
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:
As you receive permission emails from operators, send copies to the IRB Office for the file.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North(phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C Jacobs

Sue C. Jacobs, Chair
Institutional Review Board

VITA

Yong Joong Kim

Candidate for the Degree of

Master of Science or Arts

Thesis: INTENTION TO STAY AND CUSTOMERES' PERCEPTIONS ABOUT THE EFFECTIVENESS AND THE COMPONENTS OF ENVIRONMENTALLY FRIENDLY PROGRAMS IN HOTELS

Major Field: Human Environmental Science

Biographical:

Personal Data: Born in Seoul, Korea, on August 19, 1974 the son of Chung-soo Kim & Ok-sim Hwang.

Education: Graduated from Joong Dong High School, Seoul, Korea in February 1993; received Bachelor of Business Administration degree in Hospitality and Tourism Management from Sejong University, Seoul, Korea in February 2001; completed the requirements for the Master of Science in Hospitality Administration at Oklahoma State University, Stillwater, Oklahoma in May, 2008.

Experience: Sergeant, Republic of Korea Army, Gyeonggi-do, Korea, 1995-1997; International Accommodation Manager, Seoul National University, Seoul, Korea, 2002-2004; Marketing Manager, Esco Lighting INC, Seoul, Korea, 2004- 2005; Intern, Marshal Dillon's Stakehouse & Saloon, Stillwater, OK, 2007.

Professional Memberships: National Society of Minorities in Hospitality (NSMH)

Name: Yong Joong Kim Date of Degree: May, 2008

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: INTENTION TO STAY AND CUSTOMERS' PERCEPTIONS ABOUT THE EFFECTIVENESS AND THE COMPONENTS OF ENVIRONMENTALLY FRIENDLY PROGRAMS IN HOTELS

Pages in Study: 49 Candidate for the Degree of Master of Science

Major Field: Human Environmental Science

Scope and Method of Study: This study is aimed at identifying the customers' perceptions about the components of environmentally friendly programs in hotels and to evaluate their effectiveness. Furthermore, this study determines the importance of each factor to the customers' intention to stay at an environmentally friendly hotel. Data were collected from online travel communities by conducting web-based online survey. One hundred thirty three community members from 63 travel-related online communities participated in the survey. The analyses of data for this study included frequency analysis, factor analysis, t-test analysis, one-way ANOVA analysis, and multiple regression analysis using SPSS 14.0.

Findings and Conclusions: The results indicated that the respondents perceived the environmentally friendly programs as being somewhat effective. The multiple regression result indicated that the significant factors that affected customers' intention to stay at an environmentally friendly hotel were *Solidwaste & water program in guestroom, Energy program, Solidwaste & water program in housekeeping and Biodiversity.* However, *Water program by customers' option* did not influence customers' intention to stay at an environmentally friendly hotel. Additionally, the results showed that there were differences in customers' gender, income, and age on intention to stay at an environmentally friendly hotel.

ADVISER'S APPROVAL: Dr. Radesh Palakurthi