

Green Practices in Egyptian Hotels: Importance and Existence

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ABSTRACT

Due to the growing interest in environmental issues; many businesses have become more environmental friendly. The hospitality industry worldwide is beginning to adopt the concept of green environment. Hotels are more likely to invest more in the implementation of green practices into many of their activities throughout facilities. However, such practices will help decrease the operating costs and increase the profits. It is important for hotel managers to be aware that green practices will not only help to protect the environment, but will increase revenue as well. A hotel uses huge amounts of energy and water for daily operations which puts stress on the environment. Therefore, hotel operators and their staff as well as guests should be actively encouraged to participate in such environmental practices. Moreover, Government Authorities may have a significant role to facilitate adopting green practices. As more environmental regulations appear and environmental awareness increases, tourists are increasingly searching for eco-friendly hotels over other hotels. Consequently, many hotels are beginning to implement various innovative methods to increase the green concept to their operations.

The research aims to investigate the importance and the existence of green practices in hotels in Egypt, regardless of being certified and non-certified. It will depict the current status of green practices in Egyptian hotels, specifically in two main areas—Water consumption and Energy consumption. It aims also to determine to what extent there is awareness toward green practices and their level of implementation.

To achieve the objectives, the research used a quantitative and qualitative data collection approach through reviewing the literature and distributing questionnaires. The research instrument utilized was

online questionnaire, which was developed based on the reliable benchmark that was gathered from the green certifications' benchmarks in Egypt. The population of the study included only 5-star hotels in Egypt, which are 150 hotels. This category represents the niche of hotels and is more capable to adopt such relatively new trend. A link to online questionnaire was emailed to all population elements, from which 49 were valid for data analysis, with a response rate 32.6%.

Results of the research indicated that there is significant difference between importance and implementation of green practices in Egyptian Hotels; with variance in each group elements. The exception was for those practices that are related to water conservation in green-certified five-star hotels; since most of the practices that were considered important, from managers' points of view, were implemented in their hotels. The outcome will give recommendation to enhance the green practices in hotel operations, as well as encouraging for potential implementation. Moreover, areas for future research are recommended.

Key Words: Green Practices, Green Certifications, Hotels, Egypt

1 INTRODUCTION

Many people are beginning to realize that the Earth is quickly becoming inhospitable due to the huge amount of air, land, and water pollution. They began to recognize that there is an ideal opportunity for people to take a step toward a greener Earth to help future generations. Based on such a perspective, many corporations have become more environmental friendly.

Tourism is one of the most promising drivers for growth of the world economy. While tourism has many advantages for any country, there are negative impacts associated with it as well. Some of these may include air, water and noise pollution, negative social aspects, labor problems, and detrimental effects on the animal and plant life, as well as other natural resources (Bohdanowicz, 2005; Dodds & Butler, 2005; Holden, 2008; Graci, 2009; Hall & Lew, 2009; Micioni, 2009). Tourism and the environment go hand in hand. People travel far and wide to enjoy recreational activities such as skiing in the mountains or surfing at tropical beaches (University of Nebraska, 2010). Green Hotel Association (2006) mentioned that the environment and the humans' well-being are very connected. The hotel industry cannot ignore how their practices influence the environment (Brown, 1996; Claver-Cortes *et al.*, 2007; Chan, 2008). In reality, a hotel uses massive amounts of energy and water for its daily operations, which puts stress on the environment. A hotel alone cannot maximize the energy and water savings. Instead, everyone involved including staff and customers should be actively encouraged to participate in such saving practices. Consumption of energy and water has the biggest effect on a trip's ecological footprint (Zein, *et al.*, 2008). As more environmental regulations appear and environmental awareness increases, tourists are increasingly searching for eco-friendly hotels over conventional hotels. Consequently, some hotels are beginning to implement various innovative methods to increase the greenness of their operations (Manaktola and Jauhari, 2007). In fact, the size and reach of Tourism sectors make it critically important, from a global resource perspective. That is, with even slight changes toward going green have significant impacts (UNEP and UNWTO, 2012). The hospitality industry worldwide is starting to become environmentally viable by the implementation of green practices into most of their facilities. Such vision would eliminate the planet contamination. It is important for hotel managers to understand that going green will not only help the environment. Moreover, it will decrease operating costs, allowing for increases in profits and enhancing employee retention rates (Elvis, 2013). Therefore, the hoteliers have to begin making the changes necessary for a greener tomorrow.

Accordingly, the purpose of this research is to investigate the importance and the existence of green practices in hotels in Egypt, regardless of being certified and non-certified. It will depict the current

status of green practices in Egyptian hotels. It aims to determine *to what extent* there is awareness toward green practices and their level of implementation. Moreover, it would develop guidelines and recommendations based on the outcome to help implement green practices in hotel's facilities.

2 LITERATURE REVIEW

2.1 Going Green History

The history of Going Green emerged in the 1980s and the 1990s. It was a new trend within all industries, which proved its predominance through the years (Kirk, 1995; Roarty, 1997; Pizam, 2009). There are some green hotels have been in existence for more than thirty years (Pizam, 2009).

In 1992, at the Earth Summit in Rio de Janeiro, the worlds' leaders agreed on a global environmental movement called Local Agenda 21 (LA21). This is the best-known initiative to start off the local programs in the 21st century by developing programs and putting them together to promote and develop green practices around the world (Leslie & Muir, 1996; Ashkin, 2007; Rachel, 2007; Klepsch & Schneider, 2012).

In 1993, Green Hotels Association started a campaign called '*Save the Earth,*' which spread around the United States very quickly. This campaign authorized the hotels to give guests the choice of changing the sheets and towels every day or not. By this practice alone, hotels saved approximately \$6.50 a day per occupied room and 5% of the utilities (Honey, 2008).

Many of hotel companies have developed a number of reporting tools to protect the environment. For instance, in 1997, Hilton International took an initiative action to create Hilton Environmental Reporting (HER), which is a benchmarking tool of Corporate Social Responsibility used for environmental reports (Bohdanowicz *et al.*, 2005).

2.2 Concept of Green Hotel

The concept of green hotel is revolving around a lodging property that performs a lot of practices and programs like energy and water savings and waste management to protect the earth (Manaktola & Jauhari, 2007; Kasali, 2009; Romppanen, 2010; Hatane *et al.*, 2012). Green hotels perform practices to eliminate the negative impacts on the environment globally (Friend, 2009; Chan & Hawkins, 2010; Radwan *et al.*, 2010), such as recycling and purchasing eco-products (Abu Taleb, 2005; Han *et al.*, 2011). Green hotels decrease the ecological impact by reducing the energy, water and waste use (University of Nebraska, 2010; China Luxury Travel Network, 2010). On the other hand, guests may perceive going green from different prospective, which can be implemented from their actions like using renewable energy and planting organic food (Siegenthaler, 2010).

The green hotel concept is an umbrella that includes the ecolodge. Eco-hotels are environment friendly properties that incorporate environmentally stable practices into their operations with the goal of preserving the Earth. Such hotels are expected to utilize distinctive strategies to minimize the negative effects on the earth; by employing strategies to use the water, energy and material in productive way, and by recycling and reducing solid waste (Alexander, 2002; Zsolnai, 2002; Han *et al.*, 2010; Romppanen, 2010). Eco-hotel is built in a way to protect the environment, culture and the surrounding natural ecosystem. It also helps increasing the awareness among all partners, including employees, guests and local people to be more environment friendly (Wood, 2002).

2.3 Reasons for Going Green

There are two reasons to go green. First, there is an environmental imperative to go green. Second, business stakeholders are already concerned about the environment now, and requiring businesses to implement green practices, which will help the environment by reducing the use of natural resources and negative impacts on them. As more pressure from the government, non-governmental organizations (NGOs), stakeholders and consumers is put on businesses; green practices can also be implemented (Gonzalez-Benito & Gonzalez-Benito, 2005; Saha & Darnton, 2005; Esty & Winston, 2009).

Many publications reviewed fields for going green within hotel industry, and mentioned some of their problem as well. These are usually occurring in four areas: *energy* (Kirk, 1996; Middleton & Hawkins, 1998; Fedrizzi & Rogers, 2002; Bohdanowicz & Martinac, 2003; Dascalaki & Balaras, 2004; Bohdanowicz, 2005; Bohdanowicz *et al.*, 2005; Shdeifat *et al.*, 2006; Ashkin, 2007; Budeanu, 2007; Zein, *et al.*, 2008; Romppanen, 2010; Klepsch & Schneider, 2012; Baerbel, 2014); *water* (Salen, 1995; Kirk, 1996; Alexander, 2002; Cespedes Lorente *et al.*, 2003; Essex *et al.*, 2004; Bohdanowicz, 2005; Kasim, 2007; Holden, 2008; Zein, *et al.*, 2008; Romppanen, 2010); *waste* (Kirk, 1996; Alexander, 2002; Bohdanowicz, 2005; Kasim, 2007; Zein, *et al.*, 2008; Romppanen, 2010); and *pollution* (Middleton & Hawkins, 1998; Gössling, 2002; Mensah, 2006; Bohdanowicz, 2006b; Graci & Dodds 2008; Holden, 2008; Zein, *et al.*, 2008; Hall & Lew, 2009; Romppanen, 2010; Halbe, 2013).

2.4 Benefits for Going Green

Going green has a lot of benefits by usually creating a good relationship with the local people and reducing poverty (OECD, 2012). By implementing green practices, hotels will have many benefits: (1) showing the hotels' dedication toward the environment, not only their profits; (2) help enhance the natural scenery; (3) making the environment healthier; (4) help the hotels to reduce their costs (Abu Taleb, 2005; Tzschentke *et al.*, 2008; Radwan *et al.*, 2010); and (5) improve the hotel image (Anglada, 2000; Anguera & Ayuso, 2000; Morrow & Rondinelli, 2002; Gonzalez, 2004; Bohdanowicz *et al.*, 2005).

Going green has many advantages as it could bring more benefits to employees (Graci & Dodds, 2008; Esty & Winston, 2009); achieve competitive advantage (Graci & Dodds, 2008; Esty & Winston, 2009; Lee *et al.*, 2010); develop customer loyalty (Manaktola & Jauhari, 2007; Claver-Cortes *et al.*, 2007; Esty & Winston, 2009; Zhang *et al.*, 2012); optimize financial benefits (Bentley, 2007; Claver-Cortes *et al.*, 2007; Doody, 2008; Katz, 2008; Esty & Winston, 2009; Esty & Simmons, 2011); and support laws compliance, social responsibility and risk management (Graci, 2002; Graci & Dodds, 2008).

2.5 Green Hotel Certifications

The certification procedure is the strategy by which an outsider gives affirmation to the organization that an item, process, administration framework complies with certain requirements (Toth, 2000). Certification is a method for guaranteeing a movement or an item meets certain standards. Inside the tourism industry, distinctive associations have created affirmation programs measuring diverse parts of tourism for quality within the entire industry (Bien, 2006). The application and participation in all green certification programs, eco labels, awards, codes of conduct and environmental/sustainable management systems are handled on a completely voluntary basis; with NO obligation for joining an environmental initiative (EPA, 1998). When a hotel has made the decision to accept and apply green

practices, they could be implemented without the use of outside experts, just by following the manuals and directions.

It was found that certifiers and verifiers are a boundary for hotels to be green (Chan, 2008). Certification fees are too high especially for auditing, assessment and accreditation (Toth, 2000; Chan, 2008; Tzschentke *et al.*, 2008). However, going green will decrease hotels' expenses and increase their revenue (Tzschentke *et al.*, 2008). Hotels that take eco-certification programs raise their room rates. Such a case might promptly increase income for every guest, but it might cut down the volume of guests. It might drive the guests to go for less expensive hotels that do not apply green practices (Houdre, 2008; Stark, 2009). Certification helps to improve the green practices, expand benefits and give exact data to guests (Mowforth & Munt, 2009; Geerts, 2014). Green certification is done by ensuring hotels are truly green.

The beginning was back to 1992, when Hilton International and other chains made one of the primary moves towards general green certifications in the hotel industry. They were establishing individuals from the International Hotels Environment Initiative (IHEI), which has 86 individuals including 11,200 hotels around the world. Then, it was later merged with the International Tourism Partnership (Honey, 2008). Hotels like Hyatt and Disney have their own certification programs. This additionally changes the edge in which hotels can have their own benchmarks and certifications (Bergin, 2010).

In December 1998, the United Nations Environmental Program (UNEP) distributed the primary report to welcome *Green Globe* to the business sector and urged governments and NGO's to use it. Suddenly, Green Globe became the biggest system in the field and the only one with a genuine worldwide scope, despite its disadvantages in the market up until now (Font, 2002; Griffin & Delacey, 2002; Ustad, 2010).

Green Hotel Certifications in Egypt: In Egypt, there are two categories of green hotel certifications—National and International. The *national* category is the certification of Green Star Hotel (Green Star Hotel, 2015, 2016), whereas the *international* category includes four types of certifications; namely, Green Globe (Green Globe Certification, 2015), Green Key (Green Key, 2016), Green Key Global (Green Key Global, 2016), and Travelife (Travelife, 2016). Each of these certifications has its objectives, standards, procedures, and rating framework or levels.

2.6 Hotel Green Practices

There are almost *nine* areas that a hotel can apply significant green practices to its facilities. These may include: (1) training programs for staff (Fedrizzi & Rogers, 2002; Shdeifat *et al.*, 2006; Kim *et al.*, 2011) and guests (Diener *et al.*, 2008; Millar & Baloglu, 2008; Morgan, 2009; Romppanen, 2010); (2) housekeeping in terms of guest rooms (Fedrizzi & Rogers, 2002; Shdeifat *et al.*, 2006; Hanna, 2008; Kasavana, 2008) and laundry (Getz, 2000; Fedrizzi & Rogers, 2002; Riggs, 2007; Green Hotel Association, 2015); (3) meeting rooms (Fedrizzi & Rogers, 2002; McPhee, 2006; Serlen, 2008);(4) food and beverage facilities including restaurants and kitchens (Fedrizzi & Rogers, 2002; Jones, 2002; Shdeifat *et al.*, 2006);(5) energy productivity either for lighting or air conditioning and heating system (Fedrizzi & Rogers, 2002; ESCWA, 2003; Bohdanowicz, 2006a; Shdeifat *et al.*, 2006; Diener *et al.*, 2008; Zein, *et al.*, 2008; Dalton *et al.*, 2009); (6) water protection (ESCWA, 2003; Bohdanowicz, 2006a; Kasavana, 2008; Godwin, 2012); (7) waste management (Bohdanowicz, 2006a; Baker, 2008; Lee, 2009); and (8) indoor environmental quality (Fedrizzi & Rogers, 2002; ESCWA, 2003; Diener *et al.*, 2008); as well as (9) Recreation & Transportation (Fedrizzi & Rogers, 2002; Shdeifat *et al.*, 2006; Baker, 2009).

There are numerous examples for implementing green practices in hotel chains around the World. Among them are The Intercontinental Hotel Group (IHG) (Klepsch & Schneider, 2012); Marriot Chain (Dasha, 2007; Blanke & Chiesa, 2008; Lee, 2009); Hyatt Chain (Fedrizzi & Rogers, 2002; Mandelbaum, 2008); Fairmont Hotel and Resorts (Fairmont Hotel and Resorts, 2008); Accor Chain (Blanke & Chiesa, 2008); and Ramada (Liz, 2016).

In Egypt, tourism policy incorporates green practices as a general objective (Helmy & Cooper, 2002; Helmy, 2004). On the other hand, *El-Gouna town* for instance, which is located 22 km north of Hurghada, was focused on the environment, when it was arranged and constructed. This town was honored for its dedication toward environment. *Green Globe* Certification was granted to it for its engineering and ecological responsibility. It draws in vacationers from various nations particularly Germany, UK and Belgium (Ibrahim, 2009).

The Ministry of Tourism (MoT) focuses on green practices in the hotel business sector. It made something refer to as Green Sharm Initiative which based on the 4 pillars of emissions mitigation, biodiversity, waste management best practices and water conservation. These pillars translate into 33 quantifiable projects to deliver a low carbon, environmental friendly city by the year 2020 It is the primary example in the Middle East that will exchange *Sharm El Sheik* to be a worldwide green city. It has reduced the gas outflow by 36%, reduced the hotels energy by 13% for every guestroom, diminished water utilization by 13% for each current lodging and 28% for every new hotel, decreased the water wastage by 75%, achieved level 3 out of 5 in the strong waste administration, achieved level 2 out of 3 in sewage treatment, and decreased the coral reef destruction by 5% every year (OECD, 2012).

In 2013, the hotels sector in Egypt attempted to outfit 100,000 hotel rooms with new clean innovations and solar-heated water, which would take 5 years to be installed. Also in 2013, 45 hotels set up a plan to install solar-heated water system framework (Baerbel, 2014).

3 METHODOLOGY

3.1 Research Objectives and Hypotheses

The main objective of this research is to investigate the importance and the existence of green practices in hotels in Egypt, regardless of being certified and non-certified. It will depict the current status of green practices in Egyptian hotels, specifically in two main areas—*Water* consumption and *Energy* consumption. It aims also to determine to what extent there is awareness toward green practices and their level of implementation. Moreover, it would develop recommendations based on the outcome to help implement green practices in hotel's facilities. The following research hypotheses will be tested:

H. There is significant relationship between hotel's management awareness of green practices and its commitment for implementation.

However, such hypothesis can be divided, based on certification into:

H.a: There is significant positive relationship between hotel's management awareness of green practices and its commitment for implementation in green *certified* hotels.

H.b: There is significant negative relationship between hotel's management awareness of green practices and its commitment for implementation in green *non-certified* hotels.

3.2 Research Technique and Instrument Development

To achieve the objectives, the research used a quantitative and qualitative data collection approach through reviewing the literature and distributing questionnaires. Due to the large number of hotels, the research considered only 5-star hotels in Egypt, either being green certified or non-certified hotels. The reason beyond such consideration is that this category represents the niche of hotels and is more capable to adopt such relatively new trend. Also, this segment is often managed by world-wide chains that usually have experience and provide money for such leading researches.

The research instrument utilized was online questionnaire. It was developed based on the reliable benchmark that was gathered from literature review as well as the *five* green certifications' benchmarks in Egypt—both national (Green Star Hotel Certification) and international (Green Globe, Green Key, Green Key, and Global Travelife) certifications. The respondents were asked to indicate the various green practices used in their hotels concerning *water* consumption and *energy* consumption (since they represent the huge amount of hotel's consumption), by using a *Likert* scale. It was divided into *two* sections: (1) the degree of *importance*, which has three choices ranging from Not Important, Partially Important and Important; whereas (2) the level of *implementation*, which had three choices ranging from Not Implemented, Partially Implemented and Implemented. Thus, this could allow for exploring the current status of green practices in the hotels, in terms of importance and implementation level. Finally, a pilot survey was conducted with some experts, including national certification manager and hoteliers, before distribution process.

3.3 Questionnaire Distribution

The population of the study included 5-star hotels in Egypt, which were 150 hotels according to the Egyptian Hotel Guide. In order to secure high responsiveness, trials were firstly made to reach each hotel to determine the potential respondent either by phone and/or email. Then, a link to online questionnaire was emailed to all population elements. It was directed to the manager who is responsible for implementing the green practices in the hotel (i.e. general manager, engineering manager, executive housekeeper, and the green department manager if available, etc.). In order to get high response rate, following-up and a reminder email was sent to those who did not answer. Out of the 150 distributed questionnaires, only 49 were valid for data analysis, with a response rate 32.6%.

4 RESULTS PRESENTAION AND DISCUSSION

4.1 Green Certified and Non-Certified Hotels

The results revealed that there were 60 green certified five-star hotels, which represented 40% of total population. They were certified with the following details—26 had national green certification, 25 had international green certification, and 9 hotels had both types of certifications, national and international. The other 90 five-star hotels had not any green certifications; therefore, they were green non-certified properties. As mentioned before that the total responses were only 49 questionnaires, which were valid for data analysis, with a response rate 32.6%. Responses were almost distributed equally between green-certified (24 hotels, representing 49%) and non-certified (25 hotels, representing 51%) hotels. Hotels were divided into the main five tourist areas in Egypt— North West Coast, Cairo, Red Sea and Sinai, Suez Canal and Upper Egypt. Most of the responses were gathered from the Red Sea and Sinai area (18 green-certified and 16 non-certified, with sum 34 hotels out of 49 total responses, representing 69.4%); followed by Cairo area (3 green-certified and 5 non-certified, with total 8 hotels, representing 16.3%); and North West Coast area (2 green-certified and 3 non-certified, with total 5 hotels, representing 10.2%). Such a case is not surprising, since the high

proportion of population (87 hotels out of 150 five-star hotels, representing 58%) is located in Red Sea and Sinai area. Moreover, all responding hotels were managed by chains.

4.2 Green Practices Assessment

This section represents an assessment of green practices in terms of the degree of *importance* and the *implementation* level in the surveyed hotels. Both green-certified and non-certified hotels will be discussed separately. Managers were asked to evaluate the degree of importance and the implementation level of green practices in their properties from their own points of view. The practices were collected from all the benchmarks of the green certifications in Egypt, and it covered only two main areas—*Water* consumption and *Energy* consumption, since they represent the huge amount of hotel's consumption. Mean values and standard deviation have been calculated for each practice in the investigated areas, in terms of importance and implementation scales. *Mann-Whitney* test was employed in order to compare analysis results for these practices, using descriptive statistics including means of scores, resulting in *p*-values at level (0.05), to identify if any significance relationship is recorded.

4.2.1 Green-Certified Hotels

The total number of Green-certified five-star hotels that were studied was 24 hotels representing 49% of total respondents. The following table (1) presented the comparison between the importance and implementation level of the green practices in the green-certified hotels. Firstly, concerning the **water consumption** green practices, there was *no* significant difference between the scores of importance degree and implementation level (*p*-value= 0.211). Therefore, such result revealed that most of the practices that were considered important, from managers' points of view, were implemented in their hotels. However, there were some practices showed significant gaps, such as practice W6 and W8 (*p*-value= 0.000).

Regarding the *importance* of those practices, the highest degrees were recorded to practices W1 and W7, which showed also the highest level of *implementation* with means 3.00 and 2.95 respectively. On the other hand, the least important practice was also the least implemented one, i.e. W6 practice with means 2.51 and 1.90 respectively.

Secondly, concerning the **energy consumption** green practices, there was a significant difference between the importance and the implementation level (*p*-value= 0.003). Therefore, such result exposed that most of the practices that were considered important, from managers' points of view, had not been implemented in their hotels. The highest two gaps were dedicated to practices E2 and E9 (*p*-value= 0.000). The most important and implemented practice was E1 (with Means 3.00 and 2.95 respectively). Conversely, the least important and implemented practice from was E9 (with Means 2.76 and 1.37 respectively).

According to the mentioned results, the research hypothesis related to green-certified hotels; **H.a**: There is significant positive relationship between hotel's management awareness of green practices and its commitment for implementation in green *certified* hotels; could be *accepted* regarding to **water consumption** green practices. On the other hand, it could be *rejected* regarding to **energy consumption** green practices.

Table 1: Comparison between the Importance and Implementation of Green Practices for Green-Certified Hotels

Green Practices	Importance Degree		Implementation Level		P-Value	
	M	SD	M	SD		
1. Water Consumption						
W1.	Monitoring the water consumption in each department at least once a month.	3.00	0.00	2.95	0.22	0.078
W2.	Installing water-saving devices in the appropriate places (flow regulators, water flow sensors, self-closing taps, etc.).	2.83	0.38	2.61	0.66	0.035*
W3.	Installing low flow showerheads that do not exceed 9 liters per minute.	2.88	0.33	2.90	0.30	0.364
W4.	Following the instructions for saving water and energy during operation of dishwashers (must be displayed near the machine).	2.88	0.33	2.71	0.63	0.067
W5.	Maintaining regularly plumbing fixtures and piping in order to avoid water losses.	2.98	0.15	2.83	0.38	0.013 *
W6.	Reusing the water used in the kitchen to wash fruits and vegetables for watering the garden.	2.51	0.70	1.90	0.85	0.000*
W7.	Watering grass and plants early in the morning and late at night to limit evaporation.	3.00	0.000	2.95	0.22	0.078
W8.	Cleaning the swimming pool in a way that will reduce the water wastage such as manual and mechanical processes, filtration maintenance etc.	2.78	0.41	2.29	0.71	0.000 *
W9.	Using less chemical detergents like phosphate-free or whitener-free in the laundry.	2.76	0.58	2.56	0.63	0.075
W10.	Giving guests a choice on having linens exchanged.	2.93	0.34	2.85	0.47	0.215
Overall Score		2.85	0.21	2.85	0.47	0.211
2. Energy Consumption						
E1.	Monitoring the energy use at least once a month for each department.	3.00	0.00	2.95	0.22	0.078
E2.	Using any renewable energy system like solar system and wind turbines.	2.90	0.43	1.88	0.80	0.000*
E3.	Using energy efficient light instead of Fluorescent light and depending on natural light more than artificial lights.	2.98	0.15	2.83	0.38	0.013*
E4.	Installing energy-efficient equipment like water heaters, air conditioners, dishwashers etc.	2.85	0.35	2.54	0.55	0.001*
E5.	Switching off equipment when not in use.	2.93	0.26	2.83	0.49	0.134 *
E6.	Depending on natural light more than artificial lights.	2.85	0.35	2.66	0.61	0.042*
E7.	Having a thermostat system in the guest rooms to control maximize and minimize temperatures	2.93	0.26	2.71	0.55	0.013*
E8.	Changing the air conditioning filters equipment regularly.	2.98	0.15	2.80	0.40	0.007 *
E9.	The air conditioning automatically switches off when windows are open.	2.76	0.53	1.37	0.72	0.000 *
E10.	Keeping the water temperature at 24°C to save the energy.	2.80	0.45	2.34	0.75	0.001*
Overall Score		2.95	0.45	2.49	0.55	0.003*

M=Mean, SD= Standard deviation, p-value= Significant difference at level 0.05.

4.2.2 Green Non-Certified Hotels

The total number of green non-certified five-star hotels that were studied was 25 hotels representing 51% of total respondents. The following table (2) presented the comparison between the importance and implementation level of the green practices in the non-certified hotels. Firstly, concerning the **water consumption** green practices, there was a significant difference between the scores of water consumption importance and implementation level (p-value = 0.000). Most of the practices were

important from the manager prospective, but they did not implement them. Practices W4, W8, W9 and W10 were the highest in gaps (p-value = 0.000).

Regarding the *importance* of those practices, the highest degrees were recorded to practices W5 (M= 2.95) and W4 (M= 2.93). However, the least important practices were W6 (M= 2.48) and W3 (M= 2.67). Regarding the *implementation* level of those practices, the highest implemented practice was W1 (M= 2.79), followed by practice W5 (M= 2.74). Conversely, the least implemented practice was W6 (M= 2.07).

Secondly, concerning the **energy consumption** green practices, there was also a significant difference between the importance and the implementation (p-value= 0.021). Some practices recorded a significant gap like E2, E4, E5, E6 and E9 (p-value= 0.000). Although, managers thought they were very important practices, they did not implement them in their hotels.

Table 2: Comparison between the Importance and Implementation of Green Practices for Non-Certified Hotels

Green Practices		Importance Degree		Implementation Level		P-Value
		M	SD	M	SD	
1. Water Consumption						
W1.	Monitoring the water consumption in each department at least once a month.	2.86	0.41	2.79	0.41	0.217
W2.	Installing water-saving devices in the appropriate places (flow regulators, water flow sensors, self-closing taps, etc.).	2.76	0.43	2.57	0.54	0.040*
W3.	Installing low flow showerheads that do not exceed 9 liters per minute.	2.67	0.52	2.50	0.79	0.132
W4.	Following the instructions for saving water and energy during operation of dishwashers (must be displayed near the machine).	2.93	0.26	2.52	0.59	0.000*
W5.	Maintaining regularly plumbing fixtures and piping in order to avoid water losses.	2.95	0.21	2.74	0.49	0.006*
W6.	Reusing the water used in the kitchen to wash fruits and vegetables for watering the garden.	2.48	0.79	2.07	0.94	0.019*
W7.	Watering grass and plants early in the morning and late at night to limit evaporation.	2.83	0.43	2.64	0.65	0.061
W8.	Cleaning the swimming pool in a way that will reduce the water wastage such as manual and mechanical processes, filtration maintenance etc.	2.81	0.50	2.14	0.83	0.000*
W9.	Using less chemical detergents like phosphate-free or whitener-free in the laundry.	2.79	0.46	2.19	0.85	0.000*
W10.	Giving guests a choice on having linens exchanged.	2.90	0.29	2.45	0.59	0.000*
Overall Score		2.80	0.20	2.50	0.58	0.000*
2. Energy Consumption						
E1.	Monitoring the energy use at least once a month for each department.	2.93	0.26	2.88	0.32	0.232
E2.	Using any renewable energy system like solar system and wind turbines.	2.93	0.34	2.12	0.88	0.000*
E3.	Using energy efficient light instead of Fluorescent light and depending on natural light more than artificial lights.	2.90	0.29	2.67	0.52	0.006*
E4.	Installing energy-efficient equipment like water heaters, air conditioners, dishwashers etc.	2.95	0.21	2.40	0.76	0.000*
E5.	Switching off equipment when not in use.	2.95	0.21	2.62	0.53	0.000*
E6.	Depending on natural light more than artificial lights.	2.95	0.21	2.64	0.53	0.000*
E7.	Having a thermostat system in the guest rooms to control maximize and minimize temperatures	2.93	0.26	2.79	0.46	0.044*
E8.	Changing the air conditioning filters equipment regularly.	2.88	0.32	2.74	0.54	0.074
E9.	The air conditioning automatically switches off when windows are open.	2.93	0.26	2.19	0.88	0.000*

E10. Keeping the water temperature at 24°C to save the energy.	2.57	0.49	2.24	0.87	0.018*
Overall Score	2.85	0.46	2.53	0.63	0.021*

M=Mean, SD= Standard deviation, *p*-value= Significant difference at level 0.05.

Moreover, it was noted that all practices have been evaluated as highly *important* with a mean that scored 2.85, as shown in Table 2. Three practices were the most important practices E4, E5 and E6 (M= 2.95), while the least important practices were E10 (M= 2.57) and E8 (M= 2.88).

Regarding the *implementation* level, the most implemented practice was practice E1 (M= 2.88), followed by practice E7 (M= 2.79); whereas the least in implementation level was practice E2 (M= 2.12).

According to the mentioned results, the research hypothesis related to non-certified hotels; **H.b**: There is significant negative relationship between hotel’s management awareness of green practices and its commitment for implementation in green *non-certified* hotels; could be *accepted* regarding to green practices for either **water consumption** or **energy consumption**.

5 LIMITATIONS AND FUTURE RESEARCH

Due to the large number of hotels, the research considered only 5-star hotels in Egypt, either being green certified or non-certified hotels. Nevertheless, other hotels categories, in Egypt, should be surveyed to determine whether they apply green practices to their facilities. Exploring the barriers for going green, as well as the gap and opportunities to have green hotel certifications might be investigated. Other areas of applying green practices that might be used in hotels could be studied, such as waste management, pollution elimination, green purchasing, and training for both employees and guests. The guests’ behaviour toward green practices as well as their concern and positive attitude toward the environment conservation might be recommended for future research. Another significant dimension that should be further investigated in future research is that the role of Governmental Authorities and NGOs that could encourage hotels to adopt green practices.

6 IMPLICATIONS AND CONCLUSIONS

The main objective of the research is to investigate the importance and the existence of green practices in hotels in Egypt. Such objective is fulfilled through the field study, specifically in the two main areas of water consumption and energy consumption. Also, the research explored the current status of Egyptian 5-star hotels, in terms of green certification. It depicted whether they are being green certified or non-certified, based on theoretical review and practical study. There were 60 green certified five-star hotels, which represented 40% of total population. They were certified with the following details—26 had national green certification, 25 had international green certification, and 9 hotels had both types of certifications, national and international. The other 90 five-star hotels had not any green certifications.

Furthermore, hotels were divided into the main five tourist areas in Egypt— North West Coast, Cairo, Red Sea and Sinai, Suez Canal and Upper Egypt. Most of the responses were gathered from the Red Sea and Sinai area, followed by Cairo area and North West Coast area. Such a case is not surprising, since the high proportion of population is located in Red Sea and Sinai area. Moreover, all responding hotels were managed by chains.

Moreover, the research can conclude that green certified and non-certified managers have a relatively high awareness regarding green practices. However, the implementation level was limited in the non-certified hotels than the green-certified ones.

Results of the research indicated that there is significant difference between importance and implementation of green practices in Egyptian Hotels; with variance in each group elements. The exception was for those practices that are related to water conservation in green-certified 5-star hotels; since most of the practices that were considered important, from managers' points of view, were implemented in their hotels. Therefore, extensive concern should be maintained toward increasing awareness and implementation. Green-certified and non-certified hotels should improve their water and energy green practices to optimize the use of resources. Moreover, areas for future research are recommended.

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