

Evaluating Strategies for Sustainability and Business Performance in the Hotel Industry of Cyprus

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Abstract: Several studies have been carried out on the topic of sustainability management. However, little has been done to evaluate the actual effects of environmental and energy management as applied to the hotel industry. This paper provides an assessment of sustainability aspects and the prospects of proactive environmental management in the hotel industry. For this purpose, interviews have been conducted to a representative sample of four- and five-star hotels in Cyprus. Hotels were chosen based on geographical stratification. Data was collected based on the responses of general managers of the selected hotel enterprises. The results of the study showed that proactive environmental management, and specifically life-cycle and conservation of water resources bring multiple benefits in the hotel industry. It is noteworthy that these benefits create a win-win situation for business and society.

Keywords: Proactive environmental management, Green hotels, Sustainability management, Energy Management, Hotel industry

1. Introduction

The hospitality industry comprises of various types of hotel units: guesthouses, resorts, apartments and hotels. These hotel units can have a significant impact on the society and the economy but also on the natural environment, which is going through a major climate crisis. As a result, tourism and sustainability is a growing field of study and hospitality establishments realize the need to become more environmentally responsible (Visser et al, 2010).

Environmental problems arising in the hotel industry can be quite impactful. So, there is a clear need to identify specific policies to deal with such problems. Environmental issues must be taken into account when delivering the hotel accommodation process. The tourism industry accommodates millions of people around the world each year. Therefore, good environmental management would have a positive significant impact for business and society. Good environmental management practice includes things such as protecting the air from pollution, water, landscape and local heritage. Good environmental management has also an impact on economic development as well as the well-being, health of people, and the quality of life in given region.

Effective management, maintaining and recycling of resources obtained from air, soil, water and the ecosystem as a whole are essential for the supply of safe food, drinking (potable) water and shelter. As populations grow, increasing pressure is placed on the environment. Air pollution, deforestation, land degradation, poor water quality and loss of biodiversity all become significant environmental threats. Human activities such as transport, energy use, industry and agriculture all put significant pressure on the environment. For example, the hotel industry could significantly reduce the harmful impact on the environment by initiating strategies and through prudent energy use.

The purpose of this paper is to investigate aspects of sustainability in the hotel industry and evaluate current strategies and their effectiveness. These include: environmental proactivity, environmental management, life cycle and saving of water resources. The evaluation has been carried out at hotels in a number of cities in Cyprus. The findings would be useful for hotel managers in formulating operational and strategic plans aimed at reducing harmful impact on the natural environment. Such an environmentally-friendly approach would additionally create a positive brand-image for a given hotel enterprise, thus creating a significant competitive advantage.

The following section provides a literature review on the topic of sustainability in the hotel industry. This is followed by the methodology section which describes how data was collected from semi-structured interviews. This leads to the section which presents the results and discusses the responses obtained from hotel managers. Finally, the conclusion focuses on the implications for the hotel enterprise and the environment.

2. Literature Review

The articles selected for a comprehensive literature review on the topic of sustainability have been grouped into four sections. The first section includes surveys that have as a common feature environmental proactivity of hotel units. The second section includes research aimed at investigating environmental practices used in hotel units. The third section focuses on the life cycle effects of hotel units. The last section has grouped articles which investigate water conservation in hotel units.

2.1 Environmental Proactivity

Proactivity refers to additional voluntary effort which yields a higher level of commitment and resources, and which is expected to improve business performance. (Nakao et al, 2007; Galdeano-Gómez et al, 2008). Environmental proactivity is defined as a set of environmental strategies and practices applied by a company to achieve its environmental goals (Jorge Pereira-Moliner et al, 2015).

As suggested by Sharma & Vredenburg (1998), proactive environmental practices positively affect a firm's financial performance by creating pro-performance organizational capabilities. However, according to Jabbour and Santos (2006), environmental activities must be integrated into the company's overall business strategy to get overall improved company performance. Environmental performance, according to De Burgos Jiménez and Céspedes Lorente (2001), could be defined as the reduction of the negative impact on the natural environment due to a company's activities and social perceptions of such impact. Oreja-Rodríguez and Armas-Cruz (2012) further suggest that environmental performance is the extent to which the firm achieves its environmental goals. This is parallel to competitive strategy suggested by Porter (1985). Following this path, companies which create and maintain a competitive advantage are able to achieve better levels of performance than their competitors. Previous research on the relationship between environmental management and a firm performance suggests better rates of return can be expected due to a firms' competitive advantage arising from proactive environmental management (Lindell & Karagozoglu 2001; López-Gamero et al, 2010). Wagner (2005) argues that a company's financial performance also affects its environmental management activities because a business with good financial performance can allocate more resources to environmental initiatives.

2.2 Environmental Management

Middleton and Hawkins (1998) describe an environmental management system and day-to-day activities that a business undertakes to protect, enhance or reduce its negative impact on the environment. Mensah (2006) defines environmental management as the continuous process adopted through management decisions, whereby the actions of a hotel result in the reduction of negative impact on the environment. So defined, environmental management in hotels began in the form of initiatives undertaken by various organizations and activities in the last three decades.

Environmental management issues that concern the hotel industry are typically waste recycling, waste management, energy conservation, water conservation, legal compliance, purchasing policy and environmental education (Zhao & Merna 1992; Forte 1994; Kotler et al. 1999; Middleton & Hawkins 1998). Waste management and energy conservation have been of critical concern for environmental management in hotels. A survey conducted by the American Hotel and Motel Association (AH & MA) showed that hotel managers rated reducing energy consumption and managing waste through recycling as their top concern (Stipanuk 1996).

At Kingfisher Bay Resort and Village (KBRV), in Queensland, Australia, waste is separated, compacted and shipped to the mainland (Faulk 2000). Statler Hotels have also installed a waste chute that sends trash directly to a designated waste room. The waste is then separated and sold (Stipanuk 1996).

Chan and Lam (2001), on the other hand, believe that the thrust of the green campaign in the tourism hospitality sector has mainly focused on energy conservation, as evidenced by the number of hotels engaged in energy conservation. The Saunders Hotel uses thermal glass windows to reduce energy costs (Patterson 1995). The Intercontinental Hotel has purchased a machine system to reduce energy consumption, with positive results affecting energy consumption and the hotel's financial performance. In the case of KBRV, the architectural design and the use of energy-saving lighting bulbs allow for their minimal energy consumption (Faulk 2000).

Environmental management also aims at reducing water wastage and improving water quality. The hotel industry is significantly affected by water availability and its quality, it strives to prevent over-consumption of water and it addresses water conservation costs (Zhao & Merna 1992). One of Sydney's Novotel and Ibis hotels have reduced potable water consumption by 50% through an implementation of a dual-pipe system (July 2002).

Cost saving practices, waste management, energy and water conservation, and environmental management practices have all become popular (Hawkes & Williams 1993; Forte 1994).

2.3 Life Cycle of the Hotel Unit

The use and construction of buildings is responsible for 40% of energy consumption, 17% of water consumption, 32% of CO₂ emissions and 25% of wood consumption (Rosselló-Batle et al, 2010). The analysis of a life cycle model created by the University of Auckland shows that environmental impact follows a pattern similar to the energy life-cycle (Mithraratne & Vale 2004). Mora (2007) emphasizes that the use of waste in construction is a necessity to improve environmental management. Thormark (2000) showed that reusing bricks and tiles instead of new materials can contribute to a significant reduction in the environmental impact of a building. Her research also showed that low energy consuming buildings have about 37-42% embodied energy that can be recovered through recycling. Arena and De Rosa (2003) concluded that energy saving materials from low energy consuming buildings can be used for solar energy purposes resulting in improved thermal insulation of a building.

2.4 Saving Water Resources

Water is an important factor in the functioning of the hotel sector. The use of water in hotels can be a significant environmental and economic problem in areas where the number of available rooms is very large and where there is water scarcity. For hotel businesses in areas with high inflow of tourism, the supply of water is more expensive (Barberán et al, 2013). Meade and Gonzalez-Morel (2011), González and Yousif (2015), and Hamele and Eckardt (2006) all focus on the use of water saving methods, pointing to a 30% and 33% reduction in water consumption (Barberán et al, 2013). According to the researchers, saving water using appropriate systems can bring about significant water saving and significantly improve economic performance of hotel units.

2.5 Synopsis

The aforementioned research has showed important factors in the functioning of hotel units. Most studies suggest that good environmental management practices, such as energy and water conservation constitute important factors for an efficient and effective operation of a hotel. Therefore, it becomes imperative to evaluate such environmental/energy management processes in the overall operation of a hotel enterprise.

3. Methodology

The purpose of the study is to investigate sustainability management practices in the hotel industry. Specifically, environmental proactivity, environmental management, the life cycle and the saving of water resources practices are evaluated based on a representative sample of hotel enterprises of Cyprus.

3.1 Research Questions

The following research questions are addressed in the study in order to fulfil the research objectives:

- To what extent does environmental proactivity help the hotel?
- To what extent does environmental management help the hotel performance?
- Which energy sources do the specific hotel units use?
- What is the role of the life cycle in the hotel unit?
- Is there economic profit following the adoption of environmental practices?

3.2 The Research Design

For the purpose of this current research, primary and secondary data was selected. Secondary data included previous work mentioned in the literature review concerning environmental proactivity, and the investigation of environmental practices, hotel life cycle effects and hotel water conservation.

3.3 The Sampling Process

The sampling procedure was a random selection, and it included five hotel units in Cyprus: from Ayia Napa, Paphos, Limassol and Nicosia. As shown in table 1, one five-star hotel was chosen from Ayia Napa, one four-star hotel was chosen from Paphos, two five-star hotels were chosen from Limassol and one five-star hotel was chosen from Nicosia. The total sample was 5 hotel units. The interviews were conducted with the managers/chief engineers of the sampled hotels.

Table 1: Selected Sample of Hotels

Hotel Enterprise	Geographic Location	Size
Adams Beach Hotel 5*	Ayia Napa	
Saint George Hotel 4*	Paphos	
Amathus Hotel 5*	Limassol	
Four Seasons Hotel 5*	Limassol	
Hilton Nicosia 5*	Nicosia	

3.3.1 Saint George Hotel 4*

Saint George Hotel is an elegant, premium all-inclusive beach & wellness resort, exclusively created for adults over 16. It offers a ‘dine-around’ gastronomic journey through seven authentic restaurants and five stylish bars to satisfy one’s senses. Saint George hotel has an excellent location on the beach, 6km from the city centre of Paphos and the town’s shopping centre.

3.3.2 Amathus Hotel 5*

Amathus hotel is located in Limassol and it is one of the oldest five-star hotels in Cyprus. It is a member of the Leading Hotels of the World. This luxury designer hotel offers a fabulous range of state-of-the-art facilities, top-notch services as well as an award-winning spa and luxury accommodation in Limassol ensuring world-class luxury holiday experience.

3.3.3 Four Seasons Hotel 5*

The prestigious independently-owned and operated Four Seasons Hotel is situated on a sandy beach east of Limassol, approximately mid-way between the airports of Larnaca and Paphos. As one of the best hotels in Cyprus, Four Seasons is committed to providing top-level standards of service and facilities, while adhering to the principles of sustainability, without compromising the 5-star experience offered to guests. It is the shared commitment of the management and owners of the Four Seasons Cyprus to ensure optimal environmental management in its operation.

3.3.4 Adams Beach Hotel 5*

Adams Beach Hotel is located on the spectacular beach-front at Nissi Bay. The resort is located around 2.5km from the centre of Ayia Napa, renowned for the place’s vibrant night-life, local pubs, clubs, but also offering family-oriented activities (a permanent funfair) as well as numerous traditional festivals. The hotel participates in the evaluation along the criteria set out by the ‘Promotion of Circular Economy in hotels and tourism accommodation establishment guidelines’, which aim to guide and facilitate the transition of Cyprus hotels and tourist accommodations establishments to green economy standards.

3.3.5 Hilton Nicosia 5*

Hilton Nicosia is part of the chain Hilton hotels and resorts worldwide. The hotel is located in Nicosia's business district, within five kilometres of the city centre. ‘Travel-with-purpose is Hilton's Environmental, Social and Governance (ESG) strategy to drive responsible travel and tourism globally. Through Travel with Purpose, the hotel seeks to create positive environmental and social impact across their operations, supply chain, and communities.

Recognising the impact of tourism on natural resources availability and climate change, hospitality professionals in Cyprus will work to ensure that the hotels in Cyprus implement energy-saving devices where possible, ensure responsible waste management, avoid pollution, and encourage customers to respect the environment and participate in the efforts to minimise the impacts of their operation.

4. Results

As mentioned in the methodology chapter, the total sample of participants has yielded 100% response rate. The interviewees from the 5 hotels included in the survey all held the position of Managers/Chief Engineers and were responsible for handling matters relating to environmental sustainability in the respective hotels. The main purpose of this section is to analyse the collected data from all four and five-star hotels and investigate the environmental issues in the hotels which participated in the study. What follows is a discussion of these topics based on the responses of the hotel managers participating in the study.

Based on their responses, the main survey findings are summarized below.

4.1 Was the Hotel Environmentally-Friendly From the Start, or did you Become Aware in the Course of its Operation? Did the Hotels do the Necessary Renovations According to Environmental Practices?

The majority of the hotels included in the survey were built at different points of time, and additional floors were added. They were not environmentally-friendly from the beginning, and this constituted the main challenge. The main goal was thus to properly balance the three main challenges - economic, environmental and social - and to achieve the highest customer satisfaction at the lowest cost for the society and the environment. Being a responsible business is one of the main purposes a hotel; the hotels hold certificates and awards proving that they comply with legislation, and that they have met the expectations expressed by travel agents and customers.

4.2 What Essential Methods and Practices do you Follow in Order to Contribute to the Protection of the Environment / Which Energy Sources are Involved in These Practices?

The surveyed hotels are interested in the whole range of practices, starting with proper management of water in rooms, making customers aware when they should wish to change the room items, i.e. the towels, duvets, sheets to save water and electricity. The major practices implemented are as follows.

Water consumption is recorded three times a week to calculate usage and, if possible, find ways to reduce it. Water saving measures are the following:

- flow restriction on faucets in all rooms
- air valves are installed in the water circuits
- flush valves in WC allow limited flush flow to save water
- promoting planting trees and plants that demand less water
- residence halls place information cards about voluntary towel change system; all rooms have a towel usage card which encourages guests to use their towel more than once
- information displayed in all rooms on water saving measures

Electricity levels are monitored three times a week by maintenance service to ensure reasonable daily consumption, and:

- sensors are installed for external lighting
- natural light is used to illuminate the living room and restaurant where and whenever possible
- outdoor lighting monitored by timers; there is a constant change of working hours according to sunset and sunrise time (BMS).
- sensors turn off air conditioning in rooms when balcony doors are opened

In addition to the above, hotels have reported recycling paper, glass, plastic, and oils in the kitchen. They try to encourage, wherever possible, that cleaning materials used are environmentally-friendly. Finally, they maintain own garden where orange trees, apple trees and herbs have been planted for the use in the hotel kitchen.

One pioneering hotel has successfully implemented advanced energy and water saving technologies, and it holds an energy-saving award from the Cyprus energy authorities. It is the first hotel in Cyprus and one of the few in southern Europe with an advanced central geo-transportation and heat recovery system using seawater. Combined with a reverse osmosis desalination unit, it provides drinking water for the hotel to meet all its needs, including in guest rooms, swimming pools, for indoor use and for the watering of 5000 square meters of gardens, saving about 4000 tons of water per month.

To save electricity, LED lamps are used throughout the hotel. Glass, plastic, oils and paper are recycled. There is cooperation with the GREEN DOT. In the hotel rooms, there is an option for customers, if they so wish, to keep the sheets and towels for a second day. There is also a system to automatically turn off an air conditioner when

the balcony door is opened. There are motion sensors that illuminate various areas and a building management system (BMS) for building management.

4.3 Does the Size of the Hotel Play a Role in Terms of Energy Saving?

All surveyed hotels stated that the size of the hotel certainly plays an important role, especially when it comes to handling volumes of plastic, glass and paper, and they are undeniably huge compared to the volumes used in a smaller hotel. The bigger a hotel is, the more electricity and water it uses and the more waste it produces. If it saves more water/electricity and recycles more volumes of paper/glass and plastic, the savings are greater. More research is needed to ascertain whether the concepts of savings and area are interrelated.

4.4 Does the Hotel's Life Cycle Play any Role in the Hotel's Progress and Development?

The surveyed managers stated that an average life cycle of a hotel room, depending on usage, is always around 6 to 8 years. Old items go for recycling. Smoke detectors containing a radioactive element go for special recycling. Minibar fridges which contain ammonia also go for special recycling. 100% of the room is recycled, no old items are reused.

The surveyed hotels reported implementing other related environmental practices. For example, old sheets were utilized in cleaning, some items were repaired and replaced. Mattresses in rooms were changed, but old ones were not thrown away; they were sold at very low prices online.

4.5 Was any Specific Training Given to Staff Following the Adoption of These Practices?

All surveyed managers stated that environmental practices were applied holistically and their staff were aware of the environmental practices used. Everyone is part in the chain; from the maid who enters the room and collects waste which must be separated into plastic, paper, aluminium, to the technicians who, when a light bulb burns out, must ensure it goes to a lamp bulb recycling bin. Everyone participates in the effort, and staff are trained from day one.

Continuous staff training is provided on the correct use of the various cleaning chemicals. Kitchen staff are trained on how to collect used oils. There is training concerning proper storage of dangerous substances, and on the sensible use of electricity, rational waste management, gas management and overall consumption recording. Housekeeping department staff are trained to monitor any leaks that might appear, and inform the maintenance department accordingly. Cleaners are informed about the hotel's decision to use herbal-based products; to clean floors, they use soda; where possible, stone surfaces are cleaned with vinegar. Care is taken that all packages have labels stating their contents to prevent accidents. All employees are well informed about the need to recycle, and told where special dedicated collection bins are.

4.6 Is There a Specific Manager Employed for Environmental Management of the Hotel and if so, What are his/her Responsibilities?

All of the surveyed hotels stated that there is a specific manager dealing with environmental management. His/her responsibilities are many, including maintaining quality and handling overall environmental management. The spectrum of responsibilities is thus quite large. One hotel stated that it organizes weekly meetings to decide on the tasks based on current environmental changes and needs. Managers direct their teams, identify deficiencies set new goals and monitor ensuing activities. They study energy consumption data files and submit a systematic report to the company to which the hotel belongs. One of the pioneering hotels points out the importance of setting new goals and determining tasks to achieve them, and subsequent monitoring of the tasks and activities. Functions and alterations are checked to meet European standards, anything that does not meet them is entered as a target in a future renovation plan.

4.7 To What Extent has your Environmental Orientation and, by Extension, Your Preparation Based on Environmental Criteria (Environmental Proactivity) Contributed to the Hotel's Performance?

In general, all changes made based on environmental criteria have clearly brought the expected improved performance. These changes were made with the aim of reducing energy consumption and to save energy. Overall financial performance also depends on EAC fluctuations and changes in oil prices but, in the long run, changes geared towards environmental protection have brought profit.

The continued expansion of hotel properties and the addition of extra floors makes it difficult to compare energy consumption. A reduction in energy consumption is expected after expansion. The shift towards environmental concerns is understood to have contributed, and will continue to contribute to the hotel's performance.

4.8 After Your Move Towards Practices Aiming at the Protection of the Environment, What are the Percentages of Energy Savings you Observed? Is There any Source of Energy That you Save the Most? Was it as Profitable as Expected?

General managers report being vulnerable to EAC increases and oil price fluctuations. Generally, after implementing environmental reforms, consumption rates have decreased as expected. Since they consume less they are charged less. There is always the unpredictable factor of the increase in the price of electricity and oil - even if and when adopting environmental management is profitable. Whether it's recycling, saving electricity, water and wood, generally all plans and investment lead to profitability in the long run.

One of the surveyed hotels uses a sophisticated variable flow system that feeds the heat pumps with seawater, transferring the thermal loads of the hotels to the sea, thus reducing the energy required for cooling by around 40% compared to standard air-cooling systems, while the energy required for water heating is reduced by an average of 70%.

Generally, the energy sources mentioned above bring significant benefits and profits in the surveyed hotels. More specifically, there is energy saving of 60% and there is a 50% reduction in the annual consumption of drinking water.

4.9 What do you Think are the Negative Effects for a Hotel That has not yet Adapted Terms of Environmental Protection?

There are many negative effects for a hotel that has not yet implemented environmental practices. Only through the management of garbage through recycling, hotels avoid huge volumes of garbage. In terms of electricity consumption, with the use of more economical LED lamps, compared with older 50-watt lamps, hotels save a lot of energy. Regarding the management of kitchen oils, throwing them into the hotel sewers creates problems. Recycling them, automatically avoids damage to the sewage system.

Lack of awareness also affects the hotel's clientele, since it has been observed that European customers demand it. Central European and Scandinavian customers in particular show great interest in the hotel's environmental status. Even travel agencies demand some degree environmental sensitivity. Customers, and European customers in particular, are more environmentally aware and demand that the hotel is more active in protecting the environment.

The negative effects are many, including financial and in terms of hotel occupancy. European customers, in particular, ask for the hotel to follow environmental practices. On a financial level, the damage to a hotel's reputation is likely to be great. If one does not invest in modernization and in environmental projects, more and more problems will gradually arise, and a hotel may be forced to close.

4.10 Do you Think you Have Reached the Desired Level of Operation, or do you Have Room for Development Towards an Even More Environmentally-Friendly way of Operation?

The respondents stated that there is room to further develop their environmentally-friendly practices and it is in their future plans to reach higher levels of implementation. They take environmental protection very seriously, but there is room for improvement.

4.11 What are your Plans for the Future?

All of the surveyed hotels currently work on big project to benefit the environment. They have replaced old equipment with new energy-efficient one (coolers, refrigeration systems). Refrigeration systems in hotels in Cyprus are among the biggest contributors to overall expense, making up to 60 to 70% of electricity costs. Managers plan to renovate kitchens, with the goal to put in energy-efficient equipment, including energy-efficient refrigerators that save energy.

Another environmentally-friendly project concerns packaging of take-away products. Widespread and huge use of plastic that cannot be recycled means it ends up in landfills. Stopping the use of non-biodegradable packaging and placing food in paper automatically reduces the use of plastic packaging. This change in buffets and restaurants is in their immediate plans.

The surveyed hotels wish to keep their awards relating to environmental sustainability, and continue to further work towards the ideal of waste rate drop to 0%. They want to continue to further reduce the use of electricity and water consumption and increase recycling. Among future plans is the utilization of their roof-space, where

they want to grow herbs and spices for use in the hotel kitchen. In their buffets, the surveyed hotels report they will look to find some use for the food that is not being consumed.

5. Conclusions and Broader Implications for the Hotel Industry

A major conclusion is that environmental proactivity, environmental management, life cycle and conservation of water resources are beneficial for the environment and contribute towards overall success in the hotel industry. The hotels involved in the present research study started their operation as non-environmentally friendly hotels and have only gradually engaged in the implementation of environmental practices. Specifically, all hotels in our sample are currently using ecological cleaning chemicals, and they recycle plastic, oil, paper and glass. In the surveyed hotel in Nicosia, they also recycle batteries. The use of LED lamps is the most frequent way to save energy, and in the surveyed hotels in Limassol and Nicosia, the measures taken to save energy sources have already brought financial profitability and contributed to better performance. Regarding the life-cycle, all of the surveyed hotels were renovated, and three of the five hotels (Paphos, Limassol, Nicosia) reused material and/or objects after their renovation. All the hotels that took part in our research study are actively involved in saving water.

Our results confirm the findings of previous reviewed literature regarding environmental proactivity, and our surveyed hotel managers declare that environmental proactivity improves their business performance. As noted by Nakao et al. (2007) and Galdeano-Gómez et al. (2008), proactivity yields a high level of commitment and resources where business performance is expected to improve. The positive response of hotel managers in our sample clearly shows that competitive advantage could result from environmental proactivity. Customers look for hotels that implement environmentally-friendly policies. Environmental proactivity is attractive for new customers. Our research findings are in agreement with other studies by Lindell & Karagozoglu (2001), López-Gamero et al (2010) and Jorge Pereira-Moliner et al. (2015) who suggest that environmental proactivity supports creation of competitive advantage in the hotel industry. Further verification and validation of our current results could be carried out in a subsequent detailed quantitative survey, which would be the next step for a future research study.

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