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# DISCLOSURE REQUIREMENTS FOR ENVIRONMENTAL POLLUTION TO ACHIEVE INFORMATION QUALITY IN THE FINANCIAL STATEMENTS

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## Abstract

This study aims to determine the requirements for disclosing environmental pollution to achieve quality information in financial reports.

Disclosure of environmental pollution includes two main sections: The first section includes disclosure of the costs of environmental pollution. The second section deals with disclosure of environmental pollution revenues.

Disclosing the costs of environmental pollution includes disclosing information about the environmental costs associated with environmental pollution, and cost management systems associated with environmental pollution. And methods for reducing costs associated with environmental pollution. All information about the costs associated with environmental pollution has an impact on decision makers.

Disclosure of environmental pollution revenues also includes all information resulting from revenues generated from the production of products that have a negative impact on environmental pollution, and information related to comparing revenues resulting from environmental pollution activities compared to the negative effects resulting from them.

Disclosure of environmental pollution also requires the disclosure of all financial and non-financial information related to environmental costs and revenues.

To achieve the goal of the study, Researchers presented problem of study and previous studies related to accounting for environmental pollution. Researchers also presented some previous studies related to achieving quality of financial reports. Researchers focused on the information that cost management tools can provide to reduce environmental costs, and their impact on achieving ecosystem integrity. In order to determine the relationship between the

requirements for disclosing environmental pollution and achieving the quality of financial statements.

Researchers relied on designing survey list to test study hypothesis, and it distributed into three groups. First group consisted of some employees of companies working in field of environment. Second group consisted of university faculty members. Third group consisted of some employees in accounting & auditing offices. Study hypothesis tested using statistical program SPSS.

Study found there is a direct relationship between requirements for disclosing environmental pollution and achieving quality of information in financial reports.

**Keywords:** Disclosure Requirements, Environmental Pollution, Information Quality.

## **Introduction**

### **1- Previous studies that dealt with subject of research:**

Analyzing previous studies on subject of disclosure requirements for environmental pollution, and the subject of information quality for financial statements, we note Researchers paid attention to them from several aspects. Some of these studies can be presented as follows:

#### **First: Previous studies related to the requirements for disclosing environmental pollution:**

Previous studies on the requirements for disclosing environmental pollution have been linked to many variables, such as: risk management and disclosure - the effectiveness of environmental accounting information - activating the role of environmental accounting - monitoring the implementation of environmental obligations and requirements - integrating accounting information on biological diversity - ecosystem services into decision-making processes. – Social responsibility – Environmental responsibility – Using stakeholder theory to explain management’s motivations towards disclosing certain types of environmental information – Lack of information and lack of expertise and competencies – Environmental management accounting – Environmental supply chains. The diversity of variables associated with environmental pollution disclosure requirements indicates its importance. Some previous studies related to environmental pollution disclosure requirements can be presented as follows:

#### **1- Rajab , 2016 , Ramah Journal of Research and Studies, 233-251:**

The study (Rajab 2016) aimed to determine the role of environmental accounting in managing and disclosing the risk resulting from environmental pollution. The study concluded that there is a need to separate the unit's economic activities from environmental activities. Disclosure of environmental and economic activities improves the decisions taken by management.

**2- Habili ,2017, Journal of Law and Human Sciences,94-105:**

The study (Habili 2017) also aimed to determine: the possibility of preparing accounting information that expresses environmental responsibility - determining the role of the economic unit in reducing the risks resulting from environmental pollution - the effectiveness of environmental accounting information in making decisions to avoid the risk or treat the risk. By providing economic and accounting information related to environmental pollution. The study concluded that intellectual and practical contributions in the field of environmental accounting and risk management are still few. Comparing the scale of the challenge and the effects associated with the issue of environmental pollution.

**3- Hilal 2018, Accounting thought,832-863:**

The study (Hilal 2018) aimed to activate the role of environmental accounting in reducing environmental risks resulting from environmental pollution. The study reached several results, including: Traditional accounting systems do not measure environmental costs and benefits appropriately and fairly - Separating the unit's economic activities from environmental activities and disclosing them leads to improving the decisions taken by management - The presence of an information system for environmental accounting helps provide management and regulatory bodies With reports and information showing the extent of environmental damage and contributions to the economic unit - the necessity of identifying weak points in environmental performance.

**4- Abu Stala ,2022, Researchers Magazine,95-110:**

The study (Abu Stala 2022) aimed to identify impact of oversight by governmental and non-governmental agencies on the extent of Libyan cement companies' commitment to environmental disclosure on quality of financial statements. Study found direct relationship between Libyan cement companies' commitment to environmental disclosure and quality of financial statements. Study recommended several recommendations, including: the need to focus on preparing specialized workshops and courses for supervisors in charge of environmental oversight of industrial companies - the need for government agencies, organizations and local bodies with jurisdiction to put pressure to oblige companies with negative impact on environment to apply environmental accounting in their financial system - need to disclose Environmental activities in financial reports - need to adhere to environmental laws and legislation.

**5- Sharawati, 2022, Algerian Institutions Performance Journal,147-166:**

Study (Sharawati 2022) aimed to shed light on impact of accounting disclosure of environmental costs on quality of financial statements. Study reached several results, including: Measurement and accounting disclosure of environmental costs is one of pillars of environmental accounting - Financial statements are fundamentally affected by institutions' failure to disclose environmental costs due to the difficulty of measuring them - There are no binding laws to disclose environmental performance - There are difficulties in measuring environmental costs - There are A link between environmental accounting, measuring environmental costs, and the fairness of financial statements.

**6- Morsi , 2022, Accounting thought,249-270:**

The (Marsa 2022) study also aimed to implement integration between the balanced performance measurement approach and the environmental supply chain and its impact on rationalizing environmental costs. The study also clarified that the stages of environmental supply chain management include: internal environmental management - customer relationship management - green environmental design - environmental purchasing and supply - environmental manufacturing - environmental marketing - reverse logistics. The study concluded that it is possible to rely on the environmental supply chain to rationalize costs. The study also recommended the need for managers to measure and evaluate environmental supply chains by developing a balanced performance measurement approach.

**7- Muhammad , 2022, Accounting thought,157-208:**

The study (Mohamed 2022) also aimed to present a model linking environmental management accounting and improving environmental efficiency. The study concluded that environmental management accounting is considered a link between management accounting and environmental management. Environmental management accounting combines financial and monetary data. Environmental management accounting also combines the economic dimension and the environmental dimension. It works to improve business and environmental performance.

**8- Al- Sayyid ,2022, Accounting thought,271-292:**

The study (Al-Sayed 2022) also defined environmental supply chain management as: an organizational philosophy for managing information and processes to perform a specific service from the supplier to the final customer through the integration of environmental practices and concerns using environmentally friendly inputs. Converting environmentally friendly inputs into outputs that can be reused at the end of the life cycle.

The Researchers believes that the use of environmental supply chains at their various stages helps provide important information about environmental pollution, and that disclosing them helps achieve the quality of financial reports.

**Second: Previous studies related to quality of information for financial statements:**

**9- Abdul Rahman , 2016 , Amarbak , 117-130:**

Study (Abdul Rahman 2016) aimed to determine the relationship between accounting estimates and the quality of financial reports. The problem of the study was to answer following question: Does the accuracy of accounting estimates contribute to improve quality of financial reports? Study found a relationship between the accuracy of accounting estimates and the quality of financial reports.

**10- Jiyad ,2019, Economic Sciences,123-244:**

Study (Jiyad 2019) aimed to determine impact of qualitative characteristics of accounting information on improving quality of financial reports in a sample of private banks operating in Iraqi market. Study reached many results, including: There is interest from commercial banks in disclosing all items of financial position elements to a sufficient extent. Disclosing

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financial data in the financial statements helps achieve transparency, credibility, and trust in financial reports. The availability of qualitative characteristics of the information helps achieve quality of financial reports.

**11- Al-Saadi, 2019, Jerash for research and studies,271-294:**

Study (Al-Saadi 2019) also aimed to determine impact of information technology in improving quality of financial reports by applying it to Jordanian public shareholding industrial companies. Study found a statistically significant effect of information technology in improving quality of financial reports as measured by earnings management in industrial companies in Jordan.

**12- Al-Fadhli, 2021, Journal of Business Research,81-99:**

The study (Al-Fadhli 2021) also aimed to investigate the role played by the International Financial Reporting Standards (IFRS) in the quality of financial accounting in Kuwaiti companies. The study concluded that adopting international financial reporting standards (IFRS) helps improve the quality of financial reporting information. Commitment to applying international financial reporting standards also results in providing high-quality information for making investment decisions.

**2- Research problem:**

In light of the continuous increase in environmental changes and the resulting environmental pollution, many accounting problems appear to contain environmental and ecological changes and the resulting environmental pollution. Disclosing information related to environmental pollution. Among the most important problems facing the disclosure of environmental pollution are the following:

- Lack of data and information on changes in environmental pollution.
- Most environmental pollution variables are linked to the future and a state of uncertainty, which results in many risks.

**3- Research objective:**

General objective of study is to determine relationship between environmental pollution disclosure requirements and achieving quality information in financial reports.

**4- Imposing the search:**

Main hypothesis of study is as follows: There is a statistically significant relationship between providing disclosure requirements for environmental pollution and achieving quality of information in financial reports.

**5- Importance research:**

Research derives its importance from following:

**A- Practical importance:**

In light of the various environmental changes sweeping throughout the year, threatening the health and food security of humans on the planet, more attention must be paid to accounting

and disclosing environmental pollution. To achieve quality information in financial reports. Providing sufficient information to decision makers to contain problems associated with environmental pollution. The impact of environmental pollution on all aspects of life related to all members of society.

**B- Scientific importance:**

This study presents many accounting issues related to accounting for environmental pollution, and their connection to environmental costs and environmental revenues. It is a study of environmental pollution accounting and the information it provides to decision makers. It is one of the important scientific areas that should be focused on. Scientific studies for accounting for environmental pollution can contribute to: reducing environmental costs - providing environmental information - reducing environmental pollution - reducing the risks of environmental pollution.

**6- Research Methodology:**

To achieve objectives of study and provide some indicators for accounting environmental pollution, and requirements for disclosing environmental pollution to achieve quality information in financial reports. Researchers relied on both inductive approach and deductive approach as follows:

**Inductive method:** Reviewing and extrapolating studies that dealt with research topic by following desk study method of Arab and foreign studies to study results reached.

**Deductive approach:** Depends on logical thinking and an attempt to determine the relationship between the requirements for disclosing environmental pollution and achieving the quality of information in financial reports. And study cost management tools. Identifying the cost management tools that have the most impact on reducing environmental costs. Contributing to reducing the gap in the lack of environmental information associated with accounting for environmental pollution in financial reports.

**7- Scope of the search:**

The research focuses on determining the relationship between environmental pollution disclosure requirements and achieving quality information in financial reports. By presenting the concepts related to the requirements for disclosing environmental pollution, and achieving quality information in financial reports. It presented the most important cost management tools and identified the tools most used to influence reduction of environmental costs. Presenting problems of disclosing environmental pollution. Methods and trends for disclosing environmental pollution information. And the risks resulting from the lack of information related to environmental pollution. And how to use environmental management accounting tools to provide information that helps achieve the quality of information in financial reports.

### **8- Search variables:**

The independent variable is environmental pollution disclosure requirements. It can be determined by presenting the theoretical framework for accounting for environmental pollution, and the disclosure problems associated with environmental pollution. The dependent variable is achieving quality information in financial reports, and it can be clarified by presenting the most important characteristics required to be available in disclosing environmental pollution to achieve quality information in financial reports.

### **9- Research plan:**

In light of the research limits and hypotheses and to achieve its objectives, the Researchers can divide the research into the following:

#### **9-1 The main approaches to environmental accounting in confronting climate change and environmental pollution:**

There are two main approaches that environmental accounting relies on to confront climate change and environmental pollution, which can be explained as follows (Mohamed 2022):

1. Environmental accounting approach to mitigate the environmental impacts of climate change and environmental pollution, including:

- The process of mitigating the effects of climate change and environmental pollution: It includes all activities that are implemented. And the measures that are taken to reduce the extent of climate change and environmental pollution in the long term. By reducing the volume of greenhouse gas emissions. Strengthening methods that absorb greenhouse gases.

- Accounting for local policies regarding climate change: through applying technological environmental standards to reduce air emissions and environmental pollution. Environmental adaptation entails capital environmental costs. and ongoing costs. And the periodic working capital costs necessary to operate environmental systems, machines and devices to reduce greenhouse gas emissions.

- Accounting for international policies for climate change and environmental pollution, including: the Kyoto Protocol - other international policies such as activating the carbon tax mechanism. Accounting related to climate change and environmental pollution also results in three types of costs: international environmental costs for climate change - regional environmental costs for mitigating environmental impacts. Climate Change - Sectoral environmental costs of climate change.

2. Accounting approach for adaptation to climate change and environmental pollution: Implementing the adaptation policy leads to reducing the following costs: ecological costs - social costs - economic costs.

#### **9-2 Environmental costs:**

Environmental costs help management in making rational administrative decisions. It is an important part of accounting information. Especially in industrial companies. Therefore, it is necessary to provide a cost system that helps companies identify and measure environmental costs (Qamish 2020).

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Environmental costs defined as all costs incurred by company to reduce negative impact of its activities on the environment, compliance with environmental laws and legislation, the costs of monitoring and controlling sources of environmental pollution, and the costs of eliminating any negative impact that the company has on the environment. In addition to the costs of activities to measure and monitor potential sources of environmental damage (Hamouda 2023).

Environmental costs can be classified as follows:

- Classification of costs according to activities, including: costs of prevention activities - costs of inventory and measurement activities - costs of control activities - costs of environmental failure activities.
- Classification of environmental costs according to accounting cycle, including: capital environmental costs - current environmental costs.

### **9-3 Types of environmental costs:**

There are several types of environmental costs, and these types include (Marsa 2022):

1- Visible or hidden environmental costs: The environmental and non-environmental parts are determined using the following equation:

Environmental costs = joint costs - non-environmental costs.

2- Internal and external environmental costs: They are of two types:

- Internal environmental costs: These are the obligatory and optional sacrifices that the company bears as a result of implementing programs to protect the environment from the effects resulting from its activities.
- External environmental costs: These are the economic sacrifices borne by society as a result of the damage resulting from the company's activities that are harmful to the environment.

Environmental costs can be reduced by using environmental management accounting applications. Environmental management accounting applications also help improve production processes. And improving environmental performance. and achieving sustainable development (Tsui 2014).

Environmental management accounting methods also help to manage environmental costs by identifying potential costs. And savings. Thus improving both environmental and financial performance (Doorasamy 2015).

### **9-4 The concept of disclosing environmental pollution and the information that is disclosed:**

Environmental disclosure means showing information related to the environment and ways to preserve it, either in the body of financial reports or in special reports attached to annual financial reports. The environmental information that is disclosed may include the following (Al-Rehaili 2005):

- Environmental regulations (legislation) related to the company.
- Environmental commitments regarding the past, present and future.
- Plans and strategies related to environmental issues.

- The costs necessary to meet environmental obligations, and if the company is unable to provide this, the reasons for non-disclosure must be determined.
- When and how to record environmental costs in the company's accounts.
- Description of the insurance that covers the environmental issues that it discloses.
- The potential impact of environmental obligations on company's financial aspects.
- Environmental impacts of manufactured products, materials used and exhausts.
- Indicators obtained by the company regarding environmental protection and violations.

#### **9-5 Restrictions on disclosing environmental pollution:**

Despite the importance and justifications for developing measurement and accounting disclosure of the environmental impacts resulting from activities of the economic unit. There are many restrictions on development of measurement and accounting disclosure of environmental impacts, including: technical restrictions due to deficiencies in internal environmental management systems - legislative restrictions represented by the fear of being subjected to penalties - fear of prosecution - social restrictions represented by the fear that the disclosed information will not be consistent with expectations. Stakeholders. The most important of these restrictions are (Al-Kashef 2009):

- The lack of tools for quantitatively measuring the environmental impacts of the economic unit's activities.
- Difficulty in making comparisons between establishments' environmental information and over time.
- Difficulty in properly identifying external environmental costs.
- Potential conflict between the objectives of solvency and shareholders, and the economic unit's fulfillment of legislative requirements.

#### **9-6 Disclosure of environmental pollution in accordance with standards of Global Financial Reporting Initiative and the Global Sustainability Initiative:**

Environmental accounting is linked to many environmental and climate variables, such as: local temperature regulation - carbon storage - real estate value proxy - air pollution reduction - green space density - surface runoff regulation - income proxy - population density. The concept of ecosystems combines many ecological and social variables (Ibrahim 2023).

The GRI standards are designed to be used by companies in reporting their impacts on the economy, environment and society (i.e. sustainability reporting). It is used as a coherent and structured group to help the company prepare sustainability reports that are based on reporting principles and focus on material issues. The GRI standards consist of 3 general and comprehensive standards. And 33 standards for specific topics. The GRI standards are also divided into two categories: The comprehensive and general standards category: It includes the basis standard that represents the starting point for using the GRI standards, in addition to the general disclosure standards and the management approach standard. The category of special standards includes standards related to the economic dimension, the environmental dimension, and the social dimension (Stouh 2022).

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The concepts contained in the Global Sustainability Initiative, and the concepts associated with national environmental accounting, also include (Wahib 2019):

- The concept of sustainable development. It includes the necessity of meeting the needs of those present without compromising the ability of future generations to meet their needs
- The concept of sustainability reporting: It is considered an accounting practice to measure the performance of an economic unit towards achieving the goal of sustainable development and disclosing performance. Bearing responsibility before the concerned internal and external parties, including addressing economic, environmental and social impacts. This report should accurately and objectively explain the performance of the economic units preparing this report with regard to sustainability.

### **9-7 Disclosure of environmental pollution:**

There is no longer justification for company management to abandon disclosure and reporting of environmental information for the following reasons (Saleh 2009):

- Monitoring the facility's environmental performance is the responsibility of all departments, including the financial department.
- The possibility of subjecting most elements of environmental activity costs to accurate financial measurement.
- Accounting science must adapt to information about environmental developments.
- Environmental performance activities are reflected in the financial statements and reports of economic units.
- Environmental performance reports are relied upon in planning, monitoring and performance evaluation processes.
- Failure to disclose environmental performance negatively affects the organization's reputation and competitive position.

There are a group of factors that affect the degree of disclosure of information resulting from the environmental activities of the economic unit, and these factors are represented in the following (Habibi 2017):

- 1- Environmental factors: Published reports vary from one country to another for economic, social, political and other factors. The environmental pollution information published in each country depends on the extent of the beneficiaries' need for environmental pollution information.
- 2- Factors related to information: The degree of disclosure in financial reports is affected by the information that is disclosed. The availability of a number of characteristics to judge the efficiency of information. Among the most important characteristics that must be present in information are: suitability, reliability, verifiability and comparability.
- 3- Factors related to the economic unit: such as the size of the economic unit - the nature of the activity carried out by the economic unit - the level of impact it leaves on the environment - types of products - the number of shareholders.

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### **9-8 Trends in disclosing data resulting from environmental pollution and environmental activities:**

Studies show that there are three trends in disclosing data resulting from environmental pollution and environmental activities: (Al-Hubaili 2017):

1- Separation between financial reports and environmental reports “separation method”: Financial information and environmental information are separated. Considering that both financial information and environmental information achieve different goals. Environmental information must be disclosed in reports separate from financial reports. Information on environmental pollution and environmental activities can be classified according to the separation method in the form of: descriptive reports - reports disclosing activities that have an impact on society.

2- Disclosing financial information and information resulting from environmental activities in one report, “merging method”: so that information with an environmental impact becomes part of the financial information.

3- Disclosing environmental information only: Environmental responsibility information is disclosed in special lists that are best directed only to the parties that require it. Because disclosure through financial statements may generate great pressure on the economic unit. Which makes the economic unit care about environmental aspects at the expense of other economic aspects.

Appropriate disclosure by business organizations about environmental performance also requires three dimensions that can be explained as follows (Khanshour 2013):

- **Scope of disclosure:** It requires specifying set of financial and non-financial indicators. Indicators include financial data such as: current environmental costs - capital environmental costs - amounts and fines charged to the company as a result of environmental violations - revenues resulting from environmental operations such as recycling. And non-financial data, such as: the amount of emissions and waste produced - the amount of violations that are treated and recycled - the amount of savings in activity inputs - the percentage of reduction in the number of injured people as a result of pollution.

- **Form of disclosure:** The form of disclosure includes three forms, including: purely descriptive reports - quantitative reports - reports in which all units are disclosed in monetary form.

- **Place of disclosure:** It includes three forms, including: disclosure in separate and independent reports on the financial statements - disclosure in the financial statements - disclosure of environmental performance in the organization’s annual report.

There is a need to demand new standards for measurement and disclosure and to increase amount of information that is disclosed to meet new requirements of financial reports. So that information on environmental costs disclosed independently can be relied upon. Disclosing environmental costs information leads to increasing quality of accounting information through availability of quality characteristics of accounting information. Recommendation No. 2 of Accounting Concepts issued by American Accounting Standards Board outlines a framework for the quality of financial reports (Sharwati 2022).

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**9-9 Impact of measuring and disclosing environmental pollution on financial statements:**

Impact of measuring and disclosing environmental pollution on financial statements can be explained through the following factors (Hafsa 2017):

- Measurement and disclosure environmental costs express environmental processes and events carried out by the institution in a way that the user can rely on in making the decisions he deems appropriate (ensures reliability and the possibility of accreditation).
- Measuring and disclosing the environmental costs of the environmental operations and events carried out by the organization contributes to increasing the effectiveness of accounting information (achieving effectiveness).
- Disclosing environmental costs helps decision makers predict future environmental performance of institutions in light of risks surrounding institutions' work environment. (Achieving relevance and predictive value).
- Standardizing methods and policies for measuring environmental costs helps standardize results. It achieves consistency and comparability of the financial statements.
- Measuring environmental costs and disclosing them in financial statements provides correct and easy accounting information for users to make decisions (providing a measure of benefit).
- Measuring and disclosing past, present and future environmental costs helps increase the information disclosed in the financial statements. Providing accurate and quality information.

**9-10 Disclosing environmental information to reduce the problem of lack of environmental information:**

From the above, the Researchers believes that the gap of lack of information necessary to disclose environmental pollution can be reduced through the use of environmental management accounting methods. To achieve quality information in financial reports as follows:

- Environmental management accounting methods provide many of the information necessary to disclose environmental pollution. However, environmental pollution information is complex and difficult to integrate.
- Environmental management accounting methods help provide information about the positive and negative effects of environmental impacts on the economic performance of companies.
- Using the product life cycle method helps provide information about the various stages of environmental costs.
- The ABC activity-based costing method helps provide information about improving environmental efficiency. By allocating the total cost. And revealing a large portion of the costs related to the environment.
- Applying the MFCA method helps provide information about environmental pollution. By identifying the costs of poor environmental behavior. Identifying opportunities to reduce costs. And improve efficiency.
- The TCA method helps provide information on equal opportunities for investments in environmental improvements.

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▪ Using balanced environmental performance helps provide information about environmental pollution and strategic and financial objectives.

Researchers also believes that disclosing all aspects and information related to environmental pollution helps achieve the quality of information in financial reports. Whether disclosed separately from the financial reports or within the financial reports. Despite the difficulties and criticism encountered in financial reports including all information related to environmental pollution. Therefore, Researchers believes it is necessary to develop a unified environmental guide that includes all financial and non-financial information related to environmental pollution, climate and biological changes, and ecosystems. It is mandatory for all companies to disclose it to ensure that environmental protection standards are followed. Providing a good tool for comparing the environmental performance of all companies.

### **10- Field study:**

#### **A. Objective of field study:**

Field study aims to determine relationship between achieving environmental pollution disclosure requirements and achieving information quality for financial statements.

#### **B. Field study assignment:**

There is a statistically significant relationship between achieving environmental pollution disclosure requirements and achieving information quality of financial statements.

#### **C. Community and sample of field study:**

Study population and sample of respondents identified in three groups, Included workers in environmental companies, faculty members in accounting, insurance departments, employees in accounting and auditing offices.

Since items of categories were not accurate, researchers could limit actual number of them, so researchers selected study sample from each category randomly (judgmental method in selecting samples(75). evenly divided into three groups representing sample categories (25 for each category), taking into account selection of experiences, competencies.

Response rate and validity of recovered lists for statistical analysis were determined after determining initial sample for all study categories. Researchers distributed survey lists (75 lists) by sending and receiving them via e-mail, in addition to resorting to preparing a form for the survey list through Google forms

Researchers sorted professor in explorations in following table: Following table:

**Response rate and validity of recovered lists for statistical analysis**

Study sample	Number of distributed poll lists	Retrieved poll lists		Number of recovered survey lists that are not valid for statistical analysis		Number of retrieved survey lists that are valid for statistical analysis		
		number	ratio *	number	ratio **	number	ratio **	ratio ***
Employees of environmental companies	25	25	100%	1	4%	24	96%	34.78%
Faculty members in accounting departments	25	25	96%	2	8.33%	22	91.67%	31.88%
Workers in accounting and auditing offices	25	23	92%	0	0%	23	100%	33.33%
Total	75	72	96%	3	4.17%	69	95.83%	100%

\*Percentage based on number of survey lists distributed to each category

\*\* Proportion based on number of survey listings retrieved from each category

\*\*\* The ratio is based on total sample size.

**It is clear from previous table:**

- Percentage of survey lists retrieved (response rate) from study sample on survey lists is 96%, which is a very good percentage indicating response and interest of study sample in subject of research.
- Proportion of lists that are valid for statistical analysis is considered an acceptable percentage and exceeds 90% for each category of study, which reflects possibility of relying on results obtained.
- The total percentage of recovered survey lists that are valid for statistical analysis is 95.83%, which is a good percentage.

**D. Data collection method**

In collecting data and formulating survey list, Researchers relied on following:

- Determine most important requirements for disclosing environmental pollution.
- Identify the most important factors that lead to achieving information quality for financial statements.
- Researchers relied mainly on a survey list containing a set of questions to test validity of research hypotheses, and Researchers took into account when preparing them to present them in a simplified and sequential manner in a way that facilitates understanding of these questions by the respondent, in a way that ultimately ensures achievement of study objectives and ease of conducting statistical analysis.

**E. Structural design of study tool:**

Researchers designed study tool, which is questionnaire list, which was distributed to three sample groups to include the following:

- First section: personal data about person being investigated, in order to clarify experience and qualification of person being investigated, and to determine the degree of reliance on his answer.
- Second section: Questions of survey list: It is a group of graded inquiries that respondent chooses to answer from five answers, as a basis for using a five-point scale Likert scale consisting of five answers, each of which expresses a degree of approval or relative importance.

**Survey list also includes two sets of inquiries as follows:**

**First group:**

- This group includes some questions and inquiries that test whether or not there is a relationship between variables of study hypothesis. This group includes following dimensions:
- Questions and inquiries that express independent variable for study hypothesis, which is requirements for disclosing environmental pollution, and expressed in a number of (9) statements coded within statistical analysis program with codes from (G1X1:G1X9).
- Questions and inquiries that express dependent variable of study hypothesis, which is achieving information quality for financial data, and are expressed in a number of (6) phrases coded within statistical analysis program with codes from (G1Y1:G1Y6).

**F. Statistical methods used in data analysis.**

When analyzing questionnaire statistically, Researchers relied on five-tiered Likert model to design the answer inquiries in a gradual way. Respondent chooses one of five answers to expresses degree of approval or importance, and takes Likert criterion to judge degree of approval on basis that for each statement Weights, and then arithmetic average (weighted average) is calculated, and then trend determined as in following table:

**Opinion trend of five-point Likert scale**

Direction of opinion of five-point Likert scale		
degree of approval	(Weights)	Opinion direction (approval decision)
Very disagree	1	Average from 1 to 1.79: Very disagreeable
not agree	2	Average from 1.80 to 2.59: disagree
neutral	3	Average from 2.60 to 3.39: neutral
OK	4	Average from 3.40 to 4.19: Agree
Very ok	5	Average of 4.20 to 5: Very OK

Researchers emptied data of survey lists that are valid for analysis, analyzed and drew conclusions through application of some statistical methods contained in Statistical Package for Social Science (SPSS)

**G. - Statistical analysis of elements of survey list (study tool)**

This includes:

First: Frequency and relative distribution of basic data of respondents. Through following table, Researchers deals with percentages of study sample categories in terms of educational qualification and years of experience, as follows:

**Frequency and relative distribution of basic data of respondents**

According to educational qualification			According to years of experience		
Qualification	Repetition	The ratio	Years of Experience	Repetition	The ratio
PHD	9	13%	less than five years	13	18.8%
Master's	18	26.1%	From five years to less than ten years	13	18.8%
Professional diplomas and certificates	15	21.7%	From ten years to less than fifteen years	14	20.3%
Bachelor's	27	39.1%	Fifteen years and over	29	42%
Total	69	100%	Total	69	100%

It is clear from previous table that study sample is characterized by diversity and sufficiency of professional practices and academic qualifications of respondents, with sufficient availability of experience factor in sample .

**H. Statistical analysis of data and testing hypothesis of study**

**1- Statistical analysis of data and testing hypothesis of study**

Researchers deals with results of characterizing opinions of study sample about statements related to variables of imposing study through statistical measures, as follows:

**Describing opinions on the statements that determine the variable environmental pollution disclosure requirements**

The elements (statements) that determine the variables of environmental pollution disclosure requirements	Descriptive statistics measures			
	Arithmetic mean	standard deviation	relative weight %	approval order
1- Displaying data and information related to environmental activities in lists and periodic reports helps to fulfill the requirements of disclosure of environmental pollution..	4.2**	0.759	84%	1
2- Disclosure of environmental performance in descriptive reports showing numbers, statistics and ratios in a structural or quantitative descriptive manner is one of the requirements for the disclosure of environmental pollution..	4.13**	0.764	82.6%	4
3- Disclosure of environmental performance in quantitative reports containing quantitative information on environmental performance, such as amount of emissions, the amount of waste, etc., is one of the requirements for the disclosure of environmental pollution..	4.03**	0.766	80.6%	9
4- Disclosure of environmental performance in the form of financial reports that determines the cost and return of environmental activity helps to achieve the requirements of environmental pollution disclosure..	4.13**	0.821	82.6%	6
5- Disclosure of environmental performance in reports independent of the traditional lists and their appendices, or in the social reports of the establishment helps to fulfill the requirements of disclosure of environmental pollution	4.13**	0.726	82.6%	3
6- Disclosure of the costs of environmental obligations in companies helps to achieve the requirements of disclosure of environmental pollution..	4.04**	0.794	80.8%	8
7- Disclosure of pollution control costs helps to fulfill the requirements of environmental pollution disclosure.	4.12**	0.796	82.4%	7
8- Disclosure of hidden costs resulting from activities necessary to comply with environmental laws and legislations helps achieve the requirements of environmental pollution disclosure.	4.13**	0.765	82.6%	5
9- Disclosure of potential costs, which costs of treatment or compensation for potential environmental pollution, helps to achieve the requirements of environmental pollution disclosure.	4.17**	0.839	83.4%	2

**It is noted from previous table:**

- Arithmetic mean values of all respondents' responses on all items indicate (greater 3) that opinions tend in favor of approval regarding environmental pollution disclosure requirements; This is confirmed by relative weight ratios for all items, which exceed 60%, representing "neutral" choice. All arithmetic means for all statements were statistically significant at a level of significance (0.05). This indicates that there are differences

(significant differences) in opinions of respondents between observed values. The value (3) represents a neutral choice.

- Descriptive statistics for information quality variable for financial data

Through following table, descriptive statistics of variable can be explained as follows:

**Describing opinions on statements that reflect the information quality of financial statements**

Elements (statements) that determine the information quality of financial statements	Descriptive statistics measures			
	Arithmetic mean	standard deviation	relative weight %	approval order
1- Disclosure of environmental pollution claims helps to provide the predictive data necessary for decision-making, and thus achieves the quality of financial reports.	4.55**	0.582	91%	1
2- Disclosure of environmental pollution claims helps to achieve the feedback evaluation of the financial information in order to achieve quality of the financial reports.	4.48**	0.655	89.6%	4
3- Disclosure of environmental pollution claims helps to measure verifiability and thus achieve the quality of financial reports.	4.42**	0.673	88.4%	5
4- Disclosure of environmental pollution claims helps to achieve the comparability of the financial statements with the financial statements over several years for the same organization, or comparison with other organizations in order to achieve quality of financial reports.	4.48**	0.633	89.6%	3
5- Disclosure of environmental pollution claims helps to investigate the data of the financial reports, which helps to achieve the quality of the financial reports.	4.32**	0.757	86.4%	6
6- Disclosure of environmental pollution claims helps to achieve transparency, impartiality, impartiality and commitment in presenting the financial statements in order to achieve quality of financial reports.	4.48**	0.609	89.6%	2

**\*\*Statistically significant at a significant level of 0.05**

**It is noted from previous table that:**

- Arithmetic mean values of all respondents' responses refer to all items (greater From 3) that opinions tend to Information quality of financial statements . This is confirmed by the relative weight ratios of all elements, which exceed 60%, representing the choice of “neutral”. All arithmetic means of all the expressions were statistically significant at a significant level (0.05). This indicates that there are differences (significant differences) in opinions of respondents among observed values. The value (3) representative of neutral selection.

In light of descriptive analysis of data related to study hypothesis, Researchers believes that study sample agrees on importance of disclosing environmental pollution because of its impact on achieving quality of information for financial data, which supports validity of study hypothesis. To confirm this agreement, Researchers addresses discrepancy (extent of agreement and difference) in opinions of sample groups. Regarding statements related to study hypothesis, this is done through Kruskal-Wallis Test, which is one of nonparametric tests that is applied with variables whose data do not follow a normal distribution to measure variance between several independent samples, as follows:

**Analysis of variance between opinions of sample groups about data of the study hypothesis**

Elements (dimensions) associated with study hypothesis	sample category	Views	Rank average	arrangement	Morale test Kruskal-Wallis
Environmental pollution disclosure requirements	Employees of environmental companies	24	34.98	2	0.509
	Faculty members in accounting departments	22	38.55	1	
	Workers in accounting and auditing offices	23	31.63	3	
	Total	69			
Achieving the information quality of the financial statements	Employees of environmental companies	24	35.06	2	0.99
	Faculty members in accounting departments	22	35.07	1	
	Workers in accounting and auditing offices	23	34.87	3	
	Total	69			

\*Statistically significant at a significant level of 0.05

**It is noted from previous table:**

- Values of average ranks and rankings indicate that highest groups agreeing to data of study hypothesis is category of sample belonging to faculty members of accounting departments, with average ranks of (38.55, 35.07) for first and second variables of study hypothesis, respectively.
- Values of significance level of (Kruskal-Wallis Test) test for data related to two variables of study hypothesis amounted to (0.509) (0.99), respectively, which is greater than 5%. This indicates that there are no differences between groups representing sample under study, and there is agreement among them on importance of disclosure requirements On environmental pollution in achieving information quality for financial statements. After descriptive analysis of data of study hypothesis and statement of the extent to which categories of study sample agree, Researchers tests validity of study hypothesis through correlation and regression analysis, through following research point: Study hypothesis is tested through correlation and regression analysis, as follows:

**a) Correlation analysis of study hypothesis variables:**

Following table shows correlation between requirements for disclosure of environmental pollution and achieving quality of information for financial statements, as follows:

**Results of correlation between variables of study hypotheses**

<i>dependent variable</i> \ <i>independent variable</i>	Correlation data	(Y): Achieving the information quality of the financial statements
(X): Environmental pollution disclosure requirements	Correlation coefficient (R)	0.621
	Moral level	0.000**

\*\* It indicates a significant correlation coefficient at a significance level of 0.01

Since the sign of correlation coefficient (positive) indicates the existence of a positive correlation, and the value of correlation coefficient indicates strength of correlation, following results are clear to researcher:

- Sign and value of correlation coefficient (0.621) indicate that there is a direct relationship between environmental pollution disclosure requirements and achieving information quality of financial statements. This means that the more company is committed to disclosing environmental pollution requirements, the higher information quality of financial statements.
- Significance of correlation coefficient (0.00), which is less than level of significance (0.01), confirms acceptance of assumption of a statistically significant correlation between environmental pollution disclosure requirements and achievement of information quality for financial statements.

**a) Regression analysis of study hypothesis variables**

Following table shows results of simple regression analysis for variables of study hypothesis, as follows:

**Results of regression analysis of study hypothesis variables**

Statement	Regression coefficient (B)	t-test values	Moral level	Statistical significance
constant amount (BO)	2.458	7.890	0.000	Statistically significant
(X) Environmental pollution disclosure requirements	0.484	6.485	0.000	Statistically significant
Explanatory value of model: coefficient of determination $[R]^2 = 0.386$				
Overall significance of model: level of significance for ANOVA analysis = 0.000				
F test value = 42.052				

**Following results are evident from previous table:**

- Positive sign of regression coefficient indicates that there is a direct effect of disclosing environmental pollution requirements and achieving information quality for financial statements. Value of regression coefficient indicates that whenever independent variable increases by one unit, this leads to an increase in dependent variable (by 0.484 units).
- Significance of t-test for independent variable (0.00), which is less than level of significance (.05), confirms acceptance of assumption that there is a relationship between requirements for disclosing environmental pollution and achieving quality of information for financial statements.
- Coefficient of determination (R<sup>2</sup>), which is (0.386), indicates extent to which independent variable explains dependent variable, as it explains it by (38.6%), and rest of percentage is due to other variables and reasons.

Researchers concludes from above that there is a relationship between requirements for disclosing environmental pollution and achieving information quality for financial statements, which supports validity of study's hypothesis.

**11- Search results:**

- The main problem in accounting for environmental pollution is the lack of information related to environmental pollution. In addition to connection of information to the future and the difficulty of predicting it.
- Increasing disclosure of information resulting from the environmental activities of the economic unit. Despite the instability of the concepts of environmental activities and environmental pollution. There are some difficulties associated with the lack of information about environmental pollution.
- The process of reducing environmental costs in environmental pollution accounting is considered an important and basic requirement to contain the problems associated with disclosure of environmental pollution accounting. To determine the relationship between environmental pollution disclosure requirements and achieving quality information in financial reports.
- The information required to disclose environmental pollution to achieve quality of financial reports requires availability of many characteristics such as: suitability - understandability - comprehensiveness - compatibility with standards for disclosing environmental responsibility information - distance from bias - proper timing - verifiability - independent exchange - comparability. – Briefness – Quantitative measurement – Critical measurement – Constant examination – Evaluatability. This is difficult to achieve in light of the lack of information about environmental pollution.
- The difficulty of predicting future information in accounting for environmental pollution results in many risks. Organizations work to reduce these risks as much as possible.
- Accounting information for environmental pollution is linked to several types of accounting, including financial accounting, cost accounting, and management accounting.

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- Overcoming the difficulties of applying the activity-based costing system in accounting for environmental pollution, represented by (high cost of application - lack of experience and efficiency of those working in the application - the difficulties of application related to information technology - reliance on financial standards only) helps to provide information on accounting for environmental pollution as one of the requirements. Disclosure of environmental pollution.
  - Overcoming the difficulties of applying target cost systems in accounting for environmental pollution, represented by (the difficulty of continuing to maintain the target cost with continuous technological developments - the lack of precise determination of the level of target costs) helps to provide information about environmental costs as one of the requirements for disclosing environmental pollution.
  - It helps to overcome the difficulties of applying the achievement accounting system in ecosystem accounting represented by (the impossibility of applying the achievement accounting system alone) in providing information about environmental pollution as one of the requirements for disclosing environmental pollution.

#### **12- Research recommendations:**

- Necessity of developing a unified environmental guide that includes all financial and non-financial information related to environmental pollution, climate and biological changes, and ecosystems. It is mandatory for all companies to disclose it to ensure that environmental protection standards are followed. Providing a good tool for comparing environmental performance of all companies.
- Necessity of integrating efforts of many specialists, such as accountants, economists, and environmental scientists, together to provide accounting information that can be used by decision makers in public and private sectors, and to achieve quality of information in financial reports.

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