

Environmental Cost Accounting and Environmental Site in Hotels

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ملخص:

صممت هذه الدراسة للتحقق في تأثير ممارسات محاسبة التكاليف البيئية على الممارسات البيئية لموقع الفندق ، تم جمع البيانات الميدانية من خلال استمارة إستقصاء وزعت على عينة عشوائية تتكون من 220 من المدراء من مختلف الأقسام بفنادق الخمس نجوم بمدينة شرم الشيخ .تم تحليل البيانات المتحصل عليها باستخدام الاصدار الخامس و العشرين من برنامج تحليل الحزم الإحصائية للعلوم الاجتماعية " IBM SPSS Statistics". ولتحديد العلاقة بين متغيرات الدراسة تم إستخدام تحليل ارتباط بيرسون ، كما أشارت النتائج إلى وجود علاقة ذو دلالة احصائية بين متغيرات الدراسة ،أوصت الدراسة بأن الإدارة الفندقية يجب أن تركز على زيادة ممارسات محاسبة التكاليف البيئية مما تؤثر على الممارسات البيئية في موقع الفندق.

الكلمات المفتاحية : محاسبة التكاليف البيئية- ممارسات محاسبة

التكاليف البيئية - الممارسات البيئية في موقع الفندق

Abstract:

The study was designed to explore the effect of environmental Cost accounting practices on environmental site in hotels. The tool of the study was a questionnaire about demographic data, environmental cost accounting practices scale and environmental site scale. The sample consisted of 220 managers from five-star hotels in Sharm El-Sheikh, Egypt. Statistical Package for Social Sciences (IBM SPSS Statistics 25) was used for data processing. Besides, examining the relationships between the two variables, by using Spearman correlation. The study has shown a statistically significant effect between environmental cost accounting practices variable and the environmental site practices variable at the Egyptian hotels in Sharm El Sheikh, It has also shown a statistically significant effect between identification, measurement and disclosure of environmental costs and the environmental site practices. Based upon both the literature reviewed and the field study findings, hotels should raise the level of environmental cost accounting practices efficient through: establishing a set of training courses and programs that help employees and managers to improve their personal, practical, and behavioral skills to have a high level of implementation of environmental cost accounting practices which support environmental site practices

Key words: Environmental cost accounting practices, Environmental site.

1. Introduction

The importance of environmental awareness in hotels is growing 98 percent of European hoteliers agree that their operations have a detrimental impact on the atmosphere in developing European countries (**Buyukipekci 2015**). According to **Doody (2010)** however, there is still a resistance to undertaking formal environmental management programs, which include the development and implementation of environmental management systems. Those systems are used for development and implementation of environmental policies and for managing environmental aspects (ISO 14004, 2004). Their implementation often includes major changes in business processes and also certification costs. That's why some hotels haven't implemented them yet. However, the ISO 14001 as well as the European Eco-Management and Audit Scheme (EMAS) provide hotels with an opportunity to start basing their own sustainability on environmental performance and to increase responsibility to stakeholders and the community as a whole. The main evidence of the hotel's environmental responsibility and environmental performance is to provide an environmental report as the hotel has to have developed and implemented environmental accounting. Environmental cost accounting is a broad concept that covers the measurement, detection, registration, and interpretation of the effect of economic operations on the environment in order to include those data in management decision - making and nonfinancial reporting to

stakeholders (**Mace, 2019**). As a result, environmental cost accounting is used to identify measure and disclose the effect of organizations processes on the environment. Its goal is to maximize the amount of valuable knowledge accessible to those who need or may gain from it. Which encompasses emerging fields of eco-accounting as well as all areas of accounting that could be influenced by a company's approach to environmental concerns. The structure, which can provide each organization with management baseline knowledge for environmental management, is based on the application of environmental cost accounting (**Persic et al., 2013**).

2. LITERATURE REVIEW

2.1. Environmental Cost Accounting Concept (ECA)

According to **Cohen and Robbins (2011)** Environmental Cost Accounting or Green Accounting was identified as a form of accounting that includes the intangible costs and benefits of business activity, including the damage of the environment of business decisions and strategies. **Vasilea and Manb (2012)** defined **ECA** as the process of identification, selection, measurement, analysis, internal reporting and use of materials and energy information, environmental costs, as well as other cost data within the decision-making process in order to take convenient decisions capable of contributing to the environment. **Tajgashinova and Akhmetova (2019)** stated that **ECA** is an environmental-oriented internal management tool which can

be used for other external purposes. The variety of use of this tool is broad and varies from business to business. **Gautama (2010)** described **ECA** as a type of accounting that is more directly concerned with environmental issues than financial and management accounting; it is the part of the information system that allows data collection and analysis, performance tracking, decision-making, and transparency for environmental cost management and transparency.

United Nations Division for Sustainable Development (UNSD.2011) said that its meaning emphasizes that information for internal decision making is created by environmental cost accounting systems, where such information can be concentrated either physically or monetarily. For internal organizational calculations and decision-making, the general use of environmental cost accounting information is intended. Internal decision-making environmental cost accounting procedures include both physical procedures for material and energy use, flows and final disposal, monetized cost, savings and revenue procedures related to operation activities with a potential environmental impact. **Deegan (2013)** explained that **ECA** is an area that identifies information about the consumption of energy, measures and communicates the costs of the environmental effects of an organization or national economic impact. Costs include the cost of cleaning or fixing polluted areas, environmental fines, fees and taxes, the installation of equipment to prevent pollution and the cost of waste management. **Mace (2019)** emphasized that **ECA** is a global concept for the measurement, classification, reporting

and evaluating of the environmental effect of economic practices to include such knowledge in the decision-making process of management and the disclosure of information to non-financial reporting stakeholders. **ECA** is a method that can generate internal decision-making information that can be either physical or financial (**Burritt & Christ, 2013**).

2.2. Objectives of Environmental Cost Accounting

Rounaghi (2019) asserted that Environmental cost accounting is a systematic method for incorporating environmental factors into business decisions. The incorporation of internal environmental costs in the accounting system will help companies make decisions that will enhance environmental efficiency in addition to raising long-term profitability and, by bringing themselves to the stock market as a green industry, the shareholders' wealth will be increased and an environmental accounting system built on the concept of the evolution of classical accounting will be provided. The costs of emissions and their removal as a function of production or services are measured in this respect, along with the income and the costs of goods and services themselves.

Schaltegger (2015) (2015) mentioned the objective of the environmental cost accounting is to allow the economic entities, local and governmental collectivities, to have a correct assessment of the impact exerted by the productive activity of an economic entity on the environment. Therefore, the totality of the expenses borne by the productive economic entity voluntarily or as a result of the legal settlements into

force - for the recondition or protection of the environment as a result of the activity carried out are based on the environmental costs. In other words, environmental costs were at the basis of the environmental.

2.3. Benefits of Environmental Cost Accounting

According to **Taygashinova et al. (2019)** the usefulness of the implementation and application of environmental cost accounting decisions in enterprises are:

A-the implementation of environmental protection: compliance with the obligations of statistical reporting; Stimulation of a productive and competitive system of environmental protection; purposeful preparation and management of environmental costs; Ensuring cost transparency in relation to its originator as an instrument of contact internally and externally.

B- Ecological effectiveness: elimination of environmental costs at the same time: Increasing transparency due to environmental cost quantification; Enhancing economic and environmental efficiencies; Identification of the potential that has been accomplished and intended in order to change the economic and environmental situation.

2.4. The Barriers of the Environmental Cost Accounting

Burritt et al. (2013) ensured that coordination, costs and knowledge are the problems of the environmental cost accounting system. Communication is often not well developed between accounting and other departments. In overhead accounts, environment-related cost information is

often 'hidden.' Information on the use, flow and cost of materials is not always properly monitored. Many kinds of expense information relevant to the economy are not found in accounting reports, and investment decisions are sometimes taken due to incompleteness.

Setthasakko (2010) confirmed that the obstacles of accounting for environmental costs are as follows:

A-Lack of organizational learning: Changing corporate culture towards sustainability relies on the ability to manage human systems. Organizational learning is the process of improving performance by means of creating, acquiring and transferring knowledge throughout an organization.

B- A narrow focus on economic performance: The narrow view of environmental organizations comes in that business owners have a short-term focus of making a profit and the economic benefits that business brings, without considering the negative effects companies have on the environment, which will harm the environment in the future.

2.5. The Components of Environmental Cost Accounting System

Environmental cost accounting system includes three components; they are going to be discussed in the following:

2.5.1 Environmental Cost Accounting Identification

The United Nations' division for sustainable development has suggested a concept of environmental costs that separates three categories of expenses ; The first is concerned with all efforts made by organizations to reduce

the environmental effects of their activities through the use of “end-of-pipe” measures and technologies; the second is concerned with all activities undertaken by organizations to prevent environmental effects before the end of the production process, for example, through the use of cleaner technologies or the establishment of environmental stewardship committees. The third categories of costs are based on the concept that everything that does not enter a company's product, such as trash, waste water, or wasted energy, is a non-product output, and that any expenditures connected with this non-product output are considered environmental costs. These expenses include both the materials' purchase price and the costs of generating the non-product output (Al Sharairi et al., 2011). Environmental costs are accounted for as general and administrative expenses on the company's financial statement. Employee costs, general costs, service charges, taxes, fees, and levies, depreciation and amortization costs, maintenance costs, education and training costs, and research and development costs are all examples of such costs (Basuki et al., 2018). Costs related to the environment can also be classified as internal management costs or external financial costs. Internal environmental cost to the company is made up of direct, indirect, and uncertain costs in this method. Costs like as cleanup or restoration, waste management, and other compliance and environmental management costs are common examples. Internal costs are often evaluated and allocated using standard costing models accessible to the company. The direct cost of pollution may be linked back to

a certain product, location, and kind of pollution or pollution avoidance program (e.g., waste management or remediation costs at a particular site). Environmental training, research and development, record keeping, and reporting are examples of indirect costs that are assigned to cost centers such as goods, departments, and activities. External cost refers to the expense of environmental harm that occurs outside of the company (**Betianu, 2013**).

Gang (2014) focuses on the environmental operating costs which are a collection of environmental costs of raw materials and labor that have arisen in the manufacturing process, inputs of raw materials and operation of equipment in order to avoid or minimize the risk of bad appearance of business environmental consequences if the company complies with environmental protection laws and regulations in the company. The following types of forms are primarily included: the cost of environmental protection for human capital, the cost of repairing equipment, the cost of auditing the business environment and the costs of sustaining the operation of environmental equipment and the opportunity cost of these funds. While environmental costs in conventional financial accounting are known as period expenses, they do not deny that it is one of the reasons that the business can have a greater effect on the cost of the enterprise product.

2.5.2 Environmental Cost Accounting Measurement

There is no doubt that user of financial reporting need the environmental information to make decisions. This

environmental information is mainly the amount of costs and benefits that return to the society and stakeholders. All of this cannot be done without following the process of environmental accounting measurement.

The measurement process is a translation of different activity processes in a more effective way in making decisions, and this requires that the accounting measurement of the organization's operations in the environment include any environmental activity of the organization with the descriptive and environmental information that differs from the data of economic activity. also, it is a quantitative and monetary measurement of the financial events arising from the organization's economic activity, through the compilation, tabulation, analysis and registration of these economic operations until the final calculations of the activity are prepared at the end of the financial period (**Salem,2008**).

Adam (2016) said that environmental cost measurement is a quantitative or financial translation of an organization's environmental activity so that environmental information can be obtained to explain to users the institution's financial statements. Environmental measurement can be done from the institution's perspective or from the perspective of the community, as follows. Environmental measurement, from the perspective of the enterprise, is the number of costs incurred by the institution as a result of its obligation and responsibility to the environment, which can be elective or mandatory under the

legislation, and thus the measurement is based on the real cost. **Alhassan et al., (2015)** agreed that Environmental accounting measurement contributes to decision-making through information about the activities of the organization and the stakeholders of the organization; It also helps in comparing institutions with the public and private sectors and thus work to improve the distribution of resources among them; Providing environmental accounting measurement of environmental data enables environmental feasibility studies to see if the organization is achieving a return in society. The lack of measurement of the environmental activities of the enterprise leads to the lack of knowledge of the different effects of activity in the environment and thus influences decisions to protect the environment from adverse effects.

Ahmed (2009) said that accounting measurement is essentially a display of quantitative and important phenomenon events and facts of a certain financial and economic unity in a beneficial and obvious format. Accounting measurement of environmental is a calculating the values of all aspects of the costs created by industrial businesses' commitments to social and environmental obligations, whether or not this commitment is only under the law (**Chhadha, 2010**).

Because the environment is so important, it is necessary to employ measuring instruments that are appropriate for the subject. Accounting data is one of the most useful instruments for assessing commercial and economic concerns, and accounting is sometimes referred to

as the "business language." Quantitative data presented through accounting systems is useful for understanding corporate performance, management performance (particularly financial managers), environmental expenses, and other expenses (**Ben Bouzian et al., 2012**)

2.5.3. Environmental Cost Accounting Disclosure

Environmental cost accounting disclosure is a commitment to reveal all facts and information related to the activity of companies that may affect investment decisions. Disclosure in its wide meaning refers to the disclosure of confidential information and its approval. Environmental disclosure is a technique or means by which firms can inform the public about their many aspects, such as environmental activities, using financial statements or reports, as this is the most appropriate vehicle for achieving this goal (**Tahar, 2011**). Because of the growing need for environmental disclosure among financial statement users and the shortcomings of traditional disclosure The accounting disclosure through its current form does not meet the needs for information and data on the institution's social responsibility to environmental protection, so there was an immediate need to develop a standard accounting disclosure thought to include environmental disclosure in the form of supplements lists and traditional reporting, or in the form of lists and independent reporting (**Ben Bouzian et al., 2012**).

Environmental accounting disclosure will lead to long-term profits for a company by allowing for the most efficient use of energy and inputs. Apart from that, companies that

disclose their environmental data may have a competitive advantage over their competitors. Environmental disclosure by travel agent and hotel firms helps to enhance service pricing and increase the effectiveness of these companies' cost systems (**Azhar et al., 2019**). According to **Al-Thaher et al. (2011)** the publishing environmental accounting information will boost the company's financial performance. The experiences of certain industrial businesses in the fields of environmental revenue, industrial waste, and accounting disclosure of environmental accounting information may enhance the company's image. Organizations that disclose environmental accounting information may gain a competitive advantage, making it easier to acquire various bids and tenders, since many companies and interested parties want to do business with companies that have a strong environmental reputation (**Saleh et al., 2019**).

2.6. Environmental Site in Hotels

Environmental policies exist around and on the hotel grounds to help enhance overall hotel operating systems. Hotels all around the world have begun to use renewable energy sources to assist minimize their reliance on the country's energy source (**Cheung & Fan, 2013**) .

Solar energy was employed for drying fabric used in the hotel in order to reduce the amount of electricity consumed for laundry (**Deloitte, 2015**).

In addition, electricity was generated using a mixture of wind and sun energy. However, In Hong Kong, only heat energy was generated using solar energy (**Cheung & Fan, 2013**).

Harvey (2014) Hotels in Poland were observed to change or modify building insulation in order to become more environmentally friendly. Environmental initiatives implemented on hotel grounds are not appropriate for all places because they are tied to energy generation, hence these initiatives cannot be broadly adopted by all hotels.

3. Research Objectives, Conceptual framework and Hypotheses

The objectives of this study are to determine:

1. The effect of environmental cost identification on the environmental site practices in hotels.
2. The effect of environmental cost measurement on the environmental site practices in hotels.
3. The effect of environmental cost disclosure on the environmental site practices in hotels.

Figure (1) shows the relationship among variables of the study.

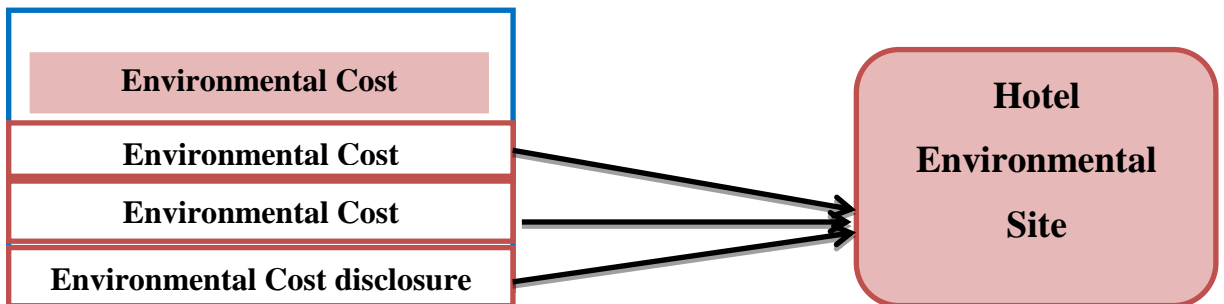


Fig. 1: Conceptual Framework

As for the research hypotheses, alternate hypotheses were used to identify if there is a significant relationship between the variables mentioned above. The following hypotheses are formulated:

H1: Environmental cost identification affects positively on the environmental site practices in hotels.

H2: Environmental cost measurement affects positively on the environmental site practices in hotels.

H3: Environmental cost disclosure affects positively on the environmental site practices in hotels.

3. 1.Research Methodology

The questionnaire forms were prepared for a random sample of the managers and distributed in investigated five star hotels in Sharm El sheikh. According to **Chamber of Hotel Establishments (2021)**, there are about 34 five star hotels in sharm el sheikh . Out of 34 hotels, 24 hotels were chosen to carry out the field study as show in Table 1:

Table1: The Investigated Sample of five stars hotel in Sharm- El sheikh.

| Investigated Hotels | | |
|----------------------------|-------------------------|-------------------|
| Stella Sharm | Renaissance golden view | Baron Sharm |
| Sultan gardens | Reef oasis Blue bay | Baron palms |
| Tropitel Naama bay | Novotel | Concorde El Salam |
| Scarros resort (Marriot) | Movenpick resort | Diamond Sharm |
| Savoy Sharm | Monte Carlo Sharm | Dreams beach |
| Royal elbatros moderna | Kiroseiz resort | Four seasons |
| Rixos Sharm | Sunrise Arabian resort | Grand plaza |
| Grand Rotana | Hyatt regency | Ibrotel palace |

Table 2: Questionnaire Forms for the Sample of the Study.

| No | Questionnaire Forms | No of Distributed Forms | Lost Forms | Returned Forms | Excluded Forms | Valid Forms |
|-----------|----------------------------|--------------------------------|-------------------|-----------------------|-----------------------|--------------------|
| 1 | Managers | 231 | 6 | 225 | 5 | 220 |

The Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows was used to analyze the valid forms. Among its many modules for statistical data analysis, including descriptive statistics such as frequencies, charts, and categorical data analysis. Frequency counts, percentage distributions. The analysis included the following statistical methods:

1. **Alpha Cronbach's test:** to know the reliability of the study tool.
2. **Descriptive analysis:** Frequencies, percentages, means, standard deviations, and ranking on the basis of the most homogeneity values to describe the characteristics of the sample of the study. And to identify the response to the study dimensions.
3. **Spearman correlation coefficients:** to test the correlation among the study variables and the validity of hypotheses. It is used in the case of nonparametric tests and in the case of the ordinal data.

4. Results and Discussion

4.1. Reliability and validity analysis

Cronbach's Alpha coefficient was used to measure the reliability of the study instrument. The reliability and validity coefficients are presented in table (3).

Table3: Alpha Cronbach's Coefficient of reliability of the scale constructs

| Dimensions | Number of Statements | Alpha |
|-----------------------------------|----------------------|------------|
| Environmental cost identification | 6 | .92 |
| Environmental cost measurement | 6 | .80 |
| Environmental cost disclosure | 6 | .91 |
| Hotel environmental site | 10 | .86 |
| . Overall Total Scale | 28 | .76 |

Table (3) clarified that Cronbach's Alpha coefficient of all items of the study questionnaire had high scores (76 %). George and **Mallery (2003)** indicates that Cronbach's Alpha coefficient acceptable at 0.60 or higher and excellent at 0.90 or higher. Since all the four parts of the questionnaire had excellent Alpha scores, it can be assured that the instrument is reliable and the items included measure what it is supposed to measure.

4.2 Demographic profile of the respondents

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The demographic profiles of respondents are shown in table (4). According to the data obtained,

Table 4: Demographic Data of Financial Managers.

| Demographic Data | Attribute | Statistics | |
|---------------------|------------------------------------|------------|------|
| | | Freq | % |
| Gender | Male | 206 | 93.6 |
| | Female | 14 | 6.4 |
| Total | | 220 | 100 |
| Age | From 25years - Less than 35 years | 91 | 41.4 |
| | From 35 years – Less than 45 years | 63 | 28.6 |
| | From 45 years – Less than 55 years | 39 | 17.7 |
| | More than 55 years | 27 | 12.3 |
| Total | | 220 | 100 |
| Educational level | Bachelor | 126 | 57.3 |
| | Higher diploma | 32 | 14.5 |
| | Master | 35 | 15.9 |
| | Ph. Doctor | 27 | 12.3 |
| Total | | 220 | 100 |
| Years of Experience | Less than 5 years | 66 | 30.0 |
| | From 5 – 10 years | 88 | 40.0 |
| | From 10 – 15 years | 41 | 18.6 |
| | 15 years and over | 25 | 11.4 |
| | Total | 220 | 100 |
| Position | Financial manager | 14 | 6.4 |
| | Room division manager | 80 | 36.4 |
| | F.B manager | 77 | 35.0 |
| | Maintenance manager | 31 | 14.1 |

| | | | |
|--|---------------------------|-----|-------|
| | Sustainability management | 18 | 8.2 |
| | Total | 220 | 100.0 |

The results in Table 30 indicated that out of the 220 respondents, there were 93.6 % males and 6.4 % were females. This refers to that the majority of managers in investigated hotels were male. They were from various age groups. 41.4% were from 25 – Less than 35 years, 28.6 % were from 35 years - less than 45 years, 17.7 % were From 45 years – Less than 55 years, and 12.3 % were 55 years and over.

Their education levels were 57.3 % bachelors degree, 14.5. % were higher diploma, 15.9 % were master degree, and 12.3 % got PhD degree. According to the years of experience , the majority of the sample. 40 % was From 5 – 10 years, 30 % were Less than 5 . While 18.6% was From 10 – 15 years, but 11.4 % was 15 years and over. They were from various departements , 36.4 % were room division managers, 35 % were f.b managers, 14.1% were maintenance managers, 8.2 % were sustainability manangers but 6.4% were financial manager.

4.3. Objective Data

Part one: Identification of Environmental Cost

The aim of these statements was to study the identification of environmental costs practices in hotels the answers of these statements are presented in Table 5.

Table5: Identification of Environmental Cost.

| Statements | Statistics | | |
|--|------------|------|---|
| | Mean | SD | R |
| 1. My hotel has identified operation cost | 3.73 | 1.08 | 1 |
| 2. Identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risk. | 2.75 | 1.36 | 4 |
| 3. My hotel has set aside research and development cost. | 1.92 | 1.19 | 5 |
| 4. My hotel has a team for environment administration and planning. | 3.03 | 1.25 | 3 |
| 5. Effective management accounting improves the identification of cost. | 1.51 | .93 | 6 |
| 6. My hotel has set aside expenses for remediation measures. | 3.67 | 1.14 | 2 |
| General Mean and Standard Deviation | 2.86 | 1.16 | |

According to the results show in table5.The respondents agreed on two statements from all statements which are arranged according to their means as follows:

- The statement of "My hotel has identified operation cost." has got the highest percentage of agreement from the respondents at (**Mean= 3.73**).

This result agreed with (**Gang Fang, 2014**) which focuses on the environmental operating costs which are a collection of environmental costs of raw materials and labor that have arisen in the

manufacturing process, inputs of raw materials and operation of equipment in order to avoid or minimize the risk of bad appearance of business environmental consequences if the company complies with environmental protection laws and regulations in the company.

- “My hotel has set aside expenses for remediation measures.” at (**Mean= 3.67**).

Meanwhile, the responses of employees were neutral with two statements which are arranged according to their means as follows:

- “My hotel has a team for environment administration and planning” at (**Mean= 3.03**).
- “Identification of environmental costs associated with a product facilitates the reduction or elimination of associated losses and risk” at (**Mean= 2.75**).

On the other hand, their responses disagreed with two statements which are arranged according to their means as follows:

- “My hotel has set aside research and development cost.” at (**Mean= 1.92**).
- “Effective management accounting improves the identification of cost.” at (**Mean= 1.51**).

Part two: Measurement of Environmental costs

The statements in this part aimed to study the extent of the measurement of environmental costs in investigated

hotels. The aim of these statements in this dimension was to study the answers of respondents toward the measurement of environmental costs in investigated hotels. The answers of these statements are presented in Table 6.

Table6: Measurement of Environmental costs.

| Statements | Statistics | | |
|---|------------|------|---|
| | Mean | SD | R |
| 1. The hotel has allocated adequate financial resources for environmental practices. | 3.52 | 1.22 | 1 |
| 2. The hotel has complied with requirements for liability identification. | 2.35 | 1.33 | 5 |
| 3. The hotel estimated the past practices and expected changes in regulations. | 3.20 | 1.17 | 2 |
| 4. The hotel keeps records of all environmental practices. | 2.01 | 1.25 | 6 |
| 5. There exists a relationship between the components of a firm value and voluntary environmental disclosure. | 2.60 | 1.19 | 4 |
| 6. The hotel measures the costs that integrate environmental issues into their strategic planning process. | 2.86 | 1.34 | 3 |
| General Mean and Standard Deviation | 2.95 | 1.25 | - |

The data in Table 6 indicated that, the respondents agreed with two statements from all statements of measurement of environmental costs practices. According to the mean, they ranked as follows:

- “The hotel has allocated adequate financial resources for environmental practices has got the highest agreement with an average” at (**Mean =3.52**). This result agreed with (**Adam, 2016**) which said that environmental cost measurement is financial translation of an organization's environmental activity.
- "The hotel estimated the past practices and expected changes in regulations” at (Mean=3.20).

Meanwhile, their responses were neutral with two statements which are arranged according to their means as follows:

- The statement of "The hotel measures the costs that integrate environmental issues into their strategic planning process." at (Mean=2.86).
- “There exists a relationship between the components of a firm value and voluntary environmental disclosure” at (Mean=2.60).

On the contrary, it could be seen that the responses disagreed with two statements which are arranged according to their means as follows:

- "The hotel has complied with requirements for liability identification.” at (Mean=2.35).

- “The hotel keeps records of all environmental practices” "at (Mean=2.01). This result disagreed with **(Borzuzadeh, 2012) which stated that** accounting data is one of the most useful instruments for assessing commercial and economic concerns; quantitative data presented through accounting systems is useful for understanding environmental expenses, and other expenses.

Part three: Disclosure of Environmental costs

The aim of these statements in this dimension was to study the answers of respondents toward the disclosure of environmental costs in hotels. The answers of these statements are presented in Table 7.

Table7: Disclosure of Environmental costs.

| Statements | Statistics | | |
|---|-------------|-------------|---|
| | Mean | SD | R |
| 1. The hotel sets out its environmental policy and develops information systems for monitoring its performance. | 3.20 | 1.12 | 3 |
| 2. The hotel engages more actively in environmental disclosure in its annual report | 1.84 | 1.14 | 5 |
| 3. Financial information is aggregated and classified according to standard disclosure formats. | 3.04 | 1.27 | 4 |
| 4. The hotel publishes its annual report with timely and reliable information useful for making efficient and effective decision. | 1.81 | 1.13 | 6 |
| 5. The financial information presented is reliable and this enhances the reliability of the financial statements. | 3.28 | 1.22 | 2 |
| 6. Financial statements are prepared in accordance with disclosure requirements | 3.36 | 1.16 | 1 |
| General Mean and Standard Deviation | 2.75 | 1.17 | |

From the results in Table 7, it is clear that the responses of the respondents were neutral with four statements which are arranged according to their means as follows:

- "Financial statements are prepared in accordance with disclosure requirements" at (**Mean= 3.36**). This result agreed with (**Tahar, 2011**) which stated that environmental disclosure is the technique which helps firms to inform the public about their many aspects, such as environmental activities, using financial statements or reports.
- "The financial information presented is reliable and this enhances the reliability of the financial statements" at (**Mean= 3.28**).
- "The hotel sets out its environmental policy and develops information systems for monitoring its performance" at (Mean= 3.20).
- "Financial information is aggregated and classified according to standard disclosure formats" at (**Mean= 3.04**).

But in contrast, their responses disagreed with two statements as follows:

- "The hotel engages more actively in environmental disclosure in its annual report" at (**Mean= 1.84**).
- "The hotel publishes its annual report with timely and reliable information useful for making efficient and effective decision" at (**Mean= 1.81**). This result disagreed with (**Tahar, 2011**) which stated that environmental cost accounting disclosure is a commitment to reveal all facts and information related

to the activity of companies that may affect investment decisions.

Part four: Hotel Environmental Site

The statements in this part aimed to study the environmental site practices in hotels. The answers of respondents are presented in Table 8.

Table8: Environmental Site

| Statements | Statistics | | |
|--|------------|------|----|
| | Mean | SD | R |
| 1. Paints; Use of low VOC paints or water-based paints | 3.47 | 1.17 | 2 |
| 2. Electronic Car Charging: Station For guest use | 3.48 | 1.18 | 1 |
| 3. Local Plants: Use of local plants in gardens | 2.49 | 1.34 | 9 |
| 4. Minimum Water Plants Use of plants that require minimum water for survival | 3.13 | 1.20 | 3 |
| 5. Living Wall : Plants growing indoor on a wall improving air quality | 2.56 | 1.31 | 8 |
| 6. Low Chemical Gardening or Minimal Use of Gardening Chemicals: Use of gardening chemicals that are less harmful to the environment | 2.74 | 1.43 | 6 |
| 7. Natural Lighting: Allowing natural lighting in guest rooms and public areas | 3.07 | 1.32 | 4 |
| 8. Alternative Form of Transportation: Hotel provides bicycle rentals for guest use. | 2.35 | 1.35 | 10 |

| | | | |
|---|-------------|-------------|---|
| 9. "Green" Meetings & Business Centers: Meeting space and business centers is equipped with recycling bins, energy efficient equipment, and other environmentally friendly necessities. | 2.63 | 1.37 | 7 |
| 10. Rooftop Garden/Green Roofs : Growing own herbs and vegetables onsite | 2.95 | 1.36 | 5 |
| General Mean and Standard Deviation | 2.88 | 1.30 | |

The results in Table 8 showed that the respondents agreed with two statements from all statements of environmental site in hotels, which are arranged according to the means as follows:

- “Electronic Car Charging: Station For guest use” at (**Mean= 3.48**).
- “Paints; Use of low VOC paints or water-based paints” at (**Mean=3.47**).

But, their responses were neutral with five statements as follows:

- “Use of plants that require minimum water for survival” at (**Mean= 3.13**).
- “Allowing natural lighting in guest rooms and public areas” at (**Mean= 3.07**).
- “Rooftop Garden/Green Roofs: Growing own herbs and vegetables onsite ” at (**Mean= 2.95**).
- “Use of gardening chemicals that are less harmful to the environment” at (**Mean=2.74**).

- “Meeting space and business centers is equipped with recycling bins, energy efficient equipment, and other environmentally friendly necessities.” at (**Mean= 2.63**).

From these results, it is clear that the investigated hotels are implementing a lot of environmental practices in their site which the respondents' answers were agreed with the majority of all statements. These results agreed with most of practices which mentioned by (**Cheung & Fan, 2013**) ; (**Deloitte,2015**) and (**Harvey ,2014**).

4.4. Correlation analysis between variables of the study

This section discusses the coefficient of correlation among variables of the study. These correlations are illustrated as follows:

4.4.1 The relationship between environmental accounting identification and environmental site practices in hotels.

In order to measure the relationship between environmental accounting identification and environmental site practices in hotels, the Spearman's correlation was used.

Table9: The effect of environmental accounting

| Nonparametric Test | | | Environmental costs identification | environmental site practices |
|--------------------|---|-------------------------|------------------------------------|------------------------------|
| Spearman | Environmental accounting identification | Correlation Coefficient | 1 | .387** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 220 | 220 |
| | environmental site practices | Correlation Coefficient | .387** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 220 | 220 |

identification and environmental site practices in hotels.

Table 9 revealed that, there is a positive correlation among of environmental accounting identification and environmental site in hotels. Where the correlation coefficiency of spearman was 0.387, it is a positive correlation. This positive correlation indicates that whenever the identification of environmental costs increased, whenever hotels environmental practices of site increased, and the opposite is true. Thus, the first hypothesis **H.Corr.1 could be accepted.**

4.4.2. The relationship between environmental accounting measurement and environmental site practices in hotels.

Table (10) illustrates the relationship between environmental accounting measurement environmental site practices; the Spearman's correlation was used.

Table10: The relationship between environmental accounting measurement and environmental site practices in hotels.

| Nonparametric Test | | | Environmental accounting measurement | environmental site practices |
|--------------------|--------------------------------------|-------------------------|--------------------------------------|------------------------------|
| Spearman | Environmental accounting measurement | Correlation Coefficient | 1 | .439** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 220 | 220 |
| | environmental site practices | Correlation Coefficient | .439** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 220 | 220 |

According to table (10) the relationship between environmental accounting measurement and environmental site practices in hotels is a significant at 0.05 level. The Spearman's correlation is positive at 0.439. This positive correlation indicates that whenever the accounting measurement of environmental costs increased, whenever hotels practices of site increased, and the opposite is true. Thus, the second hypothesis **H.Corr.2 could be accepted.**

4.4.3. The relationship between environmental accounting disclosure and environmental site practices in hotels.

In order to measure the relationship between environmental accounting disclosure and environmental site practices in hotels, the Spearman's correlation was used.

Table11: The relationship between environmental accounting disclosure and environmental site practices in hotels.

| Nonparametric Test | | | Environmental costs disclosure | environmental site practices |
|--------------------|-------------------------------------|-------------------------|--------------------------------|------------------------------|
| Spearman | Environmental accounting disclosure | Correlation Coefficient | 1 | .355** |
| | | Sig. (2-tailed) | | .000 |
| | | N | 220 | 220 |
| | environmental site practices | Correlation Coefficient | .355** | 1 |
| | | Sig. (2-tailed) | .000 | |
| | | N | 220 | 220 |

According to table (11) the effect of environmental accounting disclosure on environmental site practices in hotels is a significant at 0.05 level. The Spearman's correlation is positive at 0.355**. This positive correlation indicates that whenever the disclosure of environmental costs increased, whenever hotels practices of environmental site increased, and the opposite is true. Thus, the third hypothesis **H.Corr.3 could be accepted**. This result agreed with **Azhar (2019)** which stated that the application of environmental accounting disclosure will lead to long-term profits for hotels through optimal manages to environmental practices. Besides the hotels that disclose their environmental data may enjoy a competitive advantage distinguish them from the rest of the hotels. Environmental accounting disclosure of hotel companies contributes to improve the pricing of services and raise the efficiency of the cost system in these companies.

4.5. Conclusion and recommendations

This study has argued the concepts of environmental cost accounting practices, and environmental site practices in hotels, besides examining the relationships between the two

variables, by using Spearman correlation. The study has shown a statistically significant effect between environmental cost accounting practices variable and the environmental site practices variable at the Egyptian hotels in Sharm El Sheikh, It has also shown a statistically significant effect between identification, measurement and disclosure of environmental costs and the environmental site practices. Based upon both the literature reviewed and the field study findings, hotels should raise the level of environmental cost accounting practices efficient through: establishing a set of training courses and programs that help employees and managers to improve their personal, practical, and behavioral skills to have a high level of implementation of environmental cost accounting practices which support environmental site practices. As this study was conducted on managers from hotels industry, future studies should focus on similar framework at different groups in service sectors such as restaurants and travel agencies. For future researchers, it is advisable to use other methods for gathering more in-depth data such as interviews in order to investigate other factors that can affect environmental site practices.

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