

The Contribution of Accounting Measurement and Disclosure of Environmental Costs in Enhancing the Quality of Financial Statements: A Study of Accounting Professionals' Perspectives

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Abstract:

This study examines the requirements for measuring and disclosing environmental costs and their effect on the quality of financial statements, recognizing environmental accounting as a necessary response to evolving regulatory and professional developments. An exploratory field approach was employed, targeting accountants in economic institutions within the industrial zone of Batna, with 67 valid questionnaires analyzed using SPSS (version 23).

Descriptive and inferential statistical techniques were applied to test the study hypotheses.

The findings reveal a statistically significant positive relationship between awareness of environmental cost measurement and disclosure and improvements in environmental performance, leading to enhanced financial reporting quality.

The study recommends strengthening the Algerian financial accounting system by establishing clear methodological bases for measuring, presenting, and disclosing environmental costs to improve financial statement quality and support effective decision-making.

Keywords: *Environmental costs; Financial statement quality; Accounting measurement; Accounting disclosure.*

Jel Classification Codes : *M15, M45, M41, M40*

1. Introduction :

In recent years, accounting thought has undergone a qualitative transformation toward integrating environmental dimensions into the framework of measurement and financial reporting, in alignment with the growing imperatives of sustainability and the increasing regulatory and societal pressures imposed on economic entities. Contemporary international literature demonstrates that the development of structured mechanisms for measuring and systematically disclosing environmentally related costs enhances financial reporting transparency and strengthens users' confidence, particularly within environments that adopt expanded disclosure practices and integrated reporting approaches **(Alshehadeh, & al. 2025)**

Within the Algerian context, the last five years have witnessed a growing scholarly interest in environmental accounting. Several empirical investigations have addressed either the reality of environmental measurement practices or disclosure patterns within selected industrial entities, emphasizing the necessity of incorporating environmental costs into the Financial Accounting System (Système Comptable Financier). These studies **(Cherouati & Cherouati, & al, 2022)**, while contributory, have generally been confined either to a single dimension of accounting treatment (measurement or disclosure) or to case-based approaches, without offering an integrative analytical framework that systematically links environmental cost measurement and disclosure requirements to the qualitative attributes of financial statements.

Drawing upon contemporary accounting scholarship, a relative consensus emerges that systematic recognition of environmental costs when accompanied by appropriate and transparent disclosure contributes to strengthening the qualitative characteristics of financial information, particularly relevance, faithful representation (reliability), and comparability. Nevertheless, the extent to which such effects materialize in emerging economies remains insufficiently explored. More specifically, limited empirical evidence exists regarding accounting professionals' perceptions of the relationship between environmental measurement and disclosure requirements and the overall quality of financial statements, especially in regulatory environments lacking detailed, binding standards governing environmental cost accounting treatments **(Gündüz, & Gündüz 2025)**.

Although Algeria's Financial Accounting System has undergone significant reforms, these developments have not been paralleled by detailed operational guidelines specifying measurement bases, presentation formats, and disclosure procedures for environmental costs within financial statements. This regulatory and methodological gap may, consequently, affect the informational quality delivered to financial statement users. Accordingly, a critical research issue persists concerning the extent to which the adoption of systematic environmental measurement and disclosure practices enhances the fundamental qualitative characteristics of financial statements namely reliability (faithful representation), relevance, understandability, and comparability. **(Mebsout & Saidi, A, 2023)**

1.1 The research problem :

Based on the above, the main research question can be formulated as follows:

To what extent does measuring and disclosing environmental costs contribute to improving the quality of financial statements from the perspective of accounting professionals within Algerian economic institutions?

1.2. Sub-Research Questions

- ❖ What is the nature of the relationship between the extent of applying environmental cost measurement and disclosure practices and the reliability of information presented in financial statements?
- ❖ To what extent do environmental cost measurement and disclosure practices enhance the relevance of financial statements for decision-making purposes?
- ❖ Does the incorporation of environmental cost-related information within financial reports improve the understandability and clarity of financial statements for users?
- ❖ How does the adoption of systematic environmental measurement and disclosure practices influence the comparability of financial statements across periods and entities?

1.3. The study hypothesis:

- ❖ **H0₁** There is no statistically significant effect of environmental cost accounting measurement and disclosure on the reliability of financial statements at the 0.05 significance level.
- ❖ **H0₂**: There is no statistically significant relationship between environmental cost measurement and disclosure and the relevance of financial statements at the 0.05 significance level.
- ❖ **H0₃**: Environmental cost accounting measurement and disclosure do not have a statistically significant impact on the understandability of financial statements at the 0.05 significance level.
- ❖ **H0₄**: There is no statistically significant relationship between the implementation of environmental measurement and disclosure practices and the comparability of financial statements at the 0.05 significance level.

1.4. Importance of the study :

The significance of this study lies in its contribution to mitigating and rationalizing the adverse environmental impacts arising from the operational activities of economic entities. This is achieved through the systematic measurement and transparent disclosure of environmental impacts and related costs, thereby ensuring the accurate communication of environmental performance information for the relevant financial period. Such structured reporting enhances the informational

value of financial statements, supports evidence-based decision-making, strengthens stakeholders' judgments, and improves the interpretability and analytical usefulness of accounting information.

1.5.Literature Review

Recent international scholarship has demonstrated growing interest in the role of environmental cost measurement and disclosure in enhancing the quality of financial reporting. Empirical evidence indicates that the development of rigorous models for measuring environmental performance costs contributes to improving the credibility of financial information and reducing information asymmetry between management and stakeholders **(Alshehadeh, & al, 2025)** (Alshehadeh, 2025). Similarly, research conducted in the banking sector confirms that higher levels of environmental disclosure are positively associated with financial performance, reflecting the integration of environmental considerations within corporate reporting systems **(Gündüz, & Gündüz, 2025)**. From a conceptual standpoint, earlier international contributions emphasized the necessity of incorporating environmental costs into managerial accounting systems to ensure a more faithful representation of economic performance (Peter & Roger, 2000), while the United Nations expert working group advanced practical frameworks for environmental management accounting and its institutional application (Howard & Ward, 2002). In the Arab context, proposed disclosure frameworks within unified accounting systems (Nazem et al., 2009) and analyses of measurement and disclosure challenges highlighted structural and professional constraints affecting effective implementation. **(Mzimish & Belhassan, 2018)**

Within the Algerian setting, empirical investigations remain comparatively limited. Evidence from industrial enterprises suggests that the adoption of environmental cost accounting practices contributes positively to corporate sustainability performance **(Cherouati & Cherouati, 2022)**. Moreover, survey-based findings indicate that systematic measurement of environmental costs enhances the level of disclosure in financial statements, although regulatory and practical constraints continue to hinder full implementation **(Mebsout & Saidi, A, 2023)**. Earlier national contributions also stressed the strategic necessity of integrating environmental accounting into development measurement frameworks to avoid distorted assessments of economic performance **(Ben Farj, 2001)**.

Despite this accumulated body of knowledge, a discernible research gap persists. Existing studies have largely examined measurement, disclosure, sustainability, or financial performance separately, without constructing an integrated analytical model that simultaneously captures the joint effect of environmental cost measurement and disclosure on the qualitative characteristics of financial statements. Furthermore, limited attention has been devoted to examining these relationships from the perspective of accounting professionals within the Algerian economic environment. Accordingly, the present study seeks to address this gap by adopting a comprehensive quantitative field approach that integrates both measurement and disclosure dimensions and evaluates their combined impact on financial reporting quality.

2. The Theoretical Framework

2.1. Fundamental Concepts of Environmental Costs

Before addressing issues related to the measurement and accounting disclosure of environmental costs, the theoretical framework requires a clear conceptualization of environmental costs, an explanation of the rationale for their examination, and an assessment of their relevance to users of financial statements.

2.1.1 Definition of Environmental Costs

There exists a multiplicity of conceptualizations of environmental costs, reflecting the heterogeneity of economic activities and the varying environmental footprints associated with different sectors. One stream of thought conceptualizes environmental costs as the aggregate of cost components linked to the monitoring, identification, and remediation of adverse effects arising from actual or potential managerial decisions and operational practices that negatively affect human health, fauna, flora, and the natural ecosystem, including pollutants discharged into water, air, and soil.

The American Institute of Certified Public Accountants defines environmental costs more broadly as encompassing the expenditures incurred, or required to be incurred, to manage the environmental impacts generated by an entity's operations, in addition to other costs necessitated by the organization's environmental objectives and regulatory obligations. **(Ibrahim J. S, 2014)**

Environmental costs are also described as the financial burden borne by the enterprise in order to preserve and safeguard its surrounding environment. Such costs may arise as a consequence of actual environmental degradation or the anticipated risk of deterioration in environmental quality attributable to the entity's activities. **(Faris & Hamza, D, 2011, November 22–23)**

Synthesizing these definitions, environmental costs may be analytically framed as quantifiable economic sacrifices assumed by the enterprise as a direct or indirect consequence of conducting its operational activities. These sacrifices are undertaken to ensure compliance with environmental performance requirements, mitigate pollution-related damage, maintain ecological integrity, and enhance the institution's reputational capital within its socio-economic environment.

2.1.2 Definition of Environmental Accounting

Environmental accounting has been referred to in the literature by several related terms, including green accounting, environmental accounting for sustainable development, and environmental and economic accounting. Despite variations in terminology, these expressions converge conceptually toward a unified meaning. Environmental accounting generally denotes the process of identifying and measuring the costs associated with environmental activities and integrating such information into environmental management decision-making, with the objective of mitigating or eliminating adverse environmental impacts in accordance with the "polluter pays" principle **(Ben Farj, 2001)**.

Peter conceptualizes environmental accounting as an extension of the conventional accounting system, grounded in the analysis of financial outcomes and cost drivers, and aimed at

identifying and allocating environmental costs attributable to the activities of economic entities, particularly industrial firms. **(Peter, L. & Roger, 2000).**

From a managerial and informational perspective, environmental accounting can also be defined as a systematic process of collecting, analyzing, and evaluating environmental and financial performance data. This process relies on information generated by existing organizational systems—such as environmental management systems and financial accounting systems—to support informed decision-making directed toward reducing environmental impacts and optimizing related environmental costs. **(Howard P., & Ward, F, 2002)**

2.2. Conceptual Foundations of Accounting Measurement of Environmental Costs:

2.2.1. Definition of Environmental Accounting Measurement

The concept of environmental accounting measurement has been addressed extensively in the accounting literature, with varying formulations that converge around a common theoretical foundation. It is generally defined as the systematic identification and quantification of all cost components arising from an entity's environmental and social responsibilities, whether such commitments are undertaken voluntarily or imposed through regulatory requirements.

Environmental measurement is also understood as the process of translating an entity's environmental activities and impacts into quantitative or monetary terms, thereby generating environmental information that can be incorporated into financial reporting. This quantification enables users of financial statements to interpret the environmental dimension of corporate performance within a structured financial framework. **(Mzimish & Belhassan, 2018)**

Accordingly, environmental accounting measurement may be conceptualized as the structured quantification—whether in physical or monetary units—of environmental costs with the objective of determining their effect on financial performance and financial position. It constitutes an essential mechanism for integrating environmental considerations into the accounting information system and enhancing the analytical relevance of financial statements. **(Mahawat, L. 2015).**

2.2.2. Methods of Measuring Environmental Liabilities

Environmental liabilities may be measured using several accounting approaches, among which the most commonly applied are:

- Present value measurement, and Current cost measurement.

Under the present value approach, the environmental obligation is recognized based on the discounted value of estimated future cash outflows required to settle the liability. This method involves determining expected cash flows associated with environmental remediation or compliance activities and applying an appropriate discount rate to reflect the time value of money and risk considerations.

In addition, accounting provisions may be established to cover anticipated environmental expenditures, ensuring that expe

2.3.Accounting Disclosure of Environmental Costs

2.3.1.Definition of accounting disclosure of environmental costs

Environmental cost disclosure may be defined as the structured reporting of information related to environmental obligations and expenditures arising from an entity's operational activities. It involves communicating the nature, magnitude, and financial implications of environmental responsibilities, as well as the organization's responsiveness to such obligations.(Nazem & al, 2009)

The objective of this form of disclosure is to enable stakeholders to access adequate information for purposes of planning, monitoring, evaluating performance, and assessing the entity's environmental accountability within a broader sustainability framework.

2.3.2. Methods of Disclosing Environmental Costs

Environmental costs and related liabilities may be disclosed within the statement of financial position in accordance with generally accepted accounting standards. In certain cases, environmental expenditures that generate future economic benefits may be recognized as intangible assets or as components of capitalized assets, subject to subsequent amortization over their estimated useful lives. (Gündüz, & Gündüz 2025)

Any unamortized portion is reflected appropriately in the income statement, while recurring environmental expenditures of a periodic nature are recognized as operating expenses attributable to the relevant financial year.

Furthermore, environmental costs and liabilities may be presented under specific line items such as "Environmental Costs" or "Environmental Liabilities"—accompanied by detailed explanatory notes. These disclosures should clarify the financial magnitude, composition, penalties or compensations incurred, measurement bases applied, and recognition criteria adopted.

Comprehensive disclosure also entails explaining the accounting policies governing environmental obligations, outlining formal environmental programs and compliance measures implemented by the entity, and reporting any improvements introduced or legally mandated corrective actions undertaken. Such transparency enhances the credibility and analytical value of financial statements within the context of environmental accountability and sustainable reporting practices.

2.4. Requirements and Constraints of Environmental Accounting Measurement and Disclosure

The effective implementation of environmental cost measurement and disclosure necessitates the fulfillment of several foundational requirements, which may be summarized as follows: (Mzimish & Belhassan, N., & Ayachi, S, 2018) .

2.4.1.Requirements related to accounting principles:

Environmental cost accounting, like other specialized accounting systems, requires a conceptual and normative framework consistent with its objectives. Traditional generally accepted accounting principles (GAAP) do not fully accommodate the specificities of environmental transactions, particularly in relation to recognition, measurement, and reporting of environmental obligations. Accordingly, certain accounting principles and conceptual assumptions require adaptation and development to align with the nature of environmental cost accounting and sustainability-oriented reporting.

2.4.2.Requirements related to the identification and classification of environmental costs:

Environmental costs vary depending on the nature and magnitude of environmental impacts generated by the entity's activities. They may be categorized according to the type of environmental damage addressed, including:

- **Prevention costs:** These represent expenditures incurred to avoid or minimize potential environmental harm to employees, the community, or the ecosystem arising from operational activities. Such costs include investments in pollution control systems, cleaner technologies, environmental training programs, and compliance mechanisms designed to mitigate adverse impacts.
- **Remediation (or restoration) costs:** These encompass expenditures aimed at restoring environmental conditions to their prior state following damage. They include site rehabilitation, decontamination, waste treatment, and other corrective measures intended to address environmental degradation resulting from business operations.

This structured approach to environmental cost measurement and disclosure strengthens the informational value of financial reporting and supports the broader objective of integrating environmental accountability within the accounting framework.

3. Financial Statement Quality

Financial statement quality refers to the set of qualitative attributes that characterize the information presented in financial reports, ensuring that it provides a sound and reliable foundation for decision-making by various stakeholder groups. These qualitative characteristics can be articulated as follows: (Ajila, H. (2013)

3.1 Understandability:

This attribute requires that financial information be presented in a clear and structured manner that facilitates comprehension by users. On the one hand, disclosures should avoid unnecessary

complexity and ambiguity; on the other hand, users are presumed to possess a reasonable level of financial literacy and business knowledge enabling them to interpret the reported information appropriately.

3.2.Relevance:

Financial information is considered relevant when it is capable of influencing users' economic decisions by assisting them in evaluating past, present, or future events, or by confirming or correcting prior assessments. Thus, information attains relevance to the extent that it possesses predictive and/or confirmatory value and has the capacity to affect decision outcomes.

3.3.Reliability (Faithful Representation):

This characteristic implies that financial information faithfully depicts the economic phenomena it purports to represent, free from material error and bias. It should not be influenced by subjective preferences of preparers. Reliability encompasses several underlying elements, including faithful representation, substance over legal form, neutrality, prudence, and completeness of disclosure.

3.4.Comparability:

Comparability denotes the ability of users to identify similarities and differences across financial statements over time for the same entity, as well as across different entities. This attribute enhances users' capacity to evaluate financial position and performance trends, thereby supporting informed decisions related to investment, financing, and overall assessment of corporate sustainability and accountability.

4. Results and Discussion:

.41. Research Methodology

The study adopted a **descriptive-analytical approach**, employing its methodological tools for systematic description and statistical analysis to examine the contribution of environmental cost measurement and disclosure requirements to financial statement quality. Data were collected through a structured survey administered using a sampling technique, allowing for empirical assessment of the proposed relationships between the study variables.

4.1.1. Population and Sample

The target population comprised accounting professionals operating within the industrial zone of Batna. The final sample consisted of **67 respondents**, representing practicing accountants from various economic entities.

4.1.2 Study Structure and Instrument Design

To empirically test the hypotheses and derive evidence-based conclusions, the questionnaire was structured into two main sections as follows:

- ✓ **Section One: Demographic Information**

This section captured respondents' background characteristics, including gender, age, educational attainment, and years of professional experience.

✓ **Section Two: Research Constructs**

This section was organized into two principal axes:

- ✓ **Axis One:** Environmental cost accounting requirements in terms of measurement and disclosure, comprising eight (8) statements designed to assess the extent of application and perceived importance of these practices.
- ✓ **Axis Two:** Financial statement quality, comprising twelve (12) statements. This construct was operationalized through four qualitative dimensions: reliability, relevance, understandability, and comparability.

All items were measured using a **five-point Likert scale**, with response categories ranging from strong disagreement to strong agreement, allowing for quantitative analysis of perceptions and inferential statistical testing.

Table (01): Five-Point Likert Scale

Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Score	1	2	3	4	5
Mean Range	1.00–1.79	1.80–2.59	2.60–3.39	3.40–4.19	4.20–5.00

Source: Prepared by the researcher based on SPSS 23 analysis output.

4.2. Validity and Reliability of the Study Instrument

To ensure the robustness of the questionnaire as a data collection instrument, both validity and reliability assessments were conducted. **First**, content validity was established through expert evaluation. The questionnaire was submitted to a panel of specialists in accounting to assess the clarity, relevance, and consistency of the items with the study constructs. **Second**, internal consistency reliability was examined using Cronbach's Alpha coefficient. A minimum acceptable threshold of 0.60 was adopted to confirm reliability. Construct validity was further supported by calculating the validity coefficient, represented by the square root of Cronbach's Alpha, with an acceptable benchmark exceeding 0.70. The results are presented in the following table :

Table (02): Cronbach's Alpha Reliability Coefficients for the Study Dimensions

Dimensions	Number of Items	Cronbach's Alpha	Validity Coefficient	Percentage
Dimension 1: Environmental Cost Measurement and Disclosure Requirements	8	0.783	0.884	78.3%
Dimension 2: Financial Statement Quality	12	0.889	0.942	88.9%

Source: Prepared by the researcher based on SPSS 23 analysis output.

The results reported above indicate that all Cronbach's Alpha values exceed the accepted threshold of 0.60, confirming a satisfactory level of internal consistency among the questionnaire

items. This demonstrates that the measurement instrument possesses adequate reliability and is appropriate for subsequent statistical analysis within the context of environmental accounting research.

4.3. Analysis of Demographic Variables of the Study Sample

The composition of the study sample is presented in Table 3:

Table 3: Characteristics of the Study Sample

	Variable	Category	Frequency	Percentage (%)
1	Gender	Male	47	70.14
		Female	20	29.86
2	Age Group	<30	16	23.9
		31–40	23	34.3
		41–50	12	17.9
		>50	16	23.9
3	Education Level	Bachelor's	10	14.9
		Master's	40	59.7
		Postgraduate	17	25.4
4	Years of Expérience	<5 years	21	31.3
		5–10 years	26	38.8
		>10 years	20	29.9

Source: Prepared by the researcher based on SPSS 23 analysis.

Analysis of the demographic distribution reveals that male participants dominated the sample, representing **70.14%**, compared to **29.86%** female respondents. Regarding age, the **31–40 years** group comprised the largest segment, accounting for **34.3%** of the sample. In terms of educational attainment, the majority held a **Master's degree**, representing **59.7%** of participants. Concerning professional experience, most respondents reported **5–10 years of experience**, which constituted the largest proportion at **38.8%**.

This demographic profile indicates a predominance of mid-career, male professionals with advanced academic qualifications, which may influence their perceptions and responses regarding environmental cost measurement and disclosure in accounting practices.

A. Analysis of Sample Opinions on the Environmental Accounting Measurement and Disclosure Requirements

Table 04: Trends in Sample Responses for the First Axis

Statements	Mean	Standard Deviation	Sample Trend
Measurement and disclosure of environmental costs in the organization requires social and environmental awareness among managers.	3.83	0.971	Agree
Measurement and disclosure of environmental costs in the organization requires social and environmental awareness among other stakeholders, such as suppliers, employees, and clients.	3.64	0.990	Agree
Measurement and disclosure of environmental costs in the organization requires raising managers' awareness regarding their readiness to reorganize internal processes.	3.53	1.000	Agree
The complexity of accounting for environmental costs hinders the implementation of environmental accounting in the organization.	3.81	0.951	Agree
Disclosure of environmental costs in financial statements increases the organization's operational burdens.	3.42	0.806	Agree
The current financial accounting system does not adequately support the measurement and disclosure of environmental costs.	3.09	1.135	Neutral
Measurement and disclosure of environmental costs in the organization necessitate developing the existing financial accounting system.	3.19	1.009	Agree
Measurement and disclosure of environmental costs in financial statements require the presence of independent professional regulatory bodies to organize environmental cost accounting and issue binding legislation.	2.61	1.202	Neutral
The current cost accounting system does not fully meet the organization's environmental cost measurement needs.	2.374	1.374	Disagree
Overall Mean	3.473	0.610	Agree

Source: Prepared by the researcher based on SPSS results.

The data in Table 04 indicate that the overall mean for the environmental accounting measurement and disclosure axis reached **3.473**, with a standard deviation of **0.610**, reflecting a general trend of **agreement** among respondents regarding the importance of environmental cost measurement and disclosure.

Key observations include:

- **Stakeholder Awareness:** Respondents emphasized the critical role of social and environmental awareness among both managers (**mean = 3.83**) and other stakeholders such as suppliers, employees, and clients (**mean = 3.64**) in ensuring effective environmental accounting practices. This underscores that environmental accounting is not only a technical process but also a cultural and organizational challenge.
- **Organizational Readiness:** The mean score (**3.53**) regarding managers' readiness to reorganize internal processes highlights the recognition that implementing environmental accounting may require adjustments in organizational structure and workflow.
- **Complexity and Operational Burden:** Respondents acknowledged that the complexity of measuring environmental costs (**mean = 3.81**) and the additional burden of disclosure (**mean = 3.42**) can hinder effective implementation. These findings suggest the need for training, streamlined procedures, and integration of specialized accounting tools.
- **System Adequacy:** The lower mean values for the adequacy of the current financial accounting system (**3.09, 2.374**) indicate a **gap between existing accounting frameworks and the requirements for environmental cost measurement and disclosure**. This reinforces the need for system development and alignment with environmental accounting standards.
- **Regulatory Framework:** Respondents pointed to the importance of developing the financial accounting system (**mean = 3.19**) and establishing independent professional bodies to oversee environmental accounting (**mean = 2.61**). This highlights the dual need for institutional support and formal regulations to promote consistency and reliability in environmental cost reporting.

In summary, the results suggest that while there is broad agreement on the importance of environmental cost measurement and disclosure, **effective implementation requires both system development and regulatory support**, in addition to enhanced awareness among managers and stakeholders. These findings provide a foundation for linking environmental accounting practices to **financial statement quality**, which will be explored in the subsequent analysis of the financial statement quality axis.

b. Analysis of Respondents' Attitudes Toward the Financial Statement Quality Dimension

Table 05: Respondents' Attitudes Regarding the Second Dimension

Statements	Mean	Standard Deviation	Respondent Trend
Reliability Dimension	4.71	0.651	Strongly Agree
1. The accuracy of accounting information is verified prior to its inclusion in the financial statements.	4.28	0.615	Strongly Agree

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2. The accounting information contained in the financial statements is free from bias.	4.25	0.554	Strongly Agree
3. The accounting information presented in financial reports reflects the actual financial position of the institution.	4.27	0.770	Strongly Agree
Relevance Dimension	4.16	0.682	Agree
4. The financial statements provide information suitable for current and potential investors and creditors to support investment decisions.	4.11	0.599	Agree
5. The accounting information presented in the financial statements is relevant for forecasting future performance.	4.14	0.693	Agree
6. The accounting information is valid for use under various conditions and circumstances.	4.12	0.667	Agree
Understandability Dimension	4.21	0.889	Agree
7. The financial statements provide sufficient information to allow comparisons with previous years or similar institutions.	4.03	0.941	Agree
8. Consistency in accounting policies is maintained when preparing and presenting the institution's financial statements.	4.19	0.822	Agree
9. The financial statements aim to provide information on the financial position, performance, and changes in the financial position of the institution.	4.11	0.846	Agree
Comparability Dimension	3.74	0.879	Agree
10. The accounting policies and methods used in preparing the statements are clearly disclosed on an ongoing basis.	381	0.961	Agree
11. The information contained in the financial statements is complete and not deficient.	318	1.008	Agree
12. The financial statements include approaches and explanations that enable users to understand and interpret them without undue complexity.	3.35	0.645	Agree

Source: Prepared by the researcher based on SPSS results.

The table above summarizes respondents' perceptions of the **financial statement quality dimensions**. The following observations can be drawn:

➤ **Reliability Dimension:**

The overall mean for reliability reached **4.71** with a standard deviation of **0.651**, indicating a general trend of **strong agreement** among respondents. The item “The accuracy of accounting information is verified prior to its inclusion in the financial statements” ranked highest with a mean of **4.28** and a standard deviation of **0.615**. The statement “The accounting information presented in financial reports reflects the actual financial position of the institution” followed with a mean of **4.27** and SD **0.770**, while “The accounting information contained in the financial statements is free from bias” recorded a mean of **4.25** and SD **0.554**. These results indicate that respondents strongly perceive the reliability of financial statements as a critical component of quality.

➤ **Relevance Dimension:**

The relevance dimension achieved an overall mean of **4.16** and SD **0.682**, reflecting respondents' general agreement. Respondents highlighted the importance of financial statements providing useful information for decision-making, including investment forecasting and adaptability across different conditions.

➤ **Understandability Dimension:**

With an overall mean of **4.21** and SD **0.889**, respondents agreed that financial statements are generally understandable. They emphasized the importance of comparability over time, policy consistency, and providing sufficient context on financial position and performance.

➤ **Comparability Dimension:**

The comparability dimension recorded the lowest mean (**3.74**) and SD (**0.879**), although still within the “agree” range. This suggests that while respondents acknowledge disclosure of accounting policies and interpretability aids, there may be **variations in clarity or completeness** that limit optimal comparability across periods or institutions.

4.4. Testing the Study Hypotheses

The study hypotheses were tested using the questionnaire items as follows:

a. Testing the Sub-Hypotheses

- ✓ **Sub-Hypothesis 1:** “There is no statistically significant relationship between the reliability dimension and environmental cost measurement and disclosure at a significance level of 0.05.”

Table 6: Correlation Analysis between Environmental Cost Measurement and Disclosure and the Reliability Dimension

Hypothesis	Statistics	Value
Environmental cost measurement and disclosure contributes to enhancing the reliability dimension	Correlation coefficient (r)	0.807
	Coefficient of determination (R ²)	0.658
	Significance level (p-value)	0.000

Source: Prepared by the researcher based on SPSS results at $\alpha = 0.05$

The results presented in the table indicate a **p-value very close to zero**, which is well below the significance threshold of 0.05, confirming a **highly significant statistical effect** for the examined model. The correlation coefficient (r) equals 0.807, which is above 0.5, indicating a **strong positive association** between environmental cost measurement and disclosure and the reliability dimension.

Additionally, the coefficient of determination ($R^2 = 0.658$) suggests that the independent variable (environmental cost measurement and disclosure) **explains 65.8% of the variance in the dependent variable (reliability)**. Consequently, the null hypothesis (H₀) is rejected, and the alternative hypothesis (H₁) is accepted, indicating that there exists a **statistically significant relationship at the 0.05 level** between environmental cost measurement and disclosure and the reliability dimension.

b-Testing the Second Sub-Hypothesis

The second sub-hypothesis states that: *“There is no statistically significant relationship between the relevance dimension and environmental measurement and disclosure at the 0.05 significance level.”*

Table (7): Correlation Analysis between Environmental Measurement and Disclosure and the Relevance Dimension

Hypothesis	Statistical Indicator	Estimate
Environmental measurement and disclosure contribute to improving the relevance dimension	Correlation coefficient (R)	0.876
	Coefficient of determination (R ²)	0.775
	Significance level (Sig.)	0.000

Source: Prepared by the researcher based on SPSS (Version 23) outputs at $\alpha = 0.05$.

The statistical outputs reported in Table (7) indicate that the calculated significance level (Sig. = 0.000) is substantially below the adopted threshold of 0.05, confirming the statistical robustness of the tested model. This result provides strong evidence against the null hypothesis and supports the existence of a statistically significant association between environmental accounting measurement and disclosure practices and the relevance characteristic of financial statements.

The computed Pearson correlation coefficient ($R = 0.876$) reflects a strong and positive linear relationship between the two variables. From a financial reporting perspective, this suggests that improvements in environmental cost measurement and disclosure practices are closely associated with enhanced relevance of accounting information, particularly in terms of predictive and confirmatory value for decision-makers.

Furthermore, the coefficient of determination ($R^2 = 0.775$) indicates that approximately 77.5% of the variance in the relevance dimension can be explained by variations in environmental measurement and disclosure practices. This high explanatory power underscores the substantive contribution of environmental accounting practices to strengthening the decision-usefulness of financial statements.

Accordingly, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted, confirming that environmental measurement and disclosure have a statistically significant effect on the relevance dimension at the 0.05 level of significance.

c-Testing the Third Sub-Hypothesis

The third sub-hypothesis states that:

“There is no statistically significant relationship between the understandability dimension and environmental measurement and disclosure at the 0.05 significance level.”

Table (8): Correlation Analysis between Environmental Measurement and Disclosure and the Understandability Dimension

Hypothesis	Statistical Indicators	Value
Environmental measurement and disclosure contribute to enhancing the understandability dimension	Correlation Coefficient (R)	0.875
	Coefficient of Determination (R^2)	0.772
	Significance Level (Sig.)	0.000

Source: Prepared by the researcher based on SPSS version 23 output at $\alpha = 0.05$.

The findings reported in Table (8) indicate that the significance value (Sig. = 0.000) is substantially below the established alpha level of 0.05, confirming the statistical robustness of the estimated model. This demonstrates that the relationship examined is highly significant from an inferential standpoint.

The computed Pearson correlation coefficient ($R = 0.875$) exceeds the commonly accepted threshold of 0.50, revealing a strong and positive association between environmental measurement and disclosure practices and the understandability of financial statements. This suggests that improvements in the recognition and transparent reporting of environmental costs are closely aligned with enhanced clarity and comprehensibility of financial information for users.

Furthermore, the coefficient of determination ($R^2 = 0.772$) indicates that approximately 77.2% of the variance in the understandability dimension can be explained by variations in environmental measurement and disclosure. This reflects a substantial explanatory power of the independent variable, highlighting its material influence on the qualitative characteristic of understandability within financial reporting.

Based on these statistical outcomes, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. Accordingly, there exists a statistically significant relationship at the 0.05 level between environmental measurement and disclosure practices and the understandability dimension of financial statement quality.

d-Testing the Fourth Sub-Hypothesis

The fourth sub-hypothesis states that:

“There is no statistically significant relationship between the comparability dimension and environmental measurement and disclosure at the 0.05 level of significance.”

Table (9): Correlation Analysis between Environmental Measurement and Disclosure and the Comparability Dimension

Hypothesis	Statistical Indicators	Estimated Value
Environmental measurement and disclosure contribute to improving the comparability dimension	Correlation Coefficient (R)	0.905
	Coefficient of Determination (R^2)	0.810
	Significance Level (p-value)	0.000

Source :Prepared by the researcher based on SPSS version 23 output at $\alpha = 0.05$.

The findings presented in Table (9) indicate that the significance level (p-value = 0.000) is substantially lower than the adopted threshold of 0.05, demonstrating that the estimated model is statistically significant. This confirms the existence of a meaningful relationship between the examined variables.

The computed Pearson correlation coefficient ($R = 0.905$) exceeds the conventional benchmark of 0.50, indicating a **strong and positive linear association** between environmental measurement and disclosure practices and the comparability of financial statements. This suggests that improvements in environmental accounting practices are accompanied by enhanced consistency and uniformity in financial reporting across reporting periods and entities.

Furthermore, the coefficient of determination ($R^2 = 0.810$) implies that approximately **81% of the variation in the comparability dimension** can be explained by variations in environmental measurement and disclosure practices. This substantial explanatory power reflects the central role of structured environmental accounting procedures in strengthening one of the key qualitative characteristics of financial information.

Accordingly, the null hypothesis (H0) is rejected, and the alternative hypothesis (H1) is accepted. It is therefore concluded that, at the 0.05 significance level, environmental measurement and disclosure have a statistically significant and positive effect on the comparability dimension of financial statements.

5. Conclusion:

Amid the ongoing evolution of contemporary accounting thought, the environmental dimension has assumed a pivotal role within the accounting system, prompting a fundamental reassessment of measurement and financial disclosure principles. The study sought to examine the requirements for measuring and disclosing environmental costs and to evaluate their effect on the quality of financial statements, based on empirical evidence collected from accountants in economic enterprises. The results indicate that incorporating environmental costs is not confined to technical measurement procedures, but rather depends on a coherent regulatory and professional framework integrating legislative, institutional, and cognitive components. Statistical analysis further demonstrated a significant association between the adoption of these requirements and the enhancement of the qualitative attributes of financial information, particularly reliability and decision usefulness.

Study Findings

- A strong and statistically significant positive relationship exists between environmental cost accounting measurement and disclosure and the improvement of financial statement quality, reflecting the constructive impact of incorporating the environmental dimension into financial reporting.
- A high level of agreement among respondents was observed regarding the importance of managerial and accounting awareness of environmental accounting requirements as a prerequisite for activating effective measurement and disclosure mechanisms.
- The results confirm that the complexity associated with measuring environmental costs constitutes a practical challenge that may hinder the effective implementation of environmental accounting practices within enterprises.
- There is a clear perception that the current financial accounting system does not fully accommodate the requirements of environmental measurement and disclosure, thereby necessitating revision and modernization.
- The need for a structured legislative and professional framework has emerged as essential to define the principles of recognition, measurement, presentation, and disclosure of environmental costs in financial statements.
- Environmental disclosure contributes to enhancing financial reporting transparency and reducing information asymmetry between the enterprise and its stakeholders, thereby strengthening the credibility of financial statements.

Study Recommendations:

- Modernize the Algerian financial accounting system by incorporating explicit standards and procedural guidelines for the measurement, treatment, and disclosure of environmental costs within financial statements.
- Establish a specialized regulatory and professional framework to oversee environmental accounting practices and ensure methodological consistency in measurement and disclosure.
- Strengthen academic and professional training programs in environmental accounting to enhance accountants' technical competence in addressing environmental measurement issues.
- Promote institutional coordination between accounting regulatory bodies and environmental and social authorities to ensure functional integration.
- Institutionalize environmental performance as a fundamental dimension of overall organizational performance evaluation and link it to both financial and non-financial performance indicators.
- Foster a culture of environmental responsibility within economic enterprises and across society to create a regulatory and professional environment conducive to the adoption of environmental disclosure practices.

Accordingly, the study concludes that improving the quality of financial statements within the Algerian economic context is intrinsically linked to reinforcing the requirements of accounting measurement and disclosure of environmental costs, as these constitute a foundational pillar for enhancing transparency, rationalizing decision-making, and achieving institutional sustainability.

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