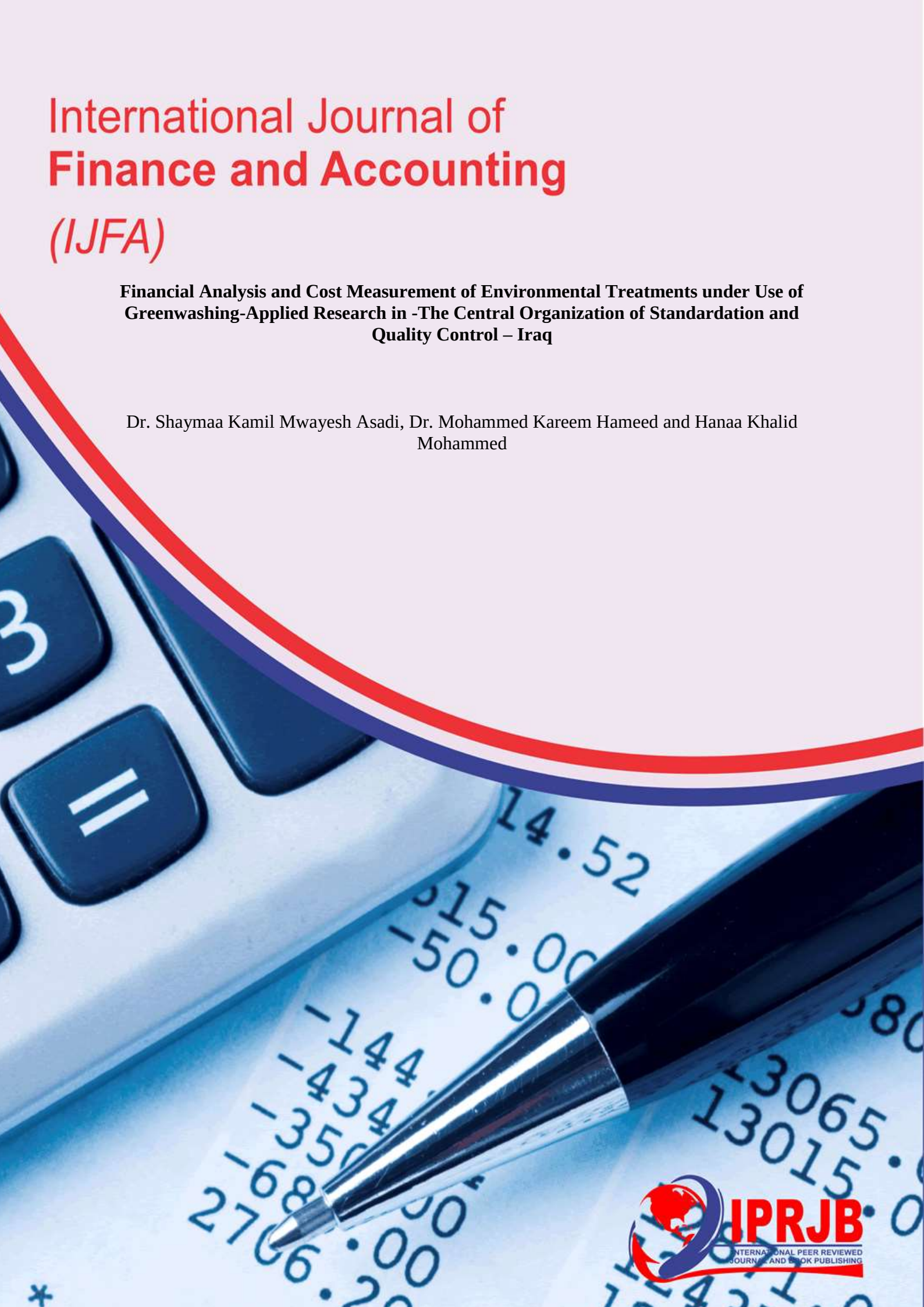
International Journal of
Finance and Accounting
(IJFA)

Financial Analysis and Cost Measurement of Environmental Treatments under Use of Greenwashing-Applied Research in -The Central Organization of Standardation and Quality Control – Iraq

Dr. Shaymaa Kamil Mwayesh Asadi, Dr. Mohammed Kareem Hameed and Hanaa Khalid Mohammed



International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026

www.iprjb.org

Financial Analysis and Cost Measurement of Environmental Treatments under Use of Greenwashing-Applied Research in -The Central Organization of Standardation and Quality Control - Iraq

[1]Dr. Shaymaa Kamil Mwayesh Asadi
Mustansiriyah University, College of Administration & Economics, Department of Banking and Finance Baghdad, Iraq,

[2]Dr. Mohammed Kareem Hameed
Mustansiriyah University, College of Administration & Economics, Department of Banking and Finance Baghdad, Iraq

[3]Hanaa Khalid Mohammed
Mustansiriyah University, College of Administration & Economics, Business Management Department, Baghdad, Iraq

Article History

Received 17th March 2026

Received in Revised Form 14th April 2026

Accepted 16th May 2026

Abstract

Purpose: is to analyse financial aspects and measure costs associated with environmental treatments in government institutions, with a focus on the phenomenon of "greenwashing," which has become a major challenge in the field of environmental sustainability. It also aims to develop a financial analytical framework that helps accurately measure the costs of environmental treatments and reveal the extent to which greenwashing practices mislead costs and environmental disclosure, thus contributing to improving the efficiency of an institution's environmental and financial performance.

Methodology: We adopted a descriptive-inferential approach in analysing sources and studies drawn from academic journals relevant to the research topic, as well as electronically published reports and books. Practically speaking, we used a descriptive-analytical approach to analyse actual data and information, utilizing reports, financial statements, and personal interviews with specialists. We employed an inductive approach to arrive at conclusions, which served as the basis for financial analysis and measuring treatment costs**.**

Findings: The Quality Control Directorate it's had highest percentage of Recurrence of Malfunctions and Defects in Quality Control Directorate for the year 2024 was (Defects related to Environmental Damage Discovered within Directorate), and the lowest percentage was (Defects Related to environmental Damage observed Outside Directorate).

Unique Contribution to Theory, Practice and Policy: This research contributes to financial analysis and measurement of the environmental remediation costs in Iraq resulting from the use of environmental deception methods, which are detected through the Quality Directorate. The target group in the research is anyone who markets environmentally deceptive products, leaving behind a negative impact on the environment.

Keywords: *Financial Analysis, Cost Measurement, Environmental Treatments, Greenwashing, Environmental Quality Costs, Organization of Standardization, Quality Control, Iraq (C.O.S.Q.C)*

JEL Codes: *G4, H50, M41*

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

INTRODUCTION

With the development of environmental awareness among consumers, they have become more concerned and afraid of buying products or services that increase or contribute to the risk of environmental degradation. Therefore, some companies or establishments have resorted to process of environmental deception, meaning that products are (green) or more (green), which in turn reduces costs for companies by not adding green materials in a real way and being satisfied with just placing some labels or drawings related to nature on the products. (Spaniol, DanilovaJensen, Nielsen, & Rosdahl, 2024). These issues related to greenwashing have not been explained or defined clearly or have no measurement or analysis tool on how to hold companies accountable or impose penalties on establishments or products that violate what is labeled or stated on their products to make them more desirable through more advertisements to market those products that work to destroy the environment despite the persistent efforts by some organizations, including the European Union organizations, to preserve the environment and impose fines on companies for spending as costs to treat the environment. (García-Sánchez, Hussain, Khan, & Martínez-Ferrero, 2021).The high costs of environmental treatment resulting from environmental pollutants, and what is meant here by pollutants is the increase in the amount of different materials in their liquid, solid, or gaseous forms in a way that reduces the system's ability to analyze, disperse, recycle, or convert them into useful materials that do not cause any problems, or the increase in the percentage of energy in the ecosystem such as radiation, heat, and noise (Free, Jones, & Tremblay, Greenwashing and sustainability assurance: a review and call for future research, 2024). Therefore, international organizations working on environmental treatment must impose some fines and subscriptions for treating these pollutants, including treatments related to greenwashing. (Fella & Bausa, 2024)

Problem answering the following questions:

- To what extent do greenwashing practices affect the accuracy of measuring the cost of environmental remediation?
- Do greenwashing practices lead to the provision of misleading accounting and financial information regarding environmental costs?
- To what extent can traditional financial analysis detect manipulation or embellishment in environmental reports resulting from greenwashing?
- What accounting and control mechanisms can be adopted to mitigate the impact of greenwashing on environmental and financial performance reports?
- Do current cost accounting systems within an organization contribute to reflecting the true cost of environmental remediation

Importance stems from need to enhance transparency in environmental disclosure and ensure that financial resources are directed towards effective and effective environmental practices, particularly in institutions with a regulatory and technical nature, such as Central Organization for Standardization and Quality Control in Iraq, which is a vital entity in supporting quality and environmental standards.

Hypothesis is that: “Greenwashing practices lead to distortion of financial measurement and analysis to allocate actual environmental costs within the cost accounting system, which hinders the accuracy of calculating the cost of environmental treatments, which in turn affects the efficiency of financial and administrative decisions.”

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

LITERATURE REVIEW

Origin and Concept of Financial Analysis (FA)

Financial analysis is historically considered to be the product of the circumstances that arose in the early thirties of the last century, which is the period of the Great Depression that prevailed in the United States of America, which led to the emergence of fraud and deception as a result of the collapse of some institutions, which created the need to publish financial information about companies. (Fares, 2024). It is known as an effective tool in assessing the financial efficiency of the enterprise based on the data resulting from the annual financial reports, where this data is sorted individually, collected and measured mutually. (Skocdopole, 2021). To support any decision-making process in any company, financial analysis must first be done, which aims to develop investment strategies, pricing and stock management. Financial analysis is defined as a process through which a set of quantitative or qualitative indicators of economic activity, whether a project or the like, are explored and deduced. These indicators work to determine the degree of importance of the project. Some define it as a system through which analytical tools are applied to transform data into information, which leads to assistance in the diagnostic process, which in turn aims to scan, examine and predict information. (Fares, 2024). The following figure shows the financial analysis:

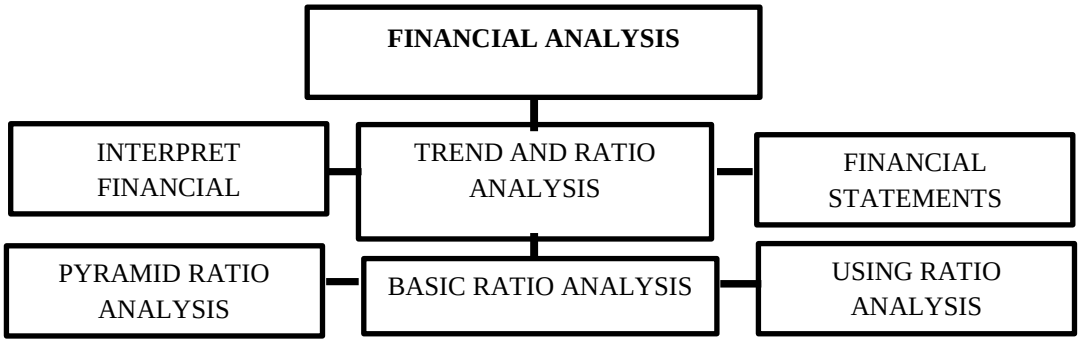


Figure 1: FINANCIAL ANALYSIS (FA).

Source: (Vipond, 2024)

Characteristics of Financial Analysis (FA): - (broking, 2018) Financial analysis is concerned with collecting detailed information from the financial statements and data of the establishment, classifying, processing and analysing them. Financial analysis is a set of tools and methods that aim to benefit from the information collected about the establishment's situation in order to discover the strengths and weaknesses of this establishment. It is considered an indispensable tool for practicing the functions of planning and control in the establishment. Financial analysis information is used by beneficiaries in making decisions and evaluating performance**.**

Importance of Financial Analysis: (Abdul Qader & Mohammed, 2017)

- Financial analysis is an effective control tool and is similar to an early warning system and a faithful guardian of the facility, especially if used effectively in facilities;
- Financial analysis can be used to evaluate the economic feasibility of establishing projects and evaluating performance.
- Financial analysis is a planning tool as it helps in predicting the future of future units;

- Financial analysis is a tool for making fateful decisions, especially regarding merger, modernization and renewal decisions

Types of Financial Accounting Analysis: - (SUBRAMANYAM, 2014)**.**

- **Vertical Analysis**: It is the conversion of financial figures into percentages of the main financial figure in that list for each period. It has been agreed that the main figure in the income statement is the net sales figure and in the balance sheet it is the total assets. This type helps to know the strengths and weaknesses in the institution.
- **Horizontal Analysis**: Horizontal analysis for several years includes formulating each of the financial elements to be analysed horizontally in the form of percentages. Therefore, the analysis from an accounting perspective will focus on a detailed study of all the important and useful relationships that can arise between the financial data contained in the financial statements and their interpretation in a way that serves the various parties that can benefit from them in the various decision-making processes. (Montgomery, Lyon, & Barg, 2024).

Cost Measurement (CM):- The purpose of accounting is no longer limited to recording an organization's accounting operations, determining its financial position, and summarizing the results of these operations. In the last century, accounting has expanded to encompass many other fields. Cost accounting has emerged as one of the accounting branches used to serve facility management in the areas of planning, implementation, and control. (Wet, 2022). It can be said that cost accounting has existed since the time of the Pharaohs, who followed specific systems and procedures for agricultural and architectural activities. Cost is defined as the resources sacrificed to achieve a specific goal. And cost accounting is measuring and reporting financial and non-financial data and information related to an organization's acquisition and consumption of resources, as well as providing data and information for management accounting and financial accounting (Horngren, , Rajan, Datar, & Bhimani, 2023).

Environmental Treatment Costs (ETC):- Environmental remediation costs are expenses incurred by an organization to mitigate or address the negative impacts of its activities on the environment. These costs include all financial efforts made to achieve compliance with environmental standards, improve environmental performance, and reduce pollution or environmental damage resulting from operational processes. Environmental remediation costs are part of a comprehensive environmental costing system. They aim to assess an organization's effectiveness in environmental compliance, whether within the framework of legal compliance or social responsibility. They are an important tool in assessing true environmental performance, avoiding deceptive practices such as greenwashing. These include following: (Borisova, Vinogradov, & Thrane-Nielsen, 2024)

Environmental Prevention Costs: - are the amounts spent to prevent pollution or negative environmental impacts from occurring in the first place, i.e., before any environmental damage occurs This type of cost aims to prevent pollution and reduce environmental risks by designing processes and systems in a sustainable and environmentally friendly manner These include following:

- Purchasing environmentally friendly equipment.
- Developing clean production processes.
- Training employees on sound environmental practices (Bombardini, Trebbi, & Ben Zhang, 2025)

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

Environmental Detection or Control Costs: These are the costs incurred by an organization to monitor, measure, or control environmental performance to ensure that industrial or operational activities do not cause pollution or environmental damage, or that they fall within legal and environmentally permissible limits. In other words, these costs are incurred to detect environmental problems or deviations before they become serious. They are part of the costs of good environmental quality. These include following: (Rosiawan, Singgih, & Widodo, 2019).

- Monitoring water or air quality.
- Conducting periodic environmental inspections.

Internal Environmental Remediation Costs: - are costs incurred by an organization to address environmental damage or waste occurring within the workplace before it impacts the external environment. In other words, they are the costs of correcting or managing pollution or waste before it is released into the environment or reaches regulatory authorities. These include following:

- Operating wastewater treatment units.
- Safely disposing of hazardous waste (Riewpaiboon, 2008).

External remediation or Correction Costs in Environment: - also known as external environmental failure costs are the costs incurred by an organization as a result of environmental damage that has gone beyond its internal control and impacted the surrounding environment or community. These costs include remediating pollution, paying fines, or compensating for damages. . These include following:

- Paying environmental fines (Leusder, Porte, Ahaus, & Elten, 2022).
- Compensating for damages to third parties or the environment.
- Repairing damages to the environment outside the organization's scope**.**

Environmental prevention is cheaper and more sustainable from an economic and social perspective. Environmental failure, on the other hand, harms the environment, money, and reputation, and may result in facility closure or legal prosecution (Evans & Popova, 2017) and figure below shows types of environmental costs.

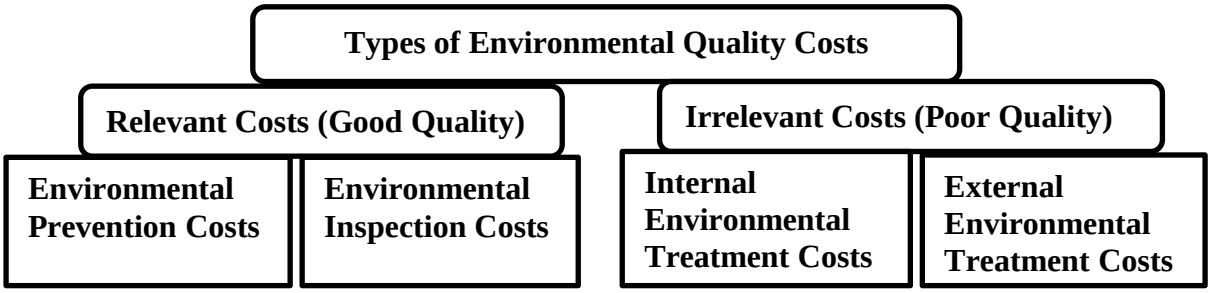


Figure 2: Types of Environmental Quality Costs

Source: Prepared by Researchers Based on Some Literature, including: (Alnoor Bhimani, Charles T. Horngren, Srikant M. Datar, & Madhav V. Rajan, 2023).

Greenwashing: is a term used to describe the deceptive tactics employed by some companies or organizations to present themselves as environmentally friendly, while in reality, they do not engage in genuine or sustainable environmental practices. It is the act of misleading consumers about a company's environmental practices or the environmental benefits of a

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

product or service. The practice of greenwashing is the act of conveying false information to the public, which is perceived as a distortion of facts and truth in order to appear socially and environmentally responsible in the eyes of the target audience (lynn r. kahle & eda gurel-atya, 2014). Greenwashing often involves changing the name of a brand or product to give the impression of "naturalness," such as placing an image of a forest on a bottle of chemical. In other words, these organizations promote a false or exaggerated green image through advertising campaigns, environmental slogans, or the use of words such as "sustainable," "organic," and "natural," without any actual evidence or commitment (Christopher Marquis & Cuili Qian, 2013). The term "greenwashing" was coined by New York environmentalist Jay Westerfield in a 1986 article regarding a hotel industry practice whereby signs were placed in each room encouraging the reuse of towels, ostensibly to "save the environment." Westerfield noted that in most cases, these establishments made little or no effort to reduce energy waste, evidenced by the lack of cost savings in implementing this practice. Westerfield argued that the real goal of this "green campaign" by many hoteliers was, in fact, to increase profits. Westerfield thus classified this and other acts of apparent environmental conscience as greenwashing, whose primary and overriding goal was to increase profits (Motavalli, 2011). And for following figure we show the development of interest in issue of greenwashing

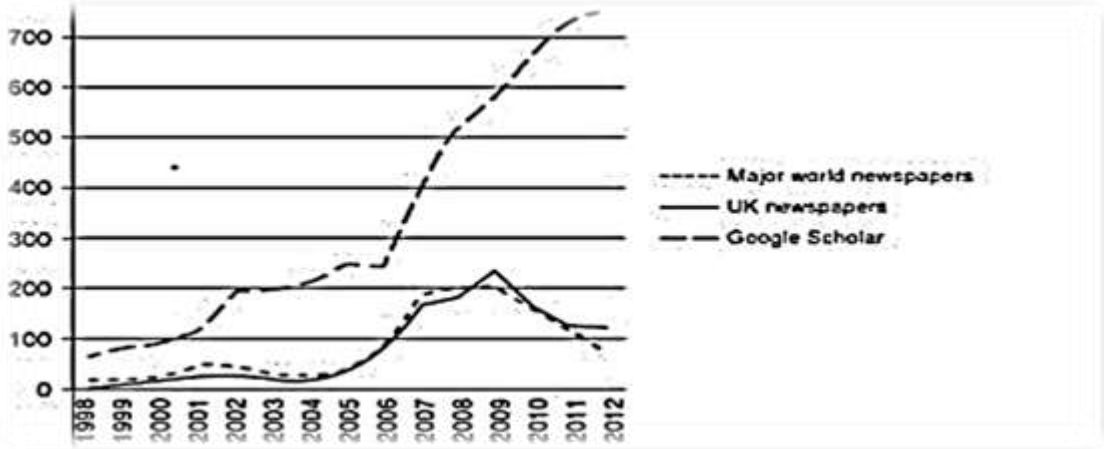


Figure 3: Development of Interest in Issue of Greenwashing

Source: (Bowen, 2014).

Types of Greenwashing :- here are several types of greenwashing, as follows:

- **Marketing greenwashing:-** The use of advertising, logos, and environmental colors to give a false impression of sustainability. Example: A package featuring images of green leaves without any real environmental commitment (Riccardo, Federica, & Arianna, 2020).
- **Legal or symbolic greenwashing:-** occurs when a company implements very limited or ineffective environmental measures, or complies only with the minimum environmental regulations, and then markets this compliance as a major environmental achievement, with the aim of polishing its environmental image without making any real or significant changes. Examples include adhering to simple legal standards and presenting them as an environmental achievement, or using weak or unrecognized environmental certifications (Mustafa, 2010).

- **Misleading greenwashing** :- Is a type of media or marketing deception practiced by some companies or institutions by promoting false or exaggerated environmental claims, with the aim of presenting a product or activity as environmentally friendly, when the reality is different. The goal is often to gain consumer confidence and increase profits. For example, a company might label a detergent package as "100% natural," while it contains harmful chemicals. A factory might advertise a "reduced carbon footprint," while making no actual changes to its operations. A product might be marketed as "recyclable," but there are no actual recycling centers. Why is it misleading? It deceives consumers seeking environmentally responsible options. It encourages uninformed consumption. It disrupts genuine environmental efforts by creating market confusion (Khair & Muhammad, 2020).
- **Comparative greenwashing:-** occurs when a company or organization compares its product or service to other, more environmentally harmful products, with the aim of presenting itself as the "greener" or "better" option. This is when the product is not actually environmentally friendly, but rather relatively less harmful. This means presenting the product as environmentally better than others, even though it is still harmful. This is similar to a fuel marketed as "cleaner" despite being polluting (Sean D. Tseng & Daisy Mallett, 2023).
- **Partial greenwashing:-** occurs when a company or organization highlights only one aspect of its business that demonstrates environmental commitment (such as recycling or reducing energy consumption), while deliberately ignoring or concealing other, more environmentally harmful aspects, resulting in an unbalanced and misleading image of its sustainability. This means highlighting a small, positive environmental aspect while obscuring the major negative aspects. For example, a company recycles some products while polluting water sources (Dempere, Alamash, & Mattos, 2024).
- **Educational greenwashing:-** occurs when companies or organizations use awareness or educational campaigns that appear environmentally friendly and purposeful to raise awareness, but in reality, their primary goal is to improve their public image and market their products or services, without actually implementing substantive changes or practices that protect the environment. This means launching environmental awareness campaigns that appear to be educational, but their goal is purely marketing to polish the company's image (Free, Jones, & Tremblay, Greenwashing and sustainability assurance: a review and call for future research, 2024). And for following figure we show Types of Greenwashing

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

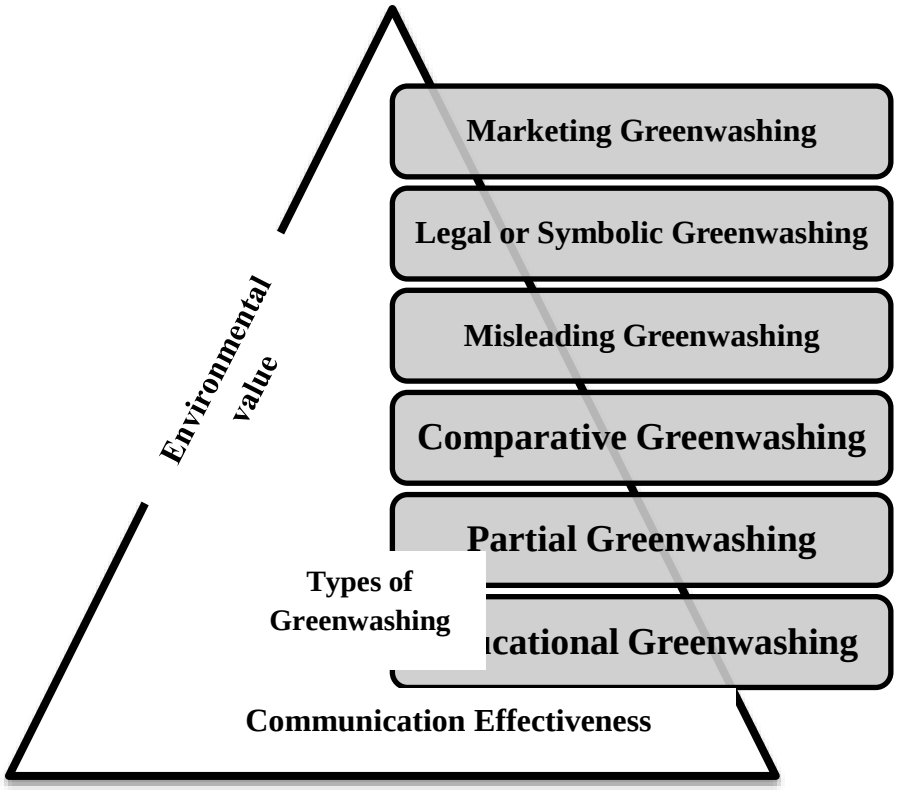


Figure 4: Types of Greenwashing

Source: Prepared by Researchers Based on Some Literature, including: (Horiuchi, 2009).

The Dimensions of Greenwashing are as follows:

- **Environmental Dimension**: Refers to the negative impacts of greenwashing on the environment and nature as a result of misleading consumers and decision-makers about the true environmental performance of products or companies, leading to the continuation of polluting activities without oversight or real improvement. This includes the negative impact on the environment as a result of concealing harmful practices. It also undermines genuine environmental initiatives by distorting the image of environmentally friendly products (Cheikh, 2022).
- **Economic Dimension:** Refers to negative financial impacts resulting from use of false or misleading environmental claims, whether at the consumer level, competition between companies, or the general economy. This distorts the market, allocates resources inefficiently, and creates an unfair trading climate. This includes distorting competition between real and misleading companies, deceiving consumers, and increasing product prices without a real environmental justification. It also undermines confidence in market due to false environmental claims (Maclennan, 2023).
- **Media and Communication Dimension:** Refers to the role played by the media, advertising, and public relations campaigns in spreading misleading or inaccurate information about the environmental performance of companies or products. This aims to create falsely positive public opinion, even without real environmentally supportive practices. This includes misinformation through advertising campaigns and environmental slogans, and controlling the environmental narrative away from actual actors (lynn r. kahle & eda gurel-atya, 2014).

- **Legal Dimension:** Refers to shortcomings or ambiguity of the legal and legislative frameworks regulating environmental claims in advertisements and products. This allows some companies to practice greenwashing without effective legal accountability, making it difficult for regulatory authorities to protect consumers and the environment. This includes the absence or weakness of legislation regulating environmental advertising, and the difficulty of holding companies legally accountable in the absence of direct evidence. Furthermore, some countries have begun enacting laws requiring companies to adhere to environmental transparency (Mundial, 2024).
- **Ethical and Cultural Dimension:** Refers to the principles and values that govern the behaviour of individuals and institutions when adopting greenwashing practices. It relates to environmental responsibility and a commitment to preserving the environment by adopting laundry and cleaning methods that reduce water and energy consumption, use environmentally friendly cleaning materials, and do not harm ecosystems or human health. This is not to exploit environmental awareness for undue commercial gain, and to weaken the collective sense of environmental responsibility (Riccardo, Federica, & Arianna, 2020).

METHODOLOGY

Research model: There are two variables

- Dependent variable: - financial Analysis and Costs Measurement of Environmental Remediation
- Independent variables**:** Greenwashing

Descriptive analysis: - Central Organization for Standardization and Quality Control – Iraq (C.O.S.Q.C): - is one of the specialized technical bodies affiliated with the Iraqi Ministry of Planning. It was established pursuant to Law No. (54) Of (197), as amended, with the aim of promoting economic development, organizing the standard specifications system, and ensuring the quality of products and services within Iraq. The organization is responsible for setting national standard specifications, conducting laboratory tests, monitoring quality, and issuing conformity certificates, as well as accrediting measurement and calibration systems in accordance with international standards. The organization organizes numerous activities, including registering and granting patents and industrial models. The organization also plays a pivotal role in protecting consumers and the environment by ensuring that goods and products circulating in the local market comply with technical, health, and environmental specifications. It also oversees imported goods through border inspection and control centres. responsibilities of Central Organization are as follows:

- Head of Central Organization (C.O.S.Q.C)
- Standardization Directorate
- Quality Control Directorate
- Technical and Administrative Services Directorate

We will highlight Quality Control Directorate, which is part of **(C.O.S.Q.C)**. This directorate monitors the application of approved specifications and everything related to the quality of local and imported goods and products directly through the technical departments, which are as follows:

Table 1: Mechanism of Action for Quality Control Directorate

Department	Department work Mechanism
Food Industries Chemical Industries Construction Industries Engineering Industries Textile Industries	Examining local goods traded in local markets by conducting inspection tours, as well as imported goods, in addition to conducting on-site inspections of factories and production plants by withdrawing samples, examining and analysing them, and then obligating them to follow legal procedures. Otherwise, the products are kept and they are not allowed to continue.
Certification Department	Issuing and renewing Iraqi conformity certificates to production and service organizations for quality management systems in accordance with international standards
Conformity Assessment Department	Monitoring the implementation of inspection and pre-inspection programs prior to import from the country of origin or export.

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024.

Now we will do financial analysis and Cost measurement through following table of Quality Cost for the Quality Control Directorate

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

Table 2: Quality Costs for Quality Control Directorate for Year 2024

Item	[1]Amounts	Ratio to Type	Ratio to Total Quality Costs	Ratio to Revenue	Ratio to Total Costs
Prevention Costs	-	-	-	-	-
Inspection cost	538,498,918	0.339	0.239	0.201	2.270
Organizational costs	88,681,619	0.056	0.039	0.033	0.374
Telephone and Communication	43,815,000	0.028	0.019	0.016	0.185
Development and Statistics	916,138,515	0.577	0.406	0.341	3.861
Total Prevention Costs	**1,587,134,052**	**1.000**	**0.704**	**0.591**	**6.689**
Evaluation Costs					
Maintenance	40,708,054	0.069	0.018	0.015	0.172
Depreciation of Equipment	10,177,013	0.017	0.005	0.004	0.043
Evaluation and follow-up	538,498,918	0.914	0.239	0.201	2.270
Total Evaluation Costs	**589,383,985**	**1.000**	**0.261**	**0.220**	**2.484**
Internal Failure Costs	-	-		-	-
Remedial Maintenance Costs for Equipment	39,708,054	0.603	0.018	0.015	0.167
Costs of Non-Disposal of Hazardous Waste	26124733	0.397	0.012	0.010	0.110
Total Internal Failure Costs	**65,832,787**	**1.000**	**0.029**	**0.025**	**0.277**
External Failure Costs					
Compensation and Fines	12,710,750	1.000	0.006	0.005	0.054
Total External Failure Costs	**12,710,750**	**1.000**	**0.006**	**0.840**	**0.054**
Total Quality Costs	**2,255,061,574**	**-**	**1.000**	**-**	**-**
Revenue	237,259,120	-	0.105	-	-
Total Cost for year 2024	**2,684,794,806**	**-**	**1.191**	**-**	**-**

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024

From table we note that the highest cost spent by Quality Control Directorate is on prevention costs for the basic design of the processes of preventing products that do not conform to quality specifications, followed by evaluation costs and down to the lowest cost, which is the cost of external failure, meaning that the more we spend on the cost of good quality to prevent, the lower the cost of poor quality

[1] All amounts are calculated on the basis of Iraqi dinars in all tables.

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

Figure 5: Quality Costs for Quality Control Directorate for year 2024

Source: Prepared by Researchers Based on Table 2.

From figure, we note that highest cost spent by Quality Control Directorate was on the costs of good quality, which amounted to (70% + 26%) = 96%, while the costs of poor quality amounted to (3 + 1) = 4%.

RESULTS AND DISCUSSION

Descriptive Data analysis and Findings: Now we will highlight greenwashing through table as follows:

Table 3: Non-Compliant Tests Causing Greenwashing of Quality Control Directorate for Year 2024

Type of Test	Non-Conforming Tests (affecting Environment)					
	Environmentally Harmful	**Moderately Harmful**	**High Harmful**	**Treatable**	**Untreatable**	**Treated in long term.**
Food	4,352	870	45	2,176	1,088	1,088
Textile	3,185	637	32	1,592.50	796	956
Construction	5,620	1124	56	2,810	1,405	562
Engineering	2,125	425	22	1,062.50	531	425
Chemical	6,105	1221	61	3,052.50	1,526	1,648
Imported Goods	10,876	2176	1088	5,438	2,719	2,610
Total Tests of Environmentally Harmful for year 2024	**32,263**	**6453**	**1,304**	**16,132**	**8,066**	**7,289**

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024

From previous table, we notice that there are many tests that do not conform to specifications, and largest percentage is for imported goods, in addition to what is very harmful to environment, which affects the phenomenon of desertification and global warming.

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

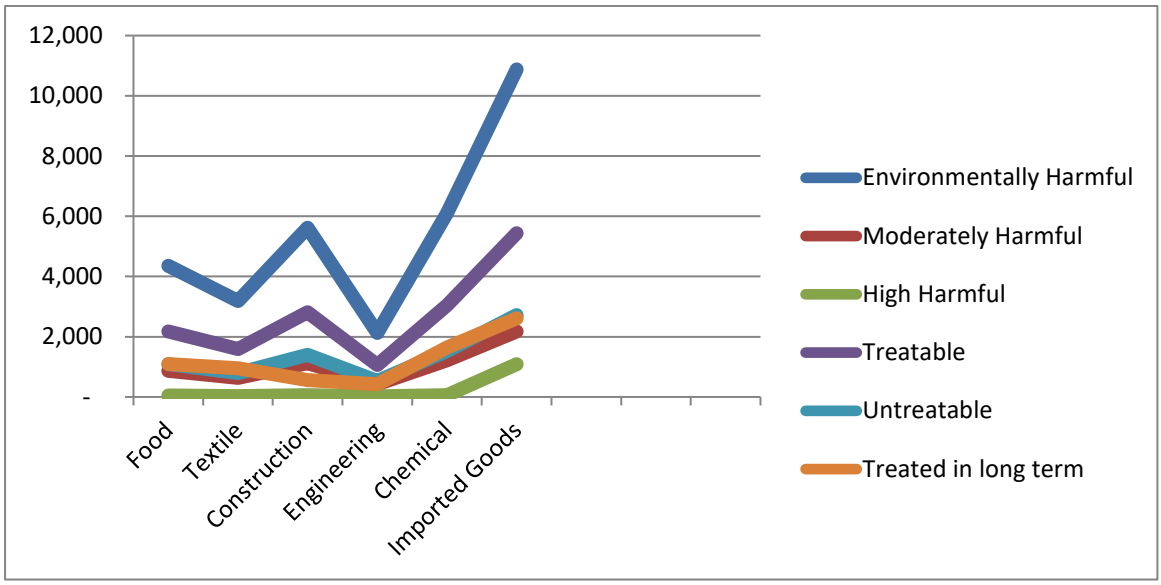


Figure 6: Proportion of Non-Compliant Tests Causing Greenwashing of Quality Control Directorate for year 2024

Source: Prepared by Researchers Based on Table 3.

And through following table, we will conduct a financial analysis and measure the costs of environmental treatment

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

Table 4: Financial Analysis and Measure Costs of Environmental Treatment through Environmental Quality Costs for Quality Control Directorate for Year 2024

Item	Amounts	Ratio to Type	Ratio to Total Environmental Quality Costs	Ratio to Revenue	Ratio to Total Costs
Environmental Prevention Costs	-	-	-	-	-
Training in environmental practices	438,538,918	0.336	0.211	1.848	0.163
Purchasing pollution treatment equipment	78,681,619	0.060	0.038	0.332	0.029
Developing environmental management systems	21,815,000	0.017	0.010	0.092	0.008
Investing in environmentally friendly materials	766,138,509	0.587	0.368	3.229	0.285
Total Environmental Prevention Costs	**1,305,174,046**	**1.000**	**0.627**	**5.501**	**0.486**
Environmental Evaluations Costs	-	-	-	-	-
Emissions testing	30,548,051	0.052	0.015	0.129	0.011
Periodic environmental audits	9,177,021	0.016	0.004	0.039	0.003
Water or air quality monitoring	538,498,918	0.915	0.259	2.270	0.201
Laboratory analysis of waste	10,177,013	0.017	0.005	0.043	0.004
Total Environmental Evaluations Costs	**588,401,003**	**1.000**	**0.283**	**2.480**	**0.219**
Internal Environmental Failure Costs	-	-	-	-	-
Chemical leaks within the plant	29,708,023	0.217	0.014	0.125	0.011
Reprocessing industrial waste	58124733	0.425	0.028	0.245	0.022
Production shutdowns due to environmental defects	23,708,054	0.174	0.011	0.100	0.009
Inefficient waste disposal	25104733	0.184	0.012	0.106	0.009
Total Internal Environmental Failure Costs	**136,645,543**	**1.000**	**0.066**	**0.576**	**0.051**
External Environmental Failure Costs	-	-	-	-	-
Payment of government environmental fines	10,410,090	0.198	0.005	0.044	0.004
Pollution lawsuits	10,710,541	0.204	0.005	0.045	0.004
Loss of reputation	20,710,722	0.394	0.010	0.087	0.008
Compensation to affected residents or environment	10,710,751	0.204	0.005	0.045	0.004
Total External Environmental Failure Costs	**52,542,104**	**1.000**	**0.025**	**0.221**	**0.020**
Total Environmental Quality Costs	**2,082,762,696**	**1.000**	**-**	**8.778**	**0.776**
Revenue	237,259,120	-	-	-	0.088
Total Cost for year 2024	**2,684,794,806**	-	-	-	1.000

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024.

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

From previous table, we note that the Quality Control Directorate spent (0.486 + 0.219) = 70% on good environmental quality costs. And From the figure following we show Environmental Quality Costs for Quality Control Directorate for year 2024

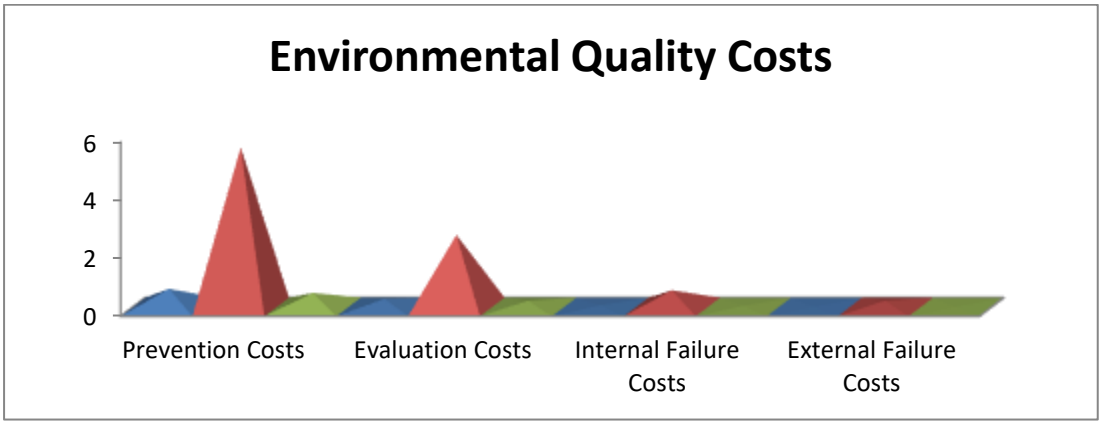


Figure 7: Environmental Quality Costs for Quality Control Directorate for year 2024

Source: Prepared by Researchers-Based Table 4.

From the perversely Figure, we notice that the highest cost is for prevention costs and the lowest cost is for external failure. And from Figure following Shows Cause – and – Effect for Quality Control Directorate for year 2024

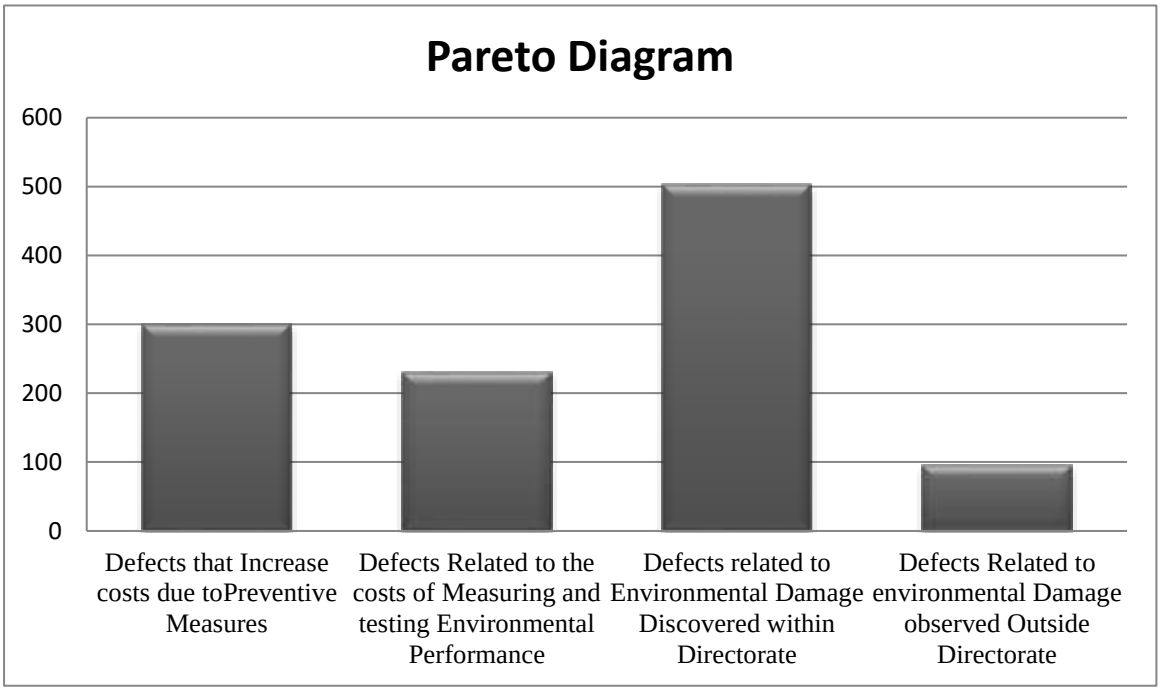
Figure 8: Cause – and – Effect for Quality Control Directorate for year 2024

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024.

International Journal of Finance and Accounting
ISSN 2518-4113 (online)
Vol.11 Issue 4, No.5. pp. 65 - 84, 2026
www.iprjb.org

Through Pareto chart, we will notice number of times and percentages of recurrence of faults and defects in the Quality Control Department for the year 2024, as shown in following figure:

Figure 9: Pareto Diagram for Number of Times Malfunctions and Defects Recurred in



Quality Control Directorate for Year 2024

Source: Prepared by Researchers Based on Reports of (C.O.S.Q.C) 2024.

Through the Pareto chart, we will notice that highest percentage of Recurrence of Malfunctions and Defects in Quality Control Directorate for the year 2024 was (Defects related to Environmental Damage Discovered within Directorate),and the lowest percentage was (Defects Related to environmental Damage observed Outside Directorate).

Conclusions

- There are many non-compliant tests, the majority of which are for imported goods, in addition to products that are extremely harmful to the environment, impacting desertification and global warming.
- The Quality Control Directorate spends high costs annually for good quality, amounting to (70% + 26%) = 96%, while the costs for poor quality amount to (3 + 1) = 4%.
- The Quality Control Directorate spends (0.486 + 0.219) = 70% on good environmental quality costs. Annually
- The Quality Control Directorate it's had highest percentage of Recurrence of Malfunctions and Defects in Quality Control Directorate for the year 2024 was (Defects related to Environmental Damage Discovered within Directorate), and the lowest percentage was (Defects Related to environmental Damage observed Outside Directorate).

Recommendations

- Strict control over raw materials and chemicals marketed to Iraq
- Imposing fines on all companies and institutions that market and introduce products harmful to the environment, as well as monitoring environmental performance assessment reports.

Acknowledgment: We thank the Central Organization for Standardization and Quality (C.O.S.Q.C), all employees, managers, the head of Organization, and the Quality Control Directorate for providing us with all the reports and information through which we were able to complete this research.

REFERENCES

Bombardini, M., Trebbi, F., & Ben Zhang, M. (2025). Measuring the Costs and Benefits of Regulation. *National Bureau of Economic Research*, 1-45.

Borisova, G., Vinogradov, S., & Thrane-Nielsen, D. (2024). Amortised cost measurement Cover Note. *EFRAG financial reportings FR TEG - CFSS meeting*, 1-8.

Dempere, J., Alamash, E., & Mattos, P. (2024). Unveiling the truth: greenwashing in sustainable finance. *Frontiers in Sustainability*, 1-14. doi:10.3389/frsus.2024.1362051

Evans, D., & Popova, A. (2017). Cost-Effectiveness Measurement in Development Accounting for Local Costs and Noisy Impacts. *world bank group - Africa Region Office of the Chief Economist*, 1-33.

Free, C., Jones, S., & Tremblay, M. S. (2024). Greenwashing and sustainability assurance: a review and call for future research. *Journal of Accounting Literature*, 4-5.

Khair, B., & Muhammad, H. (2020). Greenwashing as a practice to mislead sustainability claims and its criminal responsibilities. *Journal of Legal Studies*, 1-29.

Leusder, M., Porte, P., Ahaus, K., & Elten, H. v. (2022). Cost measurement in value-based healthcare: a systematic review. *BMJ open* , 1-12. doi:10.1136/bmjopen-2022-066568

Montgomery, A., Lyon, T. P., & Barg, J. (2024). No End in Sight? A Greenwash Review and Research Agenda. *Organization & Environment*, 244.

Riccardo, T., Federica, B., & Arianna, L. (2020). Greenwashing and environmental communication: Effects on stakeholders' perceptions. *University of Parma Research Repository*, 1-29. doi:DOI:10.1002/bse.2373

Riewpaiboon, A. (2008). Measurement of costs. *Journal of the Medical Association of Thailand*, 1-11.

Rosiawan, M., Singgih, M. L., & Widodo, E. (2019). Measurement of Cost & Benefit for Implementation of Risk Management in the Production Process. (pp. 546-550). indonesia: internaltional confrance on business and management of technology . doi:DOI: 10.12962/j23546026.y2019i5.6428

Abdul Qader, A., & Mohammed, A. (2017). *The role of financial analysis in diagnosing the financial situation of the institution. A case study of the National Corporation for Well Services (ENSP) during the period from 2012-2014.* Algeria: University of Kasdi Merbah - Ouargla.

Alnoor Bhimani, Charles T. Horngren, Srikant M. Datar, & Madhav V. Rajan. (2023). MANAGEMENT AND COST ACCOUNTING. In *MANAGEMENT AND COST ACCOUNTING* (p. 637). New Jersey, USA: published by Prentice-Hall Inc., Upper Saddle River, New Jersey, USA.

Bowen, F. (2014). After Greenwashing: Symbolic Corporate Environmentalism. *London: Cambridge University Press*, 1-22.

broking, c. w. (2018). *UNITED FINANCE PLC FINANCIAL ANALYSIS SUMMARY*. malta: broking, charts wealth management corporate.

Cheikh, M. B. (2022). Greenwashing as a Practice to Conceal Negative Environmental Impact - A Case Study of Coca-Cola. *Innovation and Marketing journal*.

Christopher Marquis, & Cuili Qian. (2013). corporate Social Responsibility Reporting in China: Symbol or Substance. *Published Online:29 Jul 2013https://doi.org/10.1287/orsc.2013.0837*.

Fares, M. M. (2024). Financial analysis. *research gate*, 1-14. doi:DOI: 10.13140/RG.2.2.18446.16961

Fella, S., & Bausa, E. (2024). Green or greenwashed? Examining consumers' ability to identify greenwashing. *Journal of Environmental Psychology*, *95*(102281), 1-16. doi:https://doi.org/10.1016/j.jenvp.2024.102281

Free, C., Jones, S., & Tremblay, M.-S. (2024). Greenwashing and sustainability assurance: a review and call for future research. *Journal of Accounting Literature*, 1-27.

García-Sánchez, I.-M., Hussain, N., Khan, S.-A., & Martínez-Ferrero, J. (2021). Do Markets Punish or Reward Corporate Social Responsibility. *Bus. Soc*, 1431-1467. Retrieved from https://journals.sagepub.com/doi/10.1177/0007650319898839

Horiuchi, R. (2009). Understanding and Preventing Greenwash. *A Business Guide. Futerra & BSR*, 1-22.

Horngren, , C., Rajan, M., Datar, r., & Bhimani, A. (2023). management and cost accounting. In A. Bhimani, *management and cost accounting* (Vol. eighth editino, pp. 5-6). New Jersey, USA: Prentice-Hall Inc., Upper Saddle River, .

lynn r. kahle , & eda gurel-atya. (2014). Communicating sustainability for the green economy. *Armonk, New York : M.E. Sharpe*, 1-12.

Maclennan, A. (2023). Greenwashing: how green is it. *PKF hospitality group*, 1-9.

Motavalli, J. (2011). A History of Greenwashing: How Dirty Towels Impacted the Green Movement. *online*, 1-15.

Mundial, P. (2024). te contamos las claves sobre la nueva acción de la ONU contra el greenwashing -. *Pacto Mundial*, 1-9.

Mustafa, G. K. (2010). Environmental Pollution: Concept, Forms, and How to Reduce Its Risk . *Journal of Environmental Studies*, 1-13.

Sean D. Tseng, & Daisy Mallett. (2023). Greenwashing and how to avoid it: An introductory guide for Asia's finance industry. *ClientEarth AISBL, enterprise number 0714.925.038, a registered company in Germany*, 1-38.

Skocdopole, P. (2021). Financial Analysis as a Basis for Creation of the Financial Plan of the Selected Business Entity – Case Study. (S. W. Conferences, Ed.) *EDP Sciences*, 1-10. doi:https://doi.org/10.1051/shsconf/20219203027

Spaniol, M., DanilovaJensen, E., Nielsen, M., & Rosdahl, C. (2024). Defining Greenwashing: A Concept Analysis. *Sustainability*, *16*(9055), 1-2. Retrieved from file:///C:/Users/hp/Downloads/sustainability-16-09055.pdf

SUBRAMANYAM, K. R. (2014). *FINANCIAL STATEMENT ANALYSIS, ELEVENTH EDITION*. United States of America: McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121. Copyright.

Vipond, t. (2024). *Financial Analysis Fundamentals.* CFI Education Inc.

Wet, S. d. (2022). Fundamentals of Cost and Management Accounting. In S. d. Wet, *Fundamentals of Cost and Management Accounting* (p. 5). Art Printers.