THE RELATIONSHIP BETWEEN TOP MANAGERS' ENVIRONMENTAL ATTITUDES AND ENVIRONMENTAL MANAGEMENT IN HOTEL COMPANIES

by

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Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of

Master of Science
In
Hospitality and Tourism Management

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July 20, 2009
Blacksburg, Virginia

Keywords: environmental management, environmental attitudes, hotels, top managers

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(ABSTRACT)

Environmental management and sustainability have been recent important issues in the hospitality industry. The hotel industry, as a main sector of the hospitality industry, has benefited from environmental initiatives through improving corporate image and increasing resource and energy efficiency. Among various environmental issues that have been addressed in the hotel industry, managerial influence on environmental management is rarely investigated.

The purpose of this study was to examine the current state of environmental management in the hotel industry. Further, this study also determined a relationship between top managers' personal environmental attitudes and organizational involvement in environmental management practices. To achieve the purpose of this study, this study examined currently adopted green practices, top managers' environmental attitudes, and their perception of advantages derived from environmental management.

Hotels that participated in this study showed greater involvement in energy management, water conservation, and waste management practices than hotels examined by previous research in different geographical areas. The results of this study showed a correlation between top managers' environmental attitudes and organizational involvement in environmental management. It was also found that top managers' environmental attitudes were positively related to their perceived advantages of environmental management. These findings present various managerial and theoretical implications for related organizations and hotel management companies.

The hotel industry should keep promoting green hotel practices to reduce negative impacts on the valuable environment and increase operational efficiency. In order to promote environmental management in the hotel industry, related organizations, governments, and stakeholders need to focus on raising top managers' environmental awareness as well as providing information on successful cases of environmental management.

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CHAPTER Ⅰ

INTRODUCTION

Introduction

Sustainability and environmental management have become one of the most critical management issues facing companies in a wide range of industries as well as hospitality firms as a result of growing environmental awareness among consumers, governments and social groups and employees. Reflecting this large scale trend, a number of research initiatives have been made to address these emerging issues in the hospitality industry context. The focus has been on identifying environmental management initiatives some green hotels have been making (e.g. Kirk, 1995; Mensah, 2006; Bohdanowicz, 2005; Stipanuk, 1996; Iwanowski & Rushmore, 1994). Growing consumer awareness and attitudes toward environmental issues and green products and services have been explored by some researchers (Manaktola & Jauhari, 2007; Gustin & Weaver, 1996). The identification of motivations for going green has also been the focus of a host of studies (e.g. Tzschentke, Kirk, & Lynch, 2008; Bohdanowicz, 2005; Tzschentke, Kirk, & Lynch, 2004).

In spite of a wide range of literature on environmental issues in the hospitality context, little research has been conducted to explore why some hotel companies come into the spotlight through their pro-environmental initiatives while others do not, and what factors affect the mode and posture of hotel companies' responses to environmental issues. This study will look for an answer to these questions by examining the relationship between top managers' environmental attitudes and corporate environmental activities. This research will primarily examine managers' personal environmental attitudes and environmentally-friendly practices hotel companies are currently implementing, and identify how general managers' world view concerning the environment affects integration of environmental issues into operations in hotel companies.

This chapter will identify problems, and state the research purpose and questions. The second chapter will present a review of the literature in the following areas: environmental management in the hotel industry, environmental attitudes and behavior, and organizational theories highlighting top managers' role in organizational mechanisms for responding to the

external environment. Chapter three will present the research methodology, while analysis of the data will be presented in chapter four. Finally, chapter five will make discussion of findings, conclusions, summarize the present research, and suggests directions for future research.

Problem Statements

The World Commission on Environment and Development (1987) and International Hotels Environmental Initiative (IHEI) (1992) started acting as a catalyst for greening hospitality practices (Kirk, 1998; Tzschentke et al., 2004). Since then, many hotel companies have participated in the green initiatives and adopted a pro-environmental policy. It has been reported that many hotels have taken advantage from their environmental initiatives through responding to customers' increasing environmental concerns (Manaktola & Jauhari, 2007; Gustine & Weaver, 1996), thereby enhancing corporate image, and achieving a high level of energy and resource efficiency (Kirk, 1995; Iwanowski & Rushmore, 1994).

An important question is what determines hotels' environmental activities and commitment? Much previous research across a range of disciplines has attempted to identify forces that motivate and encourage firms to respond to environmental issues. Stakeholders such as customers, local communities, government agencies, and public interest groups are considered relevant parties that affect environmental decision-making and actions, which in turn, have impact on the stakeholders (Banerjee, 2002). Organizational capabilities and the availability of resources to implement a proactive environmental management strategy also largely influence managerial decision-making (Banerjee, 2001; Lee & Rhee, 2006). Some research has pointed out that managerial perceptions of various environmental issues such threats and opportunities associated with environmental issues have impacts on corporate environmental responses (Banerjee, 2001; Lee & Rhee, 2006). Other research efforts have been made to identify management's perceived motivations to go green in the hospitality context (Kirk, 1998; Tzschentke et al., 2008). They include financial benefits, improved stakeholder relationships (Kirk 1995, Iwanowski & Rushmore, 1994; Tzschentke et al., 2004), and ethical concerns (Tzschentke et al., 2008). These motivations to go green are inevitably determined by the way top managers see the environmental issues as well as various internal and external factors that are relevant to their organizations as "managers' personal values can be a motivating factor" for corporate social responsibility (Heminway & Maclagan, 2004, p.36).

In addition, given that "corporate environmentalism is the recognition of the importance of environmental issues facing the firm"(Banerjee, Lyer, & Kashyap, 2003, p. 106), firms within a common industry context tend to implement similar environmental management strategies since they have similar situational contexts such as relationships with stakeholders and government regulations (Sharma, 2000). However, some studies have also argued that corporate environmental management strategy can be different among companies operating within the same industry which has similar social, regulatory, and public policy contexts (Hart & Ahuja, 1996; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). What makes that difference? This research will seek an answer to this question, focusing on managers' environmental attitudes and corporate environmental behaviors.

Further, it is found that green practices among small lodging operations are mainly driven by owner-managers' ethical concerns about the natural environment (Tzschentke et al., 2004). This implies that top managers' attitudes toward environmental issues might be directly linked to and affect hotels' response to those issues. Plentiful empirical evidence has suggested that psychological factors such as individual values and environmental attitudes underlie environmentally conscious behaviors (e.g. Stern and Dietz, 1994; Stern, Dietz, Kalof, and Guagnano, 1995). Considering that organizational mechanisms for interpreting the business environment, processing information and establishing goals cannot be separated from involvement with individuals with these attributes (Daft & Weick, 1984), top managers' individual environmental attitudes therefore can be the basis of interpreting environmental issues facing their organizations and one of the deciding factors that determine corporate environmental behaviors.

This research is needed because little empirical research has been conducted to examine the relationship between top managers' personal environmental attitudes and corporate environmental behaviors in the hotel industry. Theoretically, as an organizational application of attitudes-behaviors theories, this study will also try to determine if individuals' psychological variables that guide behaviors in a certain manner can predict organizational activities. Further, in an attempt to verify the relationship between the top managers' attitudes, perceived advantages of environmental management, and corporate environmental activities, this study will provide interest groups with a better understanding of determinants of environmental management

initiatives in the hotel industry, and thereby suggest a way to promote hospitality firms to be eco-friendly and socially responsible.

The Purpose of the Study

The primary purpose of this study is to determine the current state and perceived advantages of environmental management and to identify whether top managers' personal attitudes toward the environment affect corporate environmental orientation and thereby determine corporate environmental behaviors in hotel companies. This study also examines the relationship between top managers' environmental attitudes and their motivations to go green to identify if the personal attitudes relate to managers' perceived advantages of environmental management. To do so, following objectives should be achieved through this research:

1) Identify environmentally friendly practices implemented by hotel companies.
2) Measure the extent to which hotel companies are involved in each environmental management practice.
3) Determine top managers' personal attitudes toward the environment.
4) Determine the relationship between top managers' environmental attitudes and environmental management practices adopted by their hotels.
5) Determine the relationship between top managers' environmental attitudes and organizational involvement in environmental management.
6) Measure managers' perceived advantages environmental management provides for their hotels.
7) Determine the relationship between top managers' environmental attitudes and their perceived benefits of going green.

Research Questions

The present study attempts to answer following research questions:

1) What environmentally friendly practices are hotel companies currently implementing?
2) To what extent are hotel companies involved in environmental practices?
3) To what extent are hotel top managers concerned about the environment?
4) Is there any relationship between top managers' environmental attitudes and their hotels'

environmental management practices?

5) Is there any relationship between top managers' environmental attitudes and their organizational involvement in environmental management practices?
6) What advantages do managers perceive environmental management brings about?
7) Is there any relationship between top managers' environmental attitudes and their perceived advantages of environmental management?

Summary

Environmental management has been one of the critical management issues in the hotel industry. To gain a better understanding of environmental management in hotel companies, this study will identify what environmental management practices hotel companies are currently implementing and the extent to which the hotel companies are involved in each practice. Further, since organizational interpretation of the business environment and decision making cannot be separated from the involvement of top managers, environmental management of hotel companies can be largely affected by how these influential individuals perceive environmental issues. This study will examine top managers' environmental attitudes and their perceived advantages of environmental management to identify the relationship between top managers' environmental attitudes and hotel companies' environmental management, and perceived advantages.

CHAPTER Ⅱ

REVIEW OF LITERATURE

Introduction

As indicated in the previous chapter, the current research is primarily designed to determine environmentally friendly practices adopted by hotel companies and top managers' environmental attitudes, and to identify the relationship between the two variables. Specifically, this study is designed to examine how top managers' personal ecological world views determine the way the hotels respond to environmental issues. This study also will identify the relationship between top managers' environmental attitudes and their perceived advantages of environmental management in hotel companies. In order to accomplish these objectives, the literature on environmental management in hotel companies, environmental attitude and behavior, and role of top managers in organizations' interpretation of the business environment and decision-making will be reviewed.

Environmental Management in the Hotel Industry

The hospitality industry has been traditionally considered one that does not have a great impact on the natural environment compared to such industries as gas and oil, and other consumer product manufacturing industries. However, the hotel sector, in particular, one of the main business sectors in the hospitality industry, generates much more negative environmental impacts than the public perceives, consuming a vast amount of local and imported non-durable goods, energy and water, as well as emitting a large amount of carbon dioxide (Kirk, 1998; Bohdanowicz, 2006). As an emerging business strategy in the hospitality industry, environmental management has been attracting much interest from industry practitioners as well as scholars.

Main drivers of going green

Attempts to identify main motivations and incentives to implement environmentally friendly practices in hotel companies have been made to enhance understanding of corporate environmental decision-making and directions of environmental management in the hotel

industry. Much previous research has identified the main forces that determine green initiatives of hotel companies, and seemed to reach a consensus on them. The extent of significance hotel managers place on given driving forces however has been different in some degrees because the hotel managers have different situational contexts such as local government regulations, overall social concerns about environmental issues, and characteristics of their establishments.

Kirk (1998) examined hotel managers' perceived benefits of environmental management. The items measuring the managers' perceived benefits of environmental management are: increased profitability, enhanced customer and employee satisfaction, improved relationships with the local community, help with public relations, and a marketing advantage over competitors. The results suggest that hotel managers in the U.K displayed a moderate level of agreement on overall benefits of environmental management. The most significant benefits were the potential for improved public relations and better relationships with local communities. Bohdanowicz (2005) conducted a large scale study examining environmental management in over 600 European hotels and found that reducing operating costs is the most significant driver for the hotels to implement environmental initiatives, followed by demands from customers and improved hotel image. Mensah (2006) investigated green practices and hoteliers' perceived aims in Ghana, and found that providing a safe and healthy environment, quality service in clean environment, and reducing costs of environmental hazards were some of the main objectives of environmental initiatives. Tzschentke et al (2008) found that European hotels, in particular owner-managed small lodging operations, are mainly driven by ethical as well as economic considerations.

Economic benefits have been considered one of the most visible advantages coming from environmental initiatives. A vast amount of industry literature has highlighted economic benefits of environmentally friendly practices as one of the main drivers of going green, and related environmental organizations have provided quantitative evidence of cost savings. Marriott International, for example, currently has 211 Energy-Star-rated hotels in its system. Those hotels have 35 percent less energy use than average buildings (Marriott International, 2007). The InterContinental hotel Chicago O'Hare also utilizes 100 percent renewable energy credits from wind as well as a green roof that helps reduce cooling costs, and saves 40 percent on energy costs through the use of LED lights (Esposito, 2008). Much academic research has also found the

economic benefits through greater resource efficiency are one of the most frequently cited and significant drivers to implement environmental management (Iwanowski & Rushmore, 1994; Bohdanowicz, 2005; Kirk, 1995, 1998; Mensah, 2006).

Financial advantages over competitors through green initiatives are, however, somewhat questionable. As a proxy of competitive advantage through environmental management, objective financial performance data were collected, and the relationship between the economic performance and the degree of environmental management commitment was examined in the Spanish hotel context (Cortes, Azorin, Moliner, & Gamero, 2007). No significant impact of the environmental commitment on the financial performance was observed. Researchers however pointed out that the application of environmental management is very recent in the destination analyzed, and a longitudinal research is needed to get more reliable results about the relationship between the two variables.

Much research in general industries emphasizes improved stakeholder relationships as one of the most significant external forces that drive corporate environmental initiatives (Banerjee, 2001; Lee & Rhee, 2006). Some research in the hotel industry also presented empirical evidence that environmental initiatives are driven by stakeholder influence, such government, customers, and nongovernmental organizations (NGO). Managerial perceptions of stakeholder relations concerning environmental issues however vary according to the countries where the research is conducted. Kasim (2007) identified main drivers of and barriers to environmental management in Malaysian hotels. As an exogenous driver, government's regulatory forces are considered one of the most deciding factors for Malaysian hotels to adopt environmental management. Local government organizations, for example, provide the hotels with guidelines of environmental management and attempt to include environmental management into the hotel rating systems. On the other hand, Bohdanowicz (2005) identified demands from customers as the second most influential incentives for hotel managers to adopt environmentally friendly practices in the European hotel industry. This indicates that hoteliers are increasingly aware of the customers' increasing concerns about the natural environment and corporate social responsibility, and their environmental purchasing trends.

In a similar vein, Manaktola and Jauhari (2007) examined customers' attitudes toward green practices and behavioral intention in Indian hotels. They found that there is a significant

relationship between customer attitudes and behavioral intention towards green practices. These favorable attitudes and intentions toward environmental management of hotels however did not result in their willingness to pay more for the green initiatives. Although previous research has been conducted in limited geo-political locations or with relatively small sample sizes, and therefore have limitations in generalizing the findings, the consumers' increasing concerns about the environment has been proven to be one of the main drivers that determine environmental initiatives in hotel companies.

Gustin and Weaver (1996) also developed and tested an adopted version of Hines' model of environmental behavior. The results suggest that hotel customers' attitudes, knowledge, and perceived self-efficacy positively affect their behavioral intention to stay in environmentally friendly hotels. Thus it is argued that hotel companies' environmental strategies can be instrumental in attracting ever increasing environmentally conscious customers. Further, Noah, Robert, and Vladas (2008) conducted an experimental study to examine hotel customers' participation in a specific environmental program. The study used a concept of descriptive norms to examine the effectiveness of signs that are placed in guestrooms to solicit hotel guests' participation in a towel reuse program. Signs that used explicit descriptive messages, informing hotel guests that a majority of other guests participated in the towel reuse program, are more likely to encourage guests' participation in the program.

Among several internal drivers is a top-down process initiated by a directive from CEOs and top managers. Much literature pointed out top management's commitment to environmental initiatives is one of the most important prerequisites for a successful environmental strategy (Barnerjee, 2001; Bansal & Roth, 2000; Kasim, 2007; Andersson & Bateman, 2000). Managers' awareness of environmental problems and the level of concerns about the environment are proven to be a deciding factor that determines hotel companies' environmental management (Enz & Siguaw, 1999; Tzschentke et al., 2008). The findings of Tzschentke's qualitative research (2008) examining the environmental attitudes of small European hotels present that many hotel managers started the environmental initiatives of their hotels in line with their personal environmental ethics as environmental attitudes predispose people to act in an environmentally friendly manner (Hines, Hungerford, & Tomera, 1986). Further, the managers with greater environmental concerns displayed more ethical motivation for environmental management while

the managers with the lower level of environmental concerns expressed a more financially-oriented motivation for going green. Considering the nature of the predominance of small and medium sized independently operated hotels, top managers' attitudes toward environmental issues and their ethical motives therefore can be an important factor that predicts the hotels' environmental initiatives.

Current environmental management in the hotel industry

Currently, some hotel companies with a proactive environmental commitment are implementing green practices in various operational areas, such as housekeeping, laundry, food and beverage service, guest rooms, conference and meeting facilities. Some of the previous research has examined green practices conducted in each area of operations and categorized them into three main areas of environmentally friendly practices: energy management, waste management and water conservation (Bohdanowicz, 2006; Iwanowski & Rushmore, 1994). In addition to those three main areas of environmentally friendly practices, purchasing activities, organization and system, and external relationship can also be included in decision areas and functions for environmental management in the hotel industry.

Energy management

Energy saving has been considered one of the most significant areas of environmental management in the hotel industry because hotels in general consume considerable amount of electricity and fossil fuel energy in various operational areas. According to the U.S Environmental Protection Agency (EPA), reducing energy use by 10 percent across the hospitality industry would save $285 million (McLeish, 2007). It is reported that the potential for energy saving through green practices such as replacing light bulbs with energy efficient ones has been estimated at 10-25 percent depending on the age and size of the hotel (Bohdanowicz, 2006). Some hotels have focused on energy management through replacing old equipment with energy efficient equipment that is certified by the EPA's Energy Star as well as renovating their facilities to meet U.S Green Building Council (USGBC)'s Leadership in Energy and Environmental Design (LEED). Marriott International, for example, appointed regional Directors of Energy certified by the USGBC to monitor environmental programs of the company, and as a result of the initiatives, Marriott hotels achieved a high level of energy efficiency and cost

savings. Some of the programs and their performance are:

- "Re-Lamp" campaign replaced 450,000 light bulbs with fluorescent lighting in 2006 and saved 65 percent on overall lighting costs.
- Smoke-free policy announced and applied to all U.S Marriott hotels improves indoor air quality and as a result of that, helps save 30 percent of energy use for air treatment systems.
- Replacing 4,500 outdoor signs with LED and fiber optic technology saved 40 percent of outdoor advertising energy use in the first year of the program. (Marriott International, 2007).

Starwood Hotels & Resorts Worldwide also launched a new brand "ELEMENT" and required all hotels under the brand name to pursue LEED certification. The hotel company expects more than 20 LEED certified hotels under the name of ELEMENT to open by the end of 2009. The hotels will be designed to best use the natural light to heat guestrooms as well as using energy-efficient appliances and lightings (Hospitality Construction, 2008).

Much research has identified energy management programs hotel companies in different geographical areas incorporate into their operations. Erdongan and Barias (2007) examined the extent of environmentally friendly practices adopted among Turkish hotels. They found that adopting occupancy sensors or a key-card control system to save in-room energy is the most widely adopted energy saving practice, and more than 80 percent of four star hotels in the sample installed the measures. Energy-efficient lighting is also one of the most widely used energy saving applications (Bohdanowicz, 2006; Erdogan & Barias, 2007).

Based on the review of academic and industry trade literature (Kasavana, 2008; Mensah, 2006; Erdogan & Baris, 2007; Sherman, 2008; Iwanowski & Rushmore, 1994; Bohdanowicz, 2006; McLeish, 2007; Hanna, 2008), currently implemented energy management practices are identified as:

- Implementing a renewable energy program such as the use of wind power, solar power, and run-of river power.
- Adopting Automated (Computerized) energy control system.
- Replacing incandescent light bulbs with fluorescent lighting. (Using high energy efficient lighting).

- Installing energy-efficient laundry equipment.
- Using digital thermostats to control guestroom energy consumption.
- Installing occupancy sensors (they automatically turn the lights out when guests leave the room).
- Reducing air-circulating equipment through implementing a smoke-free policy.
- Using waste heat from the power generator.
- Using Energy Star-qualified products.
- Installing triple-glazed windows or reflective glass to save energy for heating and cooling.
- Replacing outdoor and exit signs with Light Emitting Diode (LED) signs.

In addition to these practices, designing parking areas under the building of the hotels can help greatly reduce the site footprint as well as eliminate tons of blacktop paving, which causes a heat island effect. This may be the one of the ways that helps reduce cooling costs of the hotels (Kasavana, 2008).

Water conservation

It was reported that a hotel consumes about 209 gallons of water per occupied room each day. It is almost as much as the 243 gallons used by a typical U.S household (Brodsky, 2005). With increasing awareness of cost saving opportunities through water conservation, various related programs have been developed and implemented among hotel companies. According to Marriott International's linen reuse program, encouraging guests to reuse lines and towels during their stay contributes to saving 11 to 17 percent on hot water (Marriott International, 2007). Previous literature also reported that linen and towel reuse programs are well-established practices in hotels in most countries, with more than two-thirds of the respondents in studies conducted in different countries using such programs (Bohdanowicz, 2006; Erdogan and Baris, 2007; Mensah, 2006). This program saves not only hot water and energy, but also reduces the use of detergents, and thereby reduces wastewater. A 100-guest room property with 75 percent occupancy can save an estimated $25,000 per year through a linen and towel reuse program. These savings are derived from an 81,000 gallon reduction in water consumption and 540 gallon reduction in detergent (Brodsky, 2005).

In addition to a linen and towel reuse program, installing low-flow faucets and showerheads,

and low-water-volume toilets has attracted much attention from hoteliers as one of the most efficient water saving measures (Bohdanowicz, 2006; Iwanowski & Rushmore, 1994) because these measures can be implemented through a relatively low level of modification and financial investment. Many hotels have adopted the following practices for water conservation (Kasavana, 2008; Mensah, 2006; Erdogan & Baris, 2007; Sherman, 2008; Iwanowski & Rushmore, 1994; Kirk, 1998; Bohdanowicz, 2006; McLeish, 2007; Hanna, 2008):

- Using water-efficient devices (Low-flow or infrared-activated faucets, low-flow showerheads, low-water-volume toilet, sink aerators, and Energy Star qualified cooking devices etc.)
- Instituting a linen reuse program.
- Regularly fixing toilet leaks.
- Using water-efficient laundry equipment and dishwashers.
- Placing water meters in guestrooms to track usage.
- Adopting water saving campaigns in kitchens (washing dishes when there are full loads or not using running water to wash vegetables etc).
- Adopting water-efficient or xeric gardening techniques.
- Using treated wastewater in garden irrigation.

Waste reduction and recycling

Waste management has been designed and implemented to reduce the volume and toxicity of garbage (Iwanowski & Rushmore, 1994). Erdogan and Baris (2007) conducted a study to examine environmental practices implemented by Turkish hotels and found that paper and food waste are the greatest amount of waste generated sources of hotels. The food & beverage service area in particular generates various solid and organic wastes such as packaging and food waste, aluminum cans, glass bottles, corks and cooking oils. The housekeeping operation also generates cleaning materials and plastic packaging. In addition to solid waste from front-of-house areas, back-of-house areas also generate a huge amount of solid waste such as toner cartridges, paper and cardboard waste and many other wastes from the hotel facility maintenance department (Baker, 2008). Previous research indicates that the level of hotels' commitment to waste sorting and recycling varies, depending on regulatory pressures and local government's support. For example, European hotels actively implement waste sorting and recycling programs in offices

and kitchens, but not in guestrooms (Bohdanowicz, 2006, Erdogan & Baris, 2007) while Ghanaian hotels are less committed to recycling programs, with only 17 percent of sampled hotels adopting recycling programs (Mensah, 2006). Erdogan and Baris (2007) pointed out that working with local governments and recycling firms can significantly promote the waste sorting and recycling activities among hotels. The following practices concerning waste management have been reported in previous academic and trade literature (Baker, 2008; Mensah, 2006; Erdogan & Baris, 2007; Kirk, 1998; Kasavana, 2008; Sherman, 2008; Iwanowski & Rushmore, 1994; Bohdanowicz, 2006; McLeish, 2007):

- Placing recycling bins in all front and back-of-house areas.
- Purchasing used or recycled-content products.
- Adopting a donation program (leftover guest amenities, old furniture and appliances and food).
- Composting organic kitchen waste.
- Using refillable amenity dispensers.
- Providing reusable items such as cloth napkins, glass cups, ceramic dished with food and beverage service.
- Grinding guest soaps to use as laundry detergent for hotel uniforms.
- Purchasing food items and cleaning chemicals in bulk containers.
- Recovering used cooking oil and food waste.

Environmental management practices related to such areas as reduction of solid waste, water consumption, energy consumption and air pollution have already been examined in much previous research, but employee training and environmental education programs need to be addressed more thoroughly (Shanklin, 1993; Kirk, 1998). Further, green procurement, efforts to enhance external stakeholder relationships, and an organizational monitoring and system to control those practices are increasingly taken into consideration for pro-environmental management (Brown, 1996; Bohdanowicz, 2006; Mensah, 2006; Erdogan & Baris, 2007). Practices in additional three areas of environmental management are:

Green procurement

- Purchasing eco-friendly cleaners and detergent.
- Purchasing locally produced ingredients.

- Using environmentally responsible suppliers.

External relationships

- Establishing a formal channel to cooperate NGOs.
- Establishing customer education programs.
- Supporting local communities to enhance the local environment.

Organizational system and control

- Incorporating environmental reporting in corporate control systems.
- Providing employee environmental training.
- Having a written environmental policy.
- Having a manager or a team in charge of environmental management.
- Top management involvement in environmental management.
- Pursuing green certifications.

Green Certifications and Programs

There are many green certification programs that some leading environmental organizations offer to hospitality companies that strive to be green establishments. The American Hotel & Lodging Association (AH&LA) is working with some leading organizations to help develop environmentally-friendly and sustainable hotels, and suggests certifications discussed in the following paragraphs.

U.S Green Building Council's Leadership in Energy and Environmental Design Green Building Rating System (LEED) is one of the nationally accepted certification programs for the design, construction and operation of green buildings. This program provides property owners with tools to achieve high levels of environmental performance. The five areas LEED focuses on are: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED provides comprehensive and specific technological and environmental standards and requirements for new construction and renovation projects based on the five main areas just noted (U.S Green Building Council, 2008).Within each category, a building can earn a certain amount of points, the number of which determines a project's level of LEED certification (Bovich, 2007). So far, only 13 hotels in U.S have LEED certification with an estimated 400 in process (Gunter, 2008). Starwood Hotels & Resorts Worldwide recently

launched a new brand, "Element", that requires all hotels to pursue LEED certification (Hospitality Construction, 2008). Wyndham, one of the leading hotel brands, is incorporating an environmental program called "Blue Harmony" into one of its spa and fitness centers, Wyndham Lake Buena Vista Hotel and Spa at Bonnet Creek Resort in Orlando, aiming at earning LEED certification. The hotel will also include furniture and fixtures made from sustainable materials and energy-efficient lighting (Esposito, 2008).

Green Globe is the first internationally acceptable scheme that recognized environmental performance specific to the travel and tourism industry. Green Globe 21 was developed by adopting Agenda 21, which was established in 1994 by the World Tourism Organization (WTO), the Earth Council (EC) and the World Travel and Tourism Council (WTTC) (Kasim, 2007). It is comprised of three levels of certification depending on hotels meeting requirements and standards Green Globe has established. A hotel seeking Green Globe can first gain Bronze certification by meeting Green Globe requirements and then, once the hotel passes an on-site audit as well as on-line assessment program for 2 years they are awarded the Silver certification. After 5 years of continuous compliance, a hotel can achieve the Gold certification, the highest level of the certification (Green Globe, 2008). In addition to Green Globe and LEED, there some other recognizable certification programs: "Going Green" (The Prince of Wales Foundation International Tourism Partnership program), "Green Key" (The Canadian Hotel Association Eco-Rating system), and "GS-33" (Green Seal).

The United State Environmental Protection Agency's (EPA) Energy Star program has been a widely recognized and implemented energy management program. The Energy Star program stated offering a national energy performance rating for hotel companies in 2002. It has helped hotels enhance their energy management capabilities as well as assess their state of greenness. This rating is a measurement of whole building energy performance and enables hotels to track the energy management performance of each operational area to improve their energy usage. So far, about 3,300 hotels have adopted and benchmarked this tool to evaluate their energy performance (Stark, 2008a). Best Western International and Wyndham Worldwide partnered with Energy Star and started promoting Energy Star's training program (Stark, 2008b). Boston Green Tourism (BGT), an organization formed by local hospitality leaders, also selected the Energy Star rating system as one of the main certifications that BGT accepts (Brodsky, 2008).

There are many other environmental programs for hospitality firms that were established and supported by state governments. With the global trend of environmental management, local governments have been aware of the importance of issues and designed environmental programs. The Florida Green Lodging Program, for example, was first established in 2004, offering a series of certifications to hotels and motels that incorporate environmental practices that meet the Florida Department of Environmental Protection (FDEP)'s standards. Under the Florida program, all state government's conferences and meetings should be held in lodging properties that are certified as a Green Lodge by the FDEP (Sherman, 2008). Green Lodging Michigan was also launched as a joint program through Michigan's Energy Office and the Department of Environmental Quality in Michigan in 2006. It is designed to promote environmentally friendly operations among hotels throughout the state (Gunter, 2008). Virginia also established an environmental program, "Virginia Green", for the Virginia tourism industry as a partnership between Department of Environmental Quality (DEO), the Virginia Tourism Corporation, and the Virginia Hospitality and Tourism Association. There were four green lodgings certified by Virginia Green as of 2008 (Virginia Department of Environmental Quality, 2008).

Environmental Attitudes and Behaviors

As environmental issues have attracted more attention from the public, governments, industries, and other interest groups, there has been much research on how individuals or organizations respond to these critical issues and what causes different responses and behaviors. Many psychologists have focused on some psychological factors that guide and determine environmental behaviors (e.g. Stern, Dietz, & Black, 1986; Stern et al., 1995; Schultz, Oskamp, & Mainieri, 1995; Steel, 1996; Nordlund & Garvill, 2002). Those psychological factors can be broadly categorized into two concepts: personal values and attitudes. Even though distinction of such concepts as environmental values, concerns, attitudes, and worldview is not apparent, and indeed, these terms are often used interchangeably in much literature (Schultz, Shriver, Tabanico, & Khazian, 2004), the term, "environmental attitude" which is broadly used in much literature is reviewed along with personal values in this study.

Personal Values

Rokeach (1973) stated that values are generalized internal standards that transcend specific situations, and they are relatively few in numbers and are stable. Schwartz (1992) also defined a value as "a desirable transsituational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity (p. 21)." A great deal of study suggests that personal values are one of the predictors of environmentally conscious behaviors (e.g. Granzin & Olsen, 1991; Lee & Holden, 1999; Stern et al., 1995; Karp, 1996; Nordlund & Garvill, 2002). Much previous research concerning values and environmental behavior is based on Schwartz's value theory. Schwartz (1992) developed the Value Inventory Scale, which is comprised of 56 items that represent individuals' general values systems. Based on the items, he suggested 10 motivational value types:

1. Universalism: "understanding, appreciation, tolerance, and protection for the welfare of all people and for nature" (p.12).
2. Benevolence: "preservation and enhancement of the welfare of people with whom one is in frequent personal contact" (p. 11).
3. Conformity: "restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms" (p. 9).
4. Tradition: "respect, commitment, and acceptance of the customs and ideas that one's culture or religion impose on the individual" (p. 10).
5. Security:"Safety, harmony, and stability of society, of relationships, and of self" (p.9).
6. Power: "attainment of social status and prestige, and control or dominance over people and resources" (p.9).
7. Achievement: "personal success through demonstrating competence according to social standards" (p.8).
8. Hedonism: "pleasure or sensuous gratification for oneself" (p.8).
9. Stimulation: "excitement, novelty, and challenge in life" (p.8).
10. Self-direction: "independent thought and action-choosing, creating, exploring" (p.5).

Previous research has found that each motivational value type is positively related to specific environmentally conscious behaviors (Nordlun & Garvill, 2002). Schwartz's value scales can also be described in two dimensions: openness to change versus conservation and self-

transcendence versus self-enhancement (Nordlun & Garvill, 2002).

According to Schwartz (1992), self-transcendence is oriented toward the welfare of others, whereas self-enhancement is an orientation toward self-interest. Openness to change also indicates the degree to which a person is motivated to follow his or her own emotional and intellectual interests, while conservation reflects a motivation to preserve the status quo. People who give priority to collective or self-transcendent values tend to show higher intentions to engage in pro-environmental behavior than people who give priority to individual or self-enhancement values (Karp, 1996; Schwartz, 1992; Stern & Dietz, 1994; Stern, et al., 1995; Nordlund & Garvill, 2002). Stern and his colleagues (1995) conducted a study to attempt to identify the relationships between values and behavioral intention. They used Schwartz's dimensions of self-transcendence, self-enhancement, openness to change, and conservation to predict behavioral intention that are related to political actions to protect the environment. Consistent with findings of Stern et al. (1995), Karp (1996) examined the influence of values on the environmental behavior based on Schwartz's value theory in a study of 302 U.S. college students. He measured environmental behaviors by self-reported frequency of participation in eight environmental activities and found that self-transcendence/openness to change values were positively related to pro-environmental behaviors. Similar to general values mentioned above, mainly derived from Rokeach and Schwartz's value studies, many theoretical and empirical efforts have been made to explain the effect of environmental value-based concern, which is sometimes used interchangeably with environmental attitudes on environmental behaviors.

Environmental Attitudes

Environmental attitudes have been defined as "the collection of beliefs, affect, and behavioral intentions a person holds regarding environmentally related activities or issues" (Schultz, et al., 2004, p. 31). As this definition of environmental attitude indicates, two types of environmental attitudes have been used in previous literature: "(1) attitudes toward the environment, and (2) attitudes toward ecological behavior" (Kaiser, Wolfing, & Fuhrer, 1999, p. 1). Research on attitude toward ecological behavior was derived from the framework of the theory of reasoned action (Ajzen & Fishbein, 1980) and its developed version, the theory of planned behavior (Ajzen, 1991). Only a minority of research on this topic is related to attitudes

toward ecological behavior (Kaiser et al., 1999). On the other hand, attitude toward the environment is used interchangeably with environmental concern which represents predispositions of human beings that influence behavior in a certain manner (Milfont & Duckitt, 2004). The object of most environmental attitude research has been the environment. The specific topics have been on attitudes and behavior consistency, construct of environmental attitude, and the relationship with other variables including demographic variables, experience, beliefs about control, efficacy, responsibility, and personal values. Personal values, in particular, have frequently been examined as a predictor of environmental behavior or mediator of the relationship between the environmental attitudes and behaviors (Schultz et al., 2004).

There have been attempts to examine the relationship between general values and environmental attitudes (e.g. Stern & Dietz, 1994; Schultz & Zelezny, 1998; Steger, Pierce, Steel & Lovrich, 1989). Stern and Dietz (1994) proposed that environmental attitudes are rooted in a person's value system, describing that people's attitudes toward environmental issues are related to where they place their values on such as themselves, others, or the biosphere. Values play as an organizing system for attitudes, and they are widely considered determinants of attitudes (Schultz et al., 2004). Stern et al. (1995) tested compatibility of three environmental dimensions developed in their previous research with Schwartz's value dimensions and found that Schwartz's self-transcendence value cluster can be compatible with social-altruistic, and biospheric concern, and the self-enhancement dimension is linked to egoistic value-based concern. With regard to the relationship between environmental attitudes and behavioral intentions, they found that biosphere-altruistic concern, which is linked to Schawartz's self-transcendent value, significantly relates to environmental behavior intention while the conservation and openness to change dimensions did not.

Thompson and Barton (1994) proposed anthropocentric and ecocentric motives for pro-environmental behavior. Ecocentrism represents the belief that the ecosystem itself has an intrinsic value and is worth being protected whereas anthropocentrism represents the belief that environment should be protected because it contributes to human welfare. They found that ecocentrism positively relates to pro-environmental behaviors while there is a negative relationship between anthropocentrism and pro-environmental behavior.

Nordlund and Garvill (2002) proposed and tested a model addressing hierarchical effects

of general values, environmental concerns, problems awareness (perception of environmental problems), and personal norms (a feeling of moral obligation to protect the environment) on pro-environmental behaviors. They employed Schwartz's value scale for assessing general value orientations, and Thompson and Barton's (1994) ecocentrism and anthropocentrism for measuring the environmental value-based concerns. The results showed that self-transcendence positively affects ecocentrism and environmental problem awareness while self-enhancement has a positive effect on anthropocentrism. Further, ecocentrism is positively correlated with environmental problem awareness and personal norm whereas anthropocentrism has a negative effect on problem awareness. Lastly, personal norm has a strong positive effect on environmental behavior.

In addition to research mentioned above, with regard to the ability of environmental attitudes to predict pro-environmental behaviors, there is plentiful empirical evidence that an individual's attitude about the environment is a valid indicator of environmentally conscious behaviors including recycling (DeYoung, 1986; Wall 1995; Buttel, 1987), general pro-environmental behaviors (Lee & Holden, 1999; Kaiser et al., 1999), and purchasing behaviors (Wall, 1995; Kerr, 1990). Wall (1995) conducted a study to identify variables that have effects on specific environmentally conscious behaviors, recycling and purchasing organic food. Along with strong predictability of contextual factors such as access to a recycling program for recycling behavior and safety concerns for environmental purchasing behaviors, general environmental concerns were found to be significantly correlated with both recycling and environmental purchasing behaviors. Chan (1996) also conducted a cross-cultural study to identify environmental concerns and purchasing behaviors of consumers in Canada and Hong Kong, and found that consumers with more concern about environmental problems tend to purchase more environmentally friendly products. According to Hines and his colleagues' (1986) meta-analysis, verbal commitment was the strongest predictor of environmental behavior, and attitudes were the third most important variables that predict environmental behavior.

Among a large number of environmental attitude measures, the New Environmental Paradigm (NEP) scale is perhaps the most widely used. The NEP measures general environmental concerns rather than specific attitudes (Schultz et al., 2004). Along with increasing environmental awareness in the 1970s, much attention among social scientists had

been paid to examining the ecological attitudes related to interest in the human-nature relationship (Gooch, 1995). The NEP is considered an important change in approach to environmental attitude-behavior relations in that it attempts to explore "primitive beliefs" (Gooch, 1995). Dunlap and Van Liere (1978) argued that environmental issues were related to more than just attitudes and concerns about the environment, describing that "implicit within environmentalism was a challenge to our fundamental views about nature and humans' relationship to it" (Dunlap, Van Liere, Mertig, & Jones, 2000, p. 427). They described this changing worldview as the NEP. The basis of the NEP is "a belief in the limits to growth, the necessity of balancing economic growth with environmental protection, the need to preserve the balance of nature, and the need for humans to live in harmony with nature" (Scott & Willits, 1994, p.240). In a 1976 Washington State study Dunlap and Van Liere developed a 12-item NEP scale and found that environmental attitudes measured by the NEP scale were positively related to eight pro-environmental behaviors. Dunlap and his colleagues (2000) proposed a revised NEP scale, adding 3 items to the original 12-item NEP scale in order to achieve a better balance between pro- and anti- NEP statements and to broaden the content of the NEP scale.

There is much literature using the NEP scale to measure environmental attitudes, beliefs, values, and worldview (e.g., Albrecht, Bultena, Hoiberg, &Nowak, 1982; Edgell & Nowell, 1989; Pierce, Steger, Steel, & Lovrich, 1992; Gooch, 1995; Widegren, 1998; Schutz & Zelezny, 1998). Edgell (1989) examined environmental attitudes of three interest groups. The results presented that environmentalists and the general public exhibited strong support for the NEP while a commercial fisher group expressed strong disagreement on all NEP scales, suggesting that NEP can be a useful measure of generic environmental beliefs. Scott and Willits (1994) conducted a study using the NEP scale to examine general environmental attitudes of Pennsylvania residents and to identify environmental attitude and behavior consistency. Although Dunlap and Van Liere indicated that the NEP scale was unidimensional, a principal components analysis found a two-factor solution most meaningful: Balance-of-Nature/Limits-to-Growth (eight items), and Humans-With-Nature (four items). Bivariate correlations among the environmental attitude and behaviors factors were all positive and statistically significant. Although, consistent with the results of Dunlap and Van Liere's 1978 study, support for the NEP was linked to pro-environmental behaviors the relationship between the two variables was not

strong, having an *r* value of .22 at the highest.

Gooch (1995) conducted a cross-country study to compare environmental beliefs and attitudes in Estonia, Latvia, and Sweden. He used four scales: a six-item version of the NEP scale which represents pro-environmental attitudes, a four-item scale to support science and technology which reflects respondents' materialism, a six-item postmaterialism value scale, and a scale to measure concern for local environmental problems. The expected correlation between the NEP, distrust of science and technology, postmaterial values, and environmental concerns was partially supported in the Swedish sample. The research highlighted that the discrepancies in the study derived from the fact that environmental concerns can be affected by direct experience of the environment as well as generally reported global problems.

Steel (1995) empirically investigated the relations between attitudes and self-reported behaviors regarding the environment among the public of the United States. He suggested that well-defined and specific behavior indicators are more likely to increase the attitude-behavior consistency. Using a six-item version of the NEP scale to measure environmental attitudes, he developed an eighteen-item scale to measure a wide range of environmental behaviors that the public might be involved in, including home recycling, transportation, and home and gardening behaviors. In addition, he used an eleven-item scale to measure the public's political participation in environmental issues as a separate environmental behavior variable. He also found that attitude intensity was significantly correlated with self-reported environmental behavior and political participation in environmental issues.

Although many researchers have pointed out that the relationship between environmental attitude and behavior is somewhat weak or modest at most, and suggested other variables that mediate the relationship, environmental attitude is still one of the most influential construct to predict environmental behaviors. Compared to demographic and some other psychological variables, attitude is considered a more appropriate measure to capture individuals' emotional affect, intention, beliefs, and concerns, and thereby to predict various types of environmental behaviors among different groups of people.

The Role of Upper Management in Environmental Management

Daft and Weick (1984) stated that organizations are very complex social systems that are

considered “highly specialized information receptors that interact with the environment” (p. 285). Organizations also “develop information processing mechanisms they may use to detect events, trends, and developments relevant to their activities” (Maon et al., 2008, p. 416). In order to understand the business environment, organizations should use a scanning process to identify emerging issues, opportunities, and potential threats that affect them (Albright, 2004). Information collected through the scanning process then needs to be interpreted before determining how to respond to various emerging issues. Daft and Weick (1984) conceptualized information processing as organizational interpretations which they defined as “the process of translating events and developing shared understanding and conceptual schemes among members of upper management” (p. 286). In fact, these organizational interpretations and decisions are formulated by a small group of upper managers including CEOs and executive level managers in organizations. (Hambrick & Finkelstein, 1984; Daft & Weick, 1984).

As a component of corporate social responsibility (CSR) (Maon et al., 2008) and value creating business strategy (Porter & van der Linde, 1995), environmental management is largely determined by the way top managers perceive internal and external forces relevant to their organizations (Sharma, 2000). Hambrick (2007) stated that “if we want to understand why organizations do the things they do, we must consider the biases and dispositions of their most powerful actors-their top executives”(p.334). To some extent, the upper echelons perspective, strategic leadership theory, can be used to understand the linkages between top managers’ environmental attitudes and environmental management of hotel companies.

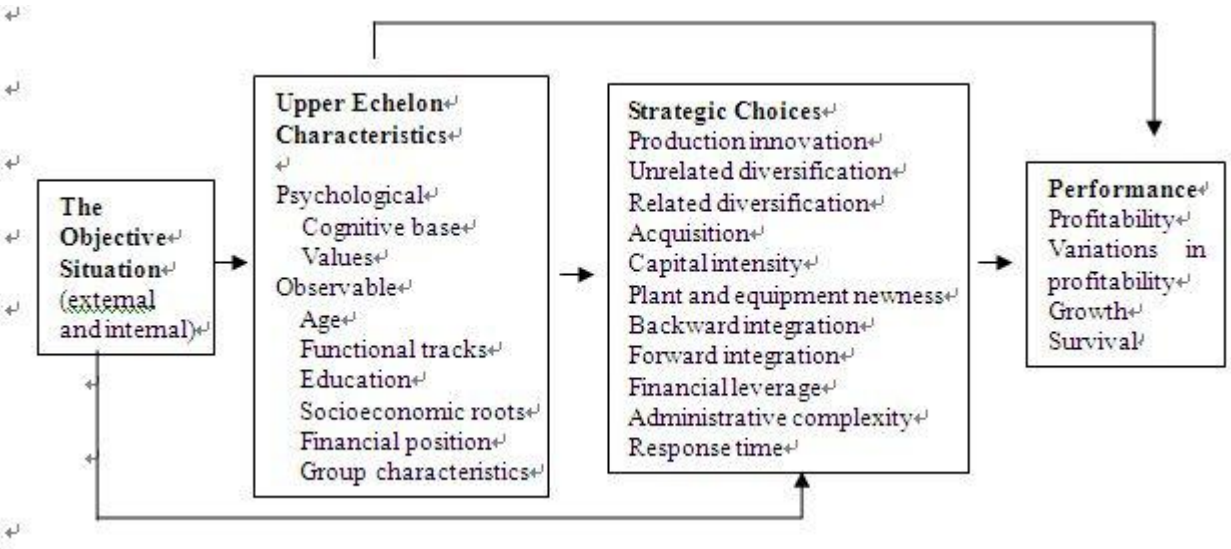
Upper echelons perspective

Hambrick and Mason’s (1984, 2007) upper echelons perspective provides a theoretical framework to address organizational interpretations of business environment and strategic choice based on top management’s characteristics. The central logic of this theory has two interconnected points: “(1) executives act on the basis of their personalized interpretations of the strategic situations they face, and (2) these personalized construals are a function of the executives’ experiences, values, and personalities” (Hambrick, 2007, p. 334). Hambrick and Mason (1984) also argued that process of making an important decision is perceptual, consisting of a series of sequential steps:

First, a manager, or even an entire team of managers, cannot scan every aspect of the organization and its environment. The manger's field of vision – those areas to which attention is directed – is restricted, posing a sharp limitation on eventual perceptions. Second, the manager's perceptions are further limited because one selectively perceives only some of the phenomena included in the field of vision. Finally, the bits of information selected for perception are interpreted through a filter woven by one's cognitive bases and values. The manager's eventual perception of the situation combines with his or her own values to form the basis of strategic choice (Hambrick & Mason, 1984, p. 195).

As mentioned, strategic decision-making made by executives or a top management team on behalf of their organization reflects, to some extent, the characteristics of those managers. Based on this logic, it is argued that different managers will select different alternatives when facing the same objective environment. Figure 2.1 illustrates the upper echelons perspective of organizations. Characteristics include a cognitive base and values, and observable characteristics such as age, functional tracks, other career experiences, education, socioeconomic roots, financial position, and group characteristics.

Figure 2.1 An Upper Echelons Perspective of Organizations (Hambrick & Mason, 1984)



Although Hambrick and Mason (1984) pointed out the significance of psychological attributes of the top managers they placed much emphasis on observable background characteristics. Because of the relative difficulty in measuring cognitive base and values of top

managers, numerous studies have focused on managerial background characteristics rather than psychological and social process, and presented empirical evidence of the association between the characteristics and organizational strategy and performance (e.g. Chaganti and Sambharya, 1987; Boeker, 1997; D'Aveni, 1990). Bantel and Jackson (1989) conducted a study designed to examine the relationship between the social composition of top management teams and innovation adoption in U.S banks, and found that more educated management teams tended to be more receptive to new ideas, and thereby achieved a higher level of innovation. Miller (1991) also found that tenure of executives is often inversely associated with a lower level of profitability. In a similar vein, Finkelstein and Hambrick's (1990) study of 100 organizations in the computer, chemical, and gas industries revealed that long-tenured managerial teams adopt more persistent strategies and tend to yield a moderate level of financial performance.

Further, Hambrick and his colleagues refined their upper echelons theory through introducing the concept of managerial discretion (Hambrick & Finkelstein, 1987) and executive job demands (Hambrick, Finkelstein, &Mooney, 2005). They stated that "discretion exists when there is an absence of constraint and when there is a great deal of means-ends ambiguity – that is, when there are multiple plausible alternatives" (Hambrick, 2007, p. 335). If top managers possess a great deal of discretion, then managerial characteristics are more likely to be reflected in strategy and outcomes (Finkelstein & Hambrick, 1990). With regard to executive job demands, Hambrick et al. (2005) proposed a moderating effect of executive job demands on the predictive strength of upper echelons theory. They argued that executive job demands are related to three set of factors: task challenge, performance challenges, and executive aspirations. Executives under heavy job demands are more likely to be dependent on what they have tried in the past. Their strategic choices thus more reflect background and predispositions.

Psychological attributes by which top managers' background characteristics are converted into strategic decision making and performance still need to be further explored (Hambrick, 2007). Upper echelons theory, however, has theoretically synthesized anecdotal evidence that top managers' individual backgrounds and world view have impacts on organizational strategy choice and performance.

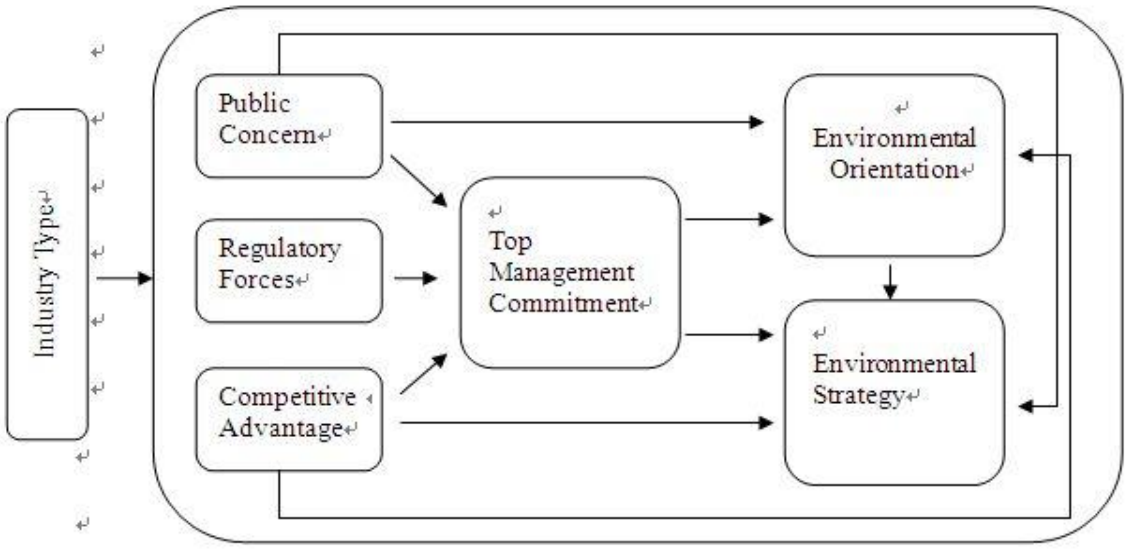
Top management and environmental management

Banerjee et al. (2003) suggested that there are two facets of corporate environmentalism: environmental orientation and strategy. Environmental orientation refers to "the recognition by managers of the importance of environmental issues facing their firms" while "environmental strategy is the extent to which environmental issues are integrated with a firm's strategic plans" (p. 106). Environmental orientation is therefore a fundamental part of corporate environmentalism, establishing motivations to go green as well as determining a level of organizational commitment. Then it is important note that this environmental orientation is established by managerial interpretations of the environmental issues (Banerjee, 1998).

Numerous studies have examined how upper level managers perceive environmental issues in an effort to identify corporate environmentalism (e.g. Catasus, Lundgren, & Rynnel, 1997; Sharma, 2000; Banerjee, 1998, 2001; Tzschentke et al., 2004; Hoffman, 1993). Top management's commitment to environmental management has been one of the main indicators of corporate environmental orientation. Banerjee (2002) found that the degree of top management commitment varies depending on managerial perceptions of environmental issues: top managers tend to be more involved in environmental issues when perceiving regulatory forces to be threats, their customers to be environmentally conscious or seeing environmental initiatives as opportunities to save costs or improve product quality. Zutshi and Sohal's (2004) study examining the key success factors for adopting environmental management suggested that top management leadership and support is one of essential elements in raising organization-wide awareness and understanding of environmental issues.

Banerjee et al. (2003) empirically examined a relationship between top management commitment and some external and internal forces, and their impact on firms' environment strategies in various business sectors. As figure 2.2 illustrates, it was found that top management commitment has a positive impact on both environmental orientation and strategy. Top management commitment was also found to have a mediating effect on the relationship between regulatory forces, public concern and need for the competitive advantage, and environmental strategy.

Figure 2.2 Corporate Environmentalism: Antecedents and Influence of Industry Type (Banerjee, 2003)



Sharma (2000) developed a conceptual model and tested it to examine links between top management's perceptions of environmental issues as threats or opportunities and choice of corporate environmental strategy in the Canadian oil and gas industry. He found a positive relationship between top management's perceptions of environmental issues as opportunities and adoption of voluntary environmental strategy. He also highlighted that managerial perceptions of environmental issues were influenced by certain organizational contextual factors: relevance of environmental issues as an integral aspect of corporate identity, resources available to managers, and incorporation of environmental issues into employee performance evaluation.

In this respect, managerial perceptions of environmental issues can reflect both external and internal driving forces that affect corporate environmental decision-making. If these internal and external forces are objective constituents to be considered in order to adopt environmental management strategy, as mentioned above, along with the nature of upper managers' discretion in organizational hierarchy, top managers' ecological world views will play a significant role in interpreting and interacting with the objective constituents affecting corporate environmental strategy.

Summary

This chapter summarized the literature on environmental management in the hotel industry, the relationship between environmental attitude and behavior, and the role of top managers in organizational interpretation and decision making. The literature review indicates that companies' environmental initiatives are driven by various motivational factors including economic benefits, improved stakeholder relationship, improved corporate image, and ethical concerns. Three main areas of environmental initiatives in the hotel industry were identified: energy management, water conservation, and solid waste management and recycling.

This chapter also reviewed literature about psychological variables that affect environmental behaviors, focusing on environmental attitudes and behavior consistency, and measurement of environmental attitudes. Environmental attitudes are constructed from personal beliefs, affect, and behavioral intentions, and predict environmental behavior in a certain manner. Dunlap and Van Liere's (1978) NEP scale is the most widely used scale to measure how personal world view is related to environmental issues.

In an attempt to apply personal environmental attitudes to an organizational context, the role of upper managers in interpreting the environment and constructing a strategic agenda were also reviewed. The upper echelons perspective provides fundamental understanding of how top managers' world view and characteristics affect organizational strategy and performance. Further, in environmental issues, top managers' perceptions of environmental issues are directly linked to corporate environmental orientation, and determine organizational response to the environmental issues.

The literature on environmental management in the hotel industry serves as secondary data for designing this research to identify currently implemented green practices and underlying motivations of going green. The review of literature on environmental attitudes and behaviors also provides this study with a theoretical underpinning in that top managers' ecological world view affects and predicts the way they interact with environmental issues. Further, the upper echelons perspective supports this reflection of the top managers' personal ecological world view on corporate environmental management through providing a theoretical foundation and empirical evidence that top mangers' personal psychological factors and characteristics significantly affect corporate strategy choice and outcomes.

CHAPTER Ⅲ

METHODOLOGY

Introduction

The primary purpose of the study was to determine the current state of environmental management in hotel companies and whether the environmental attitudes of hotel top managers are significantly related to the hotels' response to the environmental issues and their perceived benefits of environmental management. To do this, this chapter describes the methods employed to carry out the research process. It is divided into the following sections: research design and procedure, sample, instrumentation, research hypotheses, and data analysis.

Research Design and Procedure

This study utilized self-reported on-line survey design to collect data and to answer to the research questions of this study. Based on information obtained from the review of literature, a survey instrument was developed to measure top managers' environmental attitudes, environmental management practices and organizational involvement, and perceived advantages of environmental initiatives.

An on-line form of the questionnaire was designed using an on-line survey service. After written approval of the Virginia Tech Institutional Review Board (IRB) was obtained a pretest was conducted on graduate students and faculty members at Virginia Tech to assess the appropriateness of the survey questions, item clarity, and validity of constructs. The survey instrument included a cover letter (see Appendix A) that described the purpose and importance of this study, and a solicitation for managers' participation. Invitation emails were sent to the hotels drawn from lists of membership posted on websites of eleven state lodging associations with a URL link to the survey instrument. Survey administration began May, 13, 2009 and was completed June, 2, 2009. Once data collection was completed, data editing, coding, and analysis were conducted.

Sample

In order to examine top manages' environmental attitudes, currently implemented environmental management practices and organizational involvement of their hotels, the sample units was the hotels and their general managers. The general manager is the executive manager who has ultimate managerial discretion and is responsible for the overall operation of a hotel establishment. A convenience sampling method was used because of the limitations on financial resources and time. Zikmund (2003) described convenience sampling as a sampling technique used to obtain units or respondents who are most conveniently available. The sample hotels in this study were drawn from the current membership directories of the eleven state lodging associations because these directories included email addresses of the member hotels.

Instrumentation

The major constructs in this study were environmental attitudes, perceived advantage coming from environmental management, and organizational involvement in environmental management practices in the hotel industry. The questionnaire (See Appendix B) was divided into four sections. Section A was comprised of statements that determine respondents' environmental attitudes while Section B was designed to measure currently adopted environmental management practices and organizational involvement in each practice. Section C of the questionnaire included statements to measure top managers' perceived advantages coming from environmental management. Respondents' demographic information was collected in Section D.

Environmental attitudes

The 15-item revised version of the NEP scale (Dunlap et al., 2000) was used to measure top managers' environmental attitudes. As stated in the previous chapter, the NEP scale has been considered one of the best developed and widely used measures of individuals' ecological world view. The revised version of the NEP scale, in particular, achieved a better balance between pro- and anti- NEP statements through adding items that represent both "human exemptionalism and "ecocrisis" (Dunlap et al., 2000). The 15-item NEP scale contains "five facets of an ecological worldview" (Dunlap et al., 2000, p. 432): the reality of limits to growth, antianthropocentrism, the fragility of nature's balance, rejection of exemptionalism, and the possibility of an ecocrisis.

As a single measure, the revised version of the NEP scale also had a high level of internal consistency with coefficient alpha of .83 in a Washington State study in 1990 (Dunlap et al., 2000). The review of literature suggests that the NEP scale also has considerable validity. Much previous research found that the NEP scale correlates significantly with scores on various measures of environmental concerns and behaviors such as perceived seriousness of environmental problems, support for pro-environmental policies, and pro-environmental behaviors. For the NEP scale, a 7-point Likert response format was used with the end points labeled 1= "strongly disagree" and 7= "strongly agree". This point scale method allowed each respondent to indicate to what extent he or she agreed or disagreed with the statements presented. Agreement on eight odd-numbered items indicated a pro-environmental view while seven even-numbered items were inversely worded so that disagreement indicated a pro-environmental world view.

Environmental management practices and organizational involvement

The literature review did not produce any consensus on items and measurement scales for hotels' environmental management practices. Some descriptive and exploratory research used categorical scales to determine implementation of certain environmental practices (Bohdanowicz, 2006; Mensah, 2006; Scanlon, 2007) while some research employed interval rating scales to capture the degree of organizational involvement in environmental management practices (Gil et al., 2001; Erdogan & Baris, 2007; Cortes et al., 2007). This study used 27 items drawn from both academic and industry literature to identify environmental management practices and organizational involvement in each practice. Items were developed to tap two facets of environmental management in the hotel industry: technical practices (energy management, water conservation, and waste management practices), and organizational environmental management systems (green purchasing, auditing and control, and stakeholder relations). In order to determine types of environmental management practices and to measure hotels' degree of involvement in each practice, a 7-point rating scale was employed. Adopting from previous research (e.g. Erdogan & Raris, 2007; Gill et al., 2001), the end points were labeled 1="to no extent", and 7="very great extent".

Perceived advantages of environmental management

Section C of the questionnaire consisted of Likert-type scale questions requiring respondents to choose the answer that best describes their perceptions of advantages coming from environmental management. As the literature review illustrates, some research has identified major motivations and benefits of environmental management. Based on the previous works of several researchers (e.g. Kirk, 1998; Bohdanowicz, 2005; Mensah, 2006; Tzschentke et al., 2008), 14 items were developed to cover various aspects of advantages of environmental management, ranging from financial and organizational benefits to improvement of stakeholder relationships. All responses for Section C were recorded on a 7-point Likert scale with 1= "strongly disagree" and 7= "strongly agree".

Research Hypotheses

Based on the study objectives and the literature review, three main hypotheses were developed to identify the relationships between top managers' environmental attitudes and their hotels' environmental management, and top managers' environmental attitudes and perceived advantages of environmental management respectively.

Research hypothesis 1: *There is a positive relationship between hotel top managers' environmental attitudes and the number of environmental management practices implemented in their hotels.*

Research hypothesis 2: *There is a positive relationship between hotel top managers' environmental attitudes and organizational involvement in environmental management practices implemented in their hotels.*

Research hypothesis 3: *There is a positive relationship between hotel top managers' environmental attitudes and their perception of advantages of environmental management.*

Analysis

Version 15 of the Statistical Package for the Social Sciences (SPSS) was used to code and analyze the data. Descriptive statistical procedures were conducted to determine the mean, standard deviation for demographic variables and each of the survey items on three main

constructs. Pearson’s correlation analyses were performed to verify three research hypotheses.

CHAPTER Ⅳ

RESULTS

Introduction

The purpose of this study was to determine the current state of environmental management in hotel companies. This study also identified whether top managers' environmental attitudes relate to their perceived advantages of environmental management and organizational involvement in environmental management. This chapter presents the results of the data analysis utilized to achieve this research purpose and to test research hypotheses proposed in the previous chapter.

The remainder of this chapter is divided into following sections: response rate, general demographics, top managers' environmental attitudes, environmental management practices, top managers' perceived advantages of environmental management, and hypothesis testing.

Response Rate

Of the 3,699 online-survey invitation emails sent to the member hotels of 11 state lodging and hotel associations from 13 May, 2009 to 2 June, 2009, 6.5 percent (*N*=242) of the sample responded, and 5.2 percent (*N*=191) were completed by general managers, owners, CEOs, or presidents. Responses from positions other than top management were discarded because top managers' environmental attitudes and perceived advantages derived from environmental management are the primary constructs to be analyzed in this study.

Nonresponse bias was checked through dividing responses into two groups, those responding to the first survey invitation and those responding to a reminder survey invitation. One-way ANOVA tests were performed, and there were no statistically significant mean differences on the three main variables, top managers' environmental attitudes (F= 1.348, P= .247), organizational involvement in environmental management practices (F= .013, P= .909), and perceived advantages (F=2.497, P= .116), between the two groups. Considering that those responding less readily are more likely to be nonrespondents (Armstrong & Overton, 1977), the likelihood of nonresponse bias is low.

General Demographics

Table 4-1 presents a demographic profile of hotels that participated in the study. The properties consisted of 56 upscale and luxury hotels (29.3%), 117 mid-priced hotels (61.3%), and 18 economy and budget hotels (9.4%). Forty-eight percent of the properties (*N*=91) were independently owned and self-managed, and 26 percent (*N*=49) were independently owned and managed by a franchise agreement, while 17 percent (*N*=33) of the properties were independently owned and managed by a management contract, and 9 percent (*N*=18) were chain-owned hotels managed by the chain. With regard to the size of sample properties, small hotels (less than 100 rooms) and medium-size hotels accounted for 48 percent (*N*=91) and 44 percent (*N*=83) respectively, while large size properties (400 or more rooms) accounted for 8 percent (*N*=16).

Table 4.1 Demographic Profile of Sample Hotels

	Frequency	Percent (%)
Hotel grade (N=191)[a]		
Upscale and luxury	56	29.3
Mid-priced	117	61.3
Economy and budget	18	9.4
Ownership type (N=191) [a]		
Independently owned, self-managed	91	47.6
Independently owned, managed by a franchise agreement	49	25.7
Independently owned, managed by a management contract	33	17.3
Chain owned, managed by the chain	18	9.4
Hotel size (N=190) [a]		
Small (less than 100 rooms)	91	47.9
Medium-size (100-399 rooms)	83	43.7
Large (400 rooms or more)	16	8.4

[a] Total number of respondents varied due to missing values.

In order to determine whether a distribution of the sample hotels conformed to an actual distribution of the hotels in the sampling frame, a Chi-square test for goodness of fit was performed. I randomly select one hundred properties from the membership lists of the 11 state hotel associations surveyed, and used hotel size as a variable to determine if there is any difference in distribution between the hotels that actually participated in this study and the

selected hotels. No statistically significant difference was found between the two groups (χ^2= .525, P= .321).

The present study also found that the average occupancy rate for the past three years was reported to be 67.9 percent with a standard deviation of 12.7%. As Table 4.2 presents, two questions were asked to identify a perceived level of profitability of the sample hotels compared to known competitors. The largest number of sample hotels (*N*=65, 36.5%) indicated that their average gross operating profits for the three years were about same as known competitors. Over 57 percent (*N*=101) reported their operating profits were higher than competitors while only 6.7 percent (*N*=12) showed lower gross operating profits than known competitors. Consistent with the results of gross operating profits, 31.8 percent (*N*=56) of the hotels indicated that their sales growth rate for the past three years were about the same as known competitors. The majority of the sample hotels (*N*=109, 62%) showed that their sales growth rate was higher than competitors while only 6.3 percent (*N*=11) indicated a lower level of sales growth rate. It was also found that the sample hotels in the study had been involved in environmental management for an average of 4.8 years. Fifty-five percent (*N*=105) had adopted environmental management programs for less than or equal to four years.

Table 4.2 Profitability Profile of Sample Hotels

		Frequency	Percent (%)	Mean	SD
Gross Operating profits (N=178)[a]					
Very much lower	1	2	1.1		
	2	6	3.4		
	3	4	2.2		
About the same	4	65	36.5		
	5	45	25.3		
	6	42	23.6		
Very much higher	7	14	7.9		
				4.84	1.21
Sales growth rate (N=176)[a]					
Very much lower	1	1	.6		
	2	3	1.7		
	3	7	4.0		
About the same	4	56	31.8		
	5	45	25.6		
	6	50	28.4		
Very much higher	7	14	8.0		
				4.97	1.15

[a] Total number of respondents varied due to missing values.

As reported in Table 4.3, top managers who participated in the survey consisted of 125 male (66.8%) and 62 female (33.2%) general managers, CEOs, owners, or presidents. Sixty-six percent of the respondents (*N*=119) had most years of experience in output functions including sales and marketing, food and beverage, front desk or housekeeping, while 27 percent (*N*=48) had throughput functional backgrounds such as human resources, finance, and engineering. About 8 percent of the respondents (*N*=14) indicated that they had equal years of experience in both output and throughput functions.

Table 4.3 Demographic Profile of Respondents

	Frequency	Percent (%)
Gender (N=187)[a]		
Male	125	66.8
Female	62	33.2
Functional background [b] *(N=181)*[a]		
Output function	119	65.7
Throughput function	48	26.5
Others	14	7.7
Education (N=189)[a]		
Some high school	1	.5
High school graduate	19	10.1
2-year college	31	16.4
4-year college	101	53.4
Post gradate	37	19.6
Age (N=191)[a]		
Under 30	16	8.4
Between 31-40	48	25.1
Between 41-45	25	13.1
Between 46-50	37	19.4
Between 51-55	34	17.8
Over 56	31	16.2

[a] Total number of respondents varied due to missing values.

[b] Output function: sales and marketing, food and beverage, front desk, housekeeping / Throughput function: human resource, finance, engineering. / Others: two or more functions in both output and throughput categories.

The majority of respondents had completed four-year college (*N*=101, 53.4%), followed

by post graduate degree (*N*=37, 19.6%), two-year college degree (*N*=31, 16.4%), high school diploma (*N*=19, 10.1%), and some high school level (*N*=1, .5%). In terms of age, age group between 31 and 40 (*N*= 48) had the highest frequency of 25 percent followed by the 46 to 50 (19.4%, *N*= 37), and 51 to 55 (17.8%, *N*= 34) years age groups. The respondents over the age of 56 accounted for 16.3 percent (*N*=31) while 8.4 percent (*N*=16) were under the age of 30. Survey respondents also reported they had an average of 18.6 years of experience in the hotel industry and worked for the current property for an average of 9.3 years.

Respondents were also asked to indicate the extent of involvement in formulating and deciding business and environmental management policies of their property. As shown in Table 4.4, top managers in this study showed relatively greater managerial discretion in both deciding business policies (*M*= 6.11, *SD*= 1.25) and formulating an environmental management policy (*M*= 5.80, *SD*= 1.48).

Table 4.4 Top managers' Involvement in Business and Environmental Policies

		Frequency	Percent (%)	Mean	SD
Involvement in deciding business policies (N=187)[a]					
To no extent	1	1	0.53		
	2	2	1.07		
	3	5	2.67		
Some extent	4	17	9.09		
	5	19	10.16		
	6	41	21.93		
Very great higher	7	102	54.55		
				6.11	1.25
Involvement in formulating an environmental management policy (N=185)[a]					
To no extent	1	4	2.16		
	2	5	2.70		
	3	4	2.16		
Some extent	4	22	11.89		
	5	25	13.51		
	6	41	22.16		
Very great extent	7	84	45.41		
				5.80	1.48

[a] Total number of respondents varied due to missing values.

Table 4.5 illustrates top managers' extent of involvement in formulating and deciding

business and environmental policies according to hotel ownership type. Top managers whose hotels were independently owned and self-managed showed a higher level of perceived managerial discretion in deciding business policies (*M*= 6.45, *SD*= .97) and formulating an environmental policy (*M*= 6.35, *SD*=1.01). Top managers whose hotels were chain-owned and managed by the chain presented a relatively lower level of perceived managerial discretion in both deciding business policies (*M*= 5.29, *SD*= 1.40) and an environmental management policy (*M*= 4.94, *SD*=1.60) compared to hotels with other ownership types.

Table 4.5 Top Managers' Involvement in Business and Environmental Policies by Ownership Type

	N	Mean	SD
Involvement in deciding business policies (N=187)[a]			
Independently owned, self-managed	89	6.45	0.97
Independently owned, managed by a franchise agreement	49	6.10	1.19
Independently owned, managed by a management contract	32	5.63	1.58
Chain owned, managed by the chain	17	5.29	1.40
Involvement in formulating an environmental management policy (N=185)[a]			
Independently owned, self-managed	89	6.35	1.01
Independently owned, managed by a franchise agreement	48	5.40	1.69
Independently owned, managed by a management contract	31	5.32	1.70
Chain owned, managed by the chain	17	4.94	1.60

[a] Total number of respondents varied due to missing values.

Environmental Management Practices

Analysis of environmental management practices adopted by the sample hotels made answers to the first two research questions: *What environmentally friendly practices are hotel companies currently implementing, and to what extent are hotel companies involved in environmental practices?* Twenty-seven items were developed to measure organizational involvement in environmental management practices based on previous industry and academic literature. A seven-point Likert type scale with the end points labeled 1= "to no extent", and 7="very great extent" was used to measure organizational involvement in environmental management practices. Table 4.6 illustrates the degree of organizational involvement in environmental activities. Internal reliability analysis for the 27 items of environmental

management practice scale was performed. Cronbach's coefficient alpha was .921 which is considered acceptable.

It was reported that the sample hotels had adopted an average of 21.5 environmental activities among 27 practices provided on the survey with a standard deviation of 4.28. The number of environmental management practices implemented by the sample hotels was generated by counting cases that were reported to be over 2 on the environmental management practice scale (1=to no extent, 4=some extent, and 7= very great extent), and counting out cases with a score of 1 ("to no extent") on the scale.

In terms of organizational involvement in environmental management practices, the overall mean score of organizational involvement in environmental practices was 4.28 with a standard deviation of 1.11. The most widely adopted environmental management practice was reported to be use of energy efficient lighting. Ninety-nine percent (*N*=190) of the sample hotels that participated in the survey reported they used some energy efficient lighting to save energy, indicating 2 or higher on the scale. The mean score of the sample hotels' involvement in using energy efficient lighting was 6.16 (*SD*= 1.16) followed by a linen and towel reuse program (*M*= 6.02, *SD*= 1.65). Ninety-six percent (N=183) of the sample hotels indicated they had adopted a linen and towel reuse program. Non-smoking policy (*M*= 5.64, *SD*= 2.09), use of water-efficient devices (*M*= 5.62, *SD*= 1.64), use of Energy Star-qualified products (*M*= 5.34, *SD*= 1.57), and use of environmentally friendly cleansers and detergents (*M*=5.09, *SD*= 1.36) were reported to be well established green practices.

The sample hotels also reported they were least involved in implementing renewable energy programs (*M*= 2.23, *SD*=1.74). Forty-eight percent (*N*=91) of the sample hotels implemented renewable energy programs, and only 12 percent (*N*=23) indicated they were involved in the programs greater than to some extent. Composting organic kitchen waste (*M*= 2.42, *SD*= 2.10) was reported to be an environmental program in which the sample hotels were relatively less involved followed by guestroom energy saving programs (*M*= 2.77, *SD*= 2.26), and use of refillable soap and shampoo dispensers (*M*=2.95, *SD*= 2.18).

Table 4.6 Environmental Management Practice Scale Descriptive Statistics[a]

Items (Alpha= .921)	N	Mean	SD
…uses energy efficient lighting.	191	6.16	1.16
…implements a linen and towel reuse program.	189	6.02	1.65
…implements a non-smoking policy to reduce air-circulating costs.	190	5.64	2.09
…installs water-efficient devices and equipment (e.g. low-flow or infrared-activated faucets, low-flow showerheads, low-water-volume toilets, water-efficient laundry equipment or dishwashers).	191	5.62	1.64
…uses Energy Star-qualified products.	191	5.34	1.57
…uses environmentally friendly cleaners or detergents.	190	5.21	1.65
…uses energy-efficient equipment and products.	191	5.09	1.36
…implements recycling programs.	190	4.90	2.03
…implements donation programs (e.g. leftover guest amenities, or old furniture and appliances, and food)	189	4.90	1.81
…supports local communities to enhance the local environment.	190	4.80	1.86
…purchases used or recycled-content products.	191	4.64	1.72
…educates guests on environmentally friendly practices and policy.	191	4.60	1.78
…uses reusable items (e.g. cloth napkins, glass cups, ceramic dishes).	189	4.57	2.17
…uses environmentally responsible suppliers.	191	4.45	1.62
…cooperates with nongovernmental organizations to enhance environmental management.	191	4.05	1.94
…purchases locally produced ingredients.	190	3.98	1.98
…involves a manager or team in environmental management.	189	3.98	2.22
…incorporates environmental management into corporate policy.	191	3.93	2.11
…implements employee environmental training programs.	191	3.81	2.06
…pursues green certifications.	190	3.54	2.17
…recovers used cooking oils and food waste.	190	3.52	2.43
…monitors and records environmental management performance.	191	3.31	2.13
…implements water-efficient gardening programs (e.g. using treated water in garden irrigation, or adopting xeric gardening techniques).	190	3.19	2.18
…uses refillable soap and shampoo dispensers.	189	2.95	2.18
…installs occupancy sensors or a key-card control system in guest rooms to reduce in-room energy consumption.	191	2.77	2.26
…composts organic kitchen waste.	191	2.42	2.10
…implements renewable energy programs (e.g. use of wind or solar power).	191	2.23	1.74
Average		4.28	1.11

[a] Seven-point Likert scale (1=strongly disagree, and 7=strongly agree)

Table 4.7 presents the relationship between hotels' involvement in environmental management system and technical environmental practices. Environmental management system statements included seven items: *cooperating with related organizations, monitoring environmental performance, providing employee environmental training, educating customers, designating a manager or team in environmental management, pursuing green certifications, and incorporating green initiatives into corporate policy.* The environmental system score for each respondent was calculated by taking the average of the sum of the scores for the seven items mentioned above. The hotels' involvement score in technical environmental practices was calculated by taking the average of the sum of the scores for the remaining twenty items. A correlation of .794 (sig. < 0.01) indicates that the two variables are strongly correlated, meaning that hotels that have established better environmental management systems are more involved in technical environmental practices.

Table 4.7 Correlation between Environmental Management System and Technical Environmental Practices

Variable (N=191)	1	2	Mean	SD
1. Environmental management system	1	.794*	3.89	1.60
2. Technical environmental practices	.794*	1	4.40	1.00

* Correlation is significant at the 0.01 level (2-tailed).

Table 4.8 addresses the relationship between occupancy rate, profitability, and organizational involvement in environmental management. A profitability score for each respondent was calculated by taking the average of the sum of the scores for the two items: gross operating profit and sales growth rate for the past three years. A correlation of .164 (sig. < 0.01) indicates that organizational involvement in environmental management and the managers' perceptions of profitability are correlated, meaning that hotels were more involved in environmental management practices were more profitable than hotels that were less involved in green practices. However, there was no statistically significant correlation between hotel occupancy rate and involvement in environmental management.

Table 4.8 Correlation between Occupancy rate, Profitability, and Organizational Involvement in Environmental Management.

Variable (N=191)	1	2	3	Mean	SD
1. Occupancy rates	1	.332*	.085	67.94	12.72
2. Profitability	.332*	1	.164*	4.90	1.09
3.Involvement in environmental practices	.085	.164*	1	4.28	1.10

* Correlation is significant at the 0.01 level (2-tailed).

Table 4.9 illustrates organizational involvement in environmental management practices by hotel ownership type, hotel grade, and property size. Chain-owned hotels managed by the chain (*N*=18) showed the greatest organizational involvement in environmental management (*M*= 4.61, *SD*= 1.11). Hotels that are independently owned and self-managed (*N*=91) had the second highest mean sore (*M*= 4.45, *SD*= 1.16) on involvement in environmental management practices followed by independent hotels managed by a management contract (*N*=33, *M*= 4.23, *SD*= 1.08) and independent hotels with a franchise agreement (*N*=18, *M*= 3.89, *SD*= 1.01).

Table 4.9 Organizational Involvement in Environmental Management by Ownership Type, Hotel Grade, and Hotel Size[a]

	N	Mean	SD
Ownership type (N=191)[b]			
Independently owned, self-managed	91	4.45	1.16
Independently owned, managed by a franchise agreement	49	3.89	1.01
Independently owned, managed by a management contract	33	4.23	1.08
Chain owned, managed by the chain	18	4.61	0.88
Hotel grade (N=191) [b]			
Upscale and luxury	56	4.75	1.16
Mid-priced	117	4.13	1.04
Economy and budget	18	3.82	0.94
Hotel size (N=190) [b]			
Less than 100	91	4.02	1.14
100-399	83	4.41	1.04
400 or more	16	5.05	0.80

[a] Seven-point Likert scale (1= to no extent, and 7= very great extent)
[b] Total number of respondents varied due to missing values.

Upscale and luxury hotels (*N*= 56) had the highest mean score (*M*= 4.75, *SD*= 1.16) on organizational involvement in environmental management followed by mid-priced (*M*= 4.13, *SD*= 1.04), and economy and budget hotels (*M*= 3.82, *SD*= 0.94). With regard to involvement in environmental management by property size, hotels with more rooms showed greater involvement in environmental management. Hotels with 400 or more rooms had the highest mean score (*M*= 5.05, *SD*= .80) on organizational involvement in environmental management practices. Small size hotels that had less than 100 rooms had the lowest mean score (*M*= 4.02, *SD*= 1.14) on involvement in environmental activities.

Some hotels reported they had adopted environmental management practices other than the ones listed in the survey. Some properties reported they had established "a paperless digital and power down policy" to reduce office supplies and energy in back of the house areas, and encouraged sales and marketing functions to use online and email brochures. One respondent also reported they had installed a salt water pool and reclaimed rain water from downspouts to conserve water. Installing smart thermostats and metallic window coatings were also practices adopted by some of the sample hotels to save energy in guestroom areas.

Top Managers' Environmental Attitudes

Results of this section answered to the third research question: *To what extent are hotel managers concerned about the environment?* The present study utilized a 15 item version of the NEP scale (Dunlap et al., 2000) to measure top managers' general attitudes toward the environment. Table 4.10 presents descriptive statistics of top managers' environmental attitudes. A reliability test was conducted to confirm internal reliability of 15 items, and Cronbach's coefficient alpha was .887. As a diagnostic rule of thumb, the agreed upon the lower limit for Cronbach's Alpha is .70, though it is acceptable to .60 in exploratory study (Hair, Jr., Anderson, Tatham, & Black, 1998).

Each item was measured by a seven-point Likert type scale with the end points labeled 1= "strongly disagree" and 7= "strongly agree". Seven of fifteen items were phrased negatively, and therefore reversely coded. The mean score of 15 items was 4.60 with a standard deviation of 1.08. Mean scores of each item ranged from 3.35 to 5.74.

Table 4.10 The NEP Scale Descriptive Statistics[a]

Items (Alpha= .887)	N	Mean	SD
Despite our special abilities humans are still subject to the laws of nature.	191	5.74	1.30
Plants and animals have as much right as humans to exist.	189	5.43	1.61
Humans are severely abusing the environment.	188	5.01	1.80
The balance of nature is strong enough to cope with the impacts of modern industrial nations.[b]	191	4.98	1.65
The balance of nature is very delicate and easily upset.	190	4.80	1.63
Humans were meant to rule over the rest of nature.[b]	191	4.64	1.88
Humans will eventually learn enough about how nature works to be able to control it.[b]	190	4.59	1.59
The so-called "ecological crisis" facing humankind has been greatly exaggerated.[b]	190	4.57	1.93
Humans have the right to modify the natural environment to suit their needs.[b]	191	4.56	1.60
When humans interfere with nature it often produces disastrous consequences.	189	4.52	1.76
If things continue on their present course, we will soon experience a major ecological catastrophe.	191	4.52	1.92
The earth is like a spaceship with very limited room and resources.	190	4.33	1.80
We are approaching the limit of the number of people the earth can support.	191	4.12	1.86
Human ingenuity will insure that we do NOT make the earth unlivable.[b]	190	3.79	1.68
The earth has plenty of natural resources if we just learn how to develop them.[b]	191	3.35	1.80
Average		4.60	1.08

[a] Seven-point Likert scale (1=strongly disagree, and 7=strongly agree)

[b] Items were reversely coded.

Perceived Advantages of Environmental Management

Section C of the survey was designed to address the sixth research question: *What advantages do managers perceive environmental management brings about?* Respondents were asked to indicate their perceived advantages derived from environmental management. A 14-item Likert type scale with the end points labeled 1= "strongly disagree", and 7="strongly agree" was developed based on previous research (e.g. Kirk, 1998; Bohdanowicz, 2005; Mensah, 2006; Tzschentke et al., 2008). An internal reliability test was performed on the 14 items of perceived advantage scale. Cronbach's coefficient alpha was .948 which is considered acceptable. Table 4.11 shows top managers' perceived advantages derived from environmental management.

Table 4.11 Perceived Advantage Scale Descriptive Statistics[a]

Items (Alpha= .948)	N	Mean	SD
...contributes to reducing negative impacts on the environment.	191	5.69	1.32
…contributes to sustaining the environment.	191	5.55	1.39
…improves our hotel image.	190	5.52	1.22
…improves public relations.	191	5.49	1.30
…functions as a marketing asset.	191	5.36	1.30
…improves relationships with local communities.	191	5.28	1.43
…contributes to a safe and healthy work environment for employees.	191	5.26	1.41
…contributes to reducing operational costs.	191	5.09	1.52
…contributes to improving service quality.	190	4.85	1.47
…provides access to new markets.	191	4.83	1.39
…enhances employee motivation and satisfaction.	191	4.71	1.44
…differentiates services and tangible products.	190	4.71	1.39
…contributes to increasing market share.	190	4.67	1.46
…makes our hotel more profitable.	190	4.53	1.60
Average		5.11	1.08

[a] Seven-point Likert scale (1=strongly disagree, and 7=strongly agree)

The mean score of the 14 item perceived advantage scale was 5.11 with a standard

deviation of 1.08. As mean scores of each perceived advantage derived from environmental management were relatively high, ranging from 4.53 to 5.69, most respondents perceived that they gained various benefits from environmental management both for the corporation and from a social stand point. Most respondents believe that hotel environmental management contributes to lowering negative impacts on and sustaining the environment with mean scores of 5.69 and 5.55 respectively. Improving marketing and stakeholder relations were considered some of the salient advantages of environmental management in the sample hotels. More specifically, improving corporate image (*M*= 5.52, *SD*=1.22) and public relations (*M*=5.49, *SD*=1.30) were reported to be the third and fourth-ranked advantages derived from environmental management followed by functioning as a marketing asset (*M*= 5.36, *SD*= 1.30).

The lowest ranked advantage of environmental management was reported to be contribution of environmental management to improving the profitability of their hotels (*M*= 4.53, *SD*=1.60). Respondents also believe that environmental management has less advantage in terms of increase in market share (*M*=4.67, *SD*= 1.46), differentiation of service and tangible products (*M*=4.71, *SD*=1.39), and enhancement of employee motivation and satisfaction (*M*=4.71, *SD*=1.44).

Hypothesis Testing

This section discusses the results of statistical analysis undertaken to address the three research hypotheses. The first and second hypotheses focus on the relationship between top managers' environmental attitudes and environmental management practices. The third hypothesis was proposed to identify the relationship between top managers' environmental attitudes and their perceived advantages derived from environmental management.

Top managers' environmental attitude score for each respondent was calculated by taking the average of the sum of the scores for each NEP statement. The number of environmental management practices implemented by the sample hotels was generated by taking the average of the sum of the cases reported to be over 2 in the environmental management practice scale (1=to no extent, 4=some extent, and 7= very great extent), and counting out cases that indicated "to no extent" in the scale. Organizational involvement in environmental management was yielded by calculating the average of the sum scores of each environmental management practice statement.

The relationship between environmental attitudes and environmental management

Research question 4:

Is there any relationship between top managers' environmental attitudes and their hotel's environmental management practices?

Research hypothesis 1:

There is a positive relationship between hotel top managers' environmental attitudes and the number of environmental management practices implemented in their hotels.

To examine the extent of relationship between top managers' environmental attitudes and environmental management practices, a Pearson Correlation test was performed. As Table 4.12 shows, a correlation of .258 (sig. < 0.01) exists, indicating a positive relationship between the two variables. Therefore, hypothesis one is supported, and it is concluded that hotels whose top managers have more positive environmental attitudes are implementing more environmental management practices.

Table 4.12 Correlation between Top managers' Environmental Attitudes and the Number of Environmental Practices

Variable (*N*= 191)	1	2	Mean	SD
1. Environmental attitudes	1	.258*	4.60	1.08
2. The number of environmental practices	.258*	1	21.48	4.71

* Correlation is significant at the 0.01 level (2-tailed).

The relationship between environmental attitudes and organizational involvement in environmental management practices

Research question 5:

Is there any relationship between top managers' environmental attitudes and their organizational involvement in environmental management practices?

Research hypothesis 2:

There is a positive relationship between hotel top managers' environmental attitudes and organizational involvement in environmental management practices implemented in their hotels.

Table 4.13 illustrates the relationship between top managers' environmental attitudes and organizational involvement in environmental management practices. A correlation of .309 (sig. < 0.01) indicates that the relationship between the two variables are statistically significant, and supports hypothesis two. Therefore, it is concluded that hotels whose top managers have more positive environmental attitudes are more involved in environmental management practices.

Table 4.13 Correlation between Top managers' Environmental Attitudes and Organizational Involvement in Environmental Practices

Variable (*N*=191)	1	2	Mean	SD
1. Environmental attitudes	1	.309*	4.60	1.08
2. Involvement in environmental practices	.309*	1	4.28	1.12

* Correlation is significant at the 0.01 level (2-tailed).

The relationship between top managers' Environmental attitudes and perceived advantages derived from environmental management

Research question 7:

Is there any relationship between top managers' environmental attitudes and their perceived advantages of environmental management?

Research hypothesis 3:

There is a positive relationship between hotel top managers' environmental attitudes and their perception of advantages of environmental management.

Table 4.14 Correlation between Top Managers' Environmental Attitudes and Perceived Advantages of Environmental Management

Variable (*N*=191)	1	2	Mean	SD
1. Environmental attitudes	1	.368*	4.60	1.08
2. Perceived advantages	.368*	1	5.11	1.08

* Correlation is significant at the 0.01 level (2-tailed).

As the result of a correlation test in Table 4.14 shows, the relationship between top managers' environmental attitudes and their perceived advantages derived from environmental

management is statistically significant with a correlation of .368 (sig. < 0.01). Therefore, hypothesis three is also supported. Therefore, top managers with more positive environmental attitudes perceive greater advantage derived from environmental management.

Table 4.15 Correlation between Top managers' Environmental Attitudes and Perceived Advantage Items

Variable Top managers' environmental attitudes &	N	Correlation coefficient r
...contributes to reducing negative impacts on the environment.	191	.440*
…contributes to sustaining the environment.	191	.469*
…improves our hotel image.	190	.242*
…improves public relations.	191	.192*
…functions as a marketing asset.	191	.200*
…improves relationships with local communities.	191	.206*
…contributes to a safe and healthy work environment for employees.	191	.454*
…contributes to reducing operational costs.	191	.174*
…contributes to improving service quality.	190	.363*
…provides access to new markets.	191	.235*
…enhances employee motivation and satisfaction.	191	.340*
…differentiates services and tangible products.	190	.296*
…contributes to increasing market share.	190	.190*
…makes our hotel more profitable.	190	.166*

* Correlation is significant at the 0.01 level (2-tailed).

As shown in Table 4.15, top managers' environmental attitudes are significantly correlated with each perceived advantage item. Two perceived advantage items that address green practices' positive impacts on the environment show relatively high correlations with the top managers' environmental attitudes. Contribution of environmental activities to a safe and healthy work environment for employees is also positively related to top managers' environmental attitudes with a correlation of .454. However, it is interesting to note that three advantage items that represent financial benefits of environmental management showed relatively low correlations

ranging from .166 to .190. Thus, while top managers' environmental attitudes were somewhat correlated with top managers' positive perceptions of financial advantage derived from environmental management, the linkages were not as strong as the linkages between top managers' environmental attitudes and environmental contributions of green practices.

Summary

This chapter presented respondents' general demographics, frequency and descriptive information concerning three main constructs. Three hypotheses were tested by a Pearson Correlation test and were fully supported. Top managers' environmental attitudes were correlated with the number of and organizational involvement in environmental management practices with a correlation of .258 and .309 respectively. A correlation was also found between top managers' environmental attitudes and their perceived advantages derived from environmental management.

CHAPTER Ⅴ

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine the current state of environmental management in hotel companies. The relationships between top managers' environmental attitudes, their perceived advantages of environmental management, and organizational involvement in environmental management were tested by a Pearson Correlation analysis in the previous chapter. This chapter will discuss findings of this study, implications of the findings, limitations, suggestions for future research, and conclusion.

Discussion of Findings

This section discusses the findings of this study according to the research questions and hypotheses proposed in the Chapter 3.

Environmental management in hotels

Research question 1:

What environmentally friendly practices are hotel companies currently implementing?

Research question 2:

To what extent are hotel companies involved in environmental practices?

The results of this study found that most hotels participating in the study were implementing some type of environmental management practices, even though the magnitude of organizational involvement in environmental management practices varied. As the overall mean score (*M*= 4.28, *SD*= 1.11) of organizational involvement in 27 environmental management practices demonstrates, the sample hotels were involved in environmental management practices to a fairly large extent. The majority (55%) of the sample hotels also reported that they had been involved in environmental management for less than or equal to four years. These findings show that environmental management has recently been attracting much attention from hoteliers, and been becoming common practice in the U.S hotel industry.

Energy management

Consistent with the results of previous research conducted in different geographical regions (e.g. Erdogan & Baris, 2007; Bohdanowicz, 2006, Mensah, 2007), some of environmental management practices were widely adopted by the sample hotels. Using energy efficient lighting was the most widely adopted measure to save energy. With hoteliers' growing focus on energy management as a way of lowering operating costs, various energy saving measures have been highly recommended and reported by related organizations. AH&LA reported over eighty percent of member hotels that participated in Green Assessment Survey had installed compact fluorescent lights in guestrooms and public spaces, and LED exit signs as energy saving measures (AH&LA, 2008). Installing energy saving equipment and products was also reported to be a primary energy saving practice adopted by the sample hotels. Energy Star-qualified products, in particular, are not only being widely used, but also considered to be a yardstick of energy efficiency of a property.

Improving energy efficiency can be considered a key value-added strategy for hotel companies as energy costs rise, and consumers cutback on travel under the recent economic recession. Energy management can lead to a breakthrough to tide over the recent unfavorable business environment and financial constraints. Energy management can reduce operating costs without sacrificing customer services or comforts. At the same time, hotel companies can use these energy saving initiatives to demonstrate their dedication to greening of their operations.

Implementing energy saving practices, however, tends to be largely affected by organizations' resources available to invest in such practices. It is found that some of the energy management measures are associated with relatively large scale renovation and investment. As a result, it appears that energy management measures are restricted to some practices that require a low level of resource deployment. The majority (58%) of the hotels in this study were not involved in any type of renewable energy programs at all. Not surprisingly, small hotels in this study showed less involvement in such programs than large hotels because renewable energy programs may be some of the environmental practices that need a relatively high level of financial investment. In a similar vein, occupancy sensors and a key-card control system in guest rooms are energy saving practices that are highly recommended by related organizations, but were not well established in the sample hotels in this study. The majority (52%) of the sample

hotels reported that they did not implement occupancy sensor or a key-card control system to save energy in guestrooms at all.

These findings suggest that, despite the significant attention placed on the need for implementing energy management measures to reduce operating costs, hotels' resources available to invest and enough information on investment and return can play a deciding role in adopting such advanced energy management practices. Consistent with these findings, according to AH&LA (2008), the first two challenges or barriers facing U.S hotels in greening their practices are a lack of capital to invest and a question on achieving return on investment.

Water conservation

Water conservation has been one of the main areas of environmental management in the hotel industry. Of the practices aimed at water conservation, a linen and towel reuse program is the most widely adopted water conservation program. Ninety-six percent of the sample hotels reported they had been involved in a linen and towel reuse program. A towel and linen reuse program contributes not only to saving water but to reducing laundry expenses, and prolonging the life of materials. A towel and linen reuse program may be the best established green practice that is well recognized and received by hotel customers worldwide.

Water-efficient devices and equipment such as low-flow shower heads or water-efficient laundry equipment are also well established among the sample hotels. Ninety-six percent of the sample hotels reported they had adopted some of the water-efficient devices and equipment to conserve water, and over ninety percent of the sample hotels declared that they were involved in these water-efficient measures more than to some extent. These measures can be implemented through a relatively low level of modification and financial investment, but save a considerable amount of water. In addition to these two well-established water conservation programs, it appears that many hotel companies have started to implement water-efficient gardening practices as a water saving measure. The majority of the hotels in this study reported they had implemented water-efficient gardening practices to conserve water. Water-efficient gardening is a landscaping technique that utilizes native and water-efficient plants, and treated water in garden irrigation to conserve water. For example, some respondents participating in the study reported their properties had reclaimed rain water from downspouts, and used run-off water to irrigate their gardens and water golf courses. Despite the fact that water-efficient gardening techniques

are rarely mentioned and recommended, many hotels in this study were involved in these practices.

Waste management

Waste management and recycling is an integral part of hotel environmental management. Hotels typically generate a considerable amount of solid waste from various operational areas as well as back-of-house areas. Previous research found that hotels' involvement in recycling programs varies, depending on regions and nations because regulatory forces or government support influence hotel companies' response to environmental issues (Erdogan & Baris, 2007). For example, it was reported that over eighty percent of European hotels actively implemented waste sorting and recycling programs in offices and kitchens (Bohdanowicz, 2006, Erdogan & Baris, 2007) while Ghanaian hotels were less committed to recycling programs, with only 17 percent of sampled hotels adopting recycling programs (Mensah, 2006).

U.S hotels in the present study showed a relatively high level of commitment to recycling programs. Eighty-eight percent of the sample hotels reported they were involved in recycling programs at least in some degree. Nearly half of the respondents declared that their properties were dedicated to recycling programs to a great extent. This high involvement in recycling programs can be attributed to growing public awareness of the effectiveness of these programs and state governments' recent initiatives in waste management.

In addition to recycling programs, using reusable items was also found to be a well-established solid waste reduction program, with eighty-two percent of the sample hotels' using cloth napkins, glass utensils, or ceramic dishes to reduce solid waste. Donation of left over guest amenities, old furniture, or appliances was also widely adopted by the sample hotels. Ninety-two percent of the sample hotels reported they were involved in some donation programs.

However, it appears that kitchen wastes were not effectively managed in the sample hotels of this study. Composting organic kitchen waste was found to be one of the practices the sample hotels were least involved in. Over sixty-five percent of the sample hotels were not involved in composting organic kitchen waste at all, and around half of the sample hotels had not adopted any measures to recover cooking oil and food waste. As mentioned in the Chapter Two, the food & beverage service area is the major source of organic waste as well as a large amount of solid waste including aluminum cans, glass bottles, corks, and cooking oils (Baker, 2008). Thus,

composting or recovering organic kitchen waste may be one of green practices hotel companies can improve on. In these circumstances, some respondents of this study provided examples of dealing with food waste, reporting that they donated all food scraps to local farms to feed livestock and sent kitchen grease to local recycling firms to convert it to bio-diesel fuel.

It is also interesting to note that installing soap and shampoo dispensers was reported to be one of environmental activities that the sample hotels were least involved in. Over forty percent of the sample hotels had not implemented this practice at all, despite the fact that this is one of the easiest practices to be adopted. Considering the majority of waste generated from single-serve products in guest rooms and restaurants such as plastic bottles of shampoo, conditioner, and bars of soap guests often don't completely use, this practice can contribute to reducing tremendous landfill costs and negative impacts on the environment. Arguably, hoteliers are concerned about losing their guests if the guests think of this practice as a loss of their comfort and convenience. However, there are many green suppliers who provide high quality, eco-friendly in-room amenities for green hotels, which can lead to saving costs as well as providing better guest service instead of degrading the service.

Environmental management systems

Environmental management practices need to be effectively controlled and monitored by management. Water consumption, for example, should be monitored and recorded to evaluate the effectiveness of water conservation programs. Environmental training programs for employees are integral because they play an important role in educating customers in environmental initiatives as well as conducting each environmental program. Therefore, an environmental management system, defined as organizational practices or a framework to support, monitor, and control green programs, is an important component of hotel environmental management.

This study focused on seven practices that measure organizational involvement in environmental systems. Ninety-one percent of the sample hotels reported that they had provided environmental education for their guests while previous research conducted in the Turkish hotel industry found that only 28 percent of the sample hotels were involved in environmental education (Erdogan & Baris, 2007). Eighty percent of the respondents in the present study also provided employee environmental training whereas fifty-five percent of the hotels in a Ghanaian hotel study implemented environmental training program for employees (Mensah, 2007).

Further, over seventy-five percent of the sample hotels in the present study indicated that they had designated a manager or team for environmental management, and incorporated green issues into corporate policy while only around 30 percent of the hotels in previous research were reported to be involved in such activities (Erdogan & Baris, 2007; Bohdanowicz, 2006; Mensah, 2007).

These findings indicate that environmental management in the hotel industry is continuously evolving and is not considered just a fad that disappears in a short period of time, but is a growing business trend that needs to be addressed at a corporate level. Further, results indicate that hotels with a higher level of involvement in environmental management systems were more involved in the technical environmental practices. Since proactive environmental management requires firms to innovate and redesign various areas of the operations (Lee & Rhee, 2006), an organizational supporting and monitoring system is indispensible for effective implementation of green programs.

Top managers' environmental attitudes and hotel environmental management

Research question 3:

To what extent are hotel top managers concerned about the environment?

This study utilized the 15 item version of the NEP scale (Dunlap and Van Liere, 2000) to measure top managers' environmental attitudes. Even though a comparison of findings with previous research using the NEP scale is hindered by different scales or reporting formats utilized, top managers of the sample hotels showed a relatively strong endorsement of most NEP statements that represent various facets of environmental attitudes. Only two of the 15 NEP items failed to receive a pro-environmental choice by the respondents. It is interesting to note that top managers in this study relatively less agreed on statements that address so-called *limits to growth* (Dunlap and Van Liere, 2000): *We are approaching the limit of the number of people the earth can support, the earth has plenty of natural resources if we just learn how to develop them, and the earth is like a spaceship with very limited room and resources.* This result may imply that top managers in the sample hotels possess a positive perspective on human's interacting with the nature because they may be confident about the efficacy of environmental management or

personal environmentally conscious behaviors for protecting the environment.

Research question 4:

Is there any relationship between top managers' environmental attitudes and their hotels' environmental management practices?

Research hypothesis 1:

There is a positive relationship between hotel top managers' environmental attitudes and the number of environmental management practices implemented in their hotels.

With regard to the relationship between top managers' environmental attitudes and hotel environmental management, some of the findings from this study require discussion. As hypothesized in Chapter Three, top managers' personal environmental attitudes were positively related to the environmental management practices of their hotels. Hotels whose general managers, owners, or CEOs expressed pro-environmental attitudes not only implemented more green practices, but also showed greater organizational involvement in such practices. In other words, top managers' ecological worldview, as a function of their cognitive value, can influence organizational environmental strategy and outcomes. This study, therefore, empirically supports the validity of upper echelons theory, applying it to the hotel industry and a specific business policy, environmental management.

Research question 5:

Is there any relationship between top managers' environmental attitudes and their organizational involvement in environmental management practices?

Research hypothesis 2:

There is a positive relationship between hotel top managers' environmental attitudes and organizational involvement in environmental management practices implemented in their hotels.

The strength of the relationship between top managers' environmental attitudes and organizational involvement in environmental management was modest with a correlation of

0.309. However, considering all other forces that influence implementation of environmental management, such as organizational resource and capabilities, organizational structure and system, and different interests from various stakeholders, this modest level of correlation indicates top managers' attitudes can be one of the significant factors that affect corporate environmental management in the hotel industry.

In order for top managers' personal ecological worldview to affect and guide corporate environmental policy, it is integral that top managers possess enough managerial discretion that is defined as individual empowerment to act (Key, 1997). Top managers of the hotels participating in this study declared that they had great managerial discretion in both deciding business decisions and an environmental policy. It is noteworthy that respondents' perceived managerial discretion varied, depending on ownership type. Especially, top managers of independently owned and self-managed hotels reported greater top managers' authority to make such business decisions. Not surprisingly, a stronger correlation (r=.464) between top managers' environmental attitudes and organizational involvement in environmental management was found in the independently owned and self-managed hotel sector.

Top managers' environmental attitudes and perceived environmental advantages

Research question 6:

What advantages do top managers perceive environmental management brings about?

Research question 7*:*

Is there any relationship between top managers' environmental attitudes and their perceived advantages of environmental management?

Research hypothesis 3:

There is a positive relationship between hotel top managers' environmental attitudes and their perception of advantages of environmental management.

This study used the 14 item perceived advantage scale to measure top managers' perception of benefits coming from environmental management. As the NEP measured top managers' general attitudes towards the environment, the perceived advantage scale was developed to

capture top managers' attitudes toward the efficacy of environmental management.

Top managers in this study indicated that they had great perceptions of advantages derived from environmental management, agreeing on all 14 advantage statements. More specifically, two perceived advantage statements that address positive impacts of environmental management on the natural environment ranked first and second, with 82 and 87 percent of top managers, respectively, indicating that their green initiatives contribute to reducing negative impacts on, and sustaining the environment. Top managers in this study also pointed out that they could benefit from environmental management from a marketing standpoint. Three statements, *"improving our hotel image", "improving public relations", and "functions as a marketing asset"*, were highly ranked advantages of environmental management. These findings indicate that top managers in U.S hotels may approach environmental issues with a socially responsible perspective, compared to the findings of previous research (Bohdanowicz, 2006) that revealed reducing negative impacts on the environment and improving corporate image were third and fourth-ranked incentives to adopt environmental management.

It is noteworthy that even though 66 percent of the top managers surveyed in this study agreed that environmental management contributes to lowering operating costs, contribution of environmental management to hotel profitability and increase in market share ranked low. Twenty-one percent of the top managers indicated that environmental management did not contribute to improving the profitability of their hotels, and as many as 48 percent of the top managers were unsure about increasing financial profits through environmental initiatives. These findings lead to the conclusion that even though top managers in U.S hotels are well aware of customers' increasing environmental concerns and the usefulness of some of the green activities for lower operating costs, they may be uncertain about gaining return on investment and competitive advantage from green practices. This interpretation is consistent with findings of Cortes et al.'s (2007) Spanish hotel study that found no significant impact of environmental commitment on the financial performance.

In terms of the relationship between top managers' environmental attitudes and their perceived advantages of environmental management, as expected, top managers who had pro-environmental attitudes perceived more advantage derived from environmental management. Notably, it was found that top managers' environmental attitudes were more strongly correlated

with some advantage items that address green practices' contribution to protecting the environment than other advantage items. Further, financial advantage such as improving profits, reducing operating costs, and increasing market share showed weak correlations with top managers' environmental attitudes. These findings are understandable, considering that the NEP scale was designed to measure fundamental worldview on the relationship between humans and the environment. Thus, endorsement of the NEP can be more linked to pro-environmental behaviors motivated by ethical environmental concern and social responsibility rather than anthropocentric environmental benefits.

Implications

This section presents both managerial and theoretical implications drawn from the results of this study. First of all, it was found that hotel companies were least involved in some of the energy management practices that are associated with a large scale investment and refurbishment. Hotels that deploy financial and human resources on environmental management practices without investigating return on investment thoroughly take a huge risk. Related organizations such as hotel associations and local governments, therefore, need to find successful cases of retrieving investment and provide hotel companies with incentives, including financing schemes or tax breaks, for hotel companies to adopt programs that need expensive energy management facilities.

Second, some environmental management practices such as recycling programs and organic waste management are a fundamental part of hotel environmental management. Local governments' support, in cooperation with hotels, local recycling firms, or farms operating in the same area, can play a significant role in promoting recycling and waste management because existing system and infrastructure, such as recycling centers, organic waste collection service, and composting facilities, are integral and prerequisite to encouraging hotel companies to participate in such practices.

Third, it was found that organizational involvement in environmental management is positively related to a hotel' perception of profitability. There was also a positive relationship between involvement in environmental management systems and technical environmental management. To be leading green hotels and improve hotel profitability, hotel companies need

to incorporate environmental management monitoring, education, and training systems into their organizations. Especially, because environmental management is not a business decision made at a single point in time, but requires years of continuous organizational commitment, it is suggested that hotels appoint a manager or team responsible for environmental management initiatives and incorporate environmental management into their corporate strategic agendas.

Fourth, this study also empirically examined the effect of top managers' environmental attitudes on corporate environmental management in the hotel industry. The findings suggest that top managers' environmental attitudes affect environmental management practices implemented by their hotels. This study also identified the relationship between top managers' environmental attitudes and their perceived advantages derived from environmental management. As presented earlier, top managers' environmental attitudes were also correlated with perceived advantages of environmental management. Considering that hotel top managers are the ones who have managerial discretion in formulating and deciding such business policies as environmental initiatives, it is important for hotel management companies and related organizations to understand such mechanisms concerning the influence of policy makers' personal environmental attitudes on their perception of, and organizational response to environmental issues. Further, Arcury and Christianson (1990) found that "critical environmental experience can accelerate change in environmental worldview" (p. 404). This implies that top managers in the hotel industry can become more environmentally concerned through sound environmental education and campaigns designed by hotel associations or hotel management companies.

Lastly, this study also presents theoretical implications for hotel environmental management research. It is noteworthy that this study expands the concept of environmental attitude-behavior consistency to an organizational level through application of the upper echelons theory, focusing on the basic concept of the theory, the influence of top managers' individual cognitive value on their organizational strategy and outcomes. Among various determinants of corporate environmental management identified by numerous previous studies, top managers' environmental attitudes can be a unique determinant that affects and guides hotel environmental management. The hotel industry, which is comprised of a number of small businesses, is loosely regulated. Therefore, top managers' personal ethical concerns and a sense of social responsibility can be a salient factor that determines hotel environmental management.

Limitations

This study has several limitations. First of all, the study measured organizational involvement in environmental management practices based on the subjective perceptions of top managers instead of using objective data. As environmental management is a timely issue and a corporate social responsibility that attracts much attention from hoteliers, it is possible that this study failed to control socially desirable responses to self-reported environmental management practices. Social desirability bias may occur, either consciously or unconsciously, because environmental management is considered a socially responsible corporate activity, and therefore, respondents tend to respond in a manner that is shown favorably by others (Zikmund, 2003).

Second, this study utilized a self-reported only survey method due to time and financial constraints. While this study tried to cover a broad sample, in terms of geographical scope, property size, grade, and ownership type, a low response rate and non-responses might have biased the results of this study.

Third, this study utilized membership directories of 11 U.S state lodging and hotel associations as a sampling frame. The findings of this study found that organizational involvement in environmental management was somehow different from findings of previous research conducted in different geographical areas. This means that corporate environmental management is likely to be affected by various contextual factors hotels companies are facing, such as local government regulation, local customers' environmental concerns, or the business environment in which hotels operate. This will restrict generalization of the findings of this study to the U.S hotel industry.

Lastly, a relatively small number of budget hotels and large hotels (hotels with more than 400 rooms or more) participated in this study. These unequal cell sizes might hinder this study in performing some statistical tests.

Recommendations for Future Research

This study utilized top managers' perceptions of organizational involvement in green practices to determine the current state of environmental management in the hotel industry. To overcome a limitation derived from the possible social desirability bias already discussed, and gain more reliable results, future research is needed to investigate the scales of measurement that

can reduce such a bias. It is recommended for future research to use more objective data to measure hotel environmental management performance such as the number of green certifications, affiliation of related organizations, and allocation of resources.

The present study also focused on top managers' general ecological worldview and its influence on environmental management in an attempt to identify determinants of hotel environmental management. However, many other factors can have significant impacts on organizational response to environmental issues, such as stakeholder and regulatory pressures, organizational slack resources and capabilities, and so forth. Future research is necessary to analyze the other determining factors that could influence hotel environmental management strategy.

Another line of research would be to analyze other variables derived from industry characteristics. Ownership type and management agreements, hotel grade, size, and the number of employees can be influential factors that affect hotel environmental management as well as the relationship between top managers' environmental attitudes and hotel environmental management. Ownership type and management agreements may significantly affect organizational decision making on adopting an environmental management strategy and investing in green programs. For example, a limited-time management contract or franchise agreement may deter managers or operators from investing in environmental management facilities and programs because many environmental programs need to take some period of time to retrieve investment. Hotel grade and size, and the number of employees may also influence environmental management in that these factors are directly linked to the effect of economies of scale. Hotels with more rooms and employees can gain more net benefits from investment in environmental management than small hotels.

In order to determine the impacts of these variables on hotel environmental management, Future research needs to have more equal representation in the sample in terms of ownership type, size, and grade. Therefore, it is recommended that future research use a large sampling frame and a stratified sampling technique in which a subsample is drawn from within different strata (e.g. small, medium, and large hotels) (Zikmund, 2003).

Lastly, the impacts of environmental management on traditional performance criteria such as profitability can be an important research subject to be addressed in the hotel industry because

financial benefits have been considered important incentives for hotel companies to go green in the hotel industry. Especially, a longitudinal study would be necessary to gain more reliable results concerning the relationship between profitability and environmental management because environmental management needs long-term organizational commitment and investment. Further, since environmental management is an ever-growing business trend in the hotel industry, a longitudinal study may provide more insights into environmental management trend and issues in the hotel industry.

Conclusion

Environmental management is a growing business trend and a critical strategic issue in a wide range of industries. Governments, environmentally concerned customers, employees, and non-governmental organizations all require business firms to be environmentally responsible. The hotel industry, a main sector of the hospitality industry, plays a significant role in greening of the hospitality practices. Under recent economic conditions, energy and resource conservation practices are getting much more attention from hoteliers than ever before as a way of reducing operating costs and increasing resource efficiency.

The present study examined the current state of environmental management in the hotel industry to identify currently implemented green practices and how hotel companies are involved in environmental practices. This study provided some implications for related organizations and hotel managers. Hotels that participated in this study showed greater involvement in energy management, water conservation, and waste management practices than hotels examined by previous research in different geographical areas. However, return on investment can be a major concern for hotel managers in promoting green programs for their property. The results of this study also suggest that hotels need to focus more on environmental management systems, which can be essential for hotel companies to deal with environmental issues in a long-term perspective and a more effective manner.

This study also examined top managers' environmental attitudes and their perceived advantages of environmental management in an attempt to identify whether they are influential factors that are related to green initiatives in the hotel industry. The results of this study showed a correlation between top managers' environmental attitudes and organizational involvement in environmental management. This implies that hotels whose top managers are more

environmentally concerned have more organizational commitment to environmental management. These findings suggest that hotel management companies and related organizations can play an important role in promoting environmental management in the hotel industry. Training programs and seminars designed to provide environmental knowledge and management for top managers of individual properties can contribute to initiating environmental programs suitable for individual properties themselves and their local market conditions.

It was also found that top managers' environmental attitudes were positively related to their perceived advantages of environmental management. This indicates that positive environmental attitudes may positively affect managers' perception of environmental management. Especially, results of this study revealed that top managers' environmental attitudes are more related to the perception of advantages concerning ethical and social aspects of environmental management.

The hotel industry should keep promoting greening hotel practices to reduce negative impacts on the valuable environment and increase operational efficiency. As revealed in this study, top managers' personal environmental attitudes in the hotel industry have impacts on organizational response to environmental issues. Therefore, in order to promote environmental management in the hotel industry, related organizations, governments, and stakeholders need to focus on raising their environmental awareness as well as providing information on successful cases of environmental management.

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APPENDIX A

Cover Letter

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Department of Hospitality and Tourism Management (540) 808-8649
Pamplin College of Business
Virginia Polytechnic Institute and State University
362 Wallace Hall
Blacksburg, VA 24061

May 26, 2009

Dear General Manager:

I am a candidate for a Master of Science degree in Hospitality and Tourism Management at Virginia Polytechnic Institute and State University. I am conducting industry research and authoring a thesis, which is a requirement for completion of my degree. The study, titled *The Relationship between Top Managers' Environmental Attitudes and Environmental Management in Hotel Companies,* will examine the current status of environmental management and top managers' attitudes toward the natural environment in the hotel industry.

As I am sure you are aware, going green is a large scale trend in the hotel industry. We need to examine various aspects of green issues so that hotels can reduce their negative impact on the natural environment as well as provide quality service for customers.

I need your help to complete this study and make the findings valid. The survey should take about 10 minutes to complete. The responses will be collected, statistically analyzed, and reported in my thesis. All responses will be reported as aggregate data and in no way may be linked to you or any individual or property. Your participation and responses will only be known by the researchers and will be treated with the highest level of confidentiality.

Thank you in advance for your participation in this study. Your help and cooperation with this survey is vital and valuable to completion of my degree and further research on green issues in the hotel industry. If you have questions or comments, please feel free to contact me at (540) 808-8649 or by email at pjd0207@vt.edu, or Dr. Ken McCleary, my thesis advisor, at (540) 231-3262 or mccleary@vt.edu.

If you would like to participate in this survey, please visit https://www.surveymonkey.com/s.aspx?sm=BgCUdPXu3IvzVrDkaSUo8Q_3d_3d no later than Tuesday, June 02, 2009. As a token of my appreciation I will be happy to send you a copy of the results. Just enter your email address at the end of the survey to receive the results.

If you are not the general manager, I would greatly appreciate it if you would forward this mail to the general manager of your property.

Sincerely,

Jeongdoo Park
Graduate Student
Hospitality and Tourism Management
Virginia Polytechnic Institute and State University

APPENDIX B

Survey Questionnaire

A Survey of Hotel Environmental Management

Section A.

Listed below are statements about the relationship between humans and the environment. Please indicate the extent to which you agree or disagree with each statement by circling the appropriate response.

	Strongly disagree			Neutral			Strongly agree
1. We are approaching the limit of the number of people the earth can support.	1	2	3	4	5	6	7
2. Humans have the right to modify the natural environment to suit their needs.	1	2	3	4	5	6	7
3. When humans interfere with nature it often produces disastrous consequences.	1	2	3	4	5	6	7
4. Human ingenuity will insure that we do NOT make the earth unlivable.	1	2	3	4	5	6	7
5. Humans are severely abusing the environment.	1	2	3	4	5	6	7
6. The earth has plenty of natural resources if we just learn how to develop them.	1	2	3	4	5	6	7
7. Plants and animals have as much right as humans to exist.	1	2	3	4	5	6	7
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.	1	2	3	4	5	6	7
9. Despite our special abilities humans are still subject to the laws of nature.	1	2	3	4	5	6	7
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated.	1	2	3	4	5	6	7
11. The earth is like a spaceship with very limited room and resources.	1	2	3	4	5	6	7
12. Humans were meant to rule over	1	2	3	4	5	6	7

	the rest of nature.						
13.	The balance of nature is very delicate and easily upset.	1	2	3	4	5	6	7
14.	Humans will eventually learn enough about how nature works to be able to control it.	1	2	3	4	5	6	7
15.	If things continue on their present course, we will soon experience a major ecological catastrophe.	1	2	3	4	5	6	7

Section B.

Listed below are statements about environmental management. Please indicate your hotel's current extent of involvement in each environmental activity by circling the appropriate response.

	Currently, Our hotel…	To no extent			Some extent			Very great extent
1.	…implements renewable energy programs (e.g. use of wind or solar power).	1	2	3	4	5	6	7
2.	…uses energy-efficient equipment and products.	1	2	3	4	5	6	7
3.	…composts organic kitchen waste.	1	2	3	4	5	6	7
4.	…purchases locally produced ingredients.	1	2	3	4	5	6	7
5.	…cooperates with NGOs to enhance environmental management.	1	2	3	4	5	6	7
6.	…educates guests on environmentally friendly practices and policy.	1	2	3	4	5	6	7
7.	…uses high energy efficient lighting.	1	2	3	4	5	6	7
8.	…installs occupancy sensors or a key-card control system in guest rooms to reduce in-room energy consumption.	1	2	3	4	5	6	7
9.	…implements a linen and towel reuse program.	1	2	3	4	5	6	7
10.	…installs water-efficient devices and equipment (e.g. low-flow or infrared-activated faucets, low-flow showerheads, low-water-volume toilets, water-efficient laundry equipment or dishwashers).	1	2	3	4	5	6	7
11.	…uses environmentally friendly cleaners or detergents.	1	2	3	4	5	6	7

12. …monitors and records our environmental management performance.	1	2	3	4	5	6	7
13. …implements employee environmental training programs.	1	2	3	4	5	6	7
14. …implements a smoke-free policy to reduce air-circulating costs.	1	2	3	4	5	6	7
15. …uses Energy Star-qualified products.	1	2	3	4	5	6	7
16. …involves a manager or team in environmental management.	1	2	3	4	5	6	7
17. …implements water-efficient gardening programs (e.g. using treated water in garden irrigation, or adopting xeric gardening techniques).	1	2	3	4	5	6	7
18. …implements recycling programs.	1	2	3	4	5	6	7
19. …purchases used or recycled-content products.	1	2	3	4	5	6	7
20. …supports local communities to enhance the local environment.	1	2	3	4	5	6	7
21. …uses environmentally responsible suppliers	1	2	3	4	5	6	7
22. …implements donation programs (e.g. leftover guest amenities, or old furniture and appliances, and food).	1	2	3	4	5	6	7
23. …uses refillable amenity dispensers.	1	2	3	4	5	6	7
24. …pursues green certifications.	1	2	3	4	5	6	7
25. …incorporates environmental management into corporate policy.	1	2	3	4	5	6	7
26. …uses reusable items (e.g. cloth napkins, glass cups, ceramic dishes).	1	2	3	4	5	6	7
27. …recovers used cooking oils and food waste.	1	2	3	4	5	6	7

28. If your hotel implements other environmentally friendly practices than ones listed above, please specify.
( )

Section C.

Listed below are statements about the advantages coming from adopting environmental management

practices and policy. Please indicate the extent to which you agree or disagree with each statement by circling the appropriate response.

To our hotel, environmental management…	Strongly disagree			Neutral			Strongly agree
1. …contributes to reducing operational costs.	1	2	3	4	5	6	7
2. …contributes to improving service quality.	1	2	3	4	5	6	7
3. …provides access to new markets.	1	2	3	4	5	6	7
4. …improves relationships with local communities.	1	2	3	4	5	6	7
5. ...contributes to reducing negative impacts on the environment.	1	2	3	4	5	6	7
6. …improves public relations.	1	2	3	4	5	6	7
7. …functions as a marketing asset.	1	2	3	4	5	6	7
8. …contributes to increasing market share.	1	2	3	4	5	6	7
9. …makes our hotel more profitable.	1	2	3	4	5	6	7
10. …contributes to sustaining the environment.	1	2	3	4	5	6	7
11. …enhances employee motivation and satisfaction.	1	2	3	4	5	6	7
12. …differentiates services and products.	1	2	3	4	5	6	7
13. …improves our hotel image.	1	2	3	4	5	6	7
14. …contributes to a safe and healthy work environment for employees.	1	2	3	4	5	6	7

Section D.

Listed below are questions to obtain some general background about you and your hotel. All personal information will be kept strictly confidential.

1. Please indicate below the category that <u>most closely</u> describes the type of your hotel.
   ○ Upscale / luxury hotel
   ○ Mid-price hotel
   ○ Budget / economy hotel

2. Please indicate below the type that <u>most closely</u> describes the ownership and management arrangement of your hotel.
   ○ Independently owned, self-managed

○ Independently owned, managed by a franchise agreement
○ Independently owned, managed by a management contract
○ Chain owned, managed by the chain
○ Other (Please specify:)

3. How many guestrooms does your hotel have?
○ Less than 100
○ 100 – 399
○ 400 or more

4. What is the average occupancy rate of your hotel for the last three years? _____

5. Please indicate the profitability of your hotel for the past three years compared to known competitors by marking the appropriate response

1) Gross operating profit

Very much lower			About the same			Very much higher
1	2	3	4	5	6	7

2) Sales growth rate

Very much lower			About the same			Very much higher
1	2	3	4	5	6	7

6. Please indicate the extent to which you agree or disagree with following statement by circling the appropriate response.
"One of the primary reasons why I came to work for this hotel company was because of its reputation for being environmentally-conscious"

Strongly agree			Neutral			Strongly disagree
1	2	3	4	5	6	7

7. How long has it been since your hotel first started environmental initiatives? _____

8. What is your current position in your hotel? _____

9. Number of years you have been in this hotel company _____

10. Number of years in the hotel industry _____

11. Please indicate departments or functions in which you have most years of experience in hotel industry.
○ Sales and Marketing ○ Food and beverage ○ Front desk ○ Housekeeping

○ Human resource ○ Finance ○ Engineering ○ Others

12. What is your age in years?

○ Under 30 ○ Between 31 – 40 ○ Between 41 – 45 ○ Between 46 – 50
○ Between 51 – 55 ○ Over 56

13. What is your gender?

○ Male ○ Female

14. What is your educational level?

○ Some high school ○ High school graduate ○ 2-year college ○ 4-year college
○ Post graduate

End of Questionnaire!

THANK YOU VERY MUCH FOR YOUR TIME AND HELP

APPENDX C

IRB Approval form

VirginiaTech

Office of Research Compliance
Carmen T. Green, IRB Administrator
2000 Kraft Drive, Suite 2000 (0497)
Blacksburg, Virginia 24061
540/231-4358 Fax 540/231-0959
e-mail ctgreen@vt.edu
www.irb.vt.edu
FWA00000572(expires 1/20/2010)
IRB # is IRB00000667

DATE: May 12, 2009

MEMORANDUM

TO: Ken W. McCleary
Jeong Doo Park

FROM: Carmen Green

SUBJECT: **IRB Exempt Approval:** "The Relationship Between Top Managers' Environmental Attitudes and Environmental Management in Hotel Companies" , IRB # 09-420

I have reviewed your request to the IRB for exemption for the above referenced project. The research falls within the exempt status. Approval is granted effective as of May 12, 2009.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in the research protocol. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.

2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

cc: File