

AN INVESTIGATION INTO HOTEL EMPLOYEES' PERCEPTION OF  
GREEN PRACTICES

by

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## ABSTRACT

This study examined how employees of the hotel industry perceived green practices. Data was collected from 220 employees working in eight green certified hotels in Orlando. Research results revealed that *performance* levels of green practices implemented by hotels were lower than the *importance* levels of those same green practices as perceived by hotel employees. The results of the study illustrated that (1) the employees' perception regarding green practices was not different than one of hoteliers in terms of importance and performance, and (2) employees weighted the green practices that were beneficial to them as more important than green practices that required their behavior change.

Also, a positive correlation between organizational commitment and green practices detected in this study which suggests that hotel organizations may anticipate positive ramifications of green practices in relation to HR approach when they embrace green practices. Unfortunately, employees' green perceptions at work were not generalized by their demographic characteristics, yet a number of considerable results were garnered from this study. These were (1) employees in operational departments were more green conscious than employees in other departments, (2) generation X was critical about green performance by the hotels, and (3) minorities showed more green concerns than other ethnicities.

This study suggests that hotels need to spend more time and effort in communicating their green practice to employees. Training to improve green practices should be versatile and job-specific with strategies developed to motivate the employees to engage in green practices.

Overall, this study proposes for hotels simply deploying green practices is not enough. They should carefully plan their green practices by training and motivating employees.

For my mom and sister who have always prayed for me.

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## **CHAPTER ONE: INTRODUCTION**

During the past thirty years, the hotel industry has identified environmentally responsible movements as one of most important items on the agenda for hotel operations (Mensah, 2004). Evidenced by a myriad of practices aimed at improving the environmental impact on the hotel industry, hoteliers are more committed to environmental issues. A recent Green Assessment Survey conducted by American Hotel & Lodging Association polled 217 respondents' properties and revealed that nearly ninety percent of them have adopted green activities (American Hotel & Lodging Association [AH&LA], 2008). This statistic is an indication that green practices are not only widely accepted but have also become the norm in the hotel industry.

Various studies have been conducted relating to environmental concerns, yet the scope has its limitations as the majority of these studies focus primarily on the area of marketing strategy, often investigating consumer perceptions about green products (Clark, Kotchen, & Moore, 2003; Dalton, Lockington, & Baldock, 2008; Goldstein, Cialdini, & Griskevicius, 2008; Gustin & Weaver, 1996; Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Manaktola & Jauhari, 2007; Robert, 1996; Straughan & Roberts, 1999), green marketing (Davis, 1991; Grove, Fisk, Pickett, & Kangun, 1996; Menon & Menon, 1997; Kalafatis, Pollard, East, & Tsogas, 1999), and environmental strategies (Buysse & Verbeke, 2003; Gago & Antolín, 2004; Henriques & Sadosky, 1999; Hunt & Auster, 1990; Roome, 1992 ; Vastag, Kerekes, & Rondinelli, 1996).

There are a few studies that have investigated environmental concerns within the hotel industry, but the majority of them focus on hoteliers' attitudes or awareness (Bohdanowicz, Simanci, & Martinac, 2005; Bohdanowicz, 2006; Harris & Crane, 2002; Kirk, 1998; Claver-Cortés, Molina-Azorín, Pereira-Moliner, & López-Gamero, 2007) and driving forces towards green practices of the hotel industry (Bohdanowicz, Churie-Kalhauge, & Martinac, 2001; Claver-Cortés et al., 2007; Enz & Siguaw, 1999; Tzschentke, Kirk, & Lynch, 2004). In fact, the perspective of hotel employees regarding green practices has gone virtually uninvestigated even though the success of implementing green practices will largely be achieved by employees (Jesitus, 1992; Kirk, 1995; Ramus & Steger, 2000).

### **Problem Statement**

Although studies on green concerns in industry have proliferated, two major research gaps exist in regards to the hotel industry. First, the majority of studies on green practices have focused on manufacturing operations; the hotel industry as a whole should be investigated as it has a unique set of circumstances and challenges that could likely yield differing results. (Chung & Parker, 2008; Foster, Sampson, & Dunn, 2000; González & León, 2001; Maxwell, Rothenberg, Briscoe, & Marcus, 1997; Stabler & Goodall, 1997; Vastag et al., 1996). Green practices of hotels differ from those of manufacturing on two levels: (1) generally, hotels tend to be more labor intensive than the manufacturing firms. Labor intensive in this context implies that hotels heavily rely on manpower to exercise green practices (Foster et al., 2000).

Additionally, the amount of natural resources used at work by the employees is not predictable, unlike the machines of the manufacturing industry, and (2) the operational nature of the hotel business, open 365 days per year, expects more natural resources consumption than manufacturing firms do. Therefore, it is essential to examine green practices in the hotel industry specifically.

Second, there is a need to examine how hotel employees perceive green practices in order to better understand application of green practices to the hotel industry. Previous studies have not examined the employees' perspectives on green practices, but have instead focused on guest perceptions (Gustin & Weaver, 1996; Goldstein et al., 2008; Manaktola & Jauhari, 2007) and attitudes of managers (Bohdanowicz, 2005; 2006; Claver-Cortés et al., 2007; Kirk, 1998). Meanwhile, researchers suggest that employee perception or attitude towards green activities may affect the organization's ultimate green performance (Daily & Steiner, 2001; Perron, Côte, & Duffy, 2006).

Also, employees lead the way to success by not only creating a green culture (Fineman, 1996; Govindarajula & Daily, 2004; Newton & Harte, 1997) but being one of the crucial elements to having a greener hotel industry considering that they demonstrate hands-on green activities in the work environment (Daily & Huang, 2001; Jesitus, 1992; Murillo-Luna, Garcés-Ayerbe, & Rivers-Torres, 2007). Therefore, understanding how hotel employees perceive green practices is not only critical in implementing successful green programs but also an essential element to consider when developing appropriate plans and evaluating capabilities in order to remain competitive in the hotel market of the future.

## **Research Questions and Objectives of the Study**

The aim of this study is to examine green practices from the perspective of hotel employees. This study will specifically focus on green practices in terms of importance and performance as perceived by hotel employees, the relationship between organizational commitment and green practices, and demographic factors in order to examine and evaluate employees' green perception at work. These research focuses will be maintained in the three main research questions listed below.

1. How do hotel employees perceive green practices?
  - 1.1. Does a gap exist between importance and performance level on green practices from the perspective of hotel employees?
    - Do the employees think that green practices are important?
    - How do the employees evaluate the performance of green practices implemented by the hotels?
2. Do green practices relate to organizational commitment?
3. Are the green perceptions at work different based on the employee's demographic characteristics?

This research was conducted to answer the research questions above and examined the perception of hotel employees regarding green practices. Specifically, this study has the following objectives:



1. To examine green practices in terms of importance from the perspective of the hotel employees.
2. To evaluate green practices in terms of performance from the perspective of the hotel employees.
3. To examine the relationship between organizational commitment and green practices.
4. To investigate whether the employee's green perceptions at work are different based on the demographic characteristics of employees.
5. To recommend Human Resource Management (HRM) approaches for hotels involved in green practices.

### **Definition of Terms**

|                  |  |
|------------------|--|
| Ec lodge:        | A lodging establishment that is located in natural areas (Osald & Mackoy, 2004; Russell, Bottrill, & Meredith, 1995).                    |
| Green Practices: | Internal efforts or activities of a hotel to implement environmentally friendly practices towards the goal of becoming a green facility. |

|                            |   |
|----------------------------|---|
| Green Dimensions:          | Four functional areas of green practices consisting of energy efficiency, water conservation, waste reduction and air quality (Bohdanowicz, 2005).  |
| Green Hotel:               | An environmentally sensitive hotel that operates its business in a manner that minimized degradation of the environment (Iwanowski & Rushmore, 1994; Kirk, 1995).   |
| Indoor Air Quality:        | The quality of air inside buildings as expressed by concentrations of pollutants and the thermal conditions that affect the health, comfort, and performance of the occupants (U.S. Environmental Protection Agency, 2009). |
| Organizational Commitment: | An attitude as highly perceived support of employees and a strong sense of emotional attachment to the organization which may lead to better job performance (Eisenberger, Fasolo, & Davis-LaMastro, 1990).                 |

### **Organization of the Study**

This study is composed of five chapters. Chapter one presents an introduction of the study and identifies the goal and objectives of research. Chapter two consists of three main parts. Part one reviews literature on the background of green practices in the hotel industry including definition, catalyst and challenge of green practices. Then, the second part presents

literature on the dimensions of green practices, specifically in the area of energy efficiency, water conservation, recycling and clean air. Finally, part three recapitulates literature about (1) the relationship between organizational commitment and green practices, and (2) people's green perceptions as they relate to their demographic characteristics. In addition, this chapter summarizes deductions made in literature on each subject and proposes relevant hypothesis. Chapter three explains the methodology employed in the study. Chapter four illustrates the results of the data analysis. Chapter five provides the discussion of the results in relation to previous findings and elaborates the conclusion of the study with the implications of the research, its limitations, and suggestions for future research.

## **CHAPTER TWO: LITERATURE REVIEW**

### **Introduction**

The following chapter provides an overview of the existing literature on the hotel industry's green practices presented in three parts: (1) background of green practices, (2) dimensions of green practices, and (3) organizational commitment and demographic factors as they relate to green practices.

Specifically presented in part one is a review of literature regarding (1) the definition of green practices, (2) the catalyst of green practices, and (3) the challenge of green practices deployment. The second part identifies the dimensions of green practices from environmentally friendly activities literature, specifically focusing on the area of energy efficiency, water conservation, recycling, and clean air. The third part of this chapter presents a review of literature discussion on: (1) the relationships between organizational commitment and green practices and (2) employees' demographic characteristics to predict their green perception at work. Finally, a brief summary of the literature review for each main subject ends with the author's proposed hypotheses.

## **Part One**

### Background of Green Practices

#### Definition of Green Practices

Currently, the term “green” is used to signify “environmentally friendly” (Shrum, McCarty, & Lowrey, 1995) when, in fact, it is much more than that. One of the important aspects that should be understood about green practices is that the range of the term “green” is broad and varying based on perspective. From an economic management point of view, Gupta (1995) defines “greening” as corporate environmental performance in meeting stockholders’ expectations. Shrivastava (1995) views environmental management as a tool to fit into a social and ecological system. Further, Gupta and Sharma (1996) define green practices as environmentally friendly management principles in which executive levels convert natural resources into better outputs or products.

In the hotel industry, practices associated with green concerns are diverse; they may encompass a variety of activities from pollution prevention to stakeholders’ education regarding these activities. However, for the purpose of the study this research views green practices as internal efforts or activities of a hotel to implement environmentally friendly practices towards the goal of becoming a green facility.

In general, the term “green facility or hotel” can be used interchangeably with or synonymously for “an environment friendly hotel,” “an eco-friendly hotel,” or “a sustainable

hotel.” During the last few decades it has become a common phenomenon to focus on the environmental impact of the hotel industry with each hotel striving to achieve environmental sensitivity even though there is no universally agreed upon definition of a green hotel (Harris & Crane, 2002). This has not stopped academics, governmental agencies and nonprofit environmental organizations from introducing their own definitions. For instance, some scholars define a green hotel as an environmentally sensitive hotel that operates its business in a manner that minimizes degradation of the environment (Iwanowski & Rushmore, 1994; Kirk 1995). The specific areas of focus are energy efficiency, recycling, water conservation, and clean air practices (Bohdanowicz 2005; 2006; Bohdanowicz et al., 2001; Bohdanowicz, & Martinac, 2007; Coalition for Environmentally Responsible Economics [CERES], 2001; Department of Environmental Protection of Florida, 2009; Fisher, 2003; Iwanowski & Rushmore, 1994; Kirk, 1995; Scanlon, 2007; Shanklin, 1993; Stipanuk, 1996; Welford, Ytterhus, & Eligh, 1999; Withiam, 1993). Similarly, Manaktola and Jauhari (2007) define a green hotel as a lodging facility committed to ecological practices such as saving of water, energy and waste.

Interestingly, several states including Florida, Pennsylvania, Michigan, and California have introduced definitions of a green facility in order to encourage or reinforce green practices by hotels in their states. Such definitions are worth mentioning as they might provide a more practical view of what a green hotel should be. According to the state of Pennsylvania, green hotels are defined as properties which are managed utilizing environmentally friendly business procedures (Department of Environmental Protection of Pennsylvania, 2008), which include policies and procedures as well as activities such as water and energy conservation and waste

reduction. The state of Florida characterizes a green hotel as an environmentally conscientious facility that pursues water conservation, energy efficiency, recycling (waste reduction), clean air practice and communication with stakeholders (Department of Environmental Protection of Florida, 2009).

Nonprofit organizations such as the International Tourism Partnership (ITP), which evolved from International Hotels Environmental Initiative (IHEI), and Zero Waste Alliance (ZWA) have also attempted to define a green hotel. According to Alexander (2002), a green hotel is defined as a property which strives to pursue environmentally friendly business disciplines through energy efficiency, conservation of water and reduction of waste.

Based on these various concepts of what comprises a green hotel, this study utilizes the definition of focuses on the following: a green hotel as one that must practice certain functional or operational tasks in the areas of energy efficiency, water conservation, recycling (waste reduction), and clean air (air quality control) (Bohdanowicz, 2005).

### Catalyst of Green Practices

Despite the popularity of being an environmentally responsible hotel, the driving force behind it is arguable (Tzschentke et al., 2004). In fact, conventional literature most often explains the motivations of green practices in the context of Corporate Social Responsibility (CSR) or awareness at the management level (Hass, 1996; Hussain, 1999; Tzschentke et al., 2004). While CSR and awareness are imperative factors, evidence from previous studies have identified three major motivations for green practices within the hotel industry (Chan & Wong,

2006; Claver-Cortés et al., 2007; Enz & Siquaw, 1999; González & León, 2001; Iwanowski & Rushmore, 1994; Kirk, 1995; 1998; Mensah, 2004; Post & Altmanm, 1994; Tzschentke et al., 2004).

The first driving force involves current pressures or regulations of government towards green practices (Chan & Wong, 2006; Kirk, 1995; 1998; Mensah, 2004; Tzschentke et al., 2004). Demands of government or regulations that encourage being green have pressured the hotel industry. For instance, effective in 2008, Florida state agencies have been required not to hold meetings or conferences with hotels unless the properties have adopted green practices (Department of Environmental Protection of Florida, 2009). In extreme cases, some countries such as Australia and New Zealand impose financial penalties for a property's non-compliance to green policies (Mensah, 2004).

The second driver involves monetary benefits or financial gains that can be realized from green practices (González & León, 2001; Iwanowski & Rushmore, 1994; Mensah, 2004; Tzschentke et al., 2004). Many hotel organizations have reported financial benefits resulting from being green. Hyatt Regency Chicago, for example, reported that the property saved \$120,000 through recycling hotel items (Enz & Siquaw, 1999). Similarly, the Westin hotel in Seattle announced that it reduced its energy consumption by sixty six percent which is equivalent to \$400,000 annually by using energy efficient appliances (Mensah, 2004). In another example, the Hyatt Regency International Hotel in New Zealand installed an energy saving system. The cost of the system was \$16,000, yet in only a 14-month period, a savings of \$14,000 was realized (Alexander, 2002).



The third motivation for hotels adopting green practices is fostering positive public relations and marketing (Florida Green Lodging Conference, 2008; Kirk, 1995; 1998; Claver-Cortés et al., 2007; Tzschentke et al., 2004). The term “green hotel” aids in attracting more business based on various reports which show that corporations want to hold their business meetings at green hotels. According to Mensah, (2004) the number of firms that considered green facilities for their meetings spaces increased by 10 percent between 1997 and 1998. This significant growth in attention paid to green practices in the hotel industry is clearly demonstrated in the case of the Saunders Hotel Group which estimated that its promotion of the term “green practices” contributed to bringing over \$2 million of new group business (Glanzrock, 1995).

In addition, the number of consumers pursuing a greener lifestyle has been increasing (Bohdanowicz, 2005). Roberts (1996) notes that green consumers are different than other when shopping; they look out for green products (Phillips, 1999). For the hotel industry, green consumers are imperative as they choose a green facility when traveling. Heung, Fei, and Hu (2006) found that guests in China were willing to stay at a green hotel although they were uncertain about what a green hotel should be. Also, Manaktola and Jauari (2007) suggest that hotels’ green practices influence consumers choosing a hotel for their staying. Gustin and Weaver further (1996) suggest that travelers support hotels’ green practices. Consequently, marketing plans targeting these green consumers are an opportunity for the hotel industry.

Importantly, the hotel industry is one of the most energy-intensive sectors of the hospitality industry; it expels large amounts of solid waste (Bohdanowicz, 2006). Also, in many

cases hotels employ landscaping practices that pollute local water systems by causing erosion and soil degradation (Scanlon, 2007). Even hoteliers admit that hotels have a significant impact on the environment (Bohdanowicz, 2005) which makes green practices essential rather than optional.

To date, no comprehensive data measuring the U.S. hotel industry's negative impacts on the environment has been generated. However, Sustainable Travel International (STI) estimates the average total amount of carbon dioxide emissions per typical hotel room, which is approximately 300 square feet based on the U.S. Energy Information Administration's lodging category. According to the computation of STI, a typical hotel room in the U.S. emits approximately 33.6 pounds of carbon dioxide annually and consumes 29.3 Kilowatt-hours of energy per square foot. In European hotels, a typical hotel annually anticipates emitting between 160 and 200 kg (about 352 to 440 pounds) of greenhouse gas per room depending on the fuel used to generate electricity, heating, or cooling. (Bohdanowicz et al., 2005).

In the study of European hotels' green practices, Bohdanowicz et al. (2005) also demonstrate that guests consume up to 440 liters (about 117 gallons) of water and produce 1 kg (about 2.2 pounds) of waste per night. The alarming fact regarding resource consumption by the hotel industry is that its resource usage impacts the community in which its organizations operate. For instance, the water needed for a single standard hotel room in some developing countries such as the Philippines is equivalent to the amount of water that supports at least ten of its local people (Alexander, 2002). These figures emphasize the fact that the hotel industry not

only must implement green practices to minimize negative effects on the environment but also take social responsibility through them.

### Challenges of Green Practices Deployment

Although green practices are widely accepted by the hotel industry, there are still some challenges in implementing green practices in the industry that need to be examined in order to move green practices forward. As discussed, there is the lack of a universally or widely accepted definition of green practices (Harris & Crane, 2002). Consequently, confusion may arise between a green hotel fulfilling its ultimate goal of green practices and some synonymous terms. For example, a green hotel and an ecolodge may be confusing due to the similarity of the terms. Although these two concepts commonly embrace green initiatives into their operations, an ecolodge clearly differs from a green hotel for the following two reasons. First, an ecolodge is a nature dependent lodging facility (Osland & Mackoy, 2004; Russell, Bottrill, & Meredith, 1995). In other words, ecolodges are lodging establishments that are located in natural areas: in contrast, a green hotel does not have to be nature dependent. Second, ecolodges are considered as a segment of ecotourism (Osland & Mackoy, 2004; Weaver & Lawton, 2002; Wight, 1997) while green hotels are not. Rather, they are business operations that incorporate a green philosophy into their managing system.

Additionally, there are some doubts in terms of the financial impact of green practices among practitioners. Bohdanowicz (2006) points out in the study of managers' perceptions in European hotels that doubts have been raised regarding financial effectiveness of green practices

because the functional attributes of green practices are highly related to installation of new technologies or systems that increase costs. However, several case studies indicate the fact that the cost of new systems will be offset by savings in water, energy and waste reduction costs within a few years (Claver-Cortés et al., 2007; Iwanowski & Rushmore, 1994). According to a case study of five properties in Jamaica (Meade & Pringle, 2001), green practices significantly reduced the hotels' water and energy consumption and paid off the installation costs in a short period of time. It also illustrated that the payback period for the initial investment is approximately two years with about 150 % return on investment (ROI) (Meade & Pringle, 2001). In addition, it should be noted that savings via green practices are continuous (Meade & Pringle, 2001).

Another point is that the hotel industry has expressed concerns regarding decreasing service standards. Some green practices may present an impression of compromised quality (Bohdanowicz et al., 2001; Bohdanowicz, 2006; Heung et al., 2006; Kirk, 1995). In fact, Dagmar (1994) notes that conservation practices such as using shampoo dispensers may reduce waste, but may be contrary to guest expectations of indulgence and comfort. This concern, however, is not realized in actual hotel guests' research. According to the North America Hotel Guest Satisfaction Study by J.D. Power & Associate (2007), seventy three percent of respondents - hotel guests - indicated that they were willing to participate in green practices.

## **Part Two**

### Dimensions of Green Practices

For the purposes of this study, green practices in the hotel industry are divided into the following four functional / operational areas (Bohdanowicz, 2005): (1) energy efficiency, (2) water conservation, (3) recycling, and (4) clean air. These are the areas of operations that the majority of hotels currently embrace, and according to studies on green practices in the hotel industry they are also identified as environmentally friendly solutions that are easily implemented by hotel organizations (Alexander, 2002; Bohdanowicz et al., 2001; Bohdanowicz, 2005,2006; Bohdanowicz & Martinac, 2007; CERES, 2001; Department of Environmental Protection of Florida, 2009 ; Department of Environmental Protection of Pennsylvania, 2008; Fisher, 2003; Green Hotel Association, 2009; Heung et al., 2006; Iwanowski & Rushmore, 1994; Kirk, 1995; Manaktola & Jauhari, 2007; Scanlon; 2007; Shanklin, 1993; Stipanuk, 1996; Trung & Kumar, 2005; U.S. Environmental Protection Agency [EPA], 2007; Withiam, 1993; Welford et al., 1999). Each dimension is explained below.

#### **Energy Efficiency**

Due to its nature – providing comfort and service to guests – the hotel industry is one of the most energy consumptive industries (Bohdanowicz et al., 2001). Although in hotels the level of energy usage varies based on types, size, age of the facility and/or the number of rooms, in

general, the cost of energy per available room in both hotels and motels in the United States is approximately \$2,196 annually which represents roughly 6 percent of all hotel operation costs (U.S. EPA, 2007). Positively, green practices that promote energy efficiency for hotels generally results in a 10 to 25 percent reduction in expenditures on energy when using energy efficient equipment (Blank, 1999; Heung et al., 2006); this would be a savings of nearly \$20,000 per year for a typical hotel size of 100,000-ft<sup>2</sup> (U.S. EPA, 2007).

In a report comparing hotels in six different countries, Bohdanowicz et al. (2001) found a positive correlation between outdoor climate and overall electricity use of hotels. Since most hotels use the majority of their electrical energy for air conditioning and heating, hotels have gained financial benefits by implementing more energy efficiency programs for their heating and cooling systems. This is evidenced in the case of Habitat Suites in Texas which saved \$10,954 per year by controlling air-conditioning units of the hotel (Mensah, 2004).

Lighting can account for seven to twenty percent of total energy consumption for a hotel depending on the size and age of the property as well as maintenance and operating procedures (Bohdanowicz, 2006). However, lighting is a typical expense that has considerable saving potential and is the easiest area to implement energy savings initiatives. Installation of new equipment such as fluorescent lights would be costly, but the benefits should be realized not on the initial cost but on the entire life cycle (Bohdanowicz, 2006). The savings are resulted because fluorescent lamps can last eight to ten times longer than incandescent lamps, and compact fluorescent light bulbs can be lasted 12 months longer than incandescent light products (Alexander, 2002). A retrofit of energy efficient devices typically pays for itself in a very short

period of time. For instance, according to Alexander (2002), the Sheraton Tacoma Hotel changed from incandescent lights to compact fluorescent lights producing a cost savings of \$15,000 in 18 months.

### Water Conservation

The U.S Geological Survey (2008) indicates that water availability has become an important concern in the United States, primarily for the hospitality industry. Shanklin (1993) claims the availability of safe water dramatically affects the hospitality industry. Further, Hankinson (1992) categorizes water supply use into two sources for the restaurant sector of the hospitality industry, pure water for food and non-potable for cleaning uses. This implies that water conservation activities should be practiced in all areas of hospitality operation.

In addition, Alexander (2002) relates the concerns of water availability to social responsibility that the hotel industry can take. In the cases of water conservation by hotels in developing countries, he describes how the amount of water consumed by hotels effects local communities. For example, for one single standard hotel room in the Philippines water consumption is about 396 gallons per day, and this amount of water can support fourteen people at their current standard of living. It is even more alarming that it is predicted that water consumption is expected to increase by over 20 % to approximately 475 gallons per day by 2010 in luxury facilities in some developing countries (Alexander, 2002).

In the hotel industry, water consumption is influenced by several factors such as the type and size of the facility, the services that facility offers and guest nights sold (Bohdanowicz,

2006; Bohdanowicz & Martinac, 2007). It is reasonable to assume that water consumption will vary based on the property type. For instance, water consumption at full service luxury resorts providing services such as spas and swimming pools will differ greatly from more economically based hotels. Such water dependent services have a significant influence on water consumption (Bohdanowicz & Martinac, 2007). Waggett and Arotzky (2006) specifically note in their research that water consumption in the hotel industry is strongly related to “star” ratings of hotels. In a study of a Vietnamese hotel, Trung and Kumar (2005) also reveal that four-star hotels consume more water than three-star hotels. Based on accommodation sectors, water consumption can be figured differently; however, importantly, every hotel type incurs a cost and has an environmental impact regardless of the rating of hotels.

Among water conservation practices, towel and linen reuse programs have already been widely adopted by hotels. AH&LA’s current green assessment survey (2008) revealed that nearly ninety percent of respondents’ properties have implemented towel and linen reuse activities. According to the Green Hotel Association’s (GHA) report (2009), over seventy percent of hotel guests participate in such programs. Significantly, these linen reuse programs not only contribute to water conservation but also reduce detergent use and, hence, reduce the industrial detergent related chemicals released into the environment. As most water consumption occurs in hotel rooms, water efficient fixtures such as low flow showerheads can significantly contribute to water conservation (Bohdanowicz, 2006). For instance, the Habitat Suites Hotel in Texas installed low-flow showerheads and aerating faucets in the property. The result was a savings of nearly \$10,000 per year (Mensah, 2004).



For some hotels, such as the Willard InterContinental Hotel in Washington DC, water conservation does not solely mean financial benefits. This hotel expands water conservation practices to a different level of social responsibility by using its savings from linen reuse programs to clean rivers such as Anacostia River (Houdré, 2008). By practicing this type of green programs, it has succeeded in focusing the communities' attention on environmental protection.

### Recycling

Although the quantity of waste generated by hotels is influenced by factors such as occupancy rate or type of property (Shanklin, Petrillose, & Pettay, 1991), one advantage of waste reduction practices is that hotels can recycle as much as 80 percent of the wastes produced (California Integrated Waste Management Board [CIWMB], 2009). Currently, waste generation is as high as 30 pounds per room per day within the hotel industry (CIWMB, 2009).

Financial gains, as well as minimizing negative environmental impact, would be predictable as a result of waste reduction practices. Heung et al. (2006) emphasize that solid wastes can be dramatically reduced in the hotel industry which would result in financial gains. For example, the Westin San Francisco Airport Hotel reports that the hotel saves twenty-two tons of solid wastes and \$6,000 annually since the property started waste reduction activities in 1994 (Alexander, 2002). Waste reduction programs also abate negative impacts on the environment by averting toxic waste from landfills (Okazaki, Turn, & Flachsart, 2008; Shanklin et al., 1991)

Waste reduction involves different types of materials including paper, food and glass (Alexander, 2002). Among the many components, food waste makes up nearly 50 percent of all waste production (Alexander, 2002; CIWMB, 2009); unfortunately, programs to reduce food waste have not effectively penetrated the hotel industry. This current phenomenon involving food waste reduction is certainly evidenced in the Green Assessment Survey (AH&LA, 2008) and the reports of states, specifically California (CIWMB, 2009). The Green Assessment Survey (2008) identifies food waste reduction as one of the areas that the industry needs to improve upon. Additionally, the state of California reports that two percent of its food waste comes from the hotel industry in California (CIWMB, 2009).

The significant point is that the high percentage of food waste produced by the hotel industry has not decreased even though hospitality organizations are recognizing green practices increasingly. In fact, the result from a waste generation study examining 25 hotels from 1991 to 1993 revealed that food waste comprised 46 percent of the hotels' total waste (Alexander, 2002). Unfortunately, the figures on food waste have not changed since then and most food waste is still not recycled or composted according to a current study of food waste in the hospitality industry (Okazaki et al., 2008).

Possible justifications for the high percentage of food waste produced by the hotel industry include three points of view. First, although food waste can be greatly reduced by such an activity as food donation (Alexander, 2002; Bohdanowicz, 2006), it is controversial and frequently prohibited by local regulations governing sanitation (Bohdanowicz, 2006). The second contributing factor to food waste is related to the nature of the cooking process itself. In

the kitchen, over-preparation, cooking losses or packaging failures quickly lead to the accumulation of food waste (Bohaanowicz, 2006). Third, food waste reduction activities involve continuous observation and are time-consuming (Okazaki et al., 2008). Reduction efforts for other types of solid waste such as non-waxed paper products, cans or plastic are relatively undemanding as compared to food waste reduction. Unlike the efforts to reduce solid wastes, food waste reduction involves additional time and effort by kitchen staff members because the effectiveness of food waste reduction efforts mandates constant monitoring of the food inventory, the amount of food per a meal and the percentage of waste per meal (Okazaki et al., 2008)

Although not many successful cases for food waste reduction were reported, there are a few cases that represent what should be done in order to benefit from food waste. For example, the Totem Pole Restaurant in Minnesota reduced its food waste by 20 percent and over \$5,500 annually was saved by kitchen personnel who constantly monitored food inventory as described above (Alexander, 2002). It should be noted, however, that these activities will not eliminate food waste completely, but they will significantly reduce the amount of food waste produced.

Various strategies referred to as the concept of “R” – reuse, recycle and replace (Heung et al., 2006) to mitigate waste have been implementing in the hotel industry. Although examples of impressive “R” strategies have been highlighted in trade journals, the articles did not seem to fully investigate waste reduction in the hotel industry (Hayward, 2008; Vermillion, 2008).

Additionally, Okazaki et al. (2008) conducted research pertaining to waste practices in Hawaii. It demonstrates that the number of employees participating in waste reduction practices

and the effectiveness of waste reduction has a weak correlation. Based on the study, it is logical to assume that waste reduction practices in the hotel industry require education or awareness among all involved, especially employees and guests (Trung & Kumar, 2005). Energy and water conservation practices are more reliant upon technology and the organizations' financial ability to initiate them; on the other hand, the success of waste reduction practice is based on the participants' efforts (Olli, Grendstad, & Wollebaek, 2001) and their willingness to participate in waste reduction activities.

### Clean Air

The U.S. Environmental Protection Agency (EPA) (2009) defines indoor air quality as *the quality of air inside buildings as expressed by concentrations of pollutants and the thermal conditions that affect the health, comfort, and performance of the occupants*. It also considers the factors of an enclosed environment such as temperature and relative humidity. Some researchers claim that the hospitality industry may not be at the front line in causing air pollution (Kirk, 1995); yet, this perspective has changed as lodging properties do produce toxic air pollutants and ozone-depleting substances such as chlorofluorocarbons that can be released by the improper maintenance of heating, ventilation, and air conditioning units (U.S. EPA, 2009).

As the market becomes more competitive, projects of a hotel such as renovation, expansion and maintenance of the facility become more prevalent in the hotel industry; this results in an increased awareness of negative influences on air quality (Cascardo, 2007). A current report indicates that ninety-three percents of hotel guests prefer a room with better

quality of indoor air illustrating its importance to the guest (Vermillion, 2008). Choosing environmentally friendly and non-toxic cleaning products, especially in the area of housekeeping, is strongly recommended for air quality improvement.

The primary reason for controlling air quality in lodging facilities is related to human health (Shanklin, 1993). The most prevalent focus for air quality of green practices is non-smoking policies. The motivation for no-smoking policies exists for the well-being/health of guests and employees; apparently, the policies are the most prominent operational initiative contributing to improving air quality in the hotel industry (Suttell, 2005), although it still remains somewhat controversial due to the economic impact of a smoking ban.

Studies of non-smoking policies in areas such as consumer perception, health problems of employees, and the economic impacts of a smoking ban have been performed. According to Biener and Fitzgerald (1999) who investigated perceptions of non-smokers in public places where smoking is permitted such as a restaurant, seventy six percent of 4,929 respondents in Massachusetts were bothered by tobacco smoke. Forty-six percent of the respondents were non-smokers and avoided smoking places due to unpleasant smell and the concern of health issues from secondhand smoke. Repace (2004) expanded the smoking issue to address the health concerns of hospitality employees. The research examined indoor air quality before and after a smoking ban in eight hospitality establishments in Delaware. The study (2004) found that indoor air quality among hospitality establishments was poorer than other places because ventilation rates were very low. After no smoking policies were enacted, indoor air quality levels in all eight businesses had significantly improved. Repace (2004) also illustrated that secondhand

smoke comprised nearly ninety percent of the particle air pollution and almost eighty-five percent of the carcinogenic polycyclic aromatic hydrocarbons (PPAH) which influence increasing the risk of respiratory disease, heart disease, and stroke (Repace,2004; U.S. EPA, 2009). Repace (2004) concluded that having a no-smoking policy eliminated most of the pollution hazard in the hospitality industry and greatly improved the working environment.

Additionally, Scollo, Lai, Hyland, and Glantz (2003) reviewed the economic impacts of no-smoking policies in segments of the hospitality industry and suggested that policymakers should protect employees and patrons from toxins by reinforcing a smoking ban because there are no negative economic impacts of smoking bans involved in hospitality organizations. However, as mentioned earlier, there are other causes of poor indoor air quality, for instance poorly designed, maintained or operated ventilation system are primary areas of focus because mold, bacteria and other biological contaminants can quickly spread if the ventilation system is not properly maintained or operated (Cascardo, 2007).

Green certified cleaning products such as “Green Seal” improve indoor air quality and reduce emissions of volatile organic chemicals (Department of Environmental Protection of Pennsylvania, 2008; Garrison, 2009). Some challenges accompany the use of these products such as the effectiveness of these cleaners and their higher price. Regardless of these challenges, green products certainly contribute to improving air quality by reducing toxic emissions (Iwanowski & Rushmore, 1994).

Ironically, the tactics for improving indoor air quality may be problematic and could contradict energy efficiency practices. Although one of the easiest methods to increase energy

efficiency is reducing the electricity consumption by controlling the indoor temperature that is not being used, this type of activities could create ventilation problems which lead to spreading mold or bacteria. In order to handle this type of quandary, a well structured energy management routine and monitoring system are suggested (Bohdanowicz et al., 2001).

### **Part Three**

#### Organizational Commitment

The concept of employee commitment is multidimensional and takes various forms (Collier & Esteban 2007; Iles, Mabey, & Robertson, 1990; Meyer & Herscovitch, 2001) including trust, feelings of affiliation (Eisenberger, Fasolo, & Davis-LaMastro, 1990) and loyalty (Iles et al., 1990). Eisenberger et al. (1990) describe commitment as highly perceived support from employees and a strong emotional attachment to the organization which may lead to better job performance. Meyer and Herscovitch (2001) affirm that commitment should be distinguished from motivation and general attitude. According to them, commitment is a force which creates an individual's connection to the organization and improves employee performance (course of action) which makes the firm better.

Although commitment has been defined in many different ways (Meyer & Herscovitch, 2001), this study accepts that employee commitment has two main constructs: behavioral and

attitudinal commitment (Mowday, Steer, & Porter, 1979; Mottaz, 1989). Behavioral commitment refers to the degree to which an employee performs beyond normal expectations to connect himself/herself to the organization (Mottaz, 1989). Attitudinal commitment refers to the degree to which an employee identifies with the goals and values of the organizations (Mottaz, 1989). Attitudinal commitment specifically is related to the employees' perceptions of the organization's fairness (Collier & Esteban, 2007) in return for rewards, recognition or promotion (Becker, 1960). It is important to understand commitment correctly because commitment, specifically attitudinal, is related to employees' behavioral characteristics such as performance, turnover and absenteeism (Meyer & Herscovitch, 2002).

Aguilera, Rupp, Williams, and Ganapathi (2007) note that employees' perceptions of the company's social responsibility (CSR) shape their attitudes and behaviors toward the firm. Based on the authors, organizations' social responsibility activities are critical to determining the virtue of the organization and contribute to defining the level of social justice towards their employees. Therefore, the company acting socially responsible is an essential matter to employees. Overall, the previous studies that addressed the association of employee commitment and CSR indicate that a socially responsible company has positive effects on its employees' commitment level (Aguilera et al., 2007; Burke & Logsdon, 1996; Maignana, Ferrell, Hult, 1999; Peterson, 2004), and a positive corporate image will attract qualified candidates for employment (Riordan, Gatewood, & Bill, 1997). Those candidates take that corporate image into account when considering employment offers (Albinger & Freeman, 2000; Backhaus, Stone, & Heiner, 2002; Greening & Turban, 2000; Turban & Greening, 1997).



One of favorable rationales posited for this is the social identity theory (Ashforth & Mael, 1989) which states that employees will increase their self-worth/self-confidence by identifying with a company that is socially responsible (Peterson, 2004). Another possible underlying principle for this is that commitment is influenced by employees' perceptions; favorable perceptions of CSR is related to stronger employee commitment (Peterson, 2004).

In the framework of CSR constructs Burke and Logsdon (1996) propose five dimensions of CSR: centrality, specificity, proactivity, voluntarism and visibility. Among these five dimensions, they claim that CSR is a visible action for employees; it will not only retain employees but also increase job performances by improving employees' morale and loyalty. Similarly, in the framework of antecedents of CSR, Maignan et al. (1999) posit that employee commitment is one of the benefits of CSR. According to the researchers, CSR increases employee commitment in two ways: (1) CSR is significant in improving the quality of workplace experiences, and (2) CSR approaches critical social issues such as the environment that are of concern to society as a whole.

The empirical evidence of Brammer, Millington, and Raton (2007) illustrates that an employee's perception of CSR has a positive relationship to employee commitment. To note, specifically, females attached more importance to that relationship than males in the investigation. In addition to academic empirical evidence, there are practical perspectives which contend that CSR produces employee satisfaction. For example, Arthur. D. Little (2003), a well-known management consulting firm, agrees that employee satisfaction is one of benefits that a company can gain from CSR.

Apparently, the concept of organizational commitment in the single aspect of green practices has not been fully investigated in academia (Aguilera et al., 2007; Albinger & Freeman, 2000; Backhaus et al., 2002; Collier & Esteban 2007; Davis, 1973; Greening & Turban, 2000; Hussain, 1999; Maignana et al., 1999; Peterson, 2004; Turban & Greening, 1997) instead the majority of hospitality journals applied green practices in the context of CSR (Lynn, 2008). Organizations such as the Society for Human Resource Management (SHRM) have conducted studies about organizational commitment in relation to the concept of green practices. In 2007, SHRM conducted Green Work Place Survey to examine green practices in relation to HR issues. According to the survey, forty-four percent of 429 HR professional respondents surveyed said that the most prominent positive result by green practices was improving employee morale. Also, a significant figure about this survey was that sixty-one percent of 504 employees who were working for the companies that embrace green practices indicated that they were very likely to stay with the organization because of their green programs.

Additionally, Insync survey (2008), which examined 14,000 employees from all types of companies, demonstrated that a strong positive correlation existed between a company's green practices and employees' commitment and job satisfaction. Similarly, Bohdanowicz et al. (2005) examined over 3,000 employees who worked for Swedish Scandinavian hotels and found that the employees were proud of their company for being green. Taking these collectively, it is predictable that green practices have a positive influence on employee commitment.

## Demographic Characteristics and Green Perception

After a review of the studies on demographics as indicators of environmental concerns, the association between demographics and indicators of green concerns is quite low, and empirical evidences of demographic influence on green concerns are split and inconclusive (Van Liere & Dunlap, 1980). Despite the mixed result, using demographic characteristics as a predictor of green perception is a popular tool for green consumer profiling because demographic information is relatively easy to obtain (Diamantopoulos, Schlegelmilch, Sinkovics, & Bohlen, 2003) and is considered an easy method to identify market segmentation (Straughan & Roberts, 1999).

It is significant that the majority of studies on the green subject characterized that demographic gears exist in the marketing field for consumer profiling, named the green consumer (Bhate & Lawler, 1997; Diamantopoulos et al., 2003; Laroche, Bergeron, & Barbaro-Forleo, 2001; Peattie, 2001; Roberts, 1996; Straughan & Roberts, 1999; Shrum et al., 1995). Yet, after a review of previous studies using demographic characteristics as a predictor of green concerns or green behaviors, one conclusion is apparent: the link between demographic variables and green consciousness is inconsistent and inconclusive. Although demographics are a weak factor to generalize people's green perception, it is still worth to reviewing to better understand green practices in the hotel industry.

### Age and Green Perception

Given the variables of age and environmental concerns, several studies suggest that younger people are more apt to be green (Fransson and Gärling, 1999; Straughan & Roberts, 1999; Van Liere & Dunlap, 1980; Klineberg, McKeever, & Rothenbach, 1998), and two explanations are widely cited in the academic literature to support this claim. According to Van Liere and Dunlap (1980), younger people appear to be more environmentally conscious because “going green” might be seen as a threat to the existing social order in which they less participate. They are liberal and can adopt green attitude without much resistance. Similarly, Straughan and Roberts (1999) support the contention that the younger generation is more likely to embrace a green attitude because environment degradation is a noticeable issue, and it is perceived that the problem will be increased as they age.

In contrast, some studies suggest that older people display a more environmentally friendly attitude. One explanation for the positive relationship between older age and green behavior focuses on the ethic of conservation that was prevalent in the Depression era. Many seniors today lived through the “Depression-era” and conservation was required to get through the economic hardships (Samdahl & Roberston, 1989). In a literature review on this topic, it is apparent that there is a non-significant relationship between age and green consciousness.

### Gender and Green Perception

Studies using gender as an indicator of green concerns also show mixed results. Van Liere and Dunlap (1980) review studies on this subject and conclude that there is no absolute

relationship of gender as a predictor for green behaviors. Despite mixed patterns displayed, studies in general suggest that females are more environmentally friendly. Klineberg et al. (1998) suggest that gender is a significant predictor of green concerns and cite that females are more environmentally concerned than males. Also, Diamantopoulos et al. (2003) and Davidson and Freudenburg (1996) suggest that females are more supportive and participate in the efforts of being green. Similarly, Roberts's empirical evidence (1996) illustrates that females are more environmentally friendly due to some typically female gender roles such as housework, shopping and recycling.

This predominantly female tendency to be green also shows that women support green activities of government such as green regulations or green laws (Vaske, Donnelly, Williams, & Jonker, 2001). Vaske et al. (2001) identify females as more environmentally oriented and believe in supporting environmental regulation for forest preservation more than males do. Meanwhile, the empirical evidence of Bhate and Lawler (1997) indicates that gender has no significant impact on green behaviors. Furthermore, Arcury and Christianson (1990) find that males have more green-related concerns than females.

### Marital Status and Green Perception

Marital status has been less investigated than other demographic factors in terms of green behaviors. Diamantopoulos et al. (2003), for example, suggest that there are no perceived differences of green attitudes between married couples and unmarried individuals. On the other hand, Loroche et al. (2001) find out that married couples, specifically married people with

children, are more willing to pay for purchasing green products, and presume the reason is that married couples are more concern about the negative impacts on the environment because of its impact on their spouses and their children. Macey and Brown (1983) expand positive green behaviors to married couples' lifestyles. According to them, married couples who own homes are more energy conservative than married couples who do not own homes. Although there is research regarding the relationship between green behaviors and marital status, it is hard to confirm a relationship between the two.

### Income and Green Perception

In fact, several studies support the belief that a higher income has a positive relationship with green concerns (Arcury & Christianson, 1990; Van Liere & Dunlap, 1981). The assumption that higher income levels have more green concerns is supported by the position that higher income levels are likely to witness environmental problems because they are more politically involved in organizations and enjoy more leisure (Diamantopoulos et al., 2003). Klineberg et al. (1998) find that household income positively influences green behaviors and add that higher income earners may have access to more information about the degradation of the environment which naturally leads to green concerns.

In contrast, some research studies display a negative relationship between green concerns and income (Samdahl & Robertson, 1989; Roberts, 1996). In fact, Olli et al. (2001) find that lower income levels perform more environmentally friendly behaviors. Further, Diamantopoulos et al. (2003) reveal no significant relationship between income and green concerns as did Roberts

(1996) who presumes that environmental degradation may spread widely among the public regardless of income level.

### Education Level and Green Perception

It seems that education and green issues exhibit a more consistent relationship than the other demographic characteristics. In general, highly educated people are considered to be more environmentally responsible because they presumably are more exposed to green information (Klineberg et al., 1998). In Newell and Green's (1997) examination of racial influence on green concerns, the researchers find that higher education levels show more environmental concerns. Vaske et al. (2001) also find that college-educated people are more concerned about negative environmental impacts than those who are not. Unlike other studies cited, the examination of Shrum et al. (1995) illustrates that the education factor and purchasing pattern of consumers for green products are independent and are not associated. Similarly, Bhate & Lawler (1997) reveals that social class factors such as education are non-significantly related to green behaviors.

### Ethnicity and Green Perception

Several studies have examined the relationship between ethnicity and green issues (Cutter, 1995; Greenburg, 2005; Howenstine, 1993; Mohai, 1990; Newell & Green, 1997; Vaughan & Nordenstam, 1991), and by most accounts, there are differences between white and non-white people concerning the environment (Greenberg, 2005). Howenstine (1993) suggests that African-Americans are lacking in the area of recycling because they face social problems

such as drugs and crime. This claim continues to Newell and Green's investigation (1997) which reveals that, as a whole, African-Americans have less environmental concerns than White Americans. However, the influence of race also demonstrates inconsistency as a predictor of green concerns.

Interestingly, significance exists at higher income and education levels for race categories. This investigation suggests that the level of education and income significantly differentiates green concerns among African-Americans (Newell & Green, 1997). On the other hand, income and education do not significantly affect attitudes among White Americans. In the investigation of recycling behavior, Howenstine (1993) identifies that Asians perceive recycling as too much work. This pattern is also evidenced in Greenberg's study that examined people's environmental perception in New Jersey based on race. Greenberg (2005) finds that Asian and Hispanic individuals exhibit less green behaviors than their Caucasian and African-American counterparts. More specifically, Asians are the least concerned and interested group as far as green concerns and behaviors. In his investigation, African-American and Hispanic people perceive that stronger government regulations for the environment are needed. However, both groups demonstrate low support for sacrificing economic growth for environmental protection (Greenberg, 2005). These findings were explained by suggestions that these groups are relatively in more economic difficulty than White or Asian respondents. Also, it was found that Hispanics who speak Spanish have adopted fewer green issues than Hispanics who speak English.



Unlike previous studies which introduce differences between race and green concerns, Mohai (1990) suggest that Whites and African-Americans have no difference in environmental concerns. Also, Mohai and Bryant (1998) find little evidence to support the existence of differences between White and Black Americans in perceiving green issues. They rather suggest that African-Americans are more concerned about local environmental problems than White-Americans.

As previously mentioned, relationships between demographic characteristics and green perception are inconclusive and weak. However, it should be noted herein that in order to expect a more consistent result of green perception by using demographic characteristics, it is suggested that demographic factors can be combined with psychological and situational factors (Bhate & Lawler, 1997; Shrum et al., 1995).

### **Summary and Conclusions**

In summary, although green practices are widely embraced by hotel firms, one of the major challenges is that there is no globally accepted definition of green practices. However, it seems that literature, government and nonprofit organizations commonly include one major concept as they discuss green practices. That is that green practices should contain functional or operational green activities in the areas of energy efficiency, water conservation, recycling (waste reduction), and clean air (air quality control). Consequently, this study defines green practices for the hotel industry as internal efforts or activities of a hotel's pro-environmental

practices to be a green hotel. Furthermore, as mentioned earlier, there are some challenges that should be overcome for developing green practices of the hotel industry.

Although the performance levels of green practices are influenced by various factors such as size of the hotel or type of services the hotel offers, green practices have been embraced widely by hotel organizations. In particular, green activities such as non-smoking policies are well recognized within the hotel industry. However, some areas such as energy efficiency and food waste reduction are still remaining in challenge.

The majority of literature on organizational commitment and green practices support the proposition that green practices may create positive perceptions among employees toward their company. Also, employees are proud of their company for implementing green practices. As a result of this, it is assumed that the employees' commitment might be improved when their organization participates in green practices.

It is true that a few demographic factors such as education demonstrate more consistent results on green concerns; for instance, highly educated people show more concern for environmental issues. However, although demographic characteristics are broadly used as a tool to generalize green attitudes of people, the results of their influence on green concerns are mixed. Hence, it is suggested that a more consistent result pertaining to the impact demographic characteristics on perceptions regarding green activities might be expected in combination with psychological and situational factors (Bhate & Lawler, 1997; Shrum et al., 1995).

Lastly, this study proposes the following hypotheses:

**H1:** There will be a significant difference between green importance perception

and green performance perception.

**H2:** Green practices will be positively correlated with organizational commitment.

**H3:** The hotel employees' demographic characteristics will not generalize their perception regarding green practices at work.

## **CHAPTER THREE: METHODOLOGY**

### **Introduction**

This chapter outlines the methods employed to examine green practices implemented by hotels from the hotel employees' perspectives. The following sections are covered in the chapter: (1) research design, (2) survey instrument, (3) pilot test, (4) sample, (5) data collection procedure, and (6) data analysis procedures.

### **Research Design**

The goal of the study was to examine green practices of the hotel industry from its employees' perspectives. This study adopted a descriptive cross sectional research method which employed a self-administrated and closed-ended questionnaire to survey employees in the hotel industry. The reason this study employed the survey method was to obtain research data aimed at generalizing green perceptions from the sample to a population so that inferences can be suggested (Creswell, 2003). Also, three advantages of the survey were recognized. These were: (1) the rapid turnaround in data collection, (2) suitability to obtaining the targeted sample size, and (3) the economy of the design (Creswell, 2003).

## Survey Instrument

A closed-ended question and self administered questionnaire was developed after conducting a relevant literature review of green practices. Fifty-six total items were listed under four different sections: (1) dimension of green practices in importance, (2) dimension of green practices in performance, (3) organizational commitment, and (4) demographic characteristics. Specifically, the first and second section – the dimension of green practices in importance and performance respectively - illustrated four major green dimensions: energy efficiency (EF), water conservation (WC), recycling (RC), and clean air (CA) which were followed by the five functional green attributes underneath each. The green dimensions were generated from the previous academic literature, and the five functional green features were introduced and modified from literature, green surveys of organizations, and the requirements to be enlisted in a green lodging in the state of Florida.

The majority of this survey used 5-point Likert scale items based on a scale from “unimportant” to “extremely important” for importance measure and from “poor” to “excellent” for performance measure. In order to measure organizational commitment, a scale from “strongly disagree” to “strongly agree” was used. Demographic characteristics – factual information - asked the respondents to check the category that they belonged. However, three items - age, working experience for the hotels, and the industry - requested that respondents provide actual years by filling in the blanks. The detail of each section of the questionnaire used to survey the hotel employees is discussed below.

**First section:** “How important is each attribute to your hotel.” This section was used to investigate what green features are perceived as being important from the hotel employees’ perspective. It contained four major constructs: (1) recycling (RC), (2) clean air (CA), (3) energy efficiency (EF), and (4) water conservation (WC). Also, each illustrated five green features operated by hotels. The detailed description of each is as followed.

(1) recycling (**RC**):

- recycling (cardboards, papers, cans, plastics, bottles, etc)  
(AH& LA, 2008; CERES, 2001; DEP of Florida, 2009)
- using reusable utensils rather than disposable ones  
(CERES, 2001; DEP of Florida, 2009)
- purchasing and using consumer recyclable products  
(AH & LA, 2008; DEP of Florida, 2009 )
- serve proper portions of food to reduce food waste  
(Alexander, 2002; CIWMB, 2009; Okazaki et al., 2008)
- paperless policy including use of electronic system (E-copy, email, etc).  
(AH & LA, 2008; CERES, 2001; DEP of Florida, 2009)

(2) clean air (**CA**):

- non-smoking policy throughout property  
(DEP of Florida, 2009; Suttell, 2005)
- place green live plants on property  
(Heung et al., 2006)

- keeping humidity at certain level to prevent the growth of mold  
(DEP of Florida, 2009)
- using environmentally preferable cleaning products  
(CERES, 2001; DEP of Florida, 2009)
- cleaning AC units regularly to prevent bacteria  
(Cascardo, 2007; DEP of Florida, 2009)

(3) energy efficiency (**EF**):

- using automatic sensor lighting  
(AH & LA, 2008; CERES, 2001; DEP of Florida, 2009; Heung et al, 2006)
- using Energy Star rated equipments (refrigerator, copier, etc)  
(AH & LA, 2008; CERES, 2001; DEP of Florida, 2009)
- using high energy efficient lighting (compact fluorescents)  
(Alexander, 2002; AH & LA, 2008; CERES, 2001)
- setting an appropriate temperature  
(Bohdanowicz et al., 2001; Cascardo, 2007)
- using sky-lights to maximize natural light  
(Heung et al., 2006; U.S. EPA, 2007)

(4) water conservation (**WC**):

- towel and linen reuse program  
(AH & LA, 2008; CERES, 2001; DEP of Florida, 2009)
- using low-flow fixtures

(AH & LA, 2008; CERES, 2001; DEP of Florida, 2009)

- using automatic low-flow fixtures

(AH & LA, 2008; Bohdanowicz, 2006; CERES, 2001; DEP of Florida, 2009)

- using water for reuse

(AH & LA, 2008; DEP of Florida, 2009)

- landscaping with native plants

(AH & LA, 2008; DEP of Florida, 2009)

**Second section:** “How well does your hotel perform green practices?” The main objective of this section was to uncover the extent to which the hotel employees evaluated green practices implemented by the hotels. The 20 items to assess performance level of the green practices used in this section were identical to the first section.

**Third section:** “Organizational commitment.” The goal of this section was to investigate whether a correlation appears between employees’ green perception and organizational commitment. A total of six items were adopted from the 15 items of Organizational Commitment Questionnaire (OCQ) by Mowday, Steers and Porter in 1979. OCQ was employed for this study because the questionnaire is widely used by academicians when they measure organizational commitment; it was used over 2000 times in various articles. Also, the six items were specifically chosen because they clearly reflected the construct of commitment (behavioral and attitudinal commitment which this study accepted) in a concise statement.



**Fourth section:** “Employees’ demographic factors.” This section was developed to explore whether employees’ green perception at work can be generalized from the sample by their demographic characteristics. Respondents answered 10 items: gender, age, marital status, level of education, ethnicity, annual salary range, working experience of the company, working experience of the hospitality industry, position, and department.

### **Pilot Test**

The developed questionnaire – a total of 56 items - was tested on 20 employees at various departments in a hotel. Originally, the 5-point Likert scale had only two terms: extremely important and unimportant for importance measure, and excellent and poor for performance measure. However, the pilot test indicated that the questionnaire would be more comprehensive if each term was expressed individually at each point on the scale. Based on the results, the terms used at each of the five points on the importance measure were “5” = extremely important, “4” = very important, “3” = important, “2” = slightly important, “1” = unimportant. For performance measures, “5” = excellent, “4” = very good, “3” = good, “2” = fair, and “1” = poor were adopted.

Additionally, the pilot test addressed the fact that the questionnaire needed to clarify some items for better understanding of the questions. First, the third green feature of waste reduction (RC3) was “purchasing and using recyclable products.” However, the employees indicated that the term “recyclable products” was not fully understandable in the statement.

Hence, the content was replaced by “post consumer recyclable products.” As the result of clarification, the item was replaced by “purchasing and using **post consumer** recyclable products.”

Some items of the demographic factors were also modified. Originally, the question for the current position was expressed as “full-time line employee” and “part-time line employee.” However, the 20 employees were not only unclear about the term “line employees,” but also shared their opinions that there was no need to separate a position as “full” and “part” time because, most likely, part time employees would not have a chance to participate in the survey.

After the clarification and modification of some items, five people at the management level reviewed the survey and suggested that the terms used at each point of the importance scale would be more clear if the terms were changed from “important” to “moderately important” at point 3, “little important” instead of “slightly important” at point 2, and “unimportant” instead of “not important,” at point 1. Using their feedback, the terms for each point were modified accordingly. Hence, the terms eventually used to measure the importance level were finalized as extremely important, very important, moderately important, little important, and unimportant.

### **Sample**

The population of interest consists of employees in the hotel industry. More specifically, the sampling was geared to the employees at green certified hotels in Orlando; it included all types of occupations and departments. The main reason that the sample was strictly limited to

the employees from green certified hotels was to compare importance and performance levels. In order to assess the performance level of green practices by the hotels, it was critical and essential that the employees be familiar with green practices at work by performing and observing them. It also was limited to hotels in Orlando because of the accessibility of the samples. Due to the fact that many of the major hotels in the Orlando area are compliant with “Green Lodging” programs, it provided a variety of green initiatives to choose from and was convenient for the author to compile information for this study.

The sample was composed of 227 hotel employees from eight hotels in Florida. Importantly, at the point of survey these eight hotels were green certified (Palm certification) as either level one or level two according to the Department of Environmental Protection of the state of Florida. At the point of the survey, two hotels obtained level two of the green certification, and six properties were level one green certified. Note: level two is a higher level than level one in the “Palm” certification system. Further, these eight hotels were chosen and contacted to be surveyed after reviewing the list of green lodgings on the website of the Department of Environmental Protection of Florida. As noted, there were 400 green designated properties in Florida and about 77 green resorts in Orlando as of January 2009 (Graham, 2009).

### **Data Collection Procedure**

Data was collected over a one-month period between April and May in 2009. Initially, a survey packet – a brief explanation as to the nature of the research, an informed consent form,

and survey questionnaire - was sent to the human resource (HR) departments of fifteen green certified hotels in Florida, and eight of them agreed to participate. The fifteen hotels were initially contacted based on convenience of location. After obtaining permission from the hotels, the author of this research project visited three hotels to hand out the questionnaires to the employees. The author visited each department at the hotels and explained the nature of the study to the head of the departments and left copies of the questionnaire and the informed consent form.

The survey collection boxes were set up at a designated area - the employees' entrance or employee cafeteria - for a week, so employees could drop off the survey as they came in and out. The location of those boxes was given to the head of each department. A follow-up visitation was made to the HR department three days after the initial visitation. A total of 400 questionnaires were distributed and 121 surveys were collected in this manner.

The other three hotels' HR departments preferred to distribute the questionnaire internally instead. However, the HR department asked the author to set up a box for collection of the questionnaires. Per their requests, the author took the surveys to the HR department of the three hotels and set up a collection box at each HR office. The HR department distributed the questionnaires to each department in their properties. Three days after the initial visitation to these hotels, the author visited the HR departments in the hotels to request a follow-up announcement so employees who took the questionnaire could be reminded one more time what the purpose of the questionnaire was. In this manner, a total of 150 surveys were distributed and 69 questionnaires were generated.

For the last two hotels, the author did not visit the hotels to hand out the survey or collect the questionnaire. A contact person at each of the two hotels was interested in participating in the survey under one condition: that they distributed and collected the questionnaire to send to the author. The contact person at the hotels used the original survey packet to distribute the questionnaire to the employees. A total of 37 surveys were generated from these two hotels.

### **Response Rate**

In all, 550 questionnaires were distributed for this research to the employees in the eight hotels in Orlando. The total number of responses generated was 227 which represented a response rate of 41.27 %. Among the 227 surveys collected, 105 questionnaires came from the level “two” green certified hotels, and 122 questionnaires came from the six hotels had level one green certification. Originally, 227 questionnaires in total were yielded from the eight properties; however, 7 questionnaires were eliminated because of an excessive amount of missing data. After elimination, 220 usable questionnaires were retained for the analysis of this research.

### **Data Analysis Procedures**

Analyses employed for this study were: (1) Importance-Performance Analysis to compare importance and performance levels of green practices, (2) reliability check for consistency of a

scale, (3) paired samples t-test to compare the green dimensions as a pair (importance and performance) , (4) correlation analysis to examine the relationship between organizational commitment and green practices, (5) Multivariate Analysis of Variance (MANOVA) to examine whether the population's green perceptions are different by demographic characteristics, (6) one-way Analysis of Variance (ANOVA) to follow up test of the MANOVA, and (7) Post-hoc with Tukey's HSD to explore the differences between each of the groups already reported significance in ANOVA. Data analysis procedures and brief discussions for each analysis follow.

The coded 220 data were copied from SPSS version 17 and transferred to the Microsoft Excel 2008 program to perform IPA. Respondents rated the importance of 20 attributes of green practices and then evaluated the level of performance on 5-point scales. To construct the importance-performance matrix, the mean scores of green dimensions across the sample were calculated in the Excel program. The calculated mean scores were plotted on a two-dimensional grid as a pair, importance and performance.

As mentioned, the dimensions of green practices introduced in this research were RC, CA, EF, and WC. RC indicates waste reduction programs of green practices such as recycling and using reusable products. CA means activities to improve air quality such as non-smoking policies, using green cleaners, and maintaining AC units. EF refers to energy efficiency which involves more structural adjustments of the hotel. Installing high energy efficient lighting and introducing natural light to the building to reduce consumption of the energy are examples of this. WC indicates water conservation programs. In fact, activities under this category such as

linen reuse programs and using low-flow fixtures are the most visible green attributes used by hotels.

### Reliability of Scale

Measurements used in this research introduced four dimensions (RC, CA, EF, and WC) of green practices, and each dimension consists of five sub-items. In other words, twenty items in total were used for each importance and performance scale. In order to examine internal consistency of the measurements used in this research, a reliability analysis was adopted. Also, item adjustment for better internal consistency was conducted; items CA2 (place green live plants on property for the quality of indoor air), EF5 (using sky-lights to maximize natural light throughout the property), and WC1 (towel and linen reuse program in guest rooms) were excluded from the list of items in importance. Consequently, importance of CA, EF and WC remained four items instead of five for analysis, and Cronbach's alpha was increased by .04, .35, and .28 for CA, WC, and EF respectively. As the result of it, internal consistency in importance measurement of green practices was reported .66 for RC, .67 for CA, .81 for EF, and .75 for WC.

Also, Cronbach's alpha for performance measurement reported .60, .73, .85, and .81 for RC, CA, EF, and WC respectively. The organizational commitment (OC) measurement originally consisted of 6 items. However, the first statement, "I find that my values and the organization's value are similar," was removed to increase internal consistency. As a result of the item adjustments, the internal consistency of OC was improved by .32 from .61 to .93. Table

1 summarizes Cronbach's alpha values of each construct and descriptive statistics of the constructs. The construct reliability coefficients (Cronbach's alpha) ranged from .60 to .93 which is acceptable (Hair, Black, Babin, Anderson, & Tatham, 2005).

**Table 1: Construct reliability and descriptive statistics**

| Construct                 | N of Items | Cronbach's Alpha | Mean | S.D |
|---------------------------|------------|------------------|------|-----|
| RC - Importance           | 5          | .66              | 4.07 | .62 |
| CA - Importance           | 4          | .67              | 4.36 | .58 |
| EF - Importance           | 4          | .81              | 4.13 | .74 |
| WC - Importance           | 4          | .75              | 4.05 | .76 |
| RC - Performance          | 5          | .60              | 3.90 | .81 |
| CA - Performance          | 5          | .73              | 3.97 | .67 |
| EF- Performance           | 5          | .85              | 3.69 | .88 |
| WC- Performance           | 5          | .81              | 3.91 | .75 |
| Organizational Commitment | 5          | .93              | 4.19 | .96 |

For better understanding about internal consistency of a measurement, a brief explanation is suggested herein. In general, reliability is defined as the degree to which the observed variable measures the true or error free value (Hair et al., 2005). Poor reliability cannot be seen because it is embedded in the observed variables; therefore, the process to increase reliability and validity should be enforced in order to have more accurate results of the variables of interest (Hair et al., 2005). In general, Cronbach's Alphas value indicates internal consistency, and values above .6 and .7 may acceptable (Hair et al., 2005).



## Importance – Performance Analysis (IPA)

The IPA by Martilla and James (1977) employed a five-point scale. Similarly, this study adopted a five-point scale for the importance and performance attributes of a green hotel. It should be noted herein that unlike reliability assessment no questionnaire items were eliminated for IPA because of descriptive nature of IPA: IPA is used to present data and strategic suggestions not an indicator of validity (Oh, 2001). Significantly, most IPA studies do not specifically indicate the terms at each point, yet this study presented the terms at each of the five points of the Likert scale. Also, although they suggested that using median values as a measure of central tendency is preferable, this study decided to use mean scores to develop the IPA grid in order to grasp additional information that the data might contain (Martilla & James, 1977). A brief background discussion regarding IPA follows.

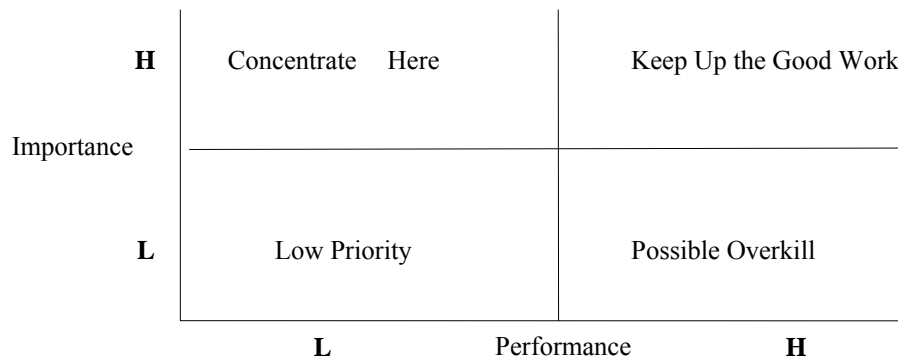
Originally, IPA by Martilla and James (1977) assessed consumer satisfaction by comparing two points: the important attributes to the consumers and the performance rating of each feature by consumers. A significant feature of IPA is that because the results can be graphically displayed on a two-dimensional grid, the results are easily interpreted (Martilla & James, 1977). Because IPA is used to determine relative value of importance and performance rather than the absolute level of importance and performance (Leong, 2008; Martilla & James, 1977), the interpretation of quadrant intersections can be determined based on judgment (Leong, 2008). A two-dimensional grid consists of a vertical y-axis depicted as “important” and a horizontal x-axis depicted as “performance” (Martilla & James, 1977; Vaske, Kiriakos, Cottrell,

& Khuong, 2009). Each of the quadrants is represented by the following interpretations

(Guadagnolo, 1985; Martilla & James, 1977):

- ***Keep up the good work*** – *The upper right-hand quadrant. Features of high level of importance to respondents and high rank of performance of the company. Therefore, decision makers need to be certain these attributes remain in this quadrant.*
- ***Concentrate here*** – *The upper left-hand quadrant. Attributes of high level of importance to respondents and lower rank of performance of the firm. Therefore, management needs to pay immediate attention on features that fall into this category.*
- ***Low priority*** – *The lower left-hand quadrant. Features of low level of importance and performance. Since the employees perceive these of little importance, decision makers may pay little or no attention to attributes that fall into this category.*
- ***Possible overkill*** – *The lower right-hand quadrant. Features of low level of importance and high rank of performance. Limited attentions can be expended on these attributes because the employees do not perceive these as being important factors.*

To depict each quadrant and its interpretations (explained above), figure 1 shows an IPA grid.



Source: Martilla and James (1977)

**Figure 1: IPA grid and interpretations**

### T-tests

The following T- tests were performed: (1) paired sample t-test to identify whether there was a discrepancy between level of importance and performance on green practices assessed by the hotel employees and (2) independent samples t-test to examine what differences showed between hotels that had different levels of green certification. To conduct a paired sample t-test, each dimension of green practices - importance and performance - was paired to compare them; for instance, importance of RC and performance of RC were paired to compare what differences show between the two.

To perform an independent samples t-test, performance of RC and EF were entered for dependent variables, and hotel classifications based on the level of green certification was

entered for independent variables. Note, level one and level two indicated “Palm certification” level one and level two. A brief discussion regarding t- tests follows.

A paired samples t-test is a type of t- test used to compare the means in the case of two samples that are related. It can also be used for measuring the same sample in two different questions (Pallant, 2007). In statistics, an independent samples t-test is used to test the probability that the two sets of scores came from the same population. In determining the appropriateness of t-tests, some assumptions - normal distribution, homogeneity of variance, and independence of observations- are needed for it to be conducted. (Pallant, 2007). In general, t- tests are widely applied by researchers because they work with sizes of a small group and are easy to apply and interpret (Hair et al., 2005). Although there is a wide application of t-tests, they have limitations: (1) t-tests are only used for two groups and (2) they only assess one independent variable at a time (Hair et al., 2005).

### Correlation Analysis

To investigate the relationship of green practices and organizational commitment (OC), the correlation analysis was used. Prior to conducting the correlation analysis, general assumptions were tested, and four green dimensions of importance and performance and OC were entered simultaneously for the analysis. Among several measures for correlation, this research took Pearson product-moment correlation coefficient to depict the results of correlation between green practices and OC. A general overview of correlation analysis follows.

Correlation is used to explore the strength and direction of the relationship between variables. In general, a Person product-moment correlation coefficient (Pearson  $r$ ) is a common measure of the correlation between two variables, giving a value from -1(negative correlation) to +1(positive correlation) (Pallant, 2007). A number of assumptions need to be made for the correlation analysis: level of measurement, related pairs, independence of observations, normality, linearity, homoscedasticity, and missing data; in fact, generating scatterplot enables the researcher to check linearity and homoscedasticity (Pallant, 2007). For appropriate analysis of the correlation, it should be known that small correlations may produce statistical significance in large samples ( $N = 100+$ ) (Pallant, 2007).

#### Multivariate analysis of variance (MANOVA)

To examine whether the employees' demographic factors can generalize their green perception at work, multivariate analysis of variance (MANOVA) was conducted. Eleven independent variables were - 10 demographic factors and one hotel classification. They were: (1) gender, (2) generation, (3) marital status, (4) education, (5) ethnicity, (6) annual salary, (7) years working for the hotel, (8) years working for the hospitality industry, (9) position, (10) department, and (11) hotel classification based on the level of green certification. As a note, hotel classification was not on the questionnaire; however, it was used for independent variables in MANOVA for the purpose of further investigation. The dependent variables were importance

and performance of green factors - RC, CA, EF and WC. Procedurally, the dependent variables were entered simultaneously while 11 independent variables were entered individually.

Some groups of six variables were collapsed to obtain better statistical results in this study. For generation, since the mature category had only few samples (1.4%), it was combined with Baby- Boomer (18.6%). It resulted in a total of 3 subgroups for generation variable which were Generation Y, X, and Mature. For education, some high school (5.9%) and graduate school (4.1%) were combined with high school graduate and college graduate respectively. Hence, resulting education variable had three groups – high school graduate, junior college, and college graduate.

Continually, three groups of annual salary range were combined and resulted in a total of 4 groups: group 4 (salary range from \$50,000 to \$74,999 (5.5 %)), group 5 (salary range from \$75,000 to \$99,000 (3.6%)), and group 6 (over \$100,000 (3.2%)) were combined into over the \$50,000 range of annual salary group. For department, in order to properly compare green perceptions of departments, audio & visual (.5%), other (3.2%), and administration (2.3%) were excluded from the further analysis due to the small size of their data. Also, HR (3.6%) was combined with the sales/marketing department. Consequently, 4 groups of department were analyzed.

For working experiences of the organizations and hospitality industry, years were cut off by five-years and ten-years respectively. Preliminary assumptions were tested, and some outliers – five cases (data number 18, 46, 84, 100, and 172) in importance and eight cases (data number 16, 40, 60, 61, 67, 100, 172, and 200) in performance – were found; yet this study decided not to

consider transformation because the number of outliers was not considered an extensive amount. In addition, a brief discussion of MANOVA is followed.

MANOVA is used for more than one dependent variable; therefore, it is used to compare two or more groups in terms of their means on a group of dependent variables (Hair et al., 2005; Pallant, 2007). For MANOVA to be valid, three assumptions need to be met (Hair et al., 2005): (1) observations must be independent – responses in each cell are not made independently of responses in any other group, (2) variance-covariance matrices must be equal for all treatment groups – in MANOVA, Box’s Test of Equality of Covariance Matrices shows whether this assumption is violated or not. Significant value that is larger than, .001 means no violation of this assumption (Pallant, 2007), and (3) normality – this assumption is that all the variables are multivariate normal. Although it underlies most multivariate techniques, there is no direct test available for multivariate normality (Hair et al., 2005). Considering the fact that univariate normality of each variable is tested, Mahalanobis distance is commonly used (Pallant, 2007).

#### One-way analysis of variance (ANOVA)

A one-way analysis of variance (ANOVA) was employed as a follow-up test to the MANOVA. ANOVA was conducted only on the dependent variables that reached statistical difference in MANOVA. In MANOVA, five variables showing significance were (1) gender, ethnicity, and department on importance of green practices and (2) generation and hotel

classification on performance of green practices. Consequently, ANOVA was conducted only for these variables. For better understating about ANOVA, it is briefly discussed herein.

One -way analysis of variance (ANOVA) is used to show whether there are significant differences in the mean scores on the dependent variables across the groups. It involves one independent variable which has a number of different levels and one dependent continuous variable (Pallant, 2007). For each group, sample size of 20+ is preferable for the comparison of mean scores (Hair et al., 2005). In principle, ANOVA can avoid type I error inflation due to making multiple comparisons of treatment groups and providing more flexibility in testing for group differences (Hair et al., 2005).

#### Post hoc tests

As a follow up test of ANOVA, post hoc tests with Tukey's HSD were conducted to determine where mean differences occurred which gave them significance across the groups. The analyzed variables were the ones that reached statistical significance in ANOVA, and they were (1) ethnicity on importance of RC, (2) department on importance of CA and EF, (3) generation on performance of RC and EF, and (4) hotel classification on importance of RC and EF. Overall discussion about post-hoc is followed.

In general, these tests are performed after the statistical tests for main effects have been performed. It does not use a single contrast, but instead tests for differences among all possible combinations of groups (Hair et al., 2005). Most common post hoc procedure are Tukey's



honestly significant difference (HSD) method and Scheffe's method which is the most cautious method for reducing the risk of a Type I error (Hair et al., 2005; Pallant, 2007;). Because Post-hoc comparisons are designed to prevent the possibility of Type I error, it is often more difficult to achieve significance (Pallant, 2007).

### **Conclusion**

This chapter describes research methodology employed to investigate green practices from perspective of the hotel employees. This research is based on a survey collected from the employees of hotels implementing green practices in their operations. Also, the areas analyzed are the level of importance and performance of green practices assessed by the employees of hotels, the relationship between employees' commitment and green practices, and the effect of employees' demographic factors to predict green perceptions. The brief discussions for each analysis used in this research - IPA, paired t-tests, MANOVA, ANOVA, and post-hoc tests – also appear in this chapter.

## **CHAPTER FOUR: RESEARCH RESULTS**

### **Introduction**

This chapter presents the results of the data analysis performed to examine green practices from hotel employees' perspectives. As noted, all information used in this study was derived from questionnaire data. Two hundred twenty completed questionnaires were coded, and the raw data was transferred into Statistical Package of Social Sciences (SPSS) version 17 for analysis at first. IPA was separately performed in Excel 2008 to present the results. Importantly, to screen data for analysis of the study, descriptive tests for variables were used in order to check errors of the data. After errors of the data were corrected, tests were repeated to double-check for occurrence of errors.

### **Sample Profiles**

The majority of participants for this study were female (68.6 %). It consists of a broad cross-sectional with an age range from 18 to 70 making 35.9 years the mean age. Interestingly, the percentage of single and married was equally 44.5 %. Over 40 % of the employees were high school graduates and nearly three-quarters (70%) of the employees had full-time positions and made less than 35K (67.3%) annually. More white people responded to this survey than other ethnicities.

There was a broad range in the number of years participants had worked for the hotels and in the hospitality industry - from 1 year to 25 years (mean = 6 years and median = 4 years) for the hotels and from 1 year to 39 years (mean = 11 years and median = 10 years) for the hospitality industry. Nearly half of the respondents worked for room departments (48.6 %) such as the front desk, housekeeping and engineering. Employees' demographic characteristics were consistent across the eight hotels. The sample profiles of this study moderately reflect the current hospitality industry labor trends including following: (1) largest percentage of the middle aged labor; (2) large portion of female labor; and (3) increasing percentage of minority labor (Angelo & Vladimir, 2004). Descriptive statistics of respondents are presented in Table 2.

**Table 2: Demographic profile of respondents (Employees N=220)**

| Variable                            | N   | %     | Variable                   | N   | %     |
|-------------------------------------|-----|-------|----------------------------|-----|-------|
| <b>Gender</b>                       |     |       | <b>Education</b>           |     |       |
| Female                              | 151 | 68.6% | Some high school           | 13  | 5.9%  |
| Male                                | 69  | 31.4% | High school graduate       | 89  | 40.5% |
| <b>Age</b>                          |     |       | Junior college graduate    | 27  | 12.3% |
| Generation Y (born after 1982)      | 57  | 25.9% | College graduate           | 82  | 37.3% |
| Generation X (born 1965 ~ 1981)     | 95  | 43.2% | Graduate school            | 9   | 4.1%  |
| Baby Boomer (born 1946 ~ 1964)      | 41  | 18.6% | <b>Ethnicity</b>           |     |       |
| Mature (born before 1946)           | 3   | 1.4%  | African American           | 30  | 13.6% |
| <b>Marital Status</b>               |     |       | Hispanic                   | 71  | 32.3% |
| Single                              | 98  | 44.5% | Caucasian                  | 86  | 39.1% |
| Married                             | 98  | 44.5% | Other                      | 31  | 14.1% |
| Separated                           | 6   | 2.7%  | <b>Annual salary range</b> |     |       |
| Divorced                            | 15  | 6.8%  | ≤ \$20,000                 | 47  | 21.4% |
| Widowed                             | 3   | 1.4%  | \$20,000 ~ \$34,999        | 101 | 45.9% |
| <b>Years for organization</b>       |     |       | \$35,000 ~ \$49,999        | 40  | 18.2% |
| Average                             |     | 6     | \$50,000 ≤                 | 27  | 12.3% |
| <b>Years for the hotel industry</b> |     |       | <b>Department</b>          |     |       |
| Average                             |     | 11    | Administration             | 5   | 2.3%  |
| <b>Current position</b>             |     |       | F & B                      | 38  | 1.3%  |
| Full - time employee                | 153 | 69.5% | Finance                    | 32  | 14.5% |
| Manager level                       | 38  | 17.3% | Room                       | 107 | 48.6% |
| Senior/Executive level              | 20  | 9.1%  | Sales/Marketing            | 18  | 18.2% |
| Others (seasonal/on-call)           | 8   | 3.7%  | Human Resource             | 8   | 3.6%  |
|                                     |     |       | Others                     | 8   | 3.7%  |

Note: Years for the organization and the hotel industry are averaged values (years).

### **Importance – Performance Analysis (IPA)**

As an initial analysis of IPA, the mean scores of green attributes were calculated. Fourteen items of importance measure and five items of performance measure had mean scores greater than “4.” It indicated that the employees of hotels perceive green practices to be at least “important” and “fair performance.” The mean scores for the attributes of green practices in importance measure ranged lowest from 3.54 (EF5, using sky lights to maximize natural light throughout the property) to highest to 4.64 (CA1, non-smoking policy for indoor air quality). Similarly, in performance measure, CA1 (non-smoking policies) with a mean of 4.50 was highest-rated while EF5 had the lowest mean score with 3.33.

The green features of RC1 (recycling), CA1 (non-smoking policy for indoor air quality), EF3 (using high energy lighting through the property), and WC1 (towel and linen reuse program) had higher mean scores than other green features in both importance and performance measures. In addition, EF 5 (using sky-lights to maximize natural light throughout the property) was lowest-rated in importance and performance. Table 3 presents the mean scores and standard deviations of 20 attributes of green practices in terms of importance and performance.

**Table 3: Importance and performance ratings of green practices by the hotel employees**

| Label              | Attribute Description  | Importance<br>Mean<br>(St.Dev) | Performance<br>Mean<br>(St.Dev) |
|--------------------|--|--------------------------------|---------------------------------|
| <b>RC1</b>         | Recycling (cardboards, papers, etc)                                      | 4.38<br>(.76)                  | 4.20<br>(2.14)                  |
| <b>RC2</b>         | Using reusable utensils rather than disposable ones                      | 3.74<br>(1.11)                 | 3.56<br>(1.14)                  |
| <b>RC3</b>         | Purchasing/using post consumer recyclable products                       | 3.92<br>(.89)                  | 3.84<br>(.92)                   |
| <b>RC4</b>         | Serves proper portion of food to reduce food waste                       | 4.02<br>(.98)                  | 3.74<br>(.99)                   |
| <b>RC5</b>         | Paperless policy including use of electronic software/system             | 4.29<br>(.87)                  | 4.01<br>(.93)                   |
| <b>CA1</b>         | Non-smoking policy for indoor air quality                                | 4.64<br>(.72)                  | 4.50<br>(.80)                   |
| <b>CA2</b>         | Place green live plants on property for the quality of indoor air        | 3.80<br>(1.21)                 | 3.73<br>(1.19)                  |
| <b>CA3</b>         | Keeping relative humidity at certain level to prevent the growth of mold | 4.21<br>(.89)                  | 3.79<br>(.91)                   |
| <b>CA4</b>         | Using environmentally preferable cleaning products                       | 4.13<br>(.91)                  | 3.84<br>(.94)                   |
| <b>CA5</b>         | Cleaning AC units regularly to prevent bacteria                          | 4.47<br>(.75)                  | 3.95<br>(.98)                   |
| <b>EF1</b>         | Using automatic sensor lighting on property                              | 4.03<br>(.99)                  | 3.76<br>(1.14)                  |
| <b>EF2</b>         | Using Energy Star rated equipments                                       | 4.13<br>(.87)                  | 3.72<br>(1.01)                  |
| <b>EF3</b>         | Using high energy efficient lighting through the property                | 4.22<br>(.91)                  | 3.85<br>(1.04)                  |
| <b>EF4</b>         | Setting appropriate temperature in back of the house                     | 4.16<br>(.88)                  | 3.78<br>(1.02)                  |
| <b>EF5</b>         | Using sky-lights to maximize natural light throughout the property       | 3.54<br>(3.46)                 | 3.33<br>(1.32)                  |
| <b>WC1</b>         | Towel and linen reuse program  | 4.48<br>(3.61)                 | 4.16<br>(.93)                   |
| <b>WC2</b>         | Using low-flow fixtures  | 4.19<br>(.96)                  | 4.05<br>(.88)                   |
| <b>WC3</b>         | Using automatic low-flow fixtures  | 4.19<br>(.96)                  | 3.99<br>(.954)                  |
| <b>WC4</b>         | Reclaiming water for reuse   | 3.82<br>(1.17)                 | 3.58<br>(1.22)                  |
| <b>WC5</b>         | Landscaping with native plants to minimize water consumption             | 3.99<br>(.95)                  | 3.75<br>(1.02)                  |
| <b>Grand Means</b> | The Grand Means for Importance & Performance                             | <b>4.11</b>                    | <b>3.85</b>                     |

\*Importance variables measured on a 5-point scale ranging from unimportant to extremely important

\*Performance variables measured on a 5-point scale ranging from poor to excellent.

### IPA grid

Activities related to green practices were mostly plotted in the upper right-hand quadrant – “keep up the good work” and the lower left-hand quadrant – “low priority.” However, a few attributes such as CA3 (keeping relative humidity at certain level to prevent the growth of mold), EF2 (using Energy Star rated equipments), and EF4 (setting appropriate temperature in back of the house) were plotted in the upper left-hand quadrant which means “**concentrate here.**” Therefore, these three features need to be improved upon terms of performance by the hotels. As note on the grid EF2 (using Energy Star rated equipments) was plotted on an interception of “concentrate here” and “low priority”; however, it was judged for the quadrant of “concentrate here” because the mean score of EF4 ( $M = 4.13$ ) is slightly higher than the averaged green features ( $M = 4.12$ ).

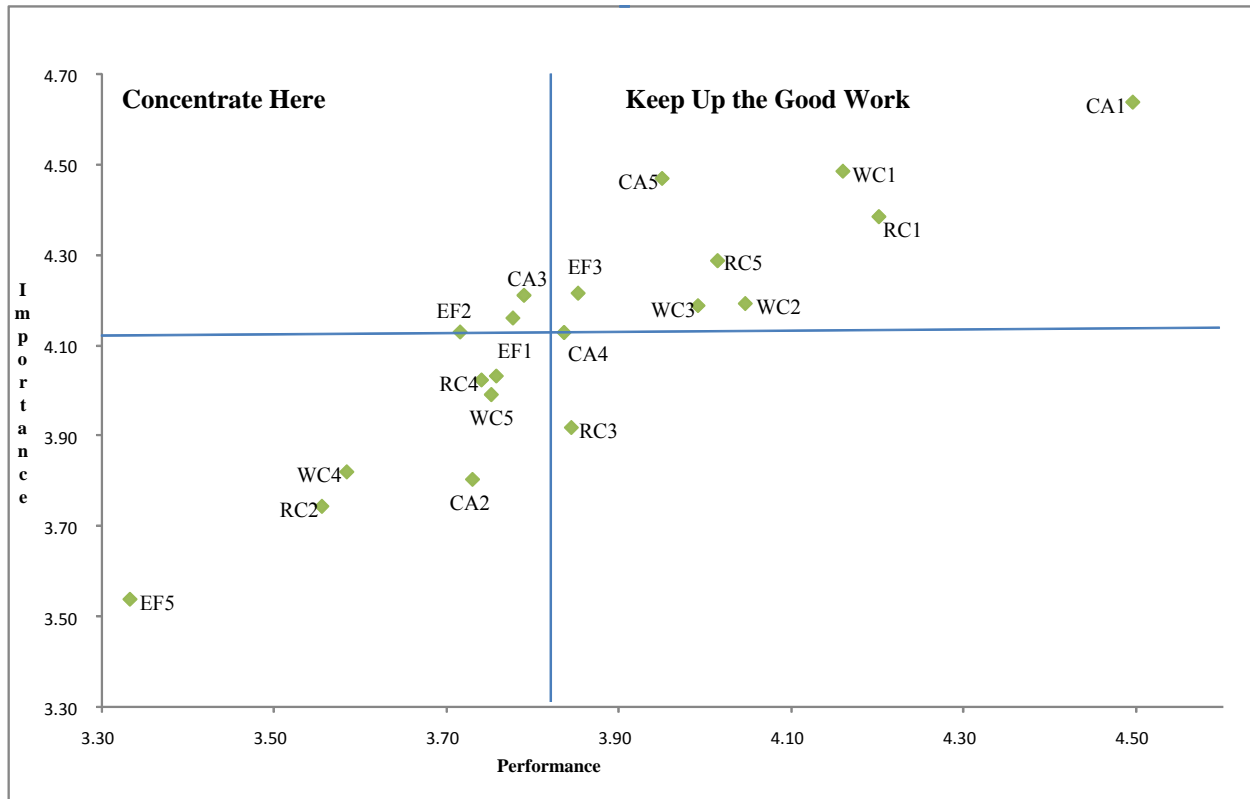
Also, only two items – CA4 (using environmentally preferable cleaning products) and RC3 (purchasing/using post consumer recyclable products) – were plotted on quadrant 4 of “**possible overkill.**” Based on the results, these two items were viewed as unimportant by the employees; meanwhile, the hotels performed these features well. According to the results, the hotels may have limited attentions on these items.

Seven items – EF1 (using automatic sensor lighting on property), EF5 (using sky-lights to maximize natural light), RC4 (serves proper portion of food), RC2 (using reusable utensils rather than disposable ones), WC5 (landscaping with native plants to minimize water consumption), WC4 (reclaiming water for reuse), CA2 (green live plants on property for indoor air quality) - out of twenty were positioned in the quadrant 3 of “**low priority.**” These seven items were

perceived as relatively unimportant by the employees. From the employees' viewpoint, the hotels may pay less attention on these.

Eight items – CA1 (non-smoking policies), CA4 (using environmentally preferable cleaning products), CA5 (cleaning AC units regularly), RC1 (recycling), RC5 (paperless policy), WC1 (towel and linen reuse program), WC2 (using low-flow fixtures), WC3 (using automatic low-flow fixtures), and EF3 (using high energy star rated equipments) - were plotted in the quadrant 2 of “**keep up the good work.**” These green features in quadrant 2 were not only perceived as important by the employees but also well-performed by the hotels. Therefore, it is predicted that the performance for these should be maintained. The IPA grid is illustrated in Figure 2.

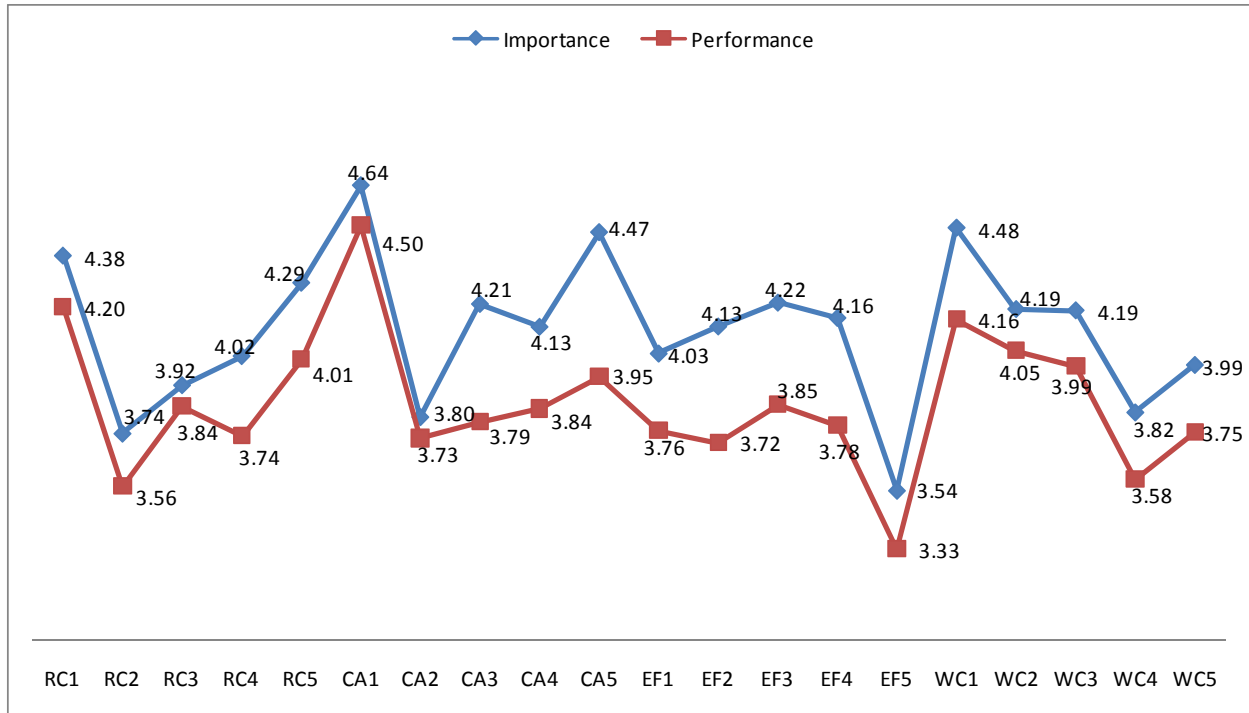




**Figure 2: Employee perception on green practices to IPA**

Interestingly according to the employees’ importance and performance measure, RC2 (using reusable utensils rather than disposable ones) and EF5 (using sky-light to maximize natural light throughout the property) were equally ranked at the bottom and CA 1 was ranked on the top in both importance and performance. Importantly, based on the IPA, overall the employees perceived that activities related to WC (water conservation) were well-performed by the hotels; three attributes related to WC – WC1, WC2, and WC3 - out of five were plotted on the “keep up the good work.” Also, green attributes related to air quality were valued more than other green features by the hotel employees.

To aid IPA, figure 3 suggests a line graph to show how the employees perceived green practices in importance and performance.



**Figure 3: Assessment of each green attribute in importance and performance by employees**

### Evaluation of Green Dimensions

A paired-samples t-test was conducted to evaluate whether there is difference between the level of importance and performance in each green dimension as perceived by the employees. The results showed that the mean scores from the importance to the performance were decreased. In other words, the employees assessed that the performance level by hotels did not exceed their importance level about green practices.

The decreased mean score for RC was .18 with a 95% confidence interval ranging from 0.80 to .28,  $t(215) = 3.51$ ,  $p < .0005$  (2-tailed). The results also indicated that the mean score of CA decrease by .41 from importance to performance with a 95 % confidence interval ranging from .32 to .51,  $t(214) = 8.63$ ,  $p < .0005$  (2-tailed). EF was the factor of green practices that showed the most significant difference on the mean scores. The mean decrease on EF from importance and performance was .44 with a 95% confidence interval ranging from .33 to .56,  $t(206) = 7.75$ ,  $p < .0005$  (2-tailed). WC also decreased the mean score by .15 from importance to performance with a 95% confidence interval ranging from .05 to .24,  $t(212) = 3.11$ ,  $p < .0005$  (2-tailed). By using eta squared values of each, the magnitude of effect between importance and performance of green practices was small or moderate according to suggestive guidelines (Pallant, 2007): .05 for RC, .24 for CA, .21 for EF, and .04 for WC.

Based on the difference of the mean scores, the gap on WC (.15) was approximately one third of EF (.44); this means that the green activities for EF did not perform well in comparison to other green activities. This emphasized that there was a statistically significant difference between the level of importance as perceived by the employees and the level of performance practiced by hotels; performance level on green practices was lower than importance level regarding green practices. In fact, the energy efficiency area had the lowest performance level among the green dimensions. Based on the results of paired t-test, hypothesis 1 – there will be a significant difference between green importance perception and green performance perception – is supported. The results of paired t-test are shown in Table 4.

**Table 4: Results of Paired T-Tests**

| Factor | Mean |      | Importance-Performance | t    | df  | Sig<br>(2-tailed) | 95% Confidence Interval |       |
|--------|------|------|------------------------|------|-----|-------------------|-------------------------|-------|
|        | I    | P    |                        |      |     |                   | Lower                   | Upper |
| RC     | 4.07 | 3.89 | .18                    | 3.51 | 215 | .00               | .08                     | .28   |
| CA     | 4.37 | 3.96 | .41                    | 8.63 | 214 | .00               | .32                     | .51   |
| EF     | 4.14 | 3.70 | .44                    | 7.75 | 206 | .00               | .33                     | .56   |
| WC     | 4.05 | 3.90 | .15                    | 3.11 | 212 | .00               | .05                     | .24   |

**Correlation between Organizational Commitment and Green Practices**

In order to examine the relationship between organizational commitment (OC) and green practices, correlation coefficients were computed among the scales. The results of correlation revealed that green practices and organizational commitment were statistically significant at  $\alpha = < .01$  level. Among the variables, importance of WC had strong correlation to OC ( $r = .38$ ) followed by RC ( $r = .35$ ). Performance of CA was strongly correlated to OC ( $r = .32$ ); meanwhile, RC was weakly correlated to OC ( $r = .22$ ). Although there were correlations between green practices and OC, the strength of the relationship was either small (less than .29) or medium (less than .49) according to suggestive guidelines (Pallant, 2007).

Based on the results of correlation between green practices and OC, hypothesis 2

- green practices will be positively correlated with organizational commitment – is supported. It clearly shows that green practices are positively correlated to organizational commitment. Table 5 and 6 present the results of correlations between green practices and organizational commitment.

**Table 5: Correlations between OC and importance of green practices**

| Scale                             | 1 | 2     | 3     | 4     | 5     |
|-----------------------------------|---|-------|-------|-------|-------|
| 1. RC – Importance                | — | .54** | .56** | .53** | .35** |
| 2. CA – Importance                |   | —     | .71** | .46** | .27** |
| 3. EF – Importance                |   |       | —     | .52** | .26** |
| 4. WC – Importance                |   |       |       | —     | .38** |
| 5. Organizational Commitment (OC) |   |       |       |       | —     |

\*\* p < .001

**Table 6: Correlations between OC and performance of green practices**

| Scale                             | 1 | 2     | 3     | 4     | 5     |
|-----------------------------------|---|-------|-------|-------|-------|
| 1. RC - Performance               | — | .50** | .50** | .50** | .22** |
| 2. CA - Performance               |   | —     | .73** | .66** | .32** |
| 3. EF – Performance               |   |       | —     | .70** | .28** |
| 4. WC - Performance               |   |       |       | —     | .30** |
| 5. Organizational Commitment (OC) |   |       |       |       | —     |

\*\* p < .001

## **Demographic Characteristics and Green Perception**

### Multivariate Analysis of Variance (MANOVA)

A one-way multivariate analysis of variance (MANOVA) was performed to examine the difference in green perception by demographic variables. The dependent variables were importance and performance of green practices, and independent variables used were 11 in total : 10 demographic factors and one hotel classification based on the level of green certification. Three on importance variables and two on performance variables reached statistical difference.

For importance, gender showed significance:  $F(4, 215) = 2.94$ ;  $p = .02$ ; Wilks'  $\lambda = .95$ ; partial eta squared = .05. Also, ethnicity,  $F(12, 558) = 1.88$ ;  $p = .03$ ; Wilks'  $\lambda = .90$ ; partial eta squared = .03, and department,  $F(12, 518) = 2.63$ ;  $p = .00$ ; Wilks'  $\lambda = .86$ ; partial eta squared = .05 showed a statistical difference.

For performance, two variables showed significance: (1) generation,  $F(8, 380) = 2.21$ ;  $p = .03$ ; Wilks'  $\lambda = .91$ ; partial eta squared = .04, and (2) hotel classification based on certification level,  $F(4, 215) = 5.46$ ,  $p = .00$ ; Wilks'  $\lambda = .91$ ; partial eta squared = .09. Based on the findings above, the employees' green perception was not determined by their demographic characteristics although there are a few variables that showed significance. Therefore, hypothesis 3 – the hotel employees' demographic characteristics will not generalize their perception regarding green practices – is partially supported. Table 7 and 8 show the results of MANOVA

**Table 7: MANOVA - Importance of green practices by demographic variables**

| Demographic Variables            | Wilks' $\lambda$ | F value <sup>a</sup> | P value | Partial Eta Squared |
|----------------------------------|------------------|----------------------|---------|---------------------|
| Gender<br>(df = 1)               | .95              | 2.94                 | .02**   | .05                 |
| Age/Generation<br>(df = 2)       | .94              | 1.42                 | .19     | .03                 |
| Marital Status<br>(df=1)         | .98              | 1.06                 | .38     | .02                 |
| Education<br>(df = 2)            | .95              | 1.35                 | .22     | .03                 |
| Ethnicity<br>(df=3)              | .90              | 1.88                 | .03**   | .03                 |
| Annual Salary<br>(df=3)          | .92              | 1.48                 | .13     | .03                 |
| Work-hotel<br>(df=2)             | .98              | .41                  | .90     | .01                 |
| Work-hospitality<br>(df=2)       | .97              | .76                  | .64     | .01                 |
| Position<br>(df=1)               | .99              | .31                  | .81     | .01                 |
| Department<br>(df = 3)           | .86              | 2.63                 | .00*    | .05                 |
| Hotel classification<br>(df = 1) | .97              | 1.70                 | .15     | .03                 |

\*  $p < .01$  and \*\*  $p < .05$

**Table 8: MANOVA - Performance of green practices by demographic variables**

| Demographic Variables            | Wilks' $\lambda$ | F value <sup>a</sup> | P value | Partial Eta Squared |
|----------------------------------|------------------|----------------------|---------|---------------------|
| Gender<br>(df = 1)               | .99              | .65                  | .63     | .01                 |
| Age/Generation<br>(df = 2)       | .91              | 2.21                 | .03**   | .04                 |
| Marital Status<br>(df=1)         | .97              | 1.94                 | .10     | .04                 |
| Education<br>(df = 2)            | .99              | .31                  | .96     | .01                 |
| Ethnicity<br>(df=3)              | .96              | .70                  | .75     | .01                 |
| Annual Salary<br>(df=3)          | .94              | 1.18                 | .29     | .02                 |
| Work-hotel<br>(df=2)             | .96              | .10                  | .44     | .02                 |
| Work-hospitality<br>(df=2)       | .98              | .42                  | .91     | .01                 |
| Position<br>(df=1)               | .99              | .46                  | .77     | .01                 |
| Department<br>(df = 3)           | .91              | 1.55                 | .10     | .03                 |
| Hotel classification<br>(df = 1) | .91              | 5.46                 | .00*    | .09                 |

\*  $p < .01$  and \*\*  $p < .05$

### Analyses of Variances (ANOVA)

To be consistent with the MANOVA, an ANOVA follow-up test was performed in order to compare the variance on the dependent variables, which reached significance in MANOVA. Significantly, although the results of MANOVA reached statistical significance on importance of green practices between female and male, the results of ANOVA reported no significance for



gender. This result indicates that the importance level of green practices on gender can be significant when the four green factors were taken collectively, as a whole concept, rather individually. Regarding ethnicity, only importance of RC reported a statistical significance,  $F(3, 214) = 3.65, p = .01$ . For department, two factors of green practices reported significance – CA and EF. Importance of EF was more significant than CA. EF was  $F(3, 199) = 7.01, p < .01$ , and CA was,  $F(3, 199) = 2.87, p < .05$ . Among these, importance of EF by department (.00) was most significant followed by importance of RC by ethnicity (.01).

Generation reported statistical significance on performance of CA and EF. CA was more significant than EF: CA was,  $F(2, 193) = 7.34, p < .01$  and EF was,  $F(2, 193) = 4.28, p < .05$ . Hotel classification on performance of RC and EF showed statistical difference; yet the magnitude between RC and EF was not distinctive, .01. CA showed  $F(2, 218) = 4.52, p < .05$ , and EF was  $F(2, 218) = 3.75, p = .05$ . Overall, performance of CA by generation was most significant. Table 9 and 10 shows the results of ANOVA on importance by ethnicity and department and performance by generation and hotel classification.

**Table 9: ANOVA - Importance and demographic variables**

|                 | Variables  | Sum of Squares | df | Mean Square | F    | Sig.  |
|-----------------|------------|----------------|----|-------------|------|-------|
| RC - Importance | Ethnicity  | 4.04           | 3  | 1.35        | 3.65 | .01** |
| CA - Importance | Ethnicity  | .57            | 3  | .19         | .55  | .65   |
| EF - Importance | Ethnicity  | .92            | 3  | .31         | .56  | .64   |
| WC - Importance | Ethnicity  | 3.58           | 3  | 1.19        | 2.09 | .10   |
| RC - Importance | Department | 1.55           | 3  | .52         | 1.33 | .27   |
| CA - Importance | Department | 2.87           | 3  | .96         | 2.87 | .04** |
| EF - Importance | Department | 10.14          | 3  | 3.38        | 7.01 | .00*  |
| WC - Importance | Department | 1.41           | 3  | .47         | .78  | .51   |

\*  $p < .01$  and \*\*  $p < .05$

**Table 10: ANOVA - Performance and demographic variables**

|                | Variables            | Sum of Squares | df | Mean Square | F    | Sig.  |
|----------------|----------------------|----------------|----|-------------|------|-------|
| RC-Performance | Generation           | 1.62           | 2  | .81         | 1.21 | .30   |
| CA-Performance | Generation           | 6.35           | 2  | 3.18        | 7.74 | .00*  |
| EF-Performance | Generation           | 6.24           | 2  | 3.12        | 4.25 | .02** |
| WC-Performance | Generation           | 2.20           | 2  | 1.10        | 2.00 | .14   |
| RC-Performance | Hotel classification | 2.96           | 1  | 2.96        | 4.52 | .04** |
| CA-Performance | Hotel classification | .00            | 1  | 2.84        | .01  | .94   |
| EF-Performance | Hotel classification | 2.84           | 1  | .96         | 2.87 | .05** |
| WC-Performance | Hotel classification | .54            | 1  | .541        | .96  | .33   |

\*  $p < .01$  and \*\*  $p \leq .05$

## Post –Hoc Analyses

This study also conducted post hoc analyses using Tukey HSD as follow-up tests to ANOVA in order to evaluate where the significant differences lie. All independent variables used for ANOVA had multiple levels of at least three levels. First, the result of multiple comparisons reported ethnicity on importance of RC was significant; Black/African Americans differed from Hispanic people and vice versa. The mean score of Hispanics is higher (M = 4.20, S.D = .57) than other ethnicities, especially Black/African Americans (M = 3.78, S.D = .60).

Second, Tukey HSD for department on importance of CA reported that room departments differed from sales/HR. Similarly, room departments on importance of EF also differed from finance and sales/HR. The mean score of room departments is higher than sales/HR in both cases. In both cases, the mean score of Food & Beverage (F&B) was not different from others.

The post-hoc HSD reported that generation X (M = 3.79, S.D = .70) on performance of CA differed from generation Y (M = 4.07, S.D = .63) and mature generation (M = 4.22, S.D = .51); the mean score of generation X is lower than others. Similarly, generation X on performance of EF was different than mature generation. The mean score of mature generation (M = 3.88, S.D = .86) was slightly higher than others. Tables (11, 12, 13, 14, and 15) show the results of multiple comparisons.

**Table 11: Multiple comparisons - Importance of RC on ethnicity**

| Dependent Variable | (I)              | (J)              | (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|------------------|------------------|-------|------------|------|-------------------------|-------------|
|                    |                  |                  |       |            |      | Lower Bound             | Upper Bound |
| RC –<br>Importance |                  | Hispanic         | -.43  | .13        | .09  | -.77                    | -.09        |
|                    | African American | Caucasian        | -.28  | .13        | .15  | -.61                    | .06         |
|                    |                  | Other            | -.36  | .16        | .10  | -.76                    | .04         |
|                    |                  | African American | .43   | .13        | .09  | .09                     | .77         |
|                    | Hispanic         | Caucasian        | .15   | .10        | .40  | -.10                    | .41         |
|                    |                  | Other            | .07   | .13        | .95  | -.27                    | .41         |
|                    |                  | African American | .28   | .13        | .15  | -.06                    | .61         |
|                    | Caucasian        | Hispanic         | -.15  | .10        | .40  | -.40                    | .10         |
|                    |                  | Other            | -.09  | .13        | .91  | -.41                    | .24         |
|                    |                  | African American | .36   | .16        | .10  | -.04                    | .76         |
|                    | Others           | Hispanic         | -.07  | .13        | .95  | -.40                    | .27         |
|                    |                  | Caucasian        | .09   | .13        | .91  | -.24                    | .42         |

\* p < .05

**Table 12: Multiple comparisons - Importance of CA on department**

| Dependent Variable | (I)      | (J)      | (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|----------|----------|-------|------------|------|-------------------------|-------------|
|                    |          |          |       |            |      | Lower Bound             | Upper Bound |
| CA – Importance    | f & b    | finance  | .15   | .14        | .71  | -.21                    | .51         |
|                    |          | room     | -.07  | .11        | .94  | -.35                    | .22         |
|                    |          | sales/HR | .27   | .15        | .27  | -.12                    | .65         |
|                    | finance  | f & b    | -.19  | .14        | .71  | -.51                    | .21         |
|                    |          | room     | -.22  | .12        | .26  | -.51                    | .09         |
|                    |          | sales/HR | .12   | .15        | .87  | -.28                    | .51         |
|                    | room     | f & b    | .07   | .11        | .94  | -.22                    | .35         |
|                    |          | finance  | .21   | .12        | .26  | -.09                    | .51         |
|                    |          | sales/HR | .33*  | .13        | .05  | .00                     | .66         |
|                    | sales/HR | f & b    | -.27  | .15        | .27  | -.65                    | .11         |
|                    |          | finance  | -.12  | .15        | .87  | -.51                    | .28         |
|                    |          | room     | -.33* | .13        | .05  | -.66                    | -.00        |

\* p < .05

**Table 13: Multiple comparisons - Importance of EF on department**

| Dependent Variable | (I)      | (J)      | (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|----------|----------|-------|------------|------|-------------------------|-------------|
|                    |          |          |       |            |      | Lower Bound             | Upper Bound |
| EF – Importance    |          | finance  | .31   | .17        | .25  | -.12                    | .74         |
|                    | f & b    | room     | -.24  | .13        | .25  | -.58                    | .10         |
|                    |          | sales/HR | .22   | .18        | .60  | -.24                    | .68         |
|                    |          | f & b    | -.31  | .17        | .25  | -.74                    | .12         |
|                    | finance  | room     | -.55* | .14        | .00  | -.92                    | -.19        |
|                    |          | sales/HR | -.09  | .18        | .96  | -.57                    | .38         |
|                    |          | f & b    | .24   | .13        | .25  | -.10                    | .58         |
|                    | room     | finance  | .55*  | .14        | .00  | .19                     | .91         |
|                    |          | sales/HR | .46*  | .15        | .01  | .07                     | .85         |
|                    |          | f & b    | -.22  | .18        | .60  | -.68                    | .23         |
|                    | sales/HR | finance  | .09   | .18        | .96  | -.38                    | .57         |
|                    |          | room     | -.46* | .15        | .01  | -.86                    | -.07        |

\* p < .05

**Table 14: Multiple comparisons - Performance of CA on generation**

| Dependent Variable | (I)    | (J)    | (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|--------|--------|-------|------------|------|-------------------------|-------------|
|                    |        |        |       |            |      | Lower Bound             | Upper Bound |
| CA-<br>Performance | Gen Y  | Gen X  | .28*  | .11        | .03  | .02                     | .53         |
|                    |        | Mature | -.15  | .13        | .47  | -.45                    | .15         |
|                    | Gen X  | Gen Y  | -.28* | .11        | .03  | -.53                    | -.02        |
|                    |        | Mature | -.43* | .12        | .00  | -.70                    | -.15        |
|                    | Mature | Gen X  | .15   | .13        | .47  | -.15                    | .45         |
|                    |        | Gen Y  | .43*  | .12        | .00  | .15                     | .70         |

\* p &lt; .05

**Table 15: Multiple comparisons - Performance of EF on generation**

| Dependent Variable | (I)    | (J)    | (I-J) | Std. Error | Sig. | 95% Confidence Interval |             |
|--------------------|--------|--------|-------|------------|------|-------------------------|-------------|
|                    |        |        |       |            |      | Lower Bound             | Upper Bound |
| EF-<br>Performance | Gen Y  | Gen X  | .31   | .14        | .08  | -.03                    | .65         |
|                    |        | Mature | -.10  | .17        | .84  | -.50                    | .31         |
|                    | Gen X  | Gen Y  | -.31  | .14        | .08  | -.65                    | .03         |
|                    |        | Mature | -.40* | .16        | .03  | -.77                    | -.04        |
|                    | Mature | Gen X  | .10   | .17        | .84  | -.31                    | .50         |
|                    |        | Gen Y  | .40*  | .16        | .03  | .04                     | .77         |

\* p &lt; .05

#### Independent samples t-test

For hotel classification, post-hoc was not feasible because it had less than three levels; hence, independent samples t-test was performed to examine the differences of the mean scores

between hotels based on the level of green certification. Although the magnitude of the mean difference among hotels - level “one” and “two” green certification - were not extreme, interestingly, the mean scores of level “one” green certified hotels were higher than level “two” green certified hotels on both - performance of RC and EF in the amount of .23. The results of independent-sample t-test are presented in Table 16.

**Table 16: Independent sample t-test - Performance of RC and EF by hotel classification**

|                | Hotel Classification | Mean | SD  | F    | Sig. (2-tailed) |
|----------------|----------------------|------|-----|------|-----------------|
| RC-Performance | Level 1              | 4.00 | .83 | .575 | .04             |
|                | Level 2              | 3.77 | .77 |      |                 |
| EF-Performance | Level 1              | 3.79 | .79 | 6.52 | .05             |
|                | Level 2              | 3.56 | .96 |      |                 |

In order to better understanding of post-hoc analysis, the mean scores of the groups were used for post-hoc HSD is presented in Table 17.



**Table 17: Mean scores of groups – generation, ethnicity, and department**

| Dependent Variable | Independent Variables - groups | Mean | Std. Deviation |
|--------------------|--------------------------------|------|----------------|
| CA – Performance   | Generation Y                   | 4.07 | .63            |
|                    | Generation X                   | 3.79 | .70            |
|                    | Mature                         | 4.22 | .51            |
| EF - Performance   | Generation Y                   | 3.79 | .81            |
|                    | Generation X                   | 3.48 | .88            |
|                    | Mature                         | 3.88 | .86            |
| RC – Importance    | Black /African American        | 3.78 | .60            |
|                    | Hispanic                       | 4.20 | .57            |
|                    | White/Caucasian                | 4.05 | .60            |
|                    | Other                          | 4.14 | .70            |
| EF – Importance    | F & B                          | 4.09 | .73            |
|                    | Finance                        | 3.78 | .67            |
|                    | Room                           | 4.33 | .66            |
|                    | Sales/HR                       | 3.87 | .79            |
| CA - Importance    | F & B                          | 3.96 | .53            |
|                    | Finance                        | 3.77 | .73            |
|                    | Room                           | 4.02 | .74            |
|                    | Sales/HR                       | 4.03 | .59            |

## **Conclusion**

Overall, performance level of green practices embraced by hotels was lower than importance level as assessed by the hotel employees. The IPA grid presents that there are some areas of green practices that need to be improved, are already well-performed or are not necessary to be concerned. Importantly, data analysis show that overall (1) there are significant difference between importance perception and performance perception regarding green practices as assessed by the hotel employees, and (2) green practices positively correlate to organizational commitment.

Although most demographic variables did not yield significant difference in green perceptions, a series of statistical analysis suggest that (1) Hispanic people perceived recycling was important more than other ethnicities, (2) the department, such as housekeeping or engineering, showed more green concerns than others, specifically in the area of clean air and energy efficiency, (3) generation X was more critical than other generations on the performance by the hotels, and (4) performance levels as evaluated by the hotel employees differed by the levels of green hotel certification. Further discussions are followed in Chapter Five.

## **CHAPTER FIVE: DISCUSSIONS & CONCLUSION**

### **Introduction**

The goal of this study was to examine green practices of the hotel industry from the perspective of hotel employees. This chapter is designed to provide further insight on the results of this research as they relate to the findings of the existing literature. First, a summary of the finding is presented to provide an idea of how this research was conducted and the significant results are that this study has produced. Second, employees' perceptions of green practices in terms of green practices and the hotels' performance level are discussed and compared to the previous relevant literature. Third, findings on the correlation between organizational commitment and implementation of green practices are compared to previous research in the area of the subject. Fourth, demographic characteristics as a predictor of green perceptions at work are discussed. Lastly, implications and limitations of the study are presented.

### **Summary of Study Results**

This research utilized a survey design to generate the necessary data to answer the proposed research questions. After the dimensions of green practices were identified from the previous literature on the topic, this study identified how the employees in the hospitality industry perceived green practices. Through the pilot test, the questionnaire was clarified to

survey the hotel employee population. Finally, 220 usable questionnaires were used for data analysis.

The first research point that guided this study was whether a gap exists between the employees' perception of the degree of importance of green practices and the overall performance level of those practices. IPA and the paired t-test indicated that the population perceived that green practices were important in showing a mean score of 4.12. Although the performance level was assessed at the "fair" level with the mean score of 3.86, the population viewed that the performance level of green practices by the hotels did not exceed its expectation on green practices. Therefore, it was concluded that there was a gap between perceived importance of green practices and actual performance levels.

Overall, the population agreed that green practices exhibited an important relevance to its health issues: the findings revealed that, to the population, "non-smoking policies" were the most important as well as the best-performed green activity. Conversely, energy efficiency was ranked at the lowest performing activity among the four green dimensions, and due to the low performance level energy efficiency dimension had the largest score gap of .44 between importance and performance.

The second point led this research was whether a hotel's green practices were related to its organizational commitment. The results of the correlation analysis indicated that a positive relationship existed between organizational commitment (OC) and implementations of green practices. Although the strength of correlation between OC and green practices was at the moderate level, the positive correlation of two variables was consistent across the green

dimensions in both importance and performance. Furthermore, in the area of water conservation ( $r = .38$ ) and air quality ( $r = .32$ ) importance and performance showed the strongest correlation to the OC. Performance level of waste reduction ( $r = .22$ ) and importance of energy efficiency ( $r = .26$ ) depicted the weakest correlation to the OC.

The third point that guided this study was whether the demographic characteristics of the workforce served as a predictor of their green perception. According to the results of MANOVA, the employees' demographic characteristics exhibited very little variance in their green perception at work. The majority of the demographic characteristics reached insignificant results; the exception were ethnicity in regard to RC in importance, the department in which the employee worked relative to CA and EF in importance, generation on CA and EF in performance, and the hotel classifications on RC and EF in performance.

Additionally, in regards to the variables that reached significance, ANOVA and multiple comparisons were conducted. It was revealed that: (1) Hispanics more than other ethnic groups perceived that recycling was of most importance (2) overall, hotel departments such as housekeeping and engineering showed more green concerns towards environmental issues than others, specifically in the areas of clean air and energy efficiency, and (3) generation X was more critical of the performance by the hotels than other generations. Interestingly, independent sample t-test showed that the performance level of two "Palm" certified hotels was lower than the hotels that had level one "Palm" certification. The following section discusses the findings related to the research questions that were examined in this study.

## **Discussion**

### Comparison of Importance and Performance

The analysis comparing the importance and performance of green practices suggest employees acknowledged and approved of green practices in the workplace. In accordance with previous studies, several issues are brought to light. First, it was assumed that the perceptions of non-management employees towards green practices might be different than those at the managerial level. However, based on the research findings of this study, industry wide, the perceptions of the hotel employees do not differ based on the level of their position within the company. The findings of Bohdanowicz (2005) and Kirk (1998) suggested that hoteliers positively perceived green practices. Similarly, the hotel employees that participated in this study also had a positive perception of green practices with the high mean score. It can be implied and safe to say that individuals in the hotel industry viewed green practices should be implemented.

Second, Shanklin (1993) and Suttell (2005) indicated that the most prominent focus of green practices in the hospitality industry was non-smoking policies. Similarly, their findings have not changed within this study. “Non-smoking policies” are ranked at the highest level in both importance and performance measures; it clearly suggests that they are the most visible green activity in the hotel industry.

When investigating the possible reasons as to why employees perceive “non-smoking policies” at the forefront of green programs, this study suspects it comes from two possible

sources. Based on Repace's (2004) claim that eliminating smoking in the workplace improves comfort level of the workers, it is logically assumed that there exists a cleaner and more favorable working environment in hotels that embraced and implemented a no-smoking policy. In addition, employees have seriously responded to health concerns, and the attention to those concerns has carried over to the hotel industry generally ("no-smoking", 2006). This can be related to Cascardo's (2007) finding that claims awareness of air quality in the hospitality industry has increased.

However, conflicting findings were found by the empirical evidence of Shopland, Anderson, Burns, and Gerlach (2004) who examined and reported that workers in the service industry were not protected by no-smoking policy. The phenomenon might have dramatically changed in the last few years, yet their findings appear to be isolated from other studies on this subject.

Also, showing the lowest mean score of 3.70, energy efficiency is shown to need improvement according to the population surveyed: the same finding was revealed by AH & LA (2008). In the Green Assessment Survey, 217 hoteliers agreed that energy efficiency remains a challenging area for the hotel industry. Notably, the employees who participated in this study share the same opinion with the hoteliers on this issue. Additionally, Bohdanowicz (2006) claimed that energy efficiency was the prevalent area of concern by hoteliers. The cost factor of the new technologies at first glance might be a reasonable argument to support it. However, as suggested by Iwanowski and Rushmore (1994) and Claver-Cortés et al. (2007) the initial costs to

improve energy efficiency should be evaluated with consideration to the return on the investment that such improvements would provide.

Presently, there exists a low priority among hotel employees to engage in green practices to reduce food waste. These findings may be instrumental to explaining why they have not yet been successfully implemented. This is supported by the findings of Okazaki et al. (2008) and the report of Alexander (2002) and includes Green Assessment Survey by AH & LA (2008) and statistics by California Integrated Waste Management Board ([CIWMV], 2009). It is true that there are several factors inhibiting the efforts to reduce food waste (Bohdanowicz, 2006), yet this study revealed that employees' perception about the importance of activities to reduce food waste can be an underlying reason as to why it has not been significantly reduced.

The reasons that the employees perceive activities to reduce food waste are less important than other green activities will be arguable because perception of green issues is complex and is influenced by several factors (Kollmuss & Agyeman, 2002). Yet, this research tries to find logic to explain this phenomenon under McKenzie-Mohr's sustainable behavior (2000). Activities to reduce food waste may take time and extra efforts which require behavior changes among employees. Behavior changes include revising their present comfort level by participating in these activities (McKenzie-Mohr, 2000), thus creating the impression that accomplishing food waste reduction may be a more difficult things to do.

An assumption this study suggests may explain another phenomenon: Gustin and Weaver (1996) demonstrated in their research which found that travelers supported green practices overall yet selectively. In the study, travelers who wanted to stay at a green facility supported



water conservation, but they did not want to use a low-flow showerhead which, to them, may have meant compromising their comfort level.

Overall, this study found that green practices are well-received by the employees and widely embraced by hotel organizations. This finding is also parallel with Bohdanowicz's (2006) findings, Alexander's (2002) report, and the survey results of AH & LA (2008) which commonly indicate that green practices are not unusual within the hotel industry. However, the findings above differed from the claim of Butler (2008) who addressed the notion that the hospitality industry has been holding back on the implementation of green practices until consumer demands dramatically increase.

Although Butler's claim is respectable, it does not seem to lend the same interpretation as other numerous researches, which suggested that hotel guests welcomed and were ready for green practices of the hotel industry (Gustin & Weaver, 1996; J. D. Powder Associates, 2007; Manaktola & Jauhari, 2007). In fact, research about guests' attitudes toward green practices commonly indicates that guests prefer to stay at a green hotel. Heung et al. (2006) found that travelers in China were willing to stay at a green hotel despite being unclear about the determining factors of how the property is so designed. Also, Gustin and Weaver (1996), and Manaktola and Jauari (2007), and revealed that travelers/guests support hotels' green practices. It is true that there are differences between the concepts "demand" and "support or willingness,"; however, a widely considered view is that guests/travelers approve of green practices of the hotel industry.

Ironically, this study found that the performance level by level two green certified hotels was lower than those certified level one as observed by the employees, specifically in the areas of recycling and energy efficiency. Logical principles behind it are unclear; however, this study assumes two possibilities. First, employees' expectations might shape their perception of what the performance level should be. In other words, employees perceive the performance of green activities as the difference between actual performance and their expectation. Therefore, the employees of the hotels that had "level two" green certification might have higher expectations than the employees of the "level one" green certified hotels. Consequently, their (the employees at the level two certified hotels) assessment on the performance might be more critical.

Second, once a hotel obtains the entry level of green certification, its motivation level for higher certification may begin to decline which can be interpreted as reluctance and may lead to a more critical assessment from the employees. Furthermore, governmental regulation recommends that hotels strive to obtain a higher certification, yet they are not required to do so. It is true that a higher level of green certification has more requirements to fulfill; however, these requirements are not much different than ones at the introductory level of green certification. The higher level of green certification should have higher green performance level, yet the employees do not assess it that way.

## Organizational Commitment and Green Practices

Simply, stating the relationship between organizational commitment (OC) and green practices, the discussions of this study can be narrowed down to only one conclusion: there is a positive correlation between OC and green practices. The previous literature also showed consistent findings on this subject this study is not exempt. Accordingly, the finding of this study leads to discussions below:

Insync (2008) surveyed 14,000 employees and concluded that there was a strong correlation between employees' perception about their company being green and their commitment to the organization's efforts. Similarly, this study has reported a positive relationship between green practices and organizational commitment. However, a difference on the findings of Insync's survey (2008) and this study would be that the former survey found a strong correlation between OC and green practices; meanwhile, the latter one showed a modest correlation between the two. The findings of this research are also related to the suggestion of Brammer et al. (2007) found that positive relationship existed between CSR and organizational commitment.

This study cautiously suggests that organizational commitment may be a positive benefit of green practices (Burke & Logsdon, 1996; SHRM, 2007; Maignan et al., 1999). In fact, the similar discussion was elaborated in the investigation of Bohdanowicz et al. (2005) revealed that employees of several Swedish Scandinavian hotels were more committed to the hotels implemented green practices.

## Demographic Factors and Green Perception of the Employees at Work

The findings of the study suggest, as did Van Liere and Dunlap (1980), that demographic characteristics have very limited affect on people's green perceptions. Although four demographic variables reached statistical differences in this study, majority of demographic variables used in this study showed non-significance of green perceptions. Hence, the discussions followed will be proceeding based on the variables reached in statistical differences.

### Ethnicity and green perception

This research found that minority groups, especially Hispanics, showed a stronger green tendency than other ethnicities. This finding is similar to the empirical evidence of Kahn (2002) which concluded minorities such as Hispanic people more supported environmental regulations. However, it differs from the finding of Greenberg (2005) which showed that Hispanic people had a lower green tendency than Caucasians or African Americans. The finding from Mohai & Bryant (1998) revealed African Americans were more green conscious than Caucasians did not appear in this study. Rather, African Americans were less so than other races which is consistent with the findings of Howenstine (1993) and Newell and Green's (1997) investigation.

The finding of this study might be critical due to the fact that the hotel industry is rapidly diversifying. In fact, minorities are comprising more of the labor force in the U.S. due to immigration (U.S. Department of Labor, 2009); especially, 21.5 % of Hispanic population in the U.S was employed by hospitality firms as of 2008 (U.S. Department Labor, 2009). These figures

clearly show that the hotel industry needs shift more focus on minorities when planning green practices.

#### Department and green perception

The findings in regards to department: each department seems to have varying interests towards green practices. Primarily, green concerns are more obvious phenomena among the employees in operational departments such as housekeeping or engineering although the underlying principles are unclear. In all probability these employees have more exposure to green related activities compared to employees in other departments. In general, the employees in operational departments are directly involved and have more opportunities to observe green practices in several ways. For instance, when a housekeeper cleans a hotel room, he or she will be required to turn off the lights or water. Requiring these energy conserving actions may increase green consciousness as well as the importance of these activities. Meanwhile, the employees from some departments such as finance may not have as frequent opportunities to engage in these practices that operational staffs do. While they are good habits they are not part of their day to day job requirement resulting in less concern.

#### Age and green perception

The majority of the previous studies to identify green perception in age employed two categories, young and old. It is difficult for the findings of the study to be evaluated against the previous studies, since this study encompassed three generations including an “in between

generation,” - generation X. In this study, generation X, is defined as an age range from 28 to 44: they were the most critical about their hotels performance of green practices by giving lower credits. The findings of this study are similar to Insync’s (2008) survey which revealed that employees whose age ranged from 24 to 34 were most critical of their employer’s green performance. In helping these findings, it seems that generation X workers hold their company to a higher standard of green performance. This finding of the study can be important because a workforce dominated by this age group seems to demand improved green performance which in turn might increase their commitment possibly resulting in a higher success rate in the competitive market.

### **Practical Implications of Study**

This study provides new insights into the practice of green activities in the hotel industry. It outlines how its employees perceive green practices and takes an initial step in identifying the relationship between green practices and employees perceptions of their company’s commitment to them. Also, based on the author’s best knowledge this study might be the first research that investigates employees’ perception of green practices within the hotel industry.

This study can be an instrument to motivate employees’ participation in green practices; it can be used as a tool to develop training programs for these activities and serve a guideline for management to introduce and set policies. These managerial implications result in the following principal recommendations for hotels to progress in their green practices.

First, the benefits of green practices should be frequently communicated with employees to encourage their green participation. This study indicates that employees who focused on green activities saw the benefits relative to their personal health issues. Therefore, the positive results of green practices should be promoted as an employee benefits to maximize its effects. For instance, it will be better that a company promotes its green practices by not focusing “saving the earth” but “saving the company” and “a benefit to the employees as well.” This can serve as a strong motivation for employees to participate in their company’s green practices.

Furthermore, communication should provide clear goals to employees and clarify their role in improving green practices. Despite the fact that communication is essential in reinforcing green practices, it is not being utilized to its potential in the hotel industry (Madesn & Ulhoi, 2001; Zilahy, 2004). For communication, a team-based style is suggested, especially at the onset of green initiatives. Team-based communication methods will develop confidence in new schemes and policies among the employees because it gives them opportunities to share their ideas and concerns (Eby, Adams, Russell, & Gaby, 2000) about green practices. In the team-based communication environment, employees are clearly informed as to what their employer prospects from them as well as long and short term goals that are expected to be achieved.

Recognition of outstanding actions towards achieving green initiatives should be an integral part of the program and can be given as monetary or verbal acknowledgement. Monetary rewards can be given for certain achievements of green practices and can certainly act as a strong motivator for employees to participate. Verbal acknowledgement, especially in the presence of coworkers can be just as motivating.

Second, hotels should do their best to facilitate employees' participation in green practices so that the employees do not feel that doing so is an inconvenience. For example, recycle bins should be visible and easily accessible so that paper can be properly collected for reuse. Hence, employees should not be made to perceive that barriers exist when they participate in their company's green programs.

Third, hotels should offer various green training programs based on the employees' needs and interests, and these should be job-specific: (1) educating minorities in their native languages during green training will reinforce their green participation: Greenberg (2005) showed that Hispanics who had information given to them in their languages were more inclined to participate than Hispanic people who were informed in English, and (2) green goals should be department specific focusing on their interests that the department possesses: this will encourage and their participation during the green training. It would be more realistic for a finance department to place emphasis on paper recycling rather than use of an environmentally friendly cleaner. Also, creative promotions would be a great tool to motivate green participation should be used during the green training because employees who are reluctant to embrace green practices need to be inspired.

Fourth, the management should generate feedback from the employees on a regular basis to keep them informed about their property's green practices. In doing so, not only can the results of these activities be evaluated but sharing results can actuate ideas for improvement and well as increase commitment. Regular assessment of green performance by the employees will foster a positive attitude and encourage the thinking that green practices are not just a short-term



initiative to increase business but their company's permanent philosophy that will contribute to the community too.

### **Conclusions**

For last few decades, green practices have been commonly embraced by hotels. Besides to the fact that there are several motivations to push the industry for going green, such practices are becoming a matter of policy not option. Based on a survey of 220 hotel employees in Orlando, this study has established the fact that the major stakeholder of the hotel industry, its employees, has perceived green practices in a positive light and attached a high level of importance to them. It is important to note that employees recognize the quality of their employers' performance in green related activities and agree that industry wide improvement is needed.

It is apparent that the link between green practices and organizational commitment is still its formative stages in academia since the relationship between the two more likely requires additional investigation. However, this study supports a newly thriving positive relationship and should be recognized throughout the hotel industry as a stepping stone for future goals and commitments to green strategies. Furthermore, this positive correlation between green practices and organizational commitment may serve as a training tool for HR strategy as well as act to communicate a positive corporate image to employees.

Employees' perception of green initiatives in workplace was not influenced by their demographic characteristics; however, it should not be said that those characteristics are invalid

to examine the employees' green perception. This study detects a few noticeable facts about the employees' importance and performance perception. Also, it suspects that if the demographic factors are used in combination of circumstances, the results may be more consistent and significant. Worth nothing is this study suggests that in order for improvement in the implementation and practices of green initiatives, hotels should take into consideration not only compliance to suggested guidelines but also the degree to which employees embrace those initiatives. The root of commitment should be cultivated by the employees to realize success.

### **Limitations and Future Research**

This study has several limitations that should be noted. First, as a matter of convenient sampling, the data was collected from certified hotels in Orlando only: the results of this study may not be applicable to hotels in all areas. Second, this study measured a narrow range of green factors: recycling, clean air, energy efficiency, and water conservation, some other relevant factors of green practices may be shown to be more valuable among employees in the hotel industry. Third, there was a lack of reference material for each green dimension which may be one reason for the general lack of research of green practices in the hotel industry. Also, this study included a number of items asking for organizational commitment. However, because organizational commitment is affected by various factors, the relationship between green practices and organizational commitment in this study is considered oversimplified. The results of IPA should not be considered as an absolute level. Lastly, there were some items such as

reclaiming water or cleaning AC units that posed a challenge to assess performance levels because there are a limited number of employees involved in these activities.

Further research would be appropriate better formulate the relationship of green practices and employee involvement and perception including motivational tools to enhance participation and strategies for the design of ongoing green training and communication. Clearly, research remains to be conducted in the area of green practices and employees issues in the hotel industry.

## **APPENDIX A: SURVEY INSTRUMENT**

# Green Practice Survey



This survey includes **FOUR** different sections, Please answer all of them. Thank You

| <p style="text-align: center;"><b>Section 1</b></p> <p style="text-align: center;"><b>HOW <u>IMPORTANT</u> IS EACH ATTRIBUTE TO YOUR HOTEL !</b></p> <p style="text-align: center;">The following is a list of green practices.<br/>Please indicate your level of agreement to each of the following items regarding the <b>importance</b> level of green practices to your hotel<br/>1 = Unimportant , and 5 = extremely important</p> | How important is it ? |                  |                      |                |                     |
|---|-----------------------|------------------|----------------------|----------------|---------------------|
|   | Unimportant           | Little important | Moderately Important | Very Important | Extremely important |
|   | 1<br>↓                | 2<br>↓           | 3<br>↓               | 4<br>↓         | 5<br>↓              |
| Recycling ( cardboards, papers, cans, plastics, bottles, etc.)  | 1                     | 2                | 3                    | 4              | 5                   |
| Using reusable utensils rather than disposable ones   | 1                     | 2                | 3                    | 4              | 5                   |
| Purchasing / using post consumer recyclable products (office supplies,hand towels,etc)  | 1                     | 2                | 3                    | 4              | 5                   |
| Serves proper portion of food to reduce food waste  | 1                     | 2                | 3                    | 4              | 5                   |
| Paperless policy including use of electronic softwares or system (E-copy, email, etc)   | 1                     | 2                | 3                    | 4              | 5                   |
| Non-smoking policy (non-smoking throughout property) for indoor air quality   | 1                     | 2                | 3                    | 4              | 5                   |
| Place green live plants on property for the quality of indoor air   | 1                     | 2                | 3                    | 4              | 5                   |
| Keeping relative humidity at certain level to prevent the growth of mold (e.g 35-60% in FL)   | 1                     | 2                | 3                    | 4              | 5                   |
| Using environmentally preferable cleaning products (e.g.Green Seal certified products, etc)   | 1                     | 2                | 3                    | 4              | 5                   |
| Cleaning AC units <b>regularly</b> to prevent bacteria  | 1                     | 2                | 3                    | 4              | 5                   |
| Using <b>automatic</b> sensor lighting on property  | 1                     | 2                | 3                    | 4              | 5                   |
| Using Energy Star rated equipments (refrigerator, copier, etc)  | 1                     | 2                | 3                    | 4              | 5                   |
| Using high energy efficient lighting (compact fluorescents) throughout the property   | 1                     | 2                | 3                    | 4              | 5                   |
| Setting temperature appropriately in back of the house (office, kitchen, etc)   | 1                     | 2                | 3                    | 4              | 5                   |
| Using sky-lights to maximize natural light throughout the property  | 1                     | 2                | 3                    | 4              | 5                   |
| Towel and linen reuse program in guest rooms  | 1                     | 2                | 3                    | 4              | 5                   |
| Using low-flow fixtures (toilet, sink, etc)   | 1                     | 2                | 3                    | 4              | 5                   |
| Using <b>automatic</b> low-flow fixtures (toilet, sink,etc)   | 1                     | 2                | 3                    | 4              | 5                   |
| Reclaiming water for reuse ( e.g. irrigation)   | 1                     | 2                | 3                    | 4              | 5                   |
| Landscaping with native plants to minimize water consumption  | 1                     | 2                | 3                    | 4              | 5                   |

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| <p style="text-align: center;"><b>Section 2</b></p> <p style="text-align: center;"><b>HOW WELL DOES YOUR HOTEL <u>PERFORM</u> GREEN PRACTICES?</b></p> <p>The following is list of green practices. Please indicate your level of agreement to each of the following items about the <b>performance</b> level of your hotel on green practices.<br/>1 = poor, and 5 = excellent</p> | How well does your hotel ? |        |        |           |           |
|---|----------------------------|--------|--------|-----------|-----------|
|   | Poor                       | Fair   | Good   | Very good | Excellent |
|   | 1<br>↓                     | 2<br>↓ | 3<br>↓ | 4<br>↓    | 5<br>↓    |
| Recycling (cardboards, papers, cans, plastics, bottles, etc.)   | 1                          | 2      | 3      | 4         | 5         |
| Using reusable utensils rather than disposable ones   | 1                          | 2      | 3      | 4         | 5         |
| Purchasing/using post consumer recyclable products (office supplies, hand towels, etc)  | 1                          | 2      | 3      | 4         | 5         |
| Serves proper portion of food to reduce food waste  | 1                          | 2      | 3      | 4         | 5         |
| Paperless policy including use of electronic softwares or system (E-copy, email, etc)   | 1                          | 2      | 3      | 4         | 5         |
| Non-smoking policy (non-smoking throughout property) for indoor air quality   | 1                          | 2      | 3      | 4         | 5         |
| Place green live plants on property for the quality of indoor air   | 1                          | 2      | 3      | 4         | 5         |
| Keeping relative humidity at certain level to prevent the growth of mold (e.g 35-60% in FL)   | 1                          | 2      | 3      | 4         | 5         |
| Using environmentally preferable cleaning products (e.g.Green Seal certified products, etc)   | 1                          | 2      | 3      | 4         | 5         |
| Cleaning AC units <b>regularly</b> to prevent bacteria  | 1                          | 2      | 3      | 4         | 5         |
| Using <b>automatic</b> sensor lighting on property  | 1                          | 2      | 3      | 4         | 5         |
| Using Energy Star rated equipments (refrigerator, copier, etc)  | 1                          | 2      | 3      | 4         | 5         |
| Using high energy efficient lighting (compact fluorescents) throughout the property   | 1                          | 2      | 3      | 4         | 5         |
| Setting temperature appropriately in back of the house (office, kitchen, etc)   | 1                          | 2      | 3      | 4         | 5         |
| Using sky-lights to maximize natural light throughout the property  | 1                          | 2      | 3      | 4         | 5         |
| Towel and linen reuse program in guest rooms  | 1                          | 2      | 3      | 4         | 5         |
| Using low-flow fixtures (toilet, sink, showerheads)   | 1                          | 2      | 3      | 4         | 5         |
| Using <b>automatic</b> low-flow fixtures (toilet,sink,etc)  | 1                          | 2      | 3      | 4         | 5         |
| Reclaiming water for reuse (e.g. irrigation)  | 1                          | 2      | 3      | 4         | 5         |
| Landscaping with native plants to minimize water consumption  | 1                          | 2      | 3      | 4         | 5         |

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| Section 3<br>Please indicate the your level of agreement to each of the following statements<br>1 = strongly disagree, and 5 = strongly agree | strongly disagree | disagree | neutral | agree  | strongly agree |
|---|-------------------|----------|---------|--------|----------------|
|   | 1<br>↓            | 2<br>↓   | 3<br>↓  | 4<br>↓ | 5<br>↓         |
| I find that my values and the organization's value are similar  | 1                 | 2        | 3       | 4      | 5              |
| I am proud to tell others that I am part of this organization   | 1                 | 2        | 3       | 4      | 5              |
| I talk up this company to my friends as a great company to work for   | 1                 | 2        | 3       | 4      | 5              |
| I am extremely glad that I chose this organization to work for  | 1                 | 2        | 3       | 4      | 5              |
| For me, this is the best of all possible companies to work for  | 1                 | 2        | 3       | 4      | 5              |
| I really care about the fate of this organization   | 1                 | 2        | 3       | 4      | 5              |

## Section 4

Please check ( ✓ ) one of each the following demographic information

**1 What is your gender?**

- Female  
 Male

**2 What is your age? \_\_\_\_\_ Years**

**3 What is your marital status?**

- Single  
 Married  
 Separated  
 Divorced  
 Widowed

**4 What is your highest level of education?**

- Some High School  
 High School Graduate  
 Junior College Graduate  
 College Graduate  
 Master's Degree

**5 What is your authenticity?**

- Black / African American  
 Hispanic  
 White / Caucausion  
 Others (please specify) \_\_\_\_\_

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**Section 4 continued. Please check (v) one of each following demographic information**

**6 What is your annual salary range?**

- Under \$20,000
- \$20,000 ~ \$34,999
- \$35,000 ~ \$49,999
- \$50,000 ~ \$74,999
- \$75,000 ~ \$99,000
- More than \$100,000

**7 How long you have been working for this company? \_\_\_\_\_ years**

**8 How long you have been working for the hospitality industry? \_\_\_\_\_ years**

**9 What is your current position?**

- Full-time employee
- Entry level manager
- Middle level manager
- Senior/ Executive level manager
- Contract labor
- Others (please specify) \_\_\_\_\_

**10 Which department do you work for ?**

- Audio & visual
- Administration (executive officer's office)
- Food & Beverage (room service, convention, catering, food service, food production)
- Finance (payroll, purchasing, accounting...)
- IT
- Room (front desk, housekeeping, reservation, security, engineering, PBX)
- Sales & Marketing
- Human Resource Department
- Other (please specify) \_\_\_\_\_

**THANK YOU**



**APPENDIX B: UCF IRB NOTICE OF EXEMPTION**



University of Central Florida Institutional Review Board  
Office of Research & Commercialization  
12201 Research Parkway, Suite 501  
Orlando, Florida 32826-3246  
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276  
[www.research.ucf.edu/compliance/irb.html](http://www.research.ucf.edu/compliance/irb.html)

### Notice of Exempt Review Status

**From:** UCF Institutional Review Board  
FWA00000351, Exp. 10/8/11, IRB00001138

**To:** Sun Hwa Kim

**Date:** March 17, 2009

**IRB Number:** SBE-09-06165

**Study Title:** Employee Perceptions on green practice in the Hotel Industry

Dear Researcher:

Your research protocol was reviewed by the IRB Chair on 3/17/2009. Per federal regulations, 45 CFR 46.101, your study has been determined to be minimal risk for human subjects and exempt from 45 CFR 46 federal regulations and further IRB review or renewal unless you later wish to add the use of identifiers or change the protocol procedures in a way that might increase risk to participants. Before making any changes to your study, call the IRB office to discuss the changes. A change which incorporates the use of identifiers may mean the study is no longer exempt, thus requiring the submission of a new application to change the classification to expedited if the risk is still minimal. Please submit the Termination/Final Report form when the study has been completed. All forms may be completed and submitted online at <https://iris.research.ucf.edu>.

The category for which exempt status has been determined for this protocol is as follows:

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures, or the observation of public behavior, so long as confidentiality is maintained.
  - (i) Information obtained is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the subject, and/or
  - (ii) Subject's responses, if known outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability or reputation.

The IRB has approved a waiver of documentation of consent for all subjects. Participants do not have to sign a consent form, but the IRB requires that you give participants a copy of the IRB-approved consent form, letter, information sheet. For online surveys, please advise participants to print out the consent document for their files.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 03/17/2009 01:30:08 PM EST

IRB Coordinator

## **APPENDIX C: INFORMED CONSENT FORM**



## *Informed Consent*

Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study which will include about 200 people. You can ask questions about the research. You can read this form and agree to take part right now, or take the form home with you to study before you decide. You will be told if any new information is learned which may affect your willingness to continue taking part in this study. You have been asked to take part in this research study because you are a employee in the hospitality industry (hotels). You must be 18 years of age or older to be included in the research study and sign this form.

The person doing this research is Sun-Hwa Kim, an master program student at the Rosen College of Hospitality Management, University of Central Florida (UCF).

Because the researcher is a master student, Sun-Hwa Kim is being guided by Dr. Fevzi Okumus , a UCF faculty supervisor in Hospitality Service Department

**Study title:** **Employee Perceptions on Green Practices in the Hotel Industry**

**Purpose of the research study:** The purpose of this study is to investigate how the hotel employees perceive green practices in the hotels

**What you will be asked to do in the study:** You will be asked to participate in answering survey questions of forty items and ten demographic information questions

**Voluntary participation:** You should take part in this study only because you want to. There is no penalty for not taking part, and you will not lose any benefits. You have the right to stop at any time. Just tell the researcher or a member of the research team that you want to stop. You will be told if any new information is learned which may affect your willingness to continue taking part in this study.

**Location:** The researcher will deliver survey to the hotels that want to participate this survey. The survey will be collected at a designated place of the hotels for the employees' conveniences drop it off.

**Time required:** You are required to participate in the survey only once and there is no further process relating to this survey. It is expected to 5 to 7 minutes to finish this survey.

**Risks:** There are no expected risks for taking part in this study. You do not have to answer any questions that make you feel uncomfortable. You will not lose any benefits if you skip questions or tasks. You do not have to answer any questions that make you feel uncomfortable. This study does not include any audio or video taping.

**Benefits:** You might learn more about green practices in hotels by participating in this study. You might have better understanding of green programs practiced by hotel organizations. Your participation in this study will help the hotel industry to develop strategy on concerns of green practice.

**Compensation or payment:** There is no compensation, payment or extra credit for taking part in this study.

**Anonymous research:** This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you. The information that you provide us will not be shared with your employer in any manner. The researcher will not identify you individually and all responses will be analyzed and reported in aggregate form.

**Study contact for questions about the study or to report a problem:** Sun-Hwa Kim, Graduate Student, Department of Hospitality Services, Rosen College of Hospitality Management, (407) 903-8207 or Dr. Fevzi Okumus, Faculty Supervisor, Department of Hospitality Services at (407) 903-8177 or by email at fokumus@mail.ucf.edu.

**IRB contact about your rights in the study or to report a complaint:** Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

**How to return this consent form to the researcher:** Please sign and return this consent form via the principal investigator. A second copy is provided for your records. By submitting the completed survey, you are agreeing to participate in this research study and verifying that you are 18 years of age or older.

## **APPENDIX D: SURVEY PARTICIPATION LETTER**

## **Employee perceptions on green practices in the hotel industry**

Dear Participant,

My name is Sun-Hwa Kim, a master program student at the Rosen Hospitality Management, University of Central Florida (UCF). I am inviting you to participate in a voluntary survey. Your participation and answers are crucial for assessing green practices in the hospitality industry more specifically the hotel industry.

- The following questions ask about your perceptions on green practices at workplace.
- This survey is completely voluntary. You may choose not to participate or not to answer any specific questions. You may skip any question you are not comfortable answering. You can decline to participate in this survey. There are no anticipated risks.
- Do not take this survey if you are under age of 18.
- The survey is anonymous. You can be assured that your responses will never be matched with your name from the survey when it is submitted.
- This study examines the perceptions of green practices. The information will be used to improve the knowledge of green practices in the hospitality industry specifically the hotel industry as well as to improve green practices strategy of service organizations.
- Your privacy and research records will be kept confidential to the extent of the law. Authorized research personnel, the UCF Institutional Review Board and its staff, and other individuals, acting on behalf of UCF, may inspect the records from this research project. The results of this study may be published. However, the published results will not include your name or any other information that would personally identify you in any way
- If you have any questions about this survey, please contact Sun-Hwa Kim, the principal investigator of this study, at 407-903-8207 or Dr. Fevzi Okumus, a UCF faculty supervisor of this study, at 407-903-8177.
- Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (IRB). Questions or concerns about research participants' rights may be directed to UCF Institutional Review Board Office at the University of Central Florida, Office of Research and Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246. The phone numbers are 407-823-2901 or 407-882-2276.
- The survey will take approximately five minutes to complete.
- Thank you for taking the time and thought to complete this survey. We sincerely appreciate your participation. Your time and effort in helping us gather information is greatly appreciated.

Sincerely  
Sun-Hwa Kim

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