

# Connect among Green, Sustainability and Hotel Industry: A Prospective Simulation Study

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**Abstract**—This review paper aims at understanding the importance of implementing sustainable green practices in the current hotel industry and the perception of the same from the point of view of the customers as well as the industry experts. Many hotels have benefited from green management such as enhanced reputation of the firm and more worth customers. For the business standing, it reduces business's cost for posting advertisements and the clear hotel's orientation shows hotels' positive image which might increase employees' recognition toward the business. Sustainability in business is the growth in lively processes which enable people to understand the potential to protect the Earth's existent support systems. Well, looking to the future today's green concerns will definitely become facet of more synchronized business environment, perhaps the concerns discussed in this study, may exchange a few words which hotels may consider in near future to widen awareness and improve business model.

**Keywords**—Environmental Protection, Green Hotel Concept, Hotel Industry, Sustainability.

## I. INTRODUCTION

GOING green has become the "it" topic of concern of the past several years and continues to gain transaction. The hotel industry is a large business sector, which means hotels can play a major role in changing the culture of environmental degradation practices being followed in order to achieve sustainable growth. So what exactly is sustainable growth? Sustainability means meeting the needs of the present generations without compromising the aptitude of the future generations [1]. Another definition says that it is a dynamic process which enables all people to realize their potential and to improve their quality of life in which simultaneously protect the Earth's life support systems [2].

The hotel sector could make a major positive contribution to the environment by taking some measures to reduce energy consumption which will in turn reduce contamination and resource exhaustion. Therefore the hotel sectors consumes a big proportion of electricity as compared to other tourism sectors thus the hotel operators still have a chance to execute energy saving campaigns and environmental management systems. The use of water in a hotel is extensive and it is used in many different ways, such as cold water for kitchen, laundry, drinking, circulation for air taming hot water for guest bathrooms and flow for space heating. Water

consumption at this rate that to without monitoring, will likely guide to water shortages. Another factor that affects water is not only consumption but also contamination. The amount of water consumed by hotels is more than the normal household consumption therefore larger consumption means a larger quantity of contaminated water will be released in the environment consequently pollute the water bodies and harm the environment.

Several studies have indicated the economic benefits of going green in the hotel industry, with little or no extra capital. Going green includes various advantages like gaining competitive advantage by being a leader in the sector, customer loyalty, employee retention, awards and recognition, regulatory compliance, risk management, increased brand value, etc [3].

The hotel industry has been pursuing and adopting enormous green practices since the year 1990s due to fluctuating economic levels and a strong focus on customer service and satisfaction. Beyond the above mentioned advantages, many hotels have started employing social initiatives and corporate social responsibility. They feel all this is the right thing to do [4].

The first ever green hotel was launched by the intercontinental hotel group in the year 2008. This was the world's first 100 percent ecologically-friendly hotel. Their green features to name a few included: giving away non-perishable food to charities, use of solar panels on rooftops, a rainwater harvesting system to supply water to toilets, wind power to generate electricity for the hotel, recycled glass windows, furniture and fixtures made entirely from recycled materials, household waste to provide heat and water just to name a few. According to David Jerome of IHG, IHG was also the first hotel chain to introduce a set of 'green' guidelines for hotels in 1991. Along with this, the brain child of IHG which is the solar powered 'innovation hotel'- outlined the latest technology in energy and water conservation recycling [5].

Coming to our own motherland India, The Orchid Hotel, Mumbai was the first Ecotel hotel not only in India but also in Asia. They have drip-irrigated greenery on either side, which reduces water use by about 50%. The building is designed using eco-friendly materials and reduces the heat load as it faces the atrium. The swimming pool is located at the rooftop acting as an insulator from the heat load. Steps have and are being taken to reduce air pollution, water pollution, and sound pollution and also to reduce waste management. Commitment and environmental sustainability of the Orchid Hotel reveal that they have innovative eco-friendly practices in position.

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This is of course has made them the leaders in hospitality sector in India and an inspiration for other hotels to go green. The staff is also well-trained in the prospects of adopting environmental practices as per set standards of the hotel policy [6]-[8].

Energy conservation, Water Conservation and Waste Water Management are the 3 domain areas that are stressed upon. Every initiative is addressed around these three major areas. Hotels falling under the category of 'green hotels' or 'eco-hotels' category are required to adhere to a whole lot of strict rules and regulations, policies and procedures [9].

The trend towards eco-conscious travel has brought with it a growing number of green hotel certification programs in the hospitality industry. The hotel industry makes great impact on the environment either directly or indirectly: therefore, certifying hotels for their environmental protection efforts has become a need of the hour. There are different eco-certification programs across the globe for indicating the hotel's sustainability and environmental responsibility actions. The Green Globe Certification, the Green Leaf Certification, the Leadership in Energy and Environmental Design Certification, Sustainable Development Eco-Certification Program are examples of eco-labels just to name a few.

There are certain changes because of the emergence of eco-resorts and hotels. Firstly, it reduces the operational costs to a large extent by investing in energy-efficient measures. This also proves to be a good marketing tool by focusing on environmental friendly practices and the awareness of eco-resorts and hotels. Investment projects that transform eco-hotels and resorts can contribute to reducing CO<sub>2</sub> emissions and thus attain recognition as a clean development mechanism project [10], [11].

To mention examples of eco-resorts and hotels, The Evason Phuket resort, which is certified by 'Green Leaf', one of the Eco label for green hotels and resorts demonstrates how environment-friendly upgrades made in older buildings can improve energy efficiency and reduce water use. The setting up of energy and resource efficient equipment in the resort makes both economic and environmental sense. In India, it's a privilege to have The ITC Sonar, the first resort hotel in the world to be registered as a clean development mechanism project by the United Nations Framework Convention on Climate Change for its energy development actions. The resort uses fifteen suitable fixtures such as planetary power for heating the health spa and variable frequency drive for the main kitchen exhaust fan. The resort has received 1,996 carbon credits per year for the past ten years [12].

Effective environmental management in the hospitality industry is not easily achieved. The hospitality industry does not cause wide-scale environmental pollution such as harming the ozone layer or significantly contaminating natural resources. It also does not consume vast amounts of non-renewable resources and, in that respect, it is not ordinarily in the front line of environmental concern as are other industries such as manufacturing. Nevertheless, it has the potential for considerably reducing environmental pollution and unnecessary consumption [13].

Therefore, there has been an evolution with regards to green hotels. A lot of importance has been given to adopting such green practices. Many hotels have benefited from green management such as enhanced reputation and more class customers. For the business status it reduces business's cost for posting advertisements and the clear hotel's orientation shows hotels' optimistic image which might increase employees' recognition toward the business. In parallel, the green marketing is effectual. When customers have optimistic perception, concept, and recognition towards green hotel they can be fascinated by the green hotel concept and participate in environmental protection themselves. It is very advantageous that a hotel would be able to provide a better environment while enhancing customers' educational level at the same time [7].

## II. OBJECTIVE OF THE STUDY

According to the concerns discussed in the introduction, the aim of this research paper is to look at the way in which the practitioners get familiarized with what green practices are adopted in the hotel industry currently to identify what practices are being recognized and followed, to explore how these practices are being taken by the employees and to understand what is the view of the hoteliers on this concept and also to explore the different eco-labels and their significance.

## III. METHODOLOGY

As this research focuses around the concept of perceived assessment of green, sustainability and Hotel industry, the methodology approach chosen is interpretative underpinned by the belief that social reality is not objective but highly subjective-shaped by our perceptions [14]. The lack of research studies and very few qualitative experiential studies of green with regards to hotel industry led to take the Prospective simulation study of green, sustainability in hotel industry. This will broaden the understanding of the chosen domain. Various research papers studies by experts across the globe have been thoroughly studied with the aim of fulfilling the aim and purpose of this research.

## IV. ECO-CENTRIC: MANAGING WATER, WASTE, ENERGY

Substantial quantities of energy and water are consumed in providing comfort and services to guests. The efficient-use of these resources is relatively low, gradually resulting in environmental degradation. Again, the large quantities of waste products generated in hotels may pose further environmental threats. Due to this there is a general need for environmental protection. There is a need for general awareness and environmental awareness among the general public. On one hand, the need for green hotels is increasing on a large scale. On the other hand, the road to environmental sustainability is too luxurious to be undertaken particularly in current economical unstable and risky times [15], [16].

Hotels undertake a variety of environmental activities. They may include brochures of water and energy conservation

displayed in hotel rooms, donation of left-over good quality food to local charity organizations. Installing energy-efficient lighting equipment in hotels may be one of the key solutions. Among the towel, water saving events and linen reuse program are already well-established practice in most of the European countries. This helps to not only save water but reduce the usage of detergents and prolong the life of the material. The use of environmental friendly chemicals and detergents and contracting an external company for laundry services are also some of the green measures [17]. Water saving fixtures is most common in Sweden. The avoidance of waste generation is a beneficial solution both environmentally and economically. Waste sorting and recycling materials is stressed upon to a large extent in today's hotel scenario. The installation of soap and shampoo-dispensers in guest bathrooms instead of individually packed toiletries should be practiced. Waste management by composting kitchen and garden wastes to be used as organic fertilizer was not implemented in most of the resorts due to that fact that it involved a complex technique that had to be mastered. Recycled paper to produce brochures was not used in any of the resorts due to the fact that it cost a lot more than normal paper. A few resorts do conserve or care for wildlife in some way due to that fact that it was a form of promotional tool to increase occupancy among animal lovers [18].

When decomposed in the anaerobic conditions 2 typical of landfills, food waste generates methane CH<sub>4</sub>, a greenhouse gas with a global warming potential 25 times greater than that of CO<sub>2</sub>. Many landfills capture and destroy or utilize the CH<sub>4</sub> generated by organic wastes. Landfills occupy large areas of land and require specialized environmental management over extended time periods. Food waste contributes radically to the space requirements of modern landfills. Landfill, incineration and advanced thermal technologies are used throughout the world to affect the disposal of typical Municipal Solid Waste. MSW is the everyday type of mixed waste that is produced by households and businesses such as restaurants and hotels. Food waste is known to represent an important portion of Municipal Solid Waste. Landfill is the most widespread Municipal Solid Waste disposal system in New Zealand [19].

To give an example, "Kingfisher Bay resort and village" located on the west coastline of Fraser Island, Australia, represents a typical example of a resort that was built to strict environmental guidelines to achieve a high level of environmental integration with the very sensitive ecosystem in which it is located. This resulted in buildings and roads that were planned around trees and using materials that blends in with bush-type atmosphere. As an alternative air-conditioning in most areas of the resort natural convection currents are used to control air temperatures. Exact measures guarantee that waste water and other types of waste do not disturb/pollute the soil and vegetation of Fraser Island [20]. In India in 2006, independently owned and manage, award winning eco-resort in south named Our Native Village is the best example for their sustainable operating practices in all aspects of energy, water, waste and architecture which clearly demonstrate the resort's complete dedication to a holistic environment. A

consistent sustainability policy generates demand and loyalty from guests who seek products that resonate with their own values. (ONV) is like other hotels in its need for energy resources and consumption but is unique in self-sufficiency and low carbon footprints [21].

#### V. SUSTAINABILITY AS A DRIVING FORCE FOR TRANSFORMATION

Sustainability is undoubtedly growing trend. Sustainability operating practices in all aspects of managing waste, water and energy should exhibit the hotel's absolute commitment to a holistic environment. Hotel sector possibly will make a major positive contribution to the environment by taking some measures to reduce energy consumption which will in turn decrease pollution and resource exhaustion. Therefore, while the hotel sector consumes a big proportion of electricity as compared to other tourism sectors, hotel owners as well as managers still have a chance to implement energy saving campaigns and environmental management systems [22].

The guest room is a difficult location to implement changes, as it requires the guest to believe in what the hotel would like to change. If the guest wants new sheets each day, then the hotel most likely will oblige the guest to make them happy. That being said, many initiatives can be taken to make it easy for the guest to participate in the new policies. The guest can decide if they want to participate in their hotel's energy Going Green program by using a touch screen in the room. The guest can choose to not have housekeeping each day when they want the lights to go on and off by setting a timer, and more control over the temperature at any point of time throughout the day [23].

Along with controlling housekeeping needs, the hotel can place recycling containers in the guest rooms labeling and explaining the recycling program [24]. A program instituted by the Muse Hotel in New York City has installed designer recycling bins for guest rooms so they can be functional as well as fashionable. Guests can recycle glass, paper and plastic and this will allow the bins to merge into the decorations in the guest rooms. Hotel guestrooms are unoccupied approximately sixty percent of the time. This means that for sixty percent of the time the hotel can be in control of the high temperature and lighting of a guestroom and manage how much energy is being used during that time without interfering with the guest's comfort.

Installation of new gas dryers can result in the drying up of the fabric more quickly and with less energy use. The other new system is a heat recovery unit that can save the heat from the old water cycle in the laundry and transfer the heat to the clean water being used in the next cycle. Both of these options are creating new ways to conserve energy, but not changing the actual process of doing laundry. If the appliances use less water money will be saved from smaller consumption in the beginning. Also less waste water would be released into the environment. This can be used in addition with a linen reuse program. While most of the hotels have instituted a towel reuse program for years, the latest trend is to not change sheets every day unless it is requested [25].

The amount of water consumed by hotels is more than the normal household consumption. Thus larger consumption means a larger amount of contaminated water will be released in the environment. Therefore polluting the water bodies and harming the environment. National Environment Management Authority has directed beach hotels to acquire technology to ensure they treat their waste. Sun and Sand Hotel and Severin Lodge are some of the hotels that treat their waste water. The environmentalists reported that pollution of the Indian Ocean might lead to serious effects including the extinction of species of fish and other marine life. Knowledge, sustainability and technology programs are needed for organizations to consume water more efficiently and to minimize contamination of water provisions. Water maintenance is a necessary step taken by hotels to control and minimize waste [26].

As the market become more competitive, projects of a hotel such as renovation, expansion and maintenance of the facility become more prevalent in the hotel industry. This results in an increased awareness of negative influences on air quality. Hotels worldwide are recognizing the need to implement energy efficient projects in space cooling and heating systems. For example the Hyatt Regency International Hotel in New Zealand found out that guests often left appliances and heating and cooling systems on when they were out of their rooms. This particular hotel developed a project to link energy use with room occupancy. So when the guest leaves the room all energy appliances shut down with the exception of alarm clocks, refrigerators, and other important appliances. The project costs were \$16,000, while the payback period was only 14 months, with savings of \$14,000 annually [27].

Lighting is the second largest energy using system in a hotel and is probably the easiest and most cost effective area for reducing energy costs [28]. According to the Save Energy Alliance fluorescent lamps produce four times as much light per watt than incandescent lamps and they can last eight to ten times longer. A solid glowing light used in place of an incandescent light that is left on continuously for 12 months all Eight thousand seven hundred and sixty hours of the year will pay for itself in less than 1 year. The Sheraton Tacoma hotel urbanized a project to transition to compact fluorescent light fixtures. There was a replacement of 2,000 incandescent light fixtures with tube compact fluorescent light bulbs in various areas of the hotel such as the guest rooms and the hall. The cost saving was calculated at up to \$15,000 with a payback rate of 18 months.

Installation of solar panels on the roof of the sauna area, which supplements heat for the sauna and pool, is widely seen in Swedish Hotels which are becoming a popular means of saving energy and consequently money. Low-flow shower heads and faucet aerators are some options for water conservation which are becoming very common among hotel amenities. The reimbursement period for their use can be three to four years depending on the extent of the project. For example the Houston based Green Hotels Association observed water use in the SanAntonio based La Quinta Inn. Through a 1 month period the hotel showed an average of 100

gallons of water being used per guest per billing period. The sequence totaled more than a billion in the first nine months in 1996. Then they installed low flow shower heads and aerating faucets in each room which resulting in a saving of \$1.50 per room per month. Replacing all toilets with ultra flow toilets at a cost of \$3,250 showed a payback in 2.1 years and annual water saving of 1,80,000 per year. In many water assessments and automatic flushing toilets are found to consume a great deal of water [29], [30]. The THC Rotorua Hotel in New Zealand had urinals that flushed without human intervention in every 9 minutes. Each flush used ten liters of water. This added up to sixty six liters per hour or thousand five hundred and eighty liters per day regardless of whether the urinals had been used or not. The total use for three urinals was four thousand seven hundred and forty daily. The hotel then installed detectors that sense when the urinals are being used and allow flushing to occur at a specified time after use. This agenda reduced water use in the three urinals from sixty six liters per hour to forty liters during the day and 20 liters in the evening. In addition to installing the urinal sensors the hotel installed low-flow shower heads at a cost of three thousand and sixty dollars. The annual cost savings for the water conservation came to five thousand two hundred and forty four with a payback of only 7 months. As toilets and urinals are being documented as high consumers of water options are becoming available that has lower flush volumes and systems are being introduced that separate solids from the fluids [31].

Implementing a solid waste reduction program in a hotel can create significant cost savings in waste hauling fees while creating a more environmentally friendly hotel. This is particularly true as hard waste becomes a more significant environmental issue and landfill fees increase.

Often hotels hesitate to establish programs in solid waste management because of the coordination and cooperation needed among management, employees, and guests. To name an example of a hotel The Westin San Francisco Airport Hotel implemented their recycling program in 1994. The hotel practices waste reducing steps such as purchasing recycled content products, providing environmental education and training to their employees donating their excess food to local food banks and aluminum, recycling paper and plastics. Another aspect of a solid waste reduction program is dealing with food waste which can frequently be a large portion of the waste produced in hotels and lodging facilities. Over table scraps, preparation, cooking losses and packaging failures lead to accumulation of food waste. Because blemished food and even extra plate scrapings can be composted hotels are increasingly recognizing that composting is a better use of organic materials than dumping them to landfills [32].

There is an implication to create more environmental awareness and strengthen organizational monitoring systems to control green practices. In addition to linen and towel reuse program installing low flow shower heads, faucets as well as low water dimensions toilets has attracted much attention from hoteliers as one of the most efficient water saving measures because they can be implemented through a relatively low level of modification and financial investment [33].

The use of key cards to control room lights, cold water for washing guest laundry, use of sprinklers in gardens and parks, recycling of electronic waste e.g. computers, TV, etc., use of waste food as animal feed, use of eco-friendly cleaning chemicals to minimize water contamination, purchasing less packaged food to reduce package waste, helping the community by supporting endangered species and expanding recycling beyond paper glass and aluminum e.g. batteries, green waste, light bulbs, oil and cardboard materials.

It was found that the use of key-controlled systems and air-conditioning sensors would help in energy-saving to a large extent. These modern energy saving light bulbs have an attractive appearance and good light output, and their lifespan are usually seven to eight times longer than standard light bulbs. In the area of gas and diesel oil reduction the core practices were to clean the kitchen equipment and to adjust the air to fuel ratio to optimize the diesel boiler performance. Other significant reduction practices for the boiler include the routine examination, applying chemical treatment of feed water and installing economizer to recover water heat. All these measures required some technical knowledge [34].

For reducing the amount of paper, used of paper on both sides that are electronic mail and abolition of meal coupon could be adopted. Other significant measures include the purchase of biodegradable tissue paper and linen coaster. To reduce the chemical usage, purchase of eco-friendly cleaning chemicals, selection of a suitable detergent and placement of towel reuse sign in guest room [35], [36].

## VI. WHAT WORKS AND WHAT DOESN'T

### A. *Hoteliers'/Managers' Perception*

Hoteliers feel that the importance of environmental initiatives and practices should be imparted to the employees during their induction and proper environmental training programs should be conducted on a regular basis. Hoteliers admit that hotels have a significant impact on the environment which makes green practices essential rather than optional. There exists a competitive advantage for the hotel in the market when such practices are being followed.

Active cooperation with others by sharing and educating other hotels and organizations about green practices is a social and economic initiative. This was due to the lack of expertise of other resort personnel regarding environmental issues. It was also due to this lack of knowledge that only a few resorts has educational activities to raise awareness in the local community about environmental practices by conducting programs and seminars holding exhibitions and giving talks to different universities [37].

Facilities for those with disabilities and allocation of no smoking sections were not popular as this was still not made compulsory by the government. Encouraging guests to participate in local customs and traditions was only practiced by resorts which had a supply of local artists. Sponsoring research on an environmental issue in the local community was not done by any of the resorts due to the fact that local

universities had not yet approached them on the subject [38]-[40].

Many authors have suggested that purchasing should be done while adhering to the principle of '3R3E' which includes reuse, reduce, recycle, ecological, economic and equitable. Hoteliers feel that they may face several challenges as they are not sure if the variety of products can satisfy customers' needs and if customers will to accept reused and recycled products before making purchase decision. Price of such purchases will be relatively higher and it will be more difficult with fewer options of products and suppliers. However, such policies can make best use of energy, reduce pollution and reduce cost. This is known as the concept of green purchasing. And most of the hoteliers and top level management have started encouraging green purchasing to do their best to benefit our environment.

Hoteliers' main motivating factors were to provide a safe and healthy environment along with quality service in a clean environment and reducing the cost of environmental hazards.

Eco-friendly hotel managers institute programs that save energy and reduce solid waste while saving money. The benefits include a satisfactory decrease in the level of operating costs and a significant increase in the volume of reservations up to 30% as well as in the satisfaction rate of the guests. Moreover, hoteliers and managers feel that green initiatives ameliorate the environment and society, as well [13].

Hotel operators are motivated and encouraged to take the initiative of food waste separation in conjunction to other initiatives designed to encourage social and environmental status of the organization. Several hotels are now offering meeting and conference options that focus on greening all aspects of the conference from zero waste and carbon offsetting options to greening services such as compostable and ecological products. Later include things like stationary disposal free food and beverage service using reusable products such as china and linen napkins focusing on eco-tours of the hotel and surrounding areas, and locally sourced organic cuisine. There are a number of options to make sure that meetings are green and the Fairmont Eco-Meet program was one of the first and the most successful green meetings program for a hotel chain. Again Hotels have the ability to buy in bulk and to influence the supplier to provide less packaging and use more environmentally friendly materials.

Along with these practices social responsibility is a new highlight that every industry every sector every organization every department every employee talks about. Corporate Social Responsibility involvement brings together the employees of an organization for the common good. The hospitality sector too has its own set of CSR responsibilities varying from hotel to hotel. The Accor group of hotels has an Earth Guest Policy which focuses on the child protection, local development, fighting against epidemics and food elements of social responsibility [41].

### *B. Employees' Perception*

Most hotel employees should be trained and educated to be eco-friendly at some level. For example instruct them to switch off devices when not in use, to conserve as much water as possible etc. A majority of managers indirectly encourage eco-friendly behavior by trying to buy eco-friendly products from suppliers. This is because there is more promotion of these products to spread environmental awareness.

Lack of knowledge and awareness can prove to be a major barrier from the point of view of the employees. For instance small and medium hotels in Kuala Lumpur were reluctant in adopting STP due to lack of awareness and information concerning environmental issues.

Most of the employees are not fully aware what green and sustainable tourism meant. Hence they cannot fully implement these practices to the best of their abilities. They just had a general idea. The younger and educated generation is found to be more aware of green tourism than the older generation. To attain the benefits of green tourism practices hotels need to spend more time and effort in communicating their green practice vision to employees through training to improve green practices and to motivate the employees to engage in green practices [42].

Most of the employees have the view that there is a link between their practices and operating costs of the hotel. They revealed that as the operational department they need and rely on water and electricity on everything and they could not operate without. They are aware of the fact that the hotel needed to pay water and electricity bills and also pointed out that the practices were in fact contributing to the costs of the department [43].

Employee awareness on green practices is an important factor in reducing costs. However employees agreed that most of the highlighted green practices could reduce operating costs although they are a few practices they disagreed. This shows that the workers have a common knowledge of practices that can reduce costs however they are not aware that these are actually green practices hence they need to be educated. The findings show that employees are not willing to participate in practices that imply behavior change or that can compromise the quality of the final product. The study results also seem to suggest that the concept of green tourism has been commonly embraced by hotels. Yet practices such as composting and recycling are viewed suspiciously as they may conciliation on quality. This study also established that workers perceive green practices negatively mainly because the benefits of the program do not accrue to them [12].

Employee awareness is an important drive in establishing the relationship of green tourism and operating costs. It would be recommended that green practices and their implications on the costs should be frequently communicated to the worker. By regularly communicating this information to the employees it encourages more participation and hence in the same way increases their awareness levels. In doing so they should also highlight the benefits of the practices not in the sense of costs but specifically to the employees. This serves as a motivator to

the employees to participate actively in the green movement [44].

### *C. Customers' Perception*

Due to consumer awareness there is also pressure from guests for the resorts to become more responsible towards the environment and the local people. Most resorts recycled their gray water as many of them had the space to construct a water treatment plant. These resorts also used energy efficient devices such as light bulbs in public areas as return on investment was fast. For example LED lights give faster ROI. Recycling and reusing programs were implemented on a large extent. Encouraging guests to take part in local customs and traditions would better guest involvement in green practices [45].

Most clients do not notice the greening practices of a hotel. Most said they recycle at home but many of them have admitted to not making a decision to choose a hotel because of the greening options. Also most of them prefer daily changing of linen in their guestrooms.

While people still wants the amenities that the hotel offers the guest rooms it opens another question of whether the guest understands the amount of energy and water that is wasted by refreshing the towels and sheets each day. If the guest took time to realize the waste involved perhaps their opinion would be different [46].

On the other hand almost about ninety percent of guests in today's environmental conscious scenario prefer a room with better quality of indoor air. Choosing environmentally friendly and non-toxic cleaning products especially in the area of housekeeping is strongly recommended for air quality improvement [47].

Hotel guests tend to equate refillable dispensers with going to the gym. Some guests have a perception that dispensers may not be sanitary or that it can be unclear what exactly is in the dispensers. As of a hotel operator's perspective they have found it difficult to find dispensers that are visually appealing and easily integrated into the design of the hotel room. All of these trepidations combined may be the reason there are not many dispensers in hotel rooms today. To move past such apprehensions hoteliers must be able to find suppliers of environmentally products that can be incorporated into their room design. At the same time hoteliers must know the benefit of using refillable containers and educate their consumers about the harmful effects of using so many bottles of shampoo or throwing away partially used bars of soap on the environment. Education such as this hotel guests can become smarter consumers of the green hotel product [48].

Guests want hotels to be responsible in showing their commitments towards the protection of the above mentioned four important aspects. The awareness of building initiatives adopted by these hotels seems to be having a positive impact. On their own guests feel that they have to contribute to sustainable practices without anticipating any selfish gains or monetary benefits. Governments and companies also have critical responsibilities towards environmental protection and conservation. Citizens governments and companies are thus

the three stakeholder groups that hotel customers feel must join forces to promote and accelerate the deployment of sustainable development initiatives [49].

Sustainable hospitality has been stressed on a lot off late. One out of every two guests is keen on staying at a green hotel. Gone are the caricatured images of jute sheets and fair trade dishwasher coffee. Customers now look favorably on the alliance of sustainability and comfort [50].

While guests consider themselves an essential link in the chain of sustainable development alongside corporations and governments they also appear to be aware of their role in supporting the development of sustainable hotels. A majority says that they are as concerned about sustainable development when staying at the hotel as they are at home. However, a significant twelve percent say that they are more aware of sustainability issues when staying at a hotel. Customers feel involved in this call to action since they see themselves as an integral part of the responsibility triangle in improving the taking into account of sustainable development [51].

Customers definitely are attracted to discounts, offers and loyalty programs. So if they are rewarded for using a green hotel over a normal hotel by providing benefits such as hotel reward points and discounts it's a human tendency that they would visit such green hotels. This is a very good strategy undertaken by hotels nowadays to promote their brand and direct more volume of sales into their hotel. These consumers expect rewards for patronizing green hotels. It is very clear that the consumers in Scotland wanted something in return for their good deed of using a green hotel. Consumers seemed ready to incorporate green hotels into their travelling excursions because they generally have a positive perception of green hotels. The most important conservation method to the consumers surveyed was energy conservation. Most travelers are willing to stay in green hotels. However, it is the responsibility of hoteliers to be prepared to come up with some form of incentive to motivate some consumers to support their green practices. In addition hoteliers should adopt green practice as an A strategic hotelier should recognize this and price rooms competitively with adequate promotions to curtail the potential negative perceptions

While many hotel companies have participated in various green initiatives and adopted green policy. Green issues are quick which is becoming a focal point for academic research. Several studies have reported that more and more consumers appreciated and rewarded firms that show strong environmental and social responsibility and were willing to pay premium prices for green services. Consumers are in theory willing to pay more for a green product however when it come to the real purchasing decision their willingness is not based on action. There are the inconsistencies between environmental concern and environmentally friendly hotel purchase behavior. The talk is still louder than actions to some degree on the part of consumers and hotel operations. There could be many reasons for such irregularity.

There is an ongoing perception that green products are too expensive. Price along with quality and convenience generally remain more important factors in consumer decision making

than the relative greenness of a product. It appears that many consumers are cynical about environmental claims made by green product sellers are confused about green and also skeptical about the ability of green consumerism to contribute to a better environment [52].

## VII. SPROUTING PROGRAMS: ECO-LABELING

There are various eco certification programs in the hotel industry such as the Sustainable Tourism Eco-Certification Program, Green Seal and the Green Lodging Program. Each program has its own criteria for certification some are self audited while others are strictly third party regulated. Others feature a mixture model that includes both a self audit and third-party regulations. Due to the wide variety of certification programs available it is difficult to assess the key practices that contribute to running a green hotel.

Many hoteliers do not have a sound and complete knowledge and expertise on environmental management. Therefore the participation in eco-certification programs remains low. Even the consumers are unaware of hotel certification programs. Many new eco-labeling programs are also not trustworthy. As an example a majority of German tourists are familiar with product labels, but only three percent to ninety percent can recognize German tourism eco-labels [53]. As the customers themselves are unaware of these, there is very little external pressure on hotels to commit themselves to environmental practices. Food waste separation is highly encouraged by eco-labels across different hotels.

For a building or hotel to be considered green, it needs to be recognized by the United States Green Building Council and certified for Leadership in Energy and Environmental Design. LEED is the rules that builders follow to have a certified green building. There are five areas that LEED certification uses as criteria to judge hotels sustainability water savings, sustainable site development, indoor environmental quality, materials selection and energy efficiency. The LEED standards were first used in the 2000 [54].

Environmental or eco-labeling for tourism products is well known and widely used in today world. Generally eco-labels in tourism refer to the reduced negative influences of tourism on the natural environment. The purpose of the eco-labeling and/or certification schemes in tourism is to highlight the best practices for products and services as well as to ensure more sustainable management or sustainable consumption in tourism practices. Today there are over eight hundred different green certification programs for ecotourism, hospitality and tourism around the world. These include the ISO 14001 Environmental Management System the Green Globe and the Green Key which are globally used. There are two main motives for ISO certification 14001. Firstly, if properly implemented certification forms the framework for improving environmental performance. Secondly, certified enterprises could establish a strong corporate image achieving such benefits as improved relations with stakeholders and marketing advantages. The Green Globe is designed to cover all sectors of the tourism [55].

Starwood Hotel and Resorts Element and Hyatt's Andaz which feature LEED certified buildings as part of their brand standards offer a variety of green products such as green restaurants and spas. These are anticipated to test the customer's appetite for a greener hotel industry. There is also a competitive advantage for being recognized for your green efforts. The Fairmont has established many awards relating to their green practices such as the 2008 Environmental Leadership Award from the Professional Convention Management Association and the 2008 Green Leadership Award from Hotelier Magazine. Such Awards and recognition spread the news of the hotel's efforts and attracts new clientele such as corporations that need to conduct business with socially responsible companies [56].

While the green building was a fairly new concept to the hospitality industry it had become a goal for many hoteliers and others in charge of building hotels. As local governments led the way toward LEED certification many hotel properties and corporate offices strove for their own LEED certification for both personal and economic reasons. Many of the bigger cities had a growing mass of hotels competing for the LEED certifications so they would be considered a green hotel and had informed customers that these hotels weren't just saying it anymore they meant business.

Towards this direction application of an eco-label certification program is highly recommended. However further research and comparative analysis is required so as to identify which certification has the best benefit cost ratio for the hospitality industry as well as the most sustainable impact on the environment [47].

#### VIII. FOCUSING FINANCIAL PERFORMANCE OF GOING GREEN

The Financial savings are one of the most important concerns for any organization that influence the implementation of environmental initiatives in a hotel. This is especially valid for hotel businesses that operate in a tremendous competitive market and where the cost of water, energy and waste dumping are high. Hotel operators that can take full advantage of their efficiency and reduce waste will be more cost-effective than their competitors. For example a hotel can bring down its energy consumption by twenty to forty percent without adversely affecting its day to day set standard of performance. Despite the setup costs and the long return on investment associated with environmental initiatives the economic benefits usually outweigh the cost of implementation. Starting with less capital intensive projects and practices can definitely lead to substantial cost savings [57].

Therefore hotels with business models that revolve around green practices will have the strongest opportunity to achieve a competitive advantage by being ahead of the emerging sustainability curve. Hotel web sites play an important role in disseminating the necessary information. They are used as an online channel to inform customers about services and products and also as an electronic platform to enhance profitability [58].

It has been found out that the larger hotels are more engaged in disseminating environmental information on their network sites. This result is consistent with studies on corporate social responsibility and indicates that large companies often see competitive advantage in making environmental improvements and are thus more likely to disclose information related to their environmental tricks. Small firms that have low perceived impact on the environment are likely to ignore the dissemination of related environmental information [59].

Several hotel firms have displayed their environmental performances via internet interactive and multimedia facilities. For example Innovation Hotel is an online showcase of a green hotel of the future. Network site visitors can experience this environmentally friendly hotel by taking a virtual tour. Accor and Scandia provide live demonstrations of their environmental achievements. The Wyndham Green network site provides a communicative platform that permits visitors and members to share green ideas and experiences. This type of environmental information exposé can be achieved only through via internet media [60].

Most of the web sites provide an abundance of environmental educational resources. For example the Wyndham Green network site provides tips and ideas to go green and information relating to green travel. This indicates that these leading hotels of the globe have expanded the scope of their environmental management to a broader social responsibility. Their network sites provide a platform for public education. To further the concept of green some of the companies not only purchase green products but even develop green products for their customers to enhance their environmental efforts. For example Accor, Marriott, Fairmount and Wyndham offer green meeting packages that assist meeting planners by suggesting meeting structures that encourage an awareness of environmental issues and optimal waste diversion strategies for conference delegates. Hotels benefit from receiving objective assessments of their practices confirmation of meeting appropriate standards and a benchmark for maintaining that competence. Of the twenty three hotel companies that had environmental network pages about half mentioned their affiliation with environmental certification agencies. This implies that peripheral validations have been recognized and adopted in the hotel industry to enhance environmental management [61].

Other green products such as green cuisine and eco rooms are additional innovative creations of the environmental endeavor of these hotel companies. IHG's network site has a specific link entitled green hotels for green hotel reservations to respond to the growing market of green customers. Environmental based certification provides a mechanism to encourage environmental management practices. To maintain these recognition hotels must pass regular re-evaluations to ensure continued compliance with the requirements and maintenance of proper operational standards.

The Eco-marketing orientation is a new underlying business philosophy to supplant the sales, production, marketing, and entrepreneurial orientations commonly discussed in business



education curricula publicize the authors. A company with this orientation should meet society's demand for corporate ethical responsibilities while fulfilling customer needs profitably [62].

#### IX. BARRIER TO ECO-PRACTICES

The adoption of environmental practices comes with a financial crunch. The infrastructure cost increases by about ten to fifteen percent in case of green buildings. Some hotels tend to feel the pinch of high certification fees that has to be paid in order to get eco-certification. To overcome this problem hotelier should resort to implementing and adopting low cost simple projects rather than adopting complicated measures [63].

Small hotel owners feel that implementing green practices in their hotels like use of recycled papers may hinder guest satisfaction. Guests tend to have a mental block that green practice adoption in hotels may lead to drop in overall standards of the hotel. That may be the reason hotels tend to release green initiatives that may jeopardize or come in the way of customer satisfaction.

Green certified cleaning products such as Green Seal improve indoor air quality and reduce emissions of volatile organic chemicals. Some challenges accompany the use of these products such as the effectiveness of these cleaners and their higher price. Regardless of these challenges green products certainly contribute to improving air quality by reducing toxic emissions.

From the point of view of the customers there are those who would go an extra mile to pay a little more to support the hotel's green cause/initiative. But some customers do mind paying a little extra as price still remains a dominant factor on customers mind when it comes to selecting a hotel [5].

Hotels that follow eco-certification programs generally elevate their room rates in order to meet their eco-certification expenses. This may lead to an increase in revenue per customer but may bring down the volume of customers as sales may go down. This may drive the customers to cheaper hotels that do not follow green standards [6]-[8].

Most customers seeking hospitality services expect to find facilities with freshly laundered linen, high pressure showers and profuse supplies of food and drink, abundant supply of towels and accessibility to swimming pools and saunas and limousine services. Although it is possible for hotels to provide more environmentally friendly services, they may fear that doing so runs the risk of losing customers due to a perceived degradation of service.

In this regard it is quite a challenge for hotel managers to come up with plans that successfully integrate environmental practices without compromising service. Again it is very clear that it is almost impossible for hotels alone to implement such measures without cooperation from customers. In this regard hotels should encourage environmentally responsible behavior among its customers and help them believe that the collective efforts they are indulging in are good for everybody. The balance between consumer expectations and green practices could prove highly beneficial.

It is seen that the hospitality sector is lagging behind the other industries in terms of consciously following eco-friendly practices and research dedicated to such practices. As mentioned earlier lack of knowledge and awareness is the key factor for the cause of the same. Lack of increasing environmental regulation, consumer demand and customer satisfaction, managerial concern with ethics and maintenance issues related to the need for aesthetics, physical plant, financial barriers and stakeholder pressures are some of the issues that hotels rustle with [64].

There is very low visibility of eco-certification programs that hotels are accredited with. People either employees or customers remain totally unaware. Employees remain unaware due to lack of training facilities as well as induction at the time of joining the hotel. Customers remain unaware of such programs because of the lack of advertisement on part of the hotels adopting such programs. Therefore hotels must consider show-casing their eco-certification at the reception for guests to view at the time of their check-in and registration. At the same time they must promote the same on their websites and other media channels. Hotels like Hyatt and Disney have their own certification programs. This affects human psychology directly or indirectly. Naturally they will prefer to stay at an eco-certified hotel than the one which has not been certified. Eco-certification reflects a brand with a different standard altogether. This also changes the angle in which consumers look at where they want to stay [65].

#### X. CONCLUSIONS AND REFLECTIONS

Green initiatives and programs undertaken by the hotels may be used as a very powerful marketing mechanism. Also co-operation among the different hotel chains and groups can make their task to be easily accomplished.

Therefore reasonable price is one of the most influential factors affecting the choice of eco-certified hotels. Although most of the selected resorts are concerned about the environment implementation of environmental initiatives are still minimal due to unattractive benefits compared to costs not enough incentives or rebates from the government to encourage implementation of green practices and lack of knowledge about the variety of methods that can be used to protect the environment and care for society in an effective way.

Hence the achievement of sustainable tourism may therefore depend on a change in discourse of both campaigners and industry in order to identify common ground more easily and to communicate this more effectively to the marketplace. Similar to other industries environmental regulation of tourism may therefore depend on shared responsibilities between governments and business and on the establishment of legislation which allow companies to develop their own flexible responses to environmental problems and market opportunities without fear of losing competitive advantage.

Not only is the construction of green building important. But the final step after building a sustainable hotel and equipping it with sustainable materials and technologies is to

make sure that every day operations reinforce the sustainable surroundings that have been created. This is extremely important and advantageous to the reputation of any brand.

In spite of all this even now it has been seen that a large number of hotels are skeptical about applying environmental practices within their organization. What is it that is holding or preventing the upper management from taking up such initiatives?

For a hotel to change its traditional ways of operating takes time and the ability to look past the expectation that if something is sustainable it will be more costly and will have a slow payback rate. A hotel can start its green hotel process by taking up something as simple as setting out recycling bins or asking guests to turn off the lights in their rooms when they depart. The staff may ask guests if they would like their room to be cleaned daily if their stay is longer than a day. These steps are simple and are less costly than many other green approaches and they do make a difference in developing a green hotel.

There is a positive relationship between hotel management commitment and application of green practices. The results indicated not only the importance of having an environmental policy but also a better understanding of green practices so as to nurture commitment. Managers are not satisfied with their current green practices. This reveals an information gap where environmental policies need to be reviewed regularly so as to highlight sensitive areas of greening. On the other hand the environmental strategy should be strictly followed to ensure implementation meets the required principles of greening. The hotel sector has a room to promote high levels of vow. Environmental training and education were therefore considered valuable in developing knowledge, awareness, skills, positive attitude and participation in green practices.

A significant factor in becoming green is to realize that while some steps may be small none are unimportant. Another important and suggestion step that green hotels are taking across the globe is to set up monitoring systems and standards for each area of the hotel. This system may be aimed at monitoring energy, water or solid waste areas. This can be very useful if for example a hotel wanted to see where the most energy was being used in the facility. The hotel can aim the lighting in those areas where the energy use is uppermost. Then they might set a goal of lowering their energy use by twenty percent over a one year period or replacing the current lighting fixtures with compact bright lighting. Setting goals and targets and monitoring results are great tools for observing the hotel's progress in energy use as well as their declining energy costs.

Hotels can also stop displaying or offering disposable toiletries voluntarily except for shampoo, soap, shower gel and hair conditioning. Prior to this policy implementation educational guidance should be conducted inside the hotel by leaving guidance card and message on the desk and toilet in the rooms in order to build the concept of environmental protection into customers' mind. For water saving the hotel can use water-saving valve instead of the regular one.

Besides there are notes indicating no need to clean the bed sheet or the towel in the room. If a guest is going to stay more than one day he can leave the note on the bed or the bathroom to let the room attendant know that those things do not need to be changed. It can decrease the number of times of changing sheets and towels as well as reduce the consumption of detergent and sewage disposal. Steps should also be taken so ensure that the polluting material such as battery and cartridge is retrieved properly. Although the consumables are still provided to the hotel guests, the hotel should adopt green products in all staff's facilities and restrooms. Green products such as recycled paper have priority to be selected while purchasing stationary. Decomposition of plastic is difficult. Therefore hotels should take extreme care to reduce the use of plastic in any form.

Many hotels have benefited from green management such as enhanced reputation and more excellent customers. For the business reputation it reduces business cost for posting advertisements and the clear hotel's orientation shows hotels positive image which might increase employees' identification toward the business. In line with this green marketing is effective. When consumers have positive concept, perception and recognition towards green hotel they can be attracted by the green hotel concept and participate in environmental shield themselves. It is very helpful that a hotel would be able to provide a better environment while enhancing customers' educational level at the same time. In fact the concept of green hotel has become an irreversible trend and it will become one of the key indexes for anti-greenhouse effect in the near future. Travel is an important part for people in the modern society so choosing a green hotel to stay might be the best way to connect consumers and environmental protection.

The major challenge is that hoteliers do not know if consumers can accept and cooperate with hotels green measures since it is highly potential them to be opposed with this idea of environmental protection. If they show content with the hotels' green concept the result of the measure will be very significant. Managers indicated that not only does green hotel attract highly educated consumers it can also save energy through educating consumers improving hotel and the whole society's environment. Overall hotels through the mass media service will definitely gain good impact for making efforts on environmental protection.

While it would be in the best interest for the environment if all businesses were green business hotels need to make the decision of whether it is worth it for the greater good to become a green hotel because the guests are not demanding it. A hotel may want to create an environmental program for the greater good but in the down economy it may not be the right time. So the best option may be to start small and make little possible changes that will ease the guest into the bigger picture and then invest slowly in larger changes. Also if the hotel makes the guest feel like part of the solution, then the guest may take a vested interest in the changes. The hotel cannot charge too much on the guest to make up for the changes as this will not be received positively by the guest and they will stay elsewhere in the prospect. With these easy

changes and the promise of future additions when the economy is in a better place the hotel will be able to make its environment better and thus affect the ecological environment. This would also help to safeguard the environment and improve their overall brand image.

Hotel managers should embrace regular environmental audits where environmental performance is constantly recorded and monitored. This can be achieved by increasing organizational systems and control to facilitate environmental coverage. Targets for each section should be set and continuous and periodic monitoring of results should take place. The management should create environmental awareness through developing a team in charge of environmental management or training as well as having a written environmental policy which is regularly updated and reviewed. This is possible to address the gap between management commitment and green practices application. The

environmental strategy should address neglected areas such as control of harmful emissions. The management must also promote partnerships with external stakeholders such as supporting local communities in environmental activities cooperating with NGOs training customers in environmental management as well as teaming up with local government and recycling firms to promote waste sorting and recycling.

Green practices are well received by the employees and embraced by hotel organizations. Most of the tourists in China are willing to stay at a green hotel despite being unclear about the determining factors of how the property is so designed. Moreover travelers or guests support hotels green practices. It is true that there are differences between the concepts demand and support or willingness however a widely considered view is that guests or travelers approve of green practices of the hotel industry.

TABLE I  
SPRINKLING REFLECTIONS ON 'GREEN' PROGRAM REVIEWS

SerialReferences No	Title	Aim/ Objective/ Purpose	Methodology	Respondents/ Test Attendance	Key Findings	Limitations
1. [64]	'What are the barriers to implementing environmental practices in the Irish Hospitality Industry'?	The purpose of this paper is to examine the literature in relation to the barriers to implementing environmental practices within the Irish Hotel Industry.	Primary research through structured interviews with 3 hotel properties and also a questionnaire survey will be sent to all registered members of the Irish Hotel Federation.	Registered members of the Irish Hotel Federation.	The implementation of an environmental strategy requires time and an investment outlay in order to achieve long term sustainability.	Limited awareness among owners <ul style="list-style-type: none"> <li>• complacent attitude</li> <li>• restricted environmental practices</li> <li>• financial constraints customers' attitudes and preferences</li> </ul>
2. [66]	'Eco-Certification Programs for Hotels in California: Determining Consumer Preferences for Green Hotels'	To evaluate the perception of eco-certification by customers.	Literature Review-Green lodging review program. Based on secondary data and experts views.	Graduate program students	Awareness of hotels' eco-labels and eco-certification programs is a must.	Lack of awareness of hotels eco-certification programs consumers unwilling to pay a premium price for eco-certified hotels
3. [67]	'Environmental Awareness in Hotel Industry'	To access the environmental awareness among the hotel representatives in Europe, as well as gathering information initiatives already taking place within the industry.	Questionnaire via e-mail.	Hotel Representatives in Europe.	Environment is a key factor in the development of hospitality and tourism sector; co-operation among various hotels is essential.	Lack of awareness requires extensive marketing and promotion increase in operational costs
4. [68]	'A Field Survey of Environmental Initiatives at Selected Resorts in Malaysia'	To investigate the environmental attitudes and initiatives of a small sample in the Malaysian hotel industry in order to obtain insights of the current environmental state of the country.	Random Sample survey.	10 different resorts in Peninsular Malaysia.	Most of the resorts realize the importance of environmental protection and therefore they take initiatives to fulfill their ecological responsibility.	Implementation of environmental practices was still minimal due to unattractive benefits compared to costs and also there is lack of rebate from the government to encourage hotels to take these measures.
5. [69]	'Environmental responsibility and business regulation: the case of sustainable tourism'	The aim of this paper is to assess the role of self regulation, or voluntary practices of environmental regulation, as a regulatory form acceptable to both business and environmentalists.	Survey of 69 companies and institutions in the UK outgoing tourism industry.	Nil	Results indicate that business has adopted a wide range of practices, but considers them to be weak regulatory instruments because ultimate responsibility for change lies with host governments via legislation.	Nil

6.	[70]	'Factors Influencing Environmental Management Practices Among Hotels in Malaysia'	To investigate the factors that influence hotel managers' attitudes towards sustainable tourism practices in Kuala Lumpur and the state of Selangor in Malaysia.	The study involved a sample of 60 hotel top managers drawn from the state of Selangor and the Federal Territory of Kuala Lumpur. According to the results, it was hypothesized that factors influencing STP are significantly related to hotel managers' attitude towards STP. It was revealed that knowledge and initiatives are the most significant predictors in STP among the seven variables that have been investigated.	The study distributes 104 questionnaires to hotels ranging from one star to five-star categories including budget hotels. Out of this figure, 60 copies of the questionnaires were returned and analyzed.	In terms of knowledge, it can be mentioned here that the more knowledgeable hotel managers are, then the more likely they adopt STP in their hotels.	The variables measuring regulation, training, formalization, top management, and reduced did not reveal a significant contribution to STP among hotels in the Malaysia.
7.	[71]	'Food waste separation in large New Zealand hotels: Barriers & Incentives'	To gain an understanding of the barriers and incentives to food waste separation in large commercial hotels. To provide stakeholders with sound research from which to develop effective waste management policies.	Interviews were conducted in Auckland, Wellington, Rotorua and Queenstown with: Hotel Operators Waste Management Contractors Disposal Facility Operators Governance Authorities Some hotels also provided waste data. The study was conducted in four New Zealand locales.	Hotel Operators, Waste Management Contractors, Disposal Facility Operators, Governance Authorities	This research demonstrates the New Zealand hotel sector produces a significant amount of food waste that has the potential to be utilized as a valuable resource. Recovery technologies such as composting and anaerobic digestion enable the energy and nutrient potential of food waste to be realized.	Nil
8.	[72]	'Greening The Hotel Industry: Impossible, Inconvenient Or Shrewd?'	Focus is on the question whether business goals and greening are irreconcilable concepts within the hotel industry.	Discussions at the International Hotel Conference, Rome.	400 hoteliers/ senior executives.	It is possible for businesses in the hotel industry to reconcile the concepts of hospitality, profitability and greening, and a number of guidelines, methods, tools, materials and technologies to do so are already available.	Nil
9.	[73]	'Going green in the hospitality industry'	The purpose of this research is to examine whether a hotel's greening efforts are a reason why everyday guests or hospitality professionals choose a hotel and whether there is guest data to support the need for hotels to become green establishments.	Purposive, Convenient Sampling. Survey through Social networking websites.	Meeting planners working in the U.S hotel industry.	A hotel may want to Create an environmental program for the greater good, but in the down economy, it may not be the right time. The best solutions maybe to start small and make little changes that will ease the guest into the bigger picture and then invest slowly in larger changes.	A major barrier to becoming an environmentally friendly hotel is not seeing the urgency to go green from the guests. The consumers, for the most part, do not want to be involved in the changes, but just know they are occurring. Also, there are many hotels that are just calling themselves green to appear more environmentally friendly and to sway the consumers.

10.	[74]	'How To Increase Your Bottom Line By Going Green'	To learn the benefits, this can be harnessed from being green, as well as to operate your property in the most sustainable way possible.	Nil	Nil	Hotels must develop an environmentally responsible brand and embed a 360-degree view of sustainability within the business model. Price, quality, brand and convenience will continue to drive consumer spending, but sustainability will increasingly be part of the decision making process.	Nil
11.	[75]	'Green Hotels: Opportunities and Resources for Success'	To discuss several topics and case studies that illustrate ways hotels are becoming greener.	Nil	Nil	For a hotel to change its traditional ways of operating takes time and the ability to look past the expectation that if something is sustainable is will be more costly and will have a slow payback rate. A very important factor in becoming green is to realize that while some steps may be small, none are insignificant.	Nil
12.	[76]	'The Advantages of Green Management for Hotel Competitiveness in Taiwan: In the Viewpoint of Senior Hotel Managers'	To investigate the advantages of green management for hotel competitiveness based on the viewpoint of hotel senior managers.	Case study and in-depth interview are used as our study method.	Case study of two hotels- The Westin Taipei Plaza; Interview with senior executives on 5 aspects – green purchase, environmental policy, hotel management , employee education and consumer education.	Hotels can save operational cost and reduce the entire societal cost through carrying out green management.	Nil
13.	[77]	'An investigation on hotel employees' perception of green practices'	To understand the perception of green practices.	Data collection and Pilot Rest.	Data was collected from 220 employees working in eight green certified hotels in Orlando.	The employees' perception regarding green practices was not different than one of hoteliers in terms of importance and performance; employees weighted the green practices that were beneficial to them as more important than green practices that required their behavior change.	Majority of studies on green practices have focused on manufacturing operations; the hotel industry as a whole should be investigated as it has a unique set of circumstances and challenges that could likely yield differing results; there is a need to examine how hotel employees perceive green practices in order to better understand application of green practices to the hotel industry.
14.	[78]	'Hotel Guests Preferences for Green Hotel Attributes'	To identify a list of green attributes guests would prefer to have in the guest room of a hotel.	Data was collected from attendees of a hotel developer's conference that took place in Las Vegas, Nevada in March 2008.	Nil	Nil	Lack of control over the participants' desire to respond the way they think they should, as opposed to responding with their true beliefs. Again, The sample in the present study is small and rather homogeneous. The results, therefore, cannot be applied to the general travelling population.

15.	[79]	'Hotel companies' environmental policies and practices: a content analysis of their web pages'	To analyze the environmental management policies and practices of the top 50 hotel companies as disclosed on their corporate web sites.	Employed content analysis to review the web sites of the top 50 hotel companies as defined herein.	Nil	Only 46 per cent of the selected hotel companies used web pages to post information related to environmental issues on their public web sites. The web pages of Wyndham, IHG, Accor, Whitbread, Hyatt, Rezidor, Sol Melia, TUI, and Scandic featured more revealing environmental information than that posted by other companies, which indicated their environmental commitment and engagement. The results of content analysis identified 12 major environmental focus areas in which the sample hotel companies engaged.	First, this study focuses only upon the environmental information of sample hotel companies' web sites. The environmental policies and practices disseminated by the companies through other communication media are beyond the scope of this study. Second, this web site analysis reveals that web page information may be changed and new environmental information may be added at any time. The findings of this study are based upon a snapshot of available web sites as of March 2010. Third, two coders conducted this content analysis, and human errors are always possible in coding data due to fatigue, personal bias, and perception.
16.	[80]	'A survey of environmental management by hotels and related tourism Businesses'	The paper is a preliminary study, part of more comprehensive study to identify environmental strategies and practices of hotels and related business.	Nil	Nil	Nil	More hotels are needed for study in order to draw more meaningful conclusions. A more systematic research method is necessary also for the next stage of research.
17.	[81]	'How Green Are North American Hotels? An Exploration of Low-Cost Adoption Practices'	To examine the extent to which hotels in the United States have embraced eco-friendly, or "green," operational and marketing strategies. In particular, the aim is the adoption of no-cost or low-cost practices that have been shown to mitigate or reverse environmental damage.	Random sample of 1,000 hotels.	Nil	Chain hotels are stronger adopters of green practices in the country than independent hotels.	Nil
18.	[82]	'Implementing sustainable practices in Greek eco-friendly Hotels'	To illustrate the benefits of Greek eco-friendly hotels while they are implementing sustainable methods of operation. Another purpose of the paper is to identify best practices of sustainability in the Greek hospitality industry and present them in a step-by-step model aiming to encourage and assist more hoteliers to implement green initiatives in their lodgings.	Online-questionnaire; Purposive Sampling.	On-line questionnaire sent to all the hotels certified with the Green Key.	Main motives towards the greening of the Greek establishments are the financial benefits and the economic support through operational programs.	Nil
19.	[83]	'An Assessment of Management Commitment to Application of Green Practices in 4 – 5 Star Hotels in Mombasa, Kenya'	To establish the current state of green practices in four to five star hotels in Mombasa, Kenya. And also to determine the relationship between management environmental commitment and organizational involvement in green practices.	Data collection.	Questionnaires, interview schedules and observation checklists from top managers and line managers.	The results pointed out to a positive relationship between hotel management commitment and application of green practices. The findings indicated not only the importance of having an environmental policy but also a better understanding of green practices so as to nurture commitment. 88.9% of the managers were not satisfied with their current green practices.	Nil

20.	[84]	'Perception of Green Hotels in the 21st Century'	Nil	Convenient Sampling.	Consumers in the Midwestern part of the United States.	Consumers seemed ready to incorporate "green" hotels into their travelling excursions. Consumers had a positive perception of green hotels.	Sample selection and the number of participants in the study.
21.	[85]	'The Influence Of Environmental Values, Economic values And Social Structure On Consumer's Choice of Green Hotels: The Case Of Luxury Hotels'	To examine consumers attitude towards hotel green practices and ultimately consumers green hotel use intention, all in the context of the luxury hotels.	Nil	Nil	The outcome of the research will provide a better understanding of consumer green hotel choices and better account for the discrepancies between consumers environmental beliefs and their actual hotel decision choices.	Lack of customer knowledge, lack of customer demand, lack of environmental regulation.
22.	[86]	'The adoption and implementation of environmental management systems in the New Zealand Hotel Industry: The Managers' Perspective'	To determine New Zealand hotel managers' awareness of environmental management system (EMS); to identify sustainable programs that have been implemented in New Zealand hotels; to explore the hotel managers' understanding of the benefits associated with the adoption and implementation of EMS and to identify hotel managers' understanding of the possible barriers associated with the adoption and implementation of EMS.	A quantitative survey approach through which environmental management systems in the accommodation sector of New Zealand were examined.	The data was collected through a postal questionnaire distributed to 41 hotels that agreed to participate in this research, out of which 36 hotels were involved in completing the survey. In total, 94 hotel managers participated in this study, representing 36 hotels from different parts of New Zealand.	Nil	Nil
23.	[87]	'Sustainable Hospitality'	To successfully integrate hotel customers into sustainable hospitality process by understanding guest expectations.	Tracking Study. Carried out with Ifop, this study scrupulously respects the scientific and deontological principles of sample surveys.	The samples are representative of each country's hotel clientele.	All guests feel concerned by sustainable development; guests consider themselves an essential link in the chain of sustainable development. Sustainable development is an increasingly visible criterion in the choices and behavior of hotel guests, regardless of their nationality.	Nil
24.	[88]	'Environmental measures for hotels' environmental management systems'	To identify and validate the environmental measures undertaken by these three hotels, the study adopted a qualitative approach.	Data Collection and Quantitative Analysis.	Nil	Many environmental measures being applied in deluxe hotels with ISO14001 EMS certification.	There is a paucity of information about the actual environmental measures implemented in ISO14001 certified hotels.
25.	[89]	'Hoteliers' Perceptions of the Impacts of Green Tourism on Hotel Operating Costs in Zimbabwe: The Case of Selected Harare Hotels'	To identify the practices being carried out at different hotels in terms of water, energy use and waste management; assess the extent to which the practices adhere to the green concept; evaluate awareness levels of employees on the concept of green practices and operating costs; and to develop strategies for hotel cost control through green tourism.	Survey Strategy i.e., structured questionnaire and in-depth interview.	Nil	Nil	Employees perceive green practices negatively mainly because the benefits of the program do not accrue to them. Also employees agreed that most of the highlighted green practices could reduce operating costs, although they are a few practices they disagreed to employees are not willing to participate in practices that imply behaviour change or that can compromise the quality of the final product.

26.	[90]	'Responsible Resource Management in Hotels – attitude, indicators, tools and strategies'	To evaluate the level of environmental awareness, identify drivers capable of changing attitudes of the hospitality business towards the environment.	Survey.	European Hoteliers.	Nil	Nil
27.	[91]	'Greening in the United States hotel sector: An exploratory examination'	To explore the concept of greening in the U.S. hotel sector. Much of the existing research on the topic of greening is relegated to the European and Asian hotel sectors.	Questionnaire – directly administered and collected.	Consumers in the Midwestern part of the United States.	Nil	Nil
28.	[92]	'Chinese Hotel General Managers' Perspectives on Energy Saving Practices'	To identify the energy saving practices in Chinese hotels, and to analyze their feasibility and profitability.	Sample and data collection, Questionnaire design.	General managers of Chinese hotels.	Nil	Nil

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