

## Evaluating Environmental Management System Adoption in the First Class Hotels in Alexandria

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### Abstract

Many hotels are subject to environmental regulations. A growing practice of the impact of activities on the environment has created a greater need to take into account environmental factors housekeeping department, because this department is most important department for application environmental practice, therefore, an increasing number of first class hotels in Alexandria are certifying their environmental management systems (EMS) by the ISO 14001 series standards. Improving the environmental practice of hotels is one way of limiting the environmental damage. EMS provides a framework for organizations that wish to effectively manage their environmental affairs. Implementing an EMS that conforms to the ISO 14001 standard, therefore, this research aims to assess the environmental practices in housekeeping department, because it is considered one of the most important departments related to environmental management inside in hotel and implementation the environmental practice also the largest department containing the largest employees. To achieve this objective, the researcher surveyed 300 employees in upscale hotels in Alexandria. Data were analyzed using Statistical Package for Social Science (SPSS 22). To high light of these results, the researcher recommended the need to pay attention to the application of environmental practices and increase the awareness of employees of good practices of (Energy Saving, Water Conservation and Waste Management).

**Keywords:** ISO 14001 Standards, Environmental Management Systems, Environmental Practice, Energy Saving, Water Conservation and Waste Management.

### Introduction

The hotel industry is one of the most important industries that have a direct relationship with the environment as each affects the other hotels in general depend on all its resources to the surrounding environment and there is no doubt that the environment is adversely affected by the practices and activities practices by hotels (Walker, 2013). Implementation of environmental management systems housekeeping department has some obstacles. One of the most significant ones is the managers' resistance to undertake formal environmental management programmed, This is due to lack of knowledge and training and also investment in time, money and resources that is required in order to comply with standards and procedures leading to additional barriers to implementation (Doody, 2010). Herzig and Burritt (2012) determined that changes in managerial behavior is the key issue, not only because of decreasing natural resources, as a resource-based internally driven reason, but also because of legitimating actions to increase the environmentally friendly visibility of the hotels, some of the key factors that have been identified as barriers to environmental management system (EMS) (Stevens et al, 2012): Lack of knowledge on conservation measures, limited staff availability , Lack of management commitment, lack of employee commitment and Cost of implementation of EMS.

## Literature Review

### Housekeeping Department Operations

The housekeeping department is responsible for cleaning and maintaining the guestrooms, public areas, office spaces and back of the house areas in the hotel so that the property is as fresh and attractive as its first day of business. Although the roles that housekeeping performs vary from one hotel to another, the tasks performed by the housekeeping department are critical to the smooth daily operations of any hotel (Matt, 2012). According to (Murray and Benny, 2009) the organization of the housekeeping department will vary from one hotel to another depending on the number of rooms and the hotel management. This department is usually headed by an executive housekeeper, who is often assisted by an assistant and several supervisors. In the case of a small hotel, an executive housekeeper might have no assistant and is assisted by smaller number of supervisors. Increasingly hotel management are streamlining their organizational structures and employing casual employees. As a result many hotels have substantially reduced the number and role of housekeeping staff. This helps reduced the bottom line. However, set standards may be scarified and staff must assume a larger responsibility. Walker (2013) Affirmed that the housekeeping department is generally the largest department in hotel operations. A sizeable hotel would typically employ more than 100 more than 500 employees in hotels. Owing to its sometimes complex organizational structure, it is important for every housekeeping staff to clearly understand his own responsibilities in order to provide the most efficient service to guests This in turn will involve several key areas of activity presented below:

Housekeeping There are numerous definitions of the word housekeeping, according to (Raghubalan, 2007) the word housekeeping is broken down into two separate words; house and keeping. The word house is described as a building for people to live in, and the word keeping is de-scribed as to continue to stay or remain in a specific situation, or to do something frequently or repeatedly. Thus the word housekeeping means keeping a house in a specific state frequently or repeatedly in order to keep the guest comfortable. According to (Raghubalan, 2015) one possible definition of housekeeping could be “provision of a clean, comfortable, safe and aesthetically appealing environment.” Another definition the author has provided for housekeeping is “an operational department in a hotel which is responsible for cleaning, maintenance, aesthetic, upkeep of rooms, public areas, back areas and the surroundings”. Nitschke and Frye (2008) mentioned that Housekeeping is a very important department of any hotel, as it contributes to the overall reputation of the hotel. This department is responsible for the cleaning of all areas of the hotel, however it does depend on their contract with cleaning company which areas will be covered. For instance housekeeping department may be responsible for the lobby area, front office area, guest rooms and washrooms, the pool, the gym, and the meeting rooms, depending on what services the hotels have to provide for their guests. It is their duty to make sure that hotel looks clean and tidy, so the guests could have a remarkable stay not only in their personal room but in the entire hotel. (Murray, 2009) mentions that the work done by the housekeeping staff in order to provide an ideal room for the guest has a direct effect on the guest’s experience in the hotel.

The major and Main tasks areas of responsibilities for the house keeping department are as follows: (Nitschke and Frye, 2008) and (Walker, 2013): Clean rooms, hallways, lobbies, lounges, restrooms, corridors, elevators, stairways, locker rooms and other work areas so that health standards are met, Empty wastebaskets, empty and clean

ashtrays, and transport other trash and waste to disposal areas, Dust and polish furniture and equipment , Keep storage areas and carts well stocked, clean, and tidy , Replenish supplies such as drinking glasses, linens, writing supplies, and bathroom items , Wash windows, walls, ceilings, and woodwork, waxing and polishing as necessary , Request repair services and confirm repair was completed. , Move and arrange furniture, and turn mattresses, Carry linens, towels, toilet items, and cleaning supplies. Karthik, (2015) Added that housekeeping its due recognition in the hospitality industry. This department is responsible for bringing in the largest share of profit to an accommodation operation, but this fact is hardly acknowledged and veterans of the industry too often must consider it a thankless job. Housekeeping operations are increasingly becoming scientific and mechanized. Efficiently managed Housekeeping departments ensure the cleanliness, safeguarding and aesthetic entreat of the hotel. The tasks performed by Housekeeping department are pivotal to the horizontal daily operation of any hotel. In the present stringent competitive scenario maintaining hotel is very tough and satisfying guest is even tougher.

#### **ISO 14001 Standards**

The organization shall establish, document, implement, maintain and continually improve an environmental management system in accordance with the requirements of this International Standard and determine how it will fulfill these requirements (Walker, 2013). International ISO 14000 standards were developed mainly in response to the proliferation of national EMS standards in various countries which forced companies to deal with dozens of potentially incompatible systems from each country in which they conducted business (Bansal and Bogner, 2008). The ISO 14001 standard defines an EMS as "a management tool enabling an organization of any size or type to control the impact of its activities (ISO, 14001) , products on environment"(Beredugo, and Mefor, 2012).

The ISO 14001 establishes a framework for managing through the development of formal processes and procedures! The standard contains 17 key elements grouped into five major areas: environmental policy, planning, implementation and operation, checking and corrective action, and management review (Laskurain and Heras, 2015). A unique aspect of the system is that it is designed to be appropriate for any company, regardless of industry, size, location, and the level of their environmental responsibilities. The ISO 14001 is a voluntary, consensus-based, and market driven standard (Gwen et al, 2004). EMS appeared in the 1990s with the best known being ISO 14001 which was released in September 1996 by the International Organization for Standardization (ISO), The ISO 14001 serves as the standard for developing an EMS in the International Organization of Standardization's ISO 14000 series. The remaining standards contain guidance and supporting documentation.

#### **Benefits Elements ISO 14001 for Hotels**

the implementation of EMS will undoubtedly have a positive effect on the success of the hotel establishments in the face of global competition, further development, attracting more customers and guests, improving human resources and training to develop and increase environmental practice of the application of ISO14001(Tortella and Tirado, 2011). Adoption of ISO 14001 has also been shown to provide both tangible and intangible benefits to hotels, such as: cost reductions and savings; improved communication; Deeper customer trust .Improved environmental performance (Daddi el al., 2014). Reduction in fines; improved hotels image; and improvement in operational processes (Nee and Nabsiah, 2010). Outlines each standard and benefits of the ISO 14000 series as following:-

Top management shall benefits of ISO 14001 to the organization's environmental policy and ensures that, within the defined scope of its EMS: is appropriate to the nature, scale and environmental impacts of its activities, products and services, includes a commitment to continual improvement and prevention of pollution, includes a commitment to comply with applicable legal requirements and with other requirements to which the organization subscribes which relate to its environmental aspects, provides the framework for setting and reviewing environmental objectives and targets, Is documented, implemented and maintained, Is communicated to all persons working for or on behalf of the organization, and is available to the public.

### **Reasons for Hotels Implementation EMS**

Some of the key reasons for hotels engaging in sound environmental practices are legislative controls, cost savings, gaining a competitive advantage, consumer demand, improving environmental quality, employee awareness, risk management and improving investor relations (Rahman et al., 2012) and (Laskurain and Heras, 2015). Improving hotels environmental performance can also help create an environmentally-friendly environment for staff and customers, helps the company gain a competitive advantage and raises the corporate image of the business (Tortella and Tirado, 2011).

Rivera (2002) referred to in order to a hotel to name itself as an environmentally responsible hotel; it has to contribute to conservation of both the environment and the local community. Hotels industry is usually based on their natural environment which serves as the main attraction. This is already one reason why contribution to conservation can help to preserve natural tourism resources and why it is vital for a nature based tourism business. When a hotel supports conservation, it can also minimize the risk of environmental problems in the future and preserve the quality of the destination, According to Manaktola and Jauhari (2007) further believed that “becoming a green hotel can be the foundation for great marketing”. In particular, the following motivations have been identified as reasons for the hotel sector to be preoccupied with environmental issues.

### **Elements of Environmental Best Practices**

#### **Energy Saving Management**

Nicol and Humphreys (2002) Added that Energy, its consumption and production are one the most important themes in Today's world as future generations might not be able to use the current energy. At hotels an enormous amount of energy is used for daily operations and activities requiring energy are among the highest areas of costs at hotels. There is a high demand for energy as the hotels try to provide their customers with modern comforts and high-technology, such as air-conditioning. Most hotels get their energy from burning fossil fuels, such as coal, oil and natural gas which further on causes local air pollution and global climate change in addition to other environmental problems.

According to McLeish (2007) Improving energy efficiency makes perfect business sense; it saves money, enhances your business reputation and helps everyone in the fight against climate change. We use the term ‘energy efficiency’ it is important to get the most out of the energy we use on a daily basis. It is not enough to say ‘we’ll reduce energy use’ because this is largely dependent on occupancy numbers among other factors. As we strive to increase our occupancy numbers we’ll inevitably use more energy but it’s how efficiently we use that energy that dictates where the savings are made.

There is a wide range of environmental damages that energy production causes, ranging from the supply of fossil fuels to the building of power plants. The use of non-renewable natural resources such as oil and coal should be decreased as these resources will not last forever. In addition, power plants and other equipment needed for energy production require huge areas of land transform the landscape and destroy natural habitats. With wise and thoughtful energy use, natural resources can be saved also for the next generations. Moreover, the demand for energy will be minimized which further on eases the pressure for new power plants and energy supply (Boiral, 2017). As a result, environmental impacts caused by energy production and transport will decrease (Burzis, 2010).

Bohdanowicz (2006) Added that hotel can reduce its energy use and costs in various ways. These ways and their effect, however, depend on the type, size and location of the hotel facility. According to (Laskurain and Heras, 2015) the following energy saving methods introduced are only general ways. First, energy use should be regularly monitored to identify the areas of largest energy consumption and to know the amount of total energy costs for each month and for each department separately, after this needed actions can be chosen for minimizing the use of energy.

Hotel can for instance install energy saving bulbs, movement detectors and timers for minimizing the use of lighting for instance in hallways. Furthermore, hotel windows should be shaded from the sun and double-glazed windows installed for minimizing air-conditioning needs and for reducing heat losses. In order to maximize the energy efficiency effect, also the staff and the customers should be trained about the environmental activities and energy saving methods in hotel (Han and Sheu, 2010).

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### **Best Practices for Energy Conservation**

According to (Deng, 2003; Kasim, 2007) to maintain energy in hotels, the following practices should be followed:

The purchase of equipment and machinery and equipment working on saving energy, The use of energy-saving lighting lamps at sites that need to be permanent lighting , Rationalizing the use of air conditioning by using it only when it's needed ,Close all the lighting and air-conditioning for places and rooms are unoccupied , Use energy alternatives, there are alternative methods, such as solar or wind generators or heat pumps Becken (2001) added that, The use of variable speed fans operates inverter.

Adoption of systems for energy management, control and reporting on energy use, provide fluorescent lamps and high-intensity lighting and incandescent lamps to reduce lighting control units, choose the coolers and cooling room high efficiency put the cards in hotel rooms with suggestions and steps guest can take to conserve electricity. Burzis (2010) Mentioned that , Distribution of sensors and heat rates in all rooms and is charged with somewhat invest in the beginning, but it is useful in the

long run , Turn off and disconnect all electrical appliances after use , Run washing machines and boilers all fullness.

### **Water Consumption Management**

Of all the water used by the hospitality industry, only 5 per cent is used for eating and drinking; the vast majority of it is used either for cleaning or for the preparation of food (Webster, 2000). Ayuso ( 2006) Added that When it comes to water management at a hotel, the main task for an environmentally conscious hotel business is to monitor its water consumption and bring it to a rational level by means that also save and protect the local resources .Water should be used only when needed. Especially in the Mediterranean countries water shortages are a problem and water usage is many times more than that of a local resident (Sherman, 2008).

A hotel establishment requires a vast amount of water resources for its daily operations, for instance for laundry and for the maintenance of swimming pools, lawns, garden and golf courses. Water needed for all these operations is also costly; therefore, when operating in an environmentally friendly manner, a hotel will not only save in water costs but also help protect the local water resources, ensure availability of water also for the local residents as well as preserve the quality of the local water resources by eliminating the need for expensive drinking water treatment processes (Erdogan and Baris, 2007). In order for a hotel to achieve better water management, it is first important to identify the main areas with largest water consumption at the hotel as these are the areas where the most significant water savings can be achieved. Secondly, water consumption of each department should be regularly monitored with water meters for identifying leaks and quantifying water savings. With monitoring, monthly water consumption and its costs can be determined and the areas and activities of high water consumption identified.

For minimizing wastage of water, for instance water reducing technologies should be used and water-saving devices (for example self-closing taps and low-flush toilets) installed where possible. It is also important to eliminate leaks with regular maintenance and repairing of water equipment. By setting the water temperature of showers to the optimal temperature, also energy can be saved (Borgaard and Gimsing, 2008).

### **Waste Management**

According to Leslie (2005) the hotel industry can reduce the amount of waste produced by implementing and following a waste management system that is modeled, "a large proportion (50-60 percent) of the materials in an accommodation facility can be recycled or reused "Around the concepts of reduce, reuse and recycle. Especially in the Mediterranean region the rapid development of the hotel and tourism industry has not only resulted in lack of water resources but also in overload of waste. This has further caused lack of waste disposal infrastructure and sanitation. Hotels produce large amounts of waste, solid and liquid, toxic and non-toxic, some of which end up in the surrounding environment because of inadequate handling and careless behavior. Many times waste has been dumped directly into seas and a river which has caused not only visual pollution to the environment and harm to the hotel's image but also has led to soil and water pollution (Park, 2009).

Over ninety percent of the natural resources used by humans transform into Waste through the production of products and nutriment. The more a hotel aims to produce as little waste as possible, the fewer natural resources are used and environmental damages minimized. Waste has direct impacts on the environment. It can pollute the

soil, water and air and can cause harm to both humans and animals (Borgaard and Gimsing, 2008).

Alexander (2002) mention that Forty six percent of a hotel's solid waste is food waste since all food waste can be composted; hotels are increasingly recognizing that composting is a better alternative to dumping food waste, as composted waste can be used as organic fertilizers, Effective and caring waste handling and management at hotels will not only save the environment but also cut down purchasing costs as well as waste disposal fees of the hotel. Proper waste disposal will also limit the risk of causing illnesses to hotel guests, and keeps the surrounding water suitable for recreational activities. All in all, a hotel business should always develop its waste management program around the three R: reduce, reuse, and recycle.

According to Mensah (2006) the practices that should be followed to reduce the quantities of waste as follows:

Reduce waste quantities and can be avoided through the use of devices that cannot be used again and avoid canned drinks and the use of a few packaging materials, Not to put bottles of shampoo, soap and perfume bathrooms and other every day, and preferably with a tablet of soap with large pieces appropriate for a guest's stay, Solid waste into glass Stamps and metal and organic and other chapter, Develop paper collection for recycling and also separation policy and the disposal of some materials such as batteries, light bulbs, pens and other policy, Re-use towels and bed sheets and blankets consumed for the purpose of cleaning (Deng, 2003) also confirmed that Prepared soap used in part of the plant for reprocessing, Buy liquid supplies whenever possible, The use of devices to download refillable liquid fluid instead of using packaged products in small quantities , Separated organic waste such as food scraps, leaves and waste resulting from cleaning parks and turn it into compost for re-usable in the hotel's garden.(Burzis, 2010) affirmed that Reduce the use of paper by using duplex paper , Packaging products such as shampoo bathing in a way that allows using the product more than once or packaging improvised recyclable, Then donate materials that the hotel intends to get rid of them, which can be used, such as sheets and blankets, glassware, food, soap and furniture and curtains for the needy and charities rather than disposed of in the waste container.

## **Research Method**

### **Research Approach**

This methodology aimed to systematically analyze text material is appropriate to carry out an in-depth examination of both standards consists in housekeeping department, in four and five star hotels in Alexandria, so the housekeeping department is largest department is suitable employees and largest hotels division of revenue. The research used descriptive analytical approach, to achieve the study goals; use data is abstracted from different sources interviews were conducted with the managers in charge of the EMS. Interviews were carried out face to face were needed in order to adapt to the availability of the respondents. Similarly, a broad range of hotels documentation related to the implemented and certified or registered EMS were analyzed in depth. Documentation such as the environmental policy of the organizations, Data collections was analyzed by SPSS "statistical package for the social since" version 22.

### **Research Design**

Questionnaire design was divided into two main sections, the first one is consists of question about demographic factors of employees in housekeeping department in first

class hotels in Alexandria. The second construct is Contain the environmental management practices (Energy Saving, Water Conservation and Waste Management). Five-point likert scale of 1-5 was used (1= Strongly Agree, 5= Strongly Not Agree).

### Population and Sample

The target population for this study was the employees in housekeeping department in first class hotels in Alexandria which consist of 18 hotels according to Egyptian Hotels Association (2015); The total number of housekeeping employees department in population study is 530 employees according to (human resource management in hotels), 345 questionnaires is target number of this study, 300 valid forms of statistical analysis were retrieved with a response rate is 56%. Cronbach's alpha was used to assess survey reliability. The reliability coefficient was 0.846, which is considered as acceptable reliability.

### Results and Discussion

#### Personal Information Analysis (Demographic Factors)

The following table (1) shows the personal Information to employees in the room division sector:

Table 1: General Profiles of the Surveyed Hotels

Attribute	N = 300		Attribute	N = 300	
	N	%		N	%
Gender :			Experience :		
Male	112	37	Less than 2	155	52
Female	188	63	2:5	94	31
Age :			5:10	33	11
18<30	165	55	More Than 10	18	6
30<40	85	28	Classification :		
40<50	35	12	4 Stars	136	45
More than 50	15	5	5 Stars	164	55
Position :			Ownership :		
Management	12	4	International Chain	178	59
Supervisor	37	12	Local Chain	86	29
Employee	251	84	Private Sector	36	12
Education :					
High School	74	25			
Education Diploma	145	48			
University Education	79	26			
Postgraduate	2	1			

The previous table (1) shows that the population study of employees in Housekeeping department in the four and five stars hotels in Alexandria represents 300 questioners of the sample hotels .The table above showed the demographic factors of the employees as follows:

**Gender** according to the data, Housekeeping department depends on female employees more than male with percentage 63% but male is 37%. This is due to the low income earned from the work in the house keeping department. This is also due to the fact that the work carried out by the employees in the house keeping department is more female than males we also find that gender in the house keeping department has no impact on their environmental practice. Therefore, female employees are responsible for the application of environmental management practices and must be well educated to maintain the material resources of the hotel.

**Age of Employees** According to population study the employees in the house keeping department in terms of age, the house keeping department depends on employees aged between 18: 30 years with percentage is 55%. Therefore, the age group

determines the amount of work you expect from this category and therefore can apply the sound environmental practices adopted.

**Position of Employees** The percentage of supervision job was percentage 12%. The percentage of employees in the department was 84%, and the percentage of management is 4%, this percentage according to the population study hotels.

**Level of Educational** According to the study population the employees in the house keeping department in terms of educational level, showed that the education diploma it was percentage by 48%, This is because the nature of work in this section does not require higher qualifications; and the percentage of the university education with percentage 26%, and percentage of those with a high school it was 25%, finally the percentage of postgraduate degree it was 1%. This percentage belongs to managers this result shows that the higher the level of education among employee,

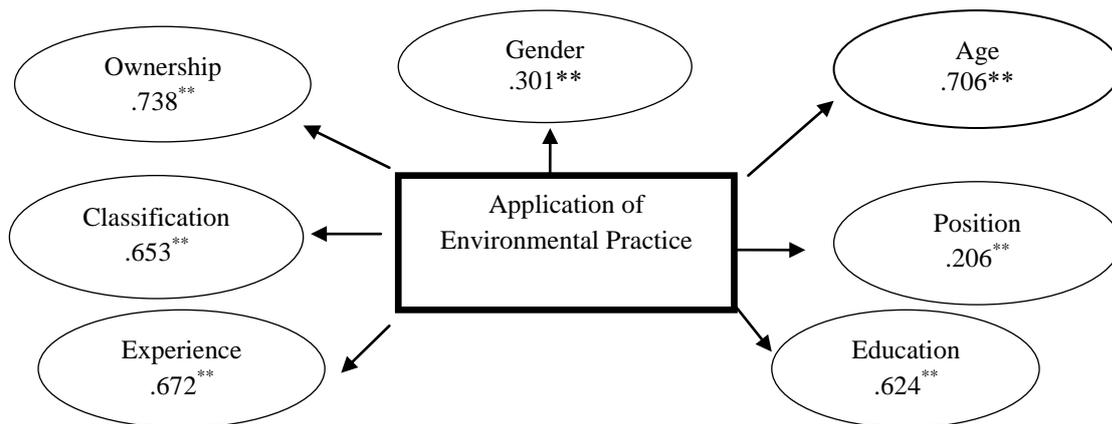
**Previous Experience** According to the study population the employees in the house keeping department in terms of the experience that the largest proportion of employees are those who have been working at the hotel for less than two years by 52%. this is due to the speed turnover in this section and the instability of employees for a long time and this is the nature of the case in the work in the hotel sector due to several reasons, including the weak wages in this section and the lack of access to the employee promotion and incentives only after a long period and the proportion of employees in the section for a period of 2: 5 years 31% Section for 5:10 years 11% This ratio is often for the average supervision function the proportion of managers working in the department for more than 10 years is 6%, and this percentage belong to managers certainly, the speed of rotation of labor has affected the awareness of the employee in the department, since the longer the employees stays and the more the experience, the greater the awareness of matters related to his work and also the loyalty to the place where he works.

**Classification of Hotels** According to the study population of employees in the house keeping department in terms of the classification of hotel, it was that the proportion of employees in four-star hotels it was percentage 45%, and the proportion of employees in five-star hotels it was 55%, because the number of five-star hotels in Alexandria is more than four star hotels.

**Ownership of Hotels** According to the study population the employees in the house keeping department in terms of the ownership in the hotel, it was the largest proportion of employees in hotels of the international chain it was percentage 59%, the largest proportion is due to the fact that the largest proportion of four and five star hotels in Alexandria, the total number of employees in housekeeping in local chain hotels it was 29%, the share of private sector employees in hotels it was 12%.

**Correlation about Demographic Factors and Application of Environmental Practice in Housekeeping Department**

Figure 1: Correlation about Demographic Factors in Housekeeping Department



**Gender:** according to Using correlations to test the correlation between gender and the awareness of employees about environmental management system. That there is positive and weak relationship between them ( $R = .301^{**}$ ). Therefore, the age of employee is poor effect of environmental management practice.

**Age:** according to Using correlations to test the correlation between age and the awareness of employees about environmental management system, that there is positive and strong relationship between them ( $R = .706^{**}$ ). Therefore, must be depend on the young employees there can be carry out and implementation environmental practice.

**Position:** Using correlations to test the correlation between position and the awareness of employees about Environmental management system. That there is positive and weak relationship between them ( $R = .206^{**}$ ).

**Education:** Using correlations to test the correlation between education and the awareness of employees about Environmental management system. That there is positive and strong relationship between them ( $R = .624^{**}$ ). Education is a key factor in the development employee's skills.

**Experience:** Using correlations to test the correlation between experience and the awareness of employees about Environmental management system. That there is positive and strong relationship between them ( $R = .672^{**}$ ). The number of years' experience is one of the most important things to emphasize when entering a job. Therefore, there is a strong relationship between the level of experience and the improvement of work performance, thus improving the development of environmental practices in hotels.

**Classification:** Using correlations to test the correlation between Classification and the awareness of employees about Environmental management system, there is positive and strong relationship between them ( $R = .653^{**}$ ).

**Ownership:** Using correlations to test the correlation between Classification and the awareness of employees about Environmental management system, there is positive and strong relationship between them ( $R = .738^{**}$ ).

### Environmental Practice in Housekeeping Department

The following table (Environmental Practice) shows the opinions of Housekeeping Department employees in four and five stars hotels in Alexandria, which are as follows:-

**Table 2: Frequency, Mean and standard deviation of Waste Management**

N o	" Question "	Strongly Agree		Agree		Neutral		Not Agree		Strongly Not Agree		Std.D MEAN	
		F	%	F	%	F	%	F	%	F	%		
<b>Waste Management</b>													
1	There is a sewage treatment system.	-	-	21	7	46	15	61	21	172	57	1.72	.56
2	Low-packaging materials are used in guest rooms to minimize waste	81	27	52	17	2	1	130	43	35	12	3.04	1.46
3	The hotel has a waste recycling system	23	8	36	12	-	-	122	41	119	39	2.87	1.25
4	Old towels are used for cleaning operations	148	49	133	44	-	-	19	7	-	-	4.36	.78
<b>Water Conservation</b>													
5	Is there is a water conservation program within the hotel	44	15	118	39	13	4	71	24	54	18	3.59	1.39
6	Are There water consumption regulators on the faucets	54	18	69	23	-	-	70	23	107	36	2.64	1.57
7	Do Bathrooms offer shower tub combinations	60	20	113	38	2	1	98	32	27	9	3.27	1.34
8	Are linens and furnishings changed every 3 days	47	15	116	39	-	-	87	29	50	17	2.92	1.20
<b>Energy Conservation</b>													
9	Is there is an energy conservation program.	54	18	143	47	21	7	62	21	20	7	3.49	1.19
10	Does hotel use renewable energy sometimes?	-	-	41	14	7	2	67	22	185	62	1.68	1.04
11	Does hotel use energy-saving appliances and equipment	62	21	79	26	14	5	74	25	71	23	2.95	1.21
12	Is the hotel is interested in using energy-saving lamps.	89	30	102	34	2	1	80	26	27	9	3.48	1.38
<b>Total</b>											36.01	14.37	
<b>Total Mean</b>											3.00	1.19	

The values as shown from the results of the previous table (2) regarding the housekeeping department, that the total mean (3.00) and the standard deviation is (1.19), less than half the mean, Therefore The data are distributed in a normal distribution and the dispersion rate is acceptable, This also indicates direction results toward is acceptable (H1) There is a relationship between the practice of environmental management and application of environmental management systems ISO 14001.

### **Waste Management Practices Analysis**

It is clear from the results of the previous table that the employees' answers about whether there is a waste treatment system were the percentage to (Not Agreed) with percentage 21% and (Strongly Not Agree) it was percentage 57%, the total was 78% of not approval, the mean trend towards about of disapproval it was 1.76 and the standard deviation is 1.46. Including the difficulty of implementation and maintenance of the system of sewage treatment and the implementation of this system will require a high cost of material and the management of these hotels would see that it's not necessary to hotel costs.

According to the data when asked about if Low-packaging materials are used in guest rooms, the hotel employees' opinion is not approval was percentage 55%, the mean it was 3.04, the standard deviation is 1.46. In the discussion of data, due to the lack of awareness of the administrations of these hotels of the importance of reducing the waste and the lack of their interest in the purchase and use of low-packaging materials and lack of interest in the application of sound environmental practices as confirmed by (Alexandr, 2002) who stressed to the importance of reducing waste and that by reducing the amount of waste is also declining purchasing costs as well as reducing waste disposal resulting to hotel fees.

Regarding the existence of a system within the hotel for waste recycling, the employees' responses were about 41% (Not agree) and 39% (Strongly not agree) for the study population. The total of not approval was 80%. The mean direction of the non-approval was 2.87 and the standard deviation is 1.25. The researcher believes that this result is due to the difficulty of implementing system recycling water in hotels and it is a high cost of hotel and get lot of money to implement it, but some hotels that apply EMS that it employees to reduce waste and the sorting of waste before sending to it recycling places and other means of waste management in a way this is the opposite of what has been confirmed by (Kasim, 2007) who said that if the hotel applies a recycling system, the hotel will have several benefits, including reducing the costs of waste collection and disposal and minimizing the negative impact on the environment.

According to the questions reuse of disposable towels and bed sheets consumed for cleaning purposes was choice (Strongly Agree) with percentage 49%, and choice (Agree) with percentage 44%. The total was 93%, which is less than half the center, the data are of natural and the dispersion rate is acceptable and there is a strong moral indication and when discussing the data we found out that the high rate of approval. The researcher believes that it is because the view of the administrations of these hotels that the application of this good practice does not cost hotels the material cost and its application shall be For simple for the hotel and do not require a minimum effort applied to the contrary, the application of this practice provides hotels a lot of money by not buying towels for cleaning inside the hotel. (Mensah, 2006) referred to the benefit of reusing recycled linen to be used again.

### **Water Conservation practices Analysis**

The employees' answers about the fact that there is a water conservation program within the hotel was a satisfactory criterion it choice (Agree) with percentage is 39% and the (strongly agree) 15% of the employees in the study society. The total approval rate was 54%. The mean it was 3.59 and the standard deviation was 1.39. This result indicates the interest of the management of these hotels in water conservation and their awareness of the importance conservation. That consumption reduction also leads to lowering the costs and the cleanliness of stored quantities must be maintained. This is confirmed by (Tzschentke et al, 2004), who stressed the importance of water conservation by improving the efficiency of water use by installing the best equipment which is highly efficient in the use of water.

According to the questions the presence of water consumption regulators on the water taps in the bathrooms of the guest rooms came to their responses to the standard (Not Agree) by 23% and the criterion (Strongly Not Agree) by 36%, The approval mean it was 2.64 and the standard deviation is 1.57. This is due to the fact that some administrations have no awareness of the importance of water conservation and the importance of applying sound environmental practices, especially that the application

of this practice requires the purchase and maintenance of water consumption organizations to be placed on water taps. For which there is no need these hotels, and they are often privately owned hotels, some of which are locally owned. But (Hanna, 2008) stressed the importance of setting up water-saving devices and organizations with low flow on faucets and latrines.

It is clear from the previous table that the responses of the employees about the existence of a kind of water showers that flow without waste water in the toilets of the rooms was a (Agree) with percentage is 38% and the (strongly Agree) with percentage 20% of the employees of the study community and the total approval rate was 58%, The approval mean is 3.27 and the standard deviation is 1.34. The researcher believes that the approval rate is due to the awareness of the management of these hotels about the importance of water conservation and their awareness that installing this type of shower will cost them a lot of money but will save a lot of water consumption and thus provide consumption bills for This sound practice was confirmed by (Eric et al, 2014) where he stressed that the installation and use of many simple techniques leads to a decrease of the quantities of water use.

On the terms of changing linens and furnishings in rooms at the request of the guest or every three days, the employee's responses (Agree) were about 39% and the choice (Strongly Agree) with percentage 15%. The percentage of the total approval was 54%. The mean direction towards the approval was 2.92 and the standard deviation is 1.20, which is less than half the center, the data natural distribution and dispersion rate is acceptable and there is strong moral significant and the researcher finds out that this result is due to the fear of the administrations of these hotels to apply this practice that they do not satisfy guests. This is in contrast to what (Han and Ham, 2013), pointed out that many guests are turning to everything new and so they have more awareness.

### **Energy Conservation Questions Analysis**

The employees' answers about the existence of an energy conservation program within the hotel were 47% was (Agree) about this and 18% (Strongly Agree). The total approval rate was 65%. the employees in the study population, the trend towards the approval was 3.49 and the standard deviation of the criteria is 1.19 .The researcher believes that this result is due to the existence of an energy conservation program inside the hotel of the important things, even if it requires a high financial cost and the management of these hotels think that they need it and it is necessary to have this program as it will provide the consumption of quantities of energy used in the hotel and thus reduce costs. This is agreeing with (Scanlon, 2007) he pointed out the importance of reducing the consumption of energy in hotels, especially as it reduces costs.

In terms of the hotel's use of renewable energy, the responses of the employees were (Strongly not Agree) with percentage 62%, and (Not Agree) with percentage 22%. The total percentage of disapproval was 84% of the employees in the study population. The mean direction towards disapproval was 2.95 and the standard deviation was 1.17 .The researcher said that this result is due to the fact that the use of renewable energy is a modern trend in energy conservation, but it needs a high cost and there is difficulty in the implementation and maintenance and the management of these hotels see that there's no need for it them and they are satisfied in terms of energy conservation and the application of environmental practices using energy efficient equipment and devices. This is in contrast to what (John, 2016) stressing the importance of using renewable energy for its benefits, including energy conservation and reducing pollution from carbon dioxide emissions from energy use.

The results of the previous table indicate that the employees' responses to the use of energy efficient appliances, the employees' responses to the standard were (Not Agree) it was percentage 25%, and the criteria (Strongly Not Agree) were 23%. The results of the survey were: 2.95 and the standard deviation is 1.51, the total approval rate was 48%. The awareness of some hotel departments of the importance of energy conservation and the importance of the application of EMS even if there is a material cost on the hotel, they are aware of the benefits later and often these hotels are those that belong to global chains and there are other departments that believed that there is no need for the hotel to bear any material cost due to their lack of awareness of the importance of energy conservation and the application of sound environmental management systems and the benefits of their subsequent application.

As for the hotel's use of energy-saving lamps in the guest rooms, the employees' responses were (Agree) about 34%, and the (Strongly Agree) it was percentage 30%. The total approval rate was 64%. The mean was 3.48 and the deviation 1.38. This is due to the awareness of the management of these hotels of the importance of energy conservation and their interest in the application of EMS may also be due to the fact that if the use of saving lamps it will cost them but they will recoup their cost by saving energy over a year or two of use. This is what (Karthik, 2015) pointed out the importance of switching light bulbs to other energy-saving as they provide 10: 25% less energy.

Third: There was a need to use (T. Test) between a number of variables to study the significance of correlation between a set of questions to prove the validity of the third hypothesis H3 or its validity (There is a statistically significant relationship between classification of hotels and application of EMS), Where the test was carried out through the axis of the hotel degree and between the ages of awareness of the employees of the application of environmental management systems as follow:

Table 3: Analysis the Hypothesis of H3

		Levene's Test for Equality of Variances		t-test for Equality of Means			
		F	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
(1)	Equal variances assumed	.066	-9.857-	148	.000	2.57109	.26085
	Equal variances not assumed		-10.233-	52.329	.000	2.57109	.25124
(2)	Equal variances assumed	.911	-8.275-	148	.000	2.45006	.29607
	Equal variances not assumed		-8.102-	43.627	.000	2.45006	.30238
(3)	Equal variances assumed	2.674	-6.168-	148	.000	2.01645	.32694
	Equal variances not assumed		-5.979-	42.155	.000	2.01645	.33728
(4)	Equal variances assumed	.649	-8.367-	148	.000	2.39483	.28621
	Equal variances not assumed		-8.049-	41.054	.000	2.39483	.29754
(5)	Equal variances assumed	2.484	-7.988-	148	.000	2.28085	.28552
	Equal variances not assumed		-7.472-	37.259	.000	2.28085	.30527
(6)	Equal variances assumed	1.223	.251	148	.803	.09518	.37989
	Equal variances not assumed		.238	39.463	.813	.09518	.39946
(7)	Equal variances assumed	3.410	-12.264-	148	.000	2.81904-	.22987
	Equal variances not assumed		-14.154-	55.928	.000	2.81904-	.19917
(8)	Equal variances assumed	.095	-9.223-	148	.000	2.60752-	.28271
	Equal variances not assumed		-9.328-	48.516	.000	2.60752-	.27952

According to the data in the previous show that a strong relationship was found among them in most areas of awareness of environmental practices, this can be illustrated by the data in the following table (3).

Fourthly: We need to use the (Chi-Square) to calculate the degree of morale between the obstacles faced by employees in the room division and the application of

environmental management practices H4, The following table (24) shows the degree of morale among the different axes.

Table 4: the Chi-Square Test of H4

	Y6	Y7	Y8	Y9
Chi-Square	2.275E2 <sup>b</sup>	1.768E2 <sup>c</sup>	1.965E2 <sup>c</sup>	2.276E2 <sup>a</sup>
Df	24	28	28	31
Asymp. Sig.	.000	.000	.000	.000

According to the data in the previous show that (4) show that a strong relationship was found among them in most areas between the obstacles faced by employees in the room division and the application of environmental management practices.

### Conclusion

This research revealed that environmental management is becoming more and more known topic in business life and also in the hospitality industry to which this thesis was focused. This research revealed that environmental management is becoming more and more known topic in business life and also in the hospitality industry to which this thesis was focused. Focusing on environmental management can also be seen as an investment in environmental management systems ISO14001 while it improves the manners how operations that have an effect on environment are dealt in hotels. The recent launching of the ISO 14001 standard to adopt environmental management systems has renewed practitioners' interest in the implications for (water conservation energy management, reduction waste). This issue has been under-researched in the scholarly literature. This lack of research is especially evident with the development of new versions of the standards for environmental management-ISO 14001:2015. This article contributes to the literature shedding light on this issue. There is Great challenge of application ISO 14001:2015 as international references for environmental practices. However, housekeeping employee's interest for hotel's an environmental practice is thus probably highly related to the general mindset of people towards environmental issues.

### Recommendation

Based on the field research and the results of this practical study, the researcher was able to make a number of recommendations and suggestions, the recommendations of the study were presented as follows: Work on developing programs to preserve the environment and its resources through the introduction of experts to train employees and raise the level of environmental awareness by increasing the rates of training programs in coordination with hotel management so that the employees apply the systems of environmental management in the right manner. The owners of hotels and investors must be aware of the importance of preserving the environment and the importance of implementing environmental management systems in the pre - opening phase of the hotel until the construction processes and the selection of employees in the correct manner. Interest printing internal brochures and pamphlets explaining the importance of raising the level of environmental awareness and environmental practice of employees and benefits of the application of EMS and distribution to the employees in housekeeping department. It should be the managers of housekeeping department prepare records and reports to follow up and record the level of awareness of employees about EMS and their application to sound environmental practices, and prepare a self-study internal to each hotel on a periodic basis the aim is to assess the level awareness of employees to EMS and how to apply them.

## **References**

- Alexander, S. (2002) "Green hotels: Opportunities and resources for success". Zero Waste Alliance, 2-9.
- Ayuso, S. (2006) "Adoption of voluntary environmental tools for sustainable tourism: Analyzing the experience of Spanish hotels". *Environmental Management*, 13, 207- 220.
- Bansal, P. and Bogner, w.c.(2008) "Deciding on ISO 14001: Economics, institutions, and context", *Long Range Planning* , Vol. 35, No .3, pp.269-290.
- Becken, S., Frampton, C. & Simmons, D. (2001) "Energy consumption patterns in the accommodation sector the New Zealand case". *Ecological Economics*, 39(3) 371-386.
- Beredugo, S.B., Mefor, I.P. (2012), "The Impact of Environmental accounting and Reporting on Sustainable Development in Nigeria", *Research Journal of Finance and Accounting*, Vol. 3, No. 7, pp. 55-63.
- Bohdanowicz, P. (2006). "Environmental Awareness and Initiatives in the Swedish and Polish Hotel Industries Survey Results". *International Journal of Hospitality Management*, 25(4), 662-682.
- Boiral, O.; Guillaumie, L.; Heras-Saizarbitoria, I.; Tayo Tene, (2017) C.V. Adoption and outcomes of ISO 14001: A systematic review. *Int. J. Manag. Rev.* pp24-86.
- Borgaard OK, Gimsing AL (2008). "Fate of Glyph Sate in Soil and the Possibility of Leaching to Ground and Surface Waters: a Review". *Pest Management. Sci.*, 64: 441-456.
- Burzis.H.Ustad, (2010) " The Adoption and Implementation of Environmental Management Systems in New Zealand Hotels: The Managers' Perspective". A dissertation Submitted to Auckland University of Technology in Partial Fulfillment of the Requirements for the Degree of Master of International Hospitality Management (MIHM).
- Daddi, T.; Testa, F.; Iraldo, F.; Frey, M. (2014) "Removing and simplifying administrative costs and burdens for EMAS and ISO 14001 certified organizations: Evidences from Italy. *Environ. Eng. Manag. J*, 13.
- Deng, S. (2003). "Energy and water uses and their performance explanatory indicators in hotels in Hong Kong". *Energy and Buildings*, 35, 775-784.
- Erdogan, N. and Baris, E. (2007). "Environmental protection programs and conservation practices of hotels in Ankara", *Turkey. Tourism Management*, 28:604- 614.
- Gwen Christini ., Michael Fetsko., Chris Hendrickson, (2004)." Environmental Management Systems and ISO 14001 Certification for Construction Firms" *Journal of Construction Engineering and management*. 10.1061/~ASCE! 0733-9364~2004! 130:3(330).
- Han, H., Hsu, L. Sheu, C. (2010). "Application of the Theory of Planned Behavior to Green Hotel Choice": Testing the Effect of Environmental Friendly Activities. *Tourism Management* 31, pp. 325–334.
- International Standard Organization ISO (2009) "Environmental Management – The ISO 14000 Family of International Standards", available at: <http://www.iso.org/iso/theiso14000family.pdf>.
- Jaana Romppanen., (2010) "Increasing Environmental Awareness of Hotel Customers, Case: a Turkish Eco Hotels", Saimaa University of Applied Sciences, Imatra Unit of Tourism, and Degree Programmed in Tourism Bachelor's Thesis 2010.

- John. V, (2016), " Energy Consumption and Use of Renewable Energy Sources in Hotels: A Case Study Crete", Journal of Tourism and Hospitality Management. Vol. 4, No. 2, pp.
- Karthik , M, (2015), "A New Trend in Hotel Housekeeping Practices and Challenges" , International Journal of Innovative Research in Science, Engineering and Technology .Vol. 4, Issue 6, June 201, 4169- 4173.
- Kasim, A. (2007). "Towards a Wider Adoption of Environmental Responsibility in the Hotel Sector". International Journal of Hospitality & Tourism Administration, 8(2), 25-49.
- Laskurain, I. Heras, S, I. (2015); "Fostering renewable energy sources by standards for Environmental and energy management". Renew. Sustain. Energy Rev. 50, 1148–1156.
- Leslie, D. (2005). "Sustainability and Environmental Management". In International Cultural Tourism: Management, Implications and Cases, pp. 112-121.
- Manaktola, K. and Jauhari, V. (2007). "Exploring Consumer Attitude and Behavior Towards Green Practices in the lodging Industry in India". International Journal Contemporary Hospitality Management, 5 (5), 364-377.
- Matt A. Casado, , (2012). "Housekeeping Management", John Wiley & Sons, Inc., Hoboken, 2nd edition, New Jersey
- Meade, B., & Pringle, J. (2001). "Environmental Management Systems for Caribbean Hotels and Resorts: A case study of five properties in Jamaica". Journal of Quality Assurance in Hospitality and Tourism, 2(3/4), 149–159.
- Mensah, I. (2006). "Environmental Management Practices Among Hotels in the Greater Accra region". Hospitality Management, 25, PP: 414-431.
- Michelle Millar and Seyhmus Baloglu (2008), "Hotel Guests Preferences for Green Hotel Attributes" University of San Francisco.
- Murray. M and Benny. C, (2009). "Tourism and Hospitality Studies introduction to Hospitality" Manual on Module II Introduction to Hospitality, Personal, Social and Humanities Education and Curriculum Development Institute, Hong Kong, pp. 17 to 50.
- Nee, G. Y., and Nabsiah, A. W, (2010), "The Effect of ISO 14001 Environmental Management System Implementation on SMEs Performance": An Empirical Study in Malaysia. Journal of Sustainable Development, 3(2), 215.
- Nicol J.F., Humphreys M.A. (2002) : "Adaptive Thermal Comfort and Sustainable Standards for Buildings", Energy and Buildings, 34, 563-572.
- Nitschke and William D. Frye. (2008). "Managing Housekeeping Operations". American Hotel and Lodging Educational Institute Operations and Management. Oxford University Press, India
- Park, J. (2009). "The Relationship Between top Managers' Environmental Attitudes and Environmental Management in Hotel Companies". Virginia Polytechnic institute and State University, Virginia.
- Raghubalan .S.R, (2007). "Hotel Housekeeping Operations and Management". 2<sup>nd</sup> edition .Oxford University Press, India.
- Raghubalan .S.R, (2015). Hotel Housekeeping, 3<sup>rd</sup> edition ,Oxford University Press, India.
- Rahman, I., Reynolds, D. and Svaren, S. (2012). "How 'Green' are North American Hotels? An Exploration of Low-Cost Adoption Practices". International Journal of Hospitality Management, 31, 720-727.

- Rivera, J. (2002). "Assessing a Voluntary Environmental Initiative in the Developing World: The Costa Rican certification for sustainable tourism". *Policy Sciences*, 35(4), 333-360.
- Scanlon, N.L. (2007), "An Analysis and Assessment of Environmental Operating Practices in Hotel and Resort Properties", *International Journal of Hospitality Management*, vol. 26, no. 3, pp. 711-723.
- Sherman, M. (2008). "Green lodging Program Helps Revive Florida Hotels", *Hospitality Construction*. 3(2): 66-70
- Tortella, B.D. and Tirado, D. (2011). "Hotel water Consumption at a Seasonal Mass Tourist Destination". The case of the island of Mallorca. *Journal of Environmental Management*, 1-12.
- Tzschentke, N., Kirk, D., and Lynch, P. (2004). "Reasons for Going Green in Serviced Accommodation Establishments" *International Journal of Contemporary Hospitality Management*, 16 (2), 116-124.
- Walker R.john, (2013)," Introduction to Hospitality Management" Rooms Division Operations. 6Edition, Chapter 3.pp:101-130.
- Webster, K. (2000). "Environmental Management in the Hospitality Industry": a Guide for Students and Managers. London: Cassel.