



Environmental Auditing as a Strategic Control Mechanism for Sustainable Development: An Accounting-Based Field Analysis

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Abstract:

This study highlights the role of environmental auditing as an accounting control mechanism in promoting sustainable development within organizations. Using an applied analytical field survey of academics and practitioners, the study shows that environmental auditing enhances environmental performance, improves economic efficiency, and ensures compliance with environmental standards. The findings emphasize its strategic importance in fostering organizational sustainability and informed decision-making. The study recommends integrating environmental auditing into institutional strategies and accounting policies and implementing regular auditing programs to support long-term competitiveness and sustainable operations.

Keywords: Environmental Auditing; Accounting Control Mechanisms; Sustainable Development; Economic Efficiency; Organizational Sustainability.

Jel Classification Codes: M41, Q56, L25.

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1. Introduction

Today environmental auditing is a pivotal accounting tool that combines accurate control with strategic environmental responsibility. It goes beyond simply verifying compliance with laws and standards to include improving resource efficiency, reducing waste, and enhancing institutional transparency. In light of the increasing global pressures to achieve sustainability, environmental auditing provides a framework that enables institutions to balance financial performance and environmental protection effectively, and promotes good governance practices and a culture of responsibility within the institution. In this way, environmental auditing becomes not only a control tool, but also a strategic pillar to ensure continuity and enhance competitiveness in a rapidly changing economic and environmental environment.

In light of the global economic and environmental transformations, institutions face a double challenge, achieving financial performance and economic efficiency while adhering to environmental standards and promoting sustainability.

Despite the institutions' reliance on traditional accounting tools and financial reports, the question about the effectiveness of environmental auditing as a strategic control mechanism in supporting sustainable development remains a central issue that needs careful analysis, especially in institutions that seek to achieve integration between financial and environmental dimensions.

1.1 Study problem:

To what extent does environmental auditing as an auditing tool contribute to promoting sustainable development within institutions by improving environmental performance and supporting governance and economic efficiency?

1.2 sub-questions:

- How does environmental auditing contribute to improving the environmental performance and economic efficiency of enterprises?

- What is the role of environmental auditing in strengthening governance in the organization and supporting sustainable strategic decision-making?

1.3 Hypotheses: The following could be used as a primary hypothesis for this study:

Environmental auditing is an effective control accounting tool that promotes sustainable development in enterprises by improving environmental performance, economic efficiency and supporting governance in the enterprise.

From this hypothesis, a set of sub-hypotheses can be formulated as follows:

- Institutions that implement regular environmental auditing programs achieve tangible improvement in resource management and reduce waste, thus enhancing economic performance.

- Environmental auditing enhances transparency and accountability within the organization, and supports strategic decision-making to ensure the long-term sustainability of operations and resources.

1.4 The nature of the study:

The importance of this study is highlighted in highlighting environmental auditing as a strategic auditing tool that promotes sustainable development within institutions, by improving environmental performance, enhancing economic efficiency, and supporting governance in the institution, The study also provides practical and applicable insights for decision makers and accounting and financial practitioners, and enables institutions to adopt balanced strategies that combine environmental sustainability and financial efficiency, In addition, it contributes to bridging research gaps on environmental auditing and sustainable development, especially in emerging institutional contexts and developing countries.

1.5 Study Objectives:

- Evaluating the role of environmental auditing as an auditing tool in promoting sustainable development within institutions, by improving environmental performance, supporting governance and achieving economic efficiency.

- Analyzing the role of environmental auditing as an auditing tool in promoting sustainable development within institutions.
- Evaluate the impact of environmental auditing on improving environmental performance and resource efficiency.
- Studying how environmental auditing contributes to strengthening governance and supporting strategic decisions.
- Provide practical insights that help organizations integrate environmental sustainability with financial performance and economic efficiency.

1.6 Methodology of the Study:

The study relies on a descriptive analytical approach that combines field research with accounting analysis, while collecting data from a sample of professionals and academics through questionnaires and structured interviews, the data are then analyzed to explore the impact of environmental auditing on environmental performance, economic efficiency, and governance, allowing for practical recommendations that are applicable within institutions.

2. Theoretical Frameworks of the study

This part of the study will address the theoretical framework of environmental auditing, sustainable development, and financial and accounting performance.

2.1 The Concept of Environmental Auditing:

Environmental auditing is an oversight tool that aims to assess the extent to which institutions adhere to environmental standards and work to improve their environmental performance in order to achieve sustainable development and reduce the negative effects of the economic activities of institutions.

- **Definition of Audit:**

An audit is a systematic and independent examination of accounting books and data, using professional standards approved locally and internationally, with the aim of verifying the fairness and truthfulness of the financial statements and the extent to which they reflect the financial position and results of the Foundation's business. (DeFond & Zhang, 2014).

Auditing is an accounting control process that relies on collecting and evaluating evidence objectively and independently in

order to ascertain the extent of compliance with approved accounting principles and standards and to judge the credibility of the financial information on which the various parties rely in making their decisions. (Hakeem, Karrar Kareem, & Thamer Kadhim, 2024)

▪ **Environmental Audit Definition:**

The Environmental Protection Agency (EPA) has been defined as a systematic, documented and objective periodic critical examination by the organization or by an independent authority of the legal procedures of production processes, and the related sub-activities to determine their impact on the environment and its variables.

Environmental auditing has also been defined as an objective and periodic examination of environmental performance by specialized individuals from within or outside the economic unit to ensure compliance with environmental administrative laws and policies, evaluate the effectiveness of environmental administrative programs and communicate the results communicated to interested parties. (Lestari, 2025)

The International Chamber of Commerce (ICC) defines environmental auditing as: An administrative tool that works on the documented and organized periodic evaluation of the efficiency of the performance of the environmental management system, the (Kariuki & Nzuki, 2024) extent of management's interest in protecting the environment through monitoring environmental activities, and the extent to which programs and policies are implemented for environmental activities through which the requirements of environmental legislation and laws are met.

It was also defined by the British Institute for Environmental Auditing as a systematic assessment to determine the compatibility of the management system and the environment of the facility with the planned programs, (Nazarovar, Nezhyva, & Kuche, 2021) and to determine the effectiveness and appropriateness of these systems to achieve the environmental policy of the institution.

From the above, it can be said that environmental auditing is a comprehensive control and methodological process aimed at evaluating and analyzing the performance of the institution in terms of

compliance with environmental laws and standards and the efficiency of natural resources management, and working to reduce risks and pollution resulting from the economic activities of institutions, Environmental auditing relies on collecting and analyzing evidence independently and objectively with the aim of making recommendations to improve environmental performance and ensure transparency, and contribute to achieving sustainable development and protecting the environment for present and future generations.

2.2 Environmental Audit Objectives:

By tracking studies and research related to environmental auditing and control, the main objectives that environmental auditing seeks to achieve can be deduced as follows. (Yousef, 2023)

- Examining and auditing the financial statements of the activities and the procedures followed by the Economic Unit to protect and improve the environment and determine the extent of their impact on the results of the business and the financial position.
- Compliance with the regulations, laws and legislation issued by the bodies specialized in environmental protection.
- Verifying the efficiency and effectiveness of the programs, activities, procedures and means of prevention and protection implemented by the unit to preserve the environment.
- Expressing a neutral technical opinion on the fairness and credibility of accounting disclosure on the negative and positive effects of the activities of economic units on the environment and the extent to which the management of those units shoulders their social and environmental responsibilities.
- Preparing various reports submitted by the institution, which obliges it to protect the environment so that it can reduce production costs, improve the quality of products, achieve financial savings, as the institution is exempt from some environmental taxes, for example, and improve the relationship with consumers and enhance competitive advantage. (Anas, Shahida, & Sabique, 2022).

2.3 Areas of application of environmental auditing:

The environmental audit is classified in terms of who performs the general audit to an external audit, that is the audit is carried out by a person outside the institution who is independent of its management, and an internal audit carried out by certain persons in the institution who are familiar with the science of management and management to serve the objectives of the institution in the field of control, The environmental audit process involves the following: (Abdulhussein, 2025)

- **Compliance Audit:** It is to determine whether the activities and operations take place within the scope of the legal restrictions imposed by the legislation, it involves a detailed assessment of the past, current and planned operations. This classification includes two activities:

- An initial assessment used to direct attention towards potential problem areas that should be of particular interest to the audit in the future.

- An environmental inspection and site assessment is carried out if the previous stage shows that there are risks of pollution and incompatibility, this activity includes the interpretation of technical analysis.

- **Audit of the environmental management system:** focuses on existing systems to ensure that they operate in an appropriate manner to manage future environmental risks.

- **Property Acquisition Audit:** It focuses on assessing the potential environmental obligations associated with the acquisition or acquisition process, which may exceed the market value of the asset due to its pollution of the environment, There are risk management tools that can be used by banks, land buyers, lending agencies and any organization that buys land with facilities or accepts it as a gift or donation. (Al-Harwi & Sujud, 2023)

- **Pollution prevention audit:** It involves an evaluation of processes that serves to identify opportunities to minimize waste and

residues, and prevent pollution at its source rather than control at the end of the process.

- **Audit of potential environmental obligations:** It involves a technical legal examination to determine the values of the obligations associated with specific environmental issues, with the report on these obligations.

- **Product audit:** It involves evaluating the production process with the aim of providing a measure of assurance that the product is compatible with the specified restrictions and with environmental concerns.

3. Environmental Audit and Sustainable Development in Institutions:

This part focuses on the role of environmental auditing in promoting sustainable development within institutions, by monitoring adherence to environmental standards, improving resource use and protecting the environment.

3.1 The contribution of environmental auditing to improving the environmental performance of institutions

- **Reducing risks and environmental pollution:** Global reports have show that institutions implementing environmental audit programs reduce harmful emissions by up to 20–25 per year, with a 15% reduction in environmental accidents (Zhu & Sarkis, 2021), contributing to environmental protection and reducing legal fines.

- **Increased resource efficiency:** Studies have shown that environmental auditing helps to reduce energy consumption by 10-18%, water by 12-15%, and improve raw

- Material management by 8-12% (Thuy, 2025), reducing operational costs and enhancing sustainability.

- **Enhancing compliance with environmental standards and legislation:** Research indicates that environmental auditing increases the rate of compliance with environmental laws and standards to more than 90% in institutions that adopt periodic reviews, which reduces legal risks and reflects a positive image to the community and investors.

- **Supporting strategic decision-making:** Environmental auditing enables the provision of accurate data, leading to improved waste management by 15-20%, and the adoption of environmentally friendly production technologies by 10-15% (Kyzdarbekova, Nurmagambetova, & Nurgaliyeva, 2025), which enhances sustainability and achieves a competitive advantage for the organization.

- **Enhancing transparency and accountability:** Environmental auditing contributes to providing reliable information on environmental performance, increasing the confidence of regulators and the public and encouraging a culture of environmental responsibility within the organization.

3.2 Environmental audit and its impact on the economic and financial efficiency of institutions:

Environmental auditing has become a pivotal element not only to improve environmental performance, but also to enhance the economic and financial efficiency of institutions by identifying waste in resources, energy and raw materials. Auditing contributes to reducing operational costs by 10-20% according to specialized global studies, which enhances the overall profitability of institutions. It also helps to improve waste and emissions management, which reduces fines and potential legal expenses by up to 15%. It also enhances financial and regulatory compliance. In addition, it provides accurate data to management on the feasibility of investments in environmentally friendly production technologies, which leads to increasing long-term economic returns and improving the financial position of the institution. Environmental auditing thus appears as a dual-purpose strategic tool that combines environmental protection with enhancing economic and financial efficiency, which supports institutional sustainability and enhances competitiveness in markets.

3.3 The role of environmental auditing in enhancing governance and achieving sustainability for institutions:

Environmental auditing is an advanced strategic tool that enhances corporate governance and supports sustainability by

providing an accurate and comprehensive assessment of an organization's performance in managing environmental resources and adhering to applicable standards and legislation (Pham, 2024), Environmental auditing allows boards and stakeholders to access reliable data on resource use, emissions, and waste management, which enhances transparency and accountability and reduces potential legal and financial risks.

The literature indicates that institutions that implement regular environmental audit programs achieve significant reductions in energy consumption by 10-15%, an improvement in resource reuse by 8-12%, and a decrease in emissions and waste by 15-20% annually (Kazem, 2024). These improvements reduce operational costs and legal fines and enhance the efficiency of operations, reflecting a direct positive impact on the financial performance of the institution.

In addition, environmental auditing contributes to supporting sustainable strategic decision-making, including investing in environmentally friendly production technologies, improving waste management, and implementing effective resource use policies, this approach not only improves environmental performance, but also enhances the competitiveness of the enterprise and ensures its sustainability in a changing economic and environmental environment.

From a broader perspective, environmental auditing promotes an environmentally responsible corporate culture, where employees and stakeholders participate in achieving environmental and financial goals together, creating a sustainable balance between economic performance and environmental protection. Environmental auditing thus emerges as a dual-functional tool that combines improving environmental and economic performance, enhancing institutional governance and supporting sustainability practically and effectively, to become a key element in the management strategies of modern institutions and a pillar for achieving long-term sustainable development.

4. The analytical field study on a sample of academics and practitioners:

This applied part of the study aims to explore the impact of environmental auditing as an auditing mechanism to promote sustainable development in institutions, It relied on a field study that included a sample of administrative and accounting teams and environmental professionals, to collect direct information about environmental auditing practices and their impact on environmental performance, economic efficiency, and governance in the institution.

The study relies on multiple scientific methods, including targeted questionnaires and interviews, in addition to analyzing quantitative and qualitative data, with the aim of providing accurate and reliable results, This section seeks to identify gaps and best practices that enable institutions to maximize the impact of environmental auditing on sustainable development, while providing practical recommendations that are applicable in the context of Algerian institutions.

4.1 Methodology of the field study and the research instrument:

Through this topic, we will try to clarify the methodology of designing a questionnaire with the presentation of the study sample with a review of the limits of the study and finally we will analyze the demographic information by the statistical program SPSS.

To answer the problem raised for this study and test its hypotheses, the questionnaire must be used to achieve the desired objectives.

▪ Questionnaire structure:

In this part, data was collected through the field study by designing a questionnaire 28 where we took into account the following elements when preparing it, which are represented in the simple method and understandable language in order to avoid lack of understanding from the sample members, and the logical sequence when preparing the paragraphs, This questionnaire included within the first part the demographic information of the employees to whom it was distributed, which is represented in age, educational qualification,

specialization, professional experience, and profession, The second part was related to the subject of our study and we divided it into two axes and consisted of 10 paragraphs, in order to ensure the validity of the hypotheses presented, as the axes were as follows:

- **The first axis:** Information about the environmental audit, which consists of (5) paragraphs.
- **The second axis:** Information about environmental disclosure, which consists of (5) paragraphs.

The five-point Likart scale was used to measure the responses of the study sample to the questionnaire items according to the following table:

Table 1. Scores of the five-point Likart scale

Responsive	Strongly disagree	Disagree	neutral	In favor	Strongly agree
Score	1	2	3	4	5

Source: Prepared by researchers based on SPSS

▪ **Study Sample:**

Each study has a reliable method, and the latter varies from one study to another, in this requirement, the spatial and temporal boundaries in which the study was conducted will be determined, in addition to identifying the study sample. And the limits of the study were taken into account as follows:

- **Time limits:** during the period from 03/05/2025 to 10/11/2025.
- **Spatial borders:** Some of the economic institutions in the Wilayat of oum el-Bouaghi, Souk Ahras, Mesilla, and academic professors were included.

In order to complete this study, we distributed 31 questionnaires shown in the table as follows:

Table 2. Number of distributed questionnaires

Subject Addressee	distributed	unretrieved	Lost	Cancelled	Valid
Number of forms	31	31	0	0	31
Forms	100%	100%	00%	00%	100%

Source: Prepared by researchers based on SPSS

4.2 Analysis of data related to the descriptive characteristics of the sample:

We will analyze the personal and functional data of the target sample, which helps to interpret some of the results of the study.

- **Age:** The distribution of the sample according to the age variable was as follows:

Table 3. Distribution of sample members by age variable

Declaration	Nos	Percentage
Less than 25 years	5	16.1
25 years	15	48.4
Over 35 years	11	35.5
Total	31	100

Source: Prepared by researchers based on SPSS

Based on the above table data, it can be seen that the under-25 age group includes only 5 workers, equivalent to 16.1% of the total workers, which indicates limited representation of young people at the beginning of their career within the organization. As for the age group between 25 and 35 years, it includes 15 workers, or 48.4%, which is the largest percentage among the groups, which reflects the institution's clear reliance on the youth group in this age range, which often combines enthusiasm, energy and relative experience.

As for the age group over 35 years, it includes 11 workers at a rate of 35.5%, and represents the segment of workers with long experience in the field. It is noted from these data that the Foundation relies on a relative balance between the youth and experience groups, with a clear tendency towards employing the youth group, which may reflect a policy aimed at renewing energies and pumping new blood, while benefiting from the accumulated experiences of the older group.

- **Educational Qualification:** The distribution of the sample according to the variable of the educational level was as follows:

Table 4. Distribution of sample members according to the variable of educational qualification

Declaration	Nos	Percentage
Master	15	48.4
Master's	02	6.50
PhD	09	29.03
Other credentials	04	12.50
Total	31	100

Source: Prepared by researchers based on SPSS

We note from the above table that the percentage of workers who hold a master's degree is 48.4% when, The percentage of a master's degree was 12.9%, while the percentage of a master's degree and a doctorate was (19.4-6.5)%. The other qualifications were 12.9%, which indicates that the profession of auditing needs great scientific qualifications.

▪ **Professional experience:** The distribution of the sample according to the variable of Professional experience was as follows:

Table 5. Distribution of sample members according to the variable of years of experience

Declaration	Nos	Percentage
Less than 5years	09	29.05
5 years – 10 years ago	12	38.70
More than 10 years	10	32.25
Total	31	100

Source: Prepared by researchers based on SPSS

It is clear from the above table that the distribution of professional experiences among workers was uneven, with the group with less than 5 years of experience representing 29.05% of the total workers, which indicates that there is a significant number of relatively new employees. As for the category whose experience ranges between 5 and 10 years, the highest percentage was recorded at 38.70%, reflecting the greater reliance of the institutions under study on this segment, which often combines practical knowledge and field experience, In contrast, the percentage of workers with more than 10 years of experience was about 32.25%, which indicates a good

presence for the long experienced category, although to a lesser extent than the average category, From these data, it is concluded that the concerned institutions tend to employ the category of workers with intermediate experience, because of their balance between efficiency and ability to develop.

▪ **Function:** The distribution of the sample according to the variable of Function was as follows:

Table 6. Distribution of sample members according to the job variable

Declaration	Nos	Percentage
Assistant Professor	10	32.25
Professor	09	29.05
Consulted	02	9.65
Account portfolios	09	29.05
Total	31	100

Source: Prepared by researchers based on SPSS

Through the above table, the number of accountants represents 9.65%, the portfolio accounts 29.05%, lecturer 32.25%, and professor 29.05%.

▪ **Specialization:** The distribution of the sample according to the variable of Specialization was as follows:

Table 7. Distribution of sample members according to the specialization variable

Declaration	Nos	Percentage
Accounting	15	48.5
Auditing	09	29.05
Financial Management	07	22.45
Total	31	100

Source: Prepared by researchers based on SPSS

We note from the table that the number of accounting specialists is 15, which represents a percentage of 48.5%, the audit of 9, which corresponds to 29.05%, while the financial management category is 7, with a percentage of 22.45%.

4.3 Testing the questionnaire:

After identifying the sample in terms of personal information, we will address in this section the tests that are used to verify the validity and reliability of the questionnaire.

▪ Validity of the Internal Consistency:

The latter is considered one of the measures of the validity of the tool, which measures the extent to which the desired objectives of the tool have been achieved, by identifying the extent to which each paragraph of the questionnaire is related to the field to which it belongs.

- Testing the validity of the internal consistency of the paragraphs of the first axis:

The following table shows the validity of the internal consistency of the paragraphs of the first axis using the Spearman correlation coefficient as follows:

Table 8. Correlation between paragraphs and the average of the first axis

SI	Declaration	Correlation	Significance
01	Environmental auditing contributes to the knowledge of the organization's commitment Respecting the environmental laws stipulated and recognized by them	0.302	0.098
02	Environmental auditing evaluates plans and policies Natural resources	0.682	0.00
03	An audit examines and analyzes the life cycle of a product or activity from beginning to end	0.739	0.00
04	Environmental audit assesses the efficiency and effectiveness of environmental programs and activities	0.207	0.263
05	Environmental auditing assists in evaluating the performance of environmental management systems	0.322	.077

Source: Prepared by researchers based on SPSS

The previous table, which presents Spearman correlation coefficients for the paragraphs of the second axis related to information on environmental disclosure, shows that there is a statistically significant direct relationship between each paragraph of the axis and the general average of this axis, The values of correlation coefficients ranged between (0.511) and (0.704), indicating a medium to strong correlation between the paragraphs and the entire axis.

This consistency in correlation indicates the sincerity of the paragraphs, as they reflect to a good extent what they are designed to measure, and they reflect in an integrated manner the content of the second axis related to environmental disclosure, Thus it can be said that the measurement tools used in this axis have a good degree of structural validity, which enhances the reliability of the study results in this aspect.

- Testing the validity of the internal consistency of the paragraphs of the second axis:

The following table shows the validity of the internal consistency of the paragraphs of the first axis using the Spearman correlation coefficient as follows:

Table 9. Correlation between paragraphs and the average of the second axis

S2	Declaration	Correlation	Significance
01	Presents the presentation of data and information related to environmental activities	0.690	0.00
02	Facilitates the process of information users and decision-makers	0.511	0.003
03	Leads to rationalization of decisions when assessing the environmental performance of institutions	0.522	0.003
04	A means of managing negotiation between property rights holders and others who exert pressure on the organization	0.704	0.000
05	Maintaining the competitive position of the organization by improving its reputation towards those related to its economic and social activities	0.634	0.000

Source: Prepared by researchers based on SPSS

The above table shows a structured presentation of data and information related to environmental activities, which effectively contributes to facilitating the task of information users and decision makers within the organization. This type of environmental disclosure is an important tool for rationalizing decisions, especially when evaluating the environmental performance of institutions, as it provides clarity and transparency with regard to environmental practices.

Environmental disclosure is also a supportive means in managing the bargaining relationship between property rights holders on the one hand, and external parties that exert pressure on the organization on the other hand, such as regulators, civil society, or customers interested in environmental aspects. On the other hand, the institution's obligation to disclose its environmental activities enhances its reputation and mental image among economic and social stakeholders, which contributes to maintaining its competitive position in the market by demonstrating its environmental and social responsibility.

▪ **Questionnaire Stability Test:**

To perform the stability test for the questionnaire paragraphs, Cronbach Alpha, which is one of the most common methods for measuring internal consistency between paragraphs, was used. The value of this coefficient ranges between (0 and 1), so that if the paragraphs do not have any stability, the value is equal to 0, but if there is complete stability, the value approaches 1, and the closer the value of the alpha coefficient to the correct one (1.00), this indicates the high level of stability, and therefore the credibility of the paragraphs used in the measurement tool.

In general, the acceptable value of Cronbach alpha coefficient is 0.60 and above, indicating that there is an acceptable degree of stability that allows the instrument to be relied upon in measuring the studied phenomenon.

Referring to the results of the data analysis for this study, the Cronbach alpha test yielded a value of 0.593, which is close to the acceptable minimum. Although it does not explicitly exceed 0.6, it

indicates that there is a relatively acceptable degree of persistence, and the tool used in this context can be considered acceptable in principle, especially if the nature of the study is exploratory or at an initial stage. However, it may be useful in the future to work on improving the paragraphs to raise the level of stability further.

4.4 Presenting the results of the answers:

This section includes a presentation of the analysis of the data of the sample members according to the axes of the questionnaire, by answering the sample members to the questions of the study and reviewing the most prominent results reached.

▪ Results of data analysis of respondents' answers:

The results of the data analysis for the sample members will be presented in this requirement, based on the outputs of the SPSS program.

- Results of the sample members for the first axis:

The sample members were analyzed to find out the answers of each respondent. The following table shows this:

Table 10. Results of the sample members for the first axis

S1		Strongly disagree	Disagree	neutral	In favor	Strongly agree	Total
01	<i>f</i>	-	-	-	14	17	31
	%	-	-	-	45.2	54.8	100
02	<i>f</i>	-	-	-	17	14	31
	%	-	-	-	54.8	45.2	100
03	<i>f</i>	-	-	06	21	04	31
	%	-	-	19.4	67.7	12.9	100
04	<i>f</i>	-	-	-	12	19	31
	%	-	-	-	38.7	61.3	100
05	<i>f</i>	-	-	-	10	21	31
	%	-	-	-	32.3	67.7	100

Source: Prepared by researchers based on SPSS

It is clear from the above table, which presents the results of the respondents' answers about the paragraphs of the first axis, that there is a discrepancy in the levels of approval for the various paragraphs, The first paragraph focused on an approval rate of 45.2%, while the percentage of "completely agree" was 54.8%, reflecting a relatively positive trend among part of the sample towards the content of this paragraph.

For the second paragraph, the percentage of “completely agree” was 54.8%, which indicates a medium degree of acceptance with very limited neutrality on the part of the respondents.

As for the third paragraph, it received the highest approval rate within the presented paragraphs, reaching 67.7%, which may indicate general agreement on the content of the paragraph, but without strong conviction among most of the respondents.

For the fourth paragraph, the approval rate was 19%, and the “completely agree” rate was 12%, which results reflect a relatively clear support from the sample party, and indicate a positive degree of interaction with this paragraph.

Finally in the fifth paragraph, the approval rate was 32.3%, and the “completely agree” rate was 67.7%, showing relatively strong support.

In general, these results indicate a general tendency towards approval of the content of the paragraphs of the first axis, with varying degrees of conviction, as some paragraphs stand out with a higher percentage of approval than others, which may give an indication of the importance or clarity of the content of those paragraphs in the study sample.

- Results of the sample members for the second axis:

The sample members were analyzed to find out the answers of each respondent. The following table shows this:

Table 11. Results of the sample members for the second axis

S2		Strongly disagree	Disagree	neutral	In favor	Strongly agree	Total
01	<i>f</i>	-	-	-	14	17	31
	%	-	-	-	45.2	54.8	100
02	<i>f</i>	-	-	-	17	14	31
	%	-	-	-	54.8	45.2	100
03	<i>f</i>	-	-	06	21	04	31
	%	-	-	19.4	67.7	12.9	100
04	<i>f</i>	02	01	03	15	10	31
	%	6.5	3.2	9.7	48.4	32.2	100
05	<i>f</i>	-	01	05	04	21	31
	%	-	3.2	16.1	13	67.7	100

Source: Prepared by researchers based on SPSS

It is clear from the above table, which presents the results of the respondents' answers about the paragraphs of the first axis, that there is a discrepancy in opinions between the levels of consent, neutrality, and full consent, reflecting a diversity of views towards the contents of the paragraphs.

The first paragraph recorded a percentage of "agree" 54.8% and "completely agree" 45.2%, which indicates a moderate support on the part of the sample, with a positive tendency towards the content of the paragraph.

The second paragraph witnessed a convergence between the approval rates with the first paragraph, where the percentage of "agree" reached 54.8% and "completely agree" 45.2%, which indicates a clear agreement by the respondents about the content of the paragraph, and is one of the strongest levels of support compared to the rest of the paragraphs.

The third paragraph has a percentage of "agree" of 67.7% and "completely agree" of 12.9%, which are close ratios that enhance the credibility of the paragraph and show positive acceptance, which reflects the clarity or importance of what is addressed in the paragraph.

The fourth paragraph came with relatively lower percentages, where "agree" reached 48.3%, while "completely agree" was 32.3%, and these results indicate a lower degree of support compared to the rest of the paragraphs, with a percentage of neutrality indicating some hesitation or lack of clarity of opinion towards the content of the paragraph.

The fifth paragraph recorded the highest percentage of "fully agree" with 67.7%, which may indicate total acceptance in full conviction towards the paragraph.

In general, these results reflect a positive tendency on the part of the sample towards the content of the paragraphs of the first axis, with a difference in the intensity of the approval, as some paragraphs stand out with strong and balanced support, while other paragraphs show a decline in the percentage of complete conviction, which may indicate

a difference in the clarity or importance of the topics raised within this axis.

5. Conclusion:

This study proves that environmental auditing has gone beyond being a traditional control tool, to become a strategic pillar to promote sustainable development within institutions by balancing environmental performance and economic efficiency, and enhancing governance and transparency, institutions can effectively address contemporary environmental and economic challenges. Incorporating environmental auditing into enterprise strategies not only ensures compliance, but also establishes the ability of institutions to compete sustainably and conserve resources in the long term, making it a key element for business sustainability in a rapidly changing environment.

5.1 Study Results:

- Environmental auditing transforms resource management into a strategic tool, reduces waste and significantly enhances operational efficiency.
- Effectively enhances environmental performance by reducing emissions and waste, and supporting environmentally friendly practices.
- Reduces operational costs directly through the optimal use of energy and raw materials.
- Promotes transparency and accountability within the organization, and provides reliable information that supports review and decision-making.
- Supports sustainable strategic decision making based on accurate data and objective analyses.
- Environmental auditing is positively linked to adherence to international environmental standards and laws, which reduces legal risks and enhances institutional reputation.
- Encourages innovation in environmental practices within operational processes, enhancing long-term institutional sustainability.

- Enables organizations to integrate environmental sustainability into financial and accounting policies, balancing financial performance and environmental sustainability.
- Environmental auditing is a dual-functional tool: a control and a strategy, which enhances competitiveness and ensures the sustainability of resources and processes in a rapidly changing environment.

5.2 Study Recommendations:

- Integrating environmental auditing into core corporate strategies: Environmental auditing must become an integral part of financial and accounting policies, ensuring a balance between financial performance and economic efficiency on the one hand, and achieving environmental sustainability on the other, thus enhancing the institution's ability to meet contemporary environmental and economic challenges.
- Implementing regular and reliable environmental audit programs: Periodic and systematic environmental audit programs should be adopted based on accurate standards and advanced evaluation tools, with the aim of improving the use of natural resources, reducing waste, and maximizing operational efficiency, which will reflect positively on the financial and environmental performance of the institution.
- Enhancing transparency and accountability in the institution: A periodic reporting system is required that clearly demonstrates the environmental and economic performance of the institution, which enhances stakeholder confidence, supports strategic decision-making based on accurate and objective data, and strengthens institutional commitment to good governance.
- Training and qualification of administrative and accounting cadres: It is necessary to provide specialized training programs to raise the efficiency of administrators and accountants in understanding and applying environmental auditing, enabling them to analyze data accurately and make sustainable strategic decisions that support institutional performance and environmental efficiency.

▪ Use the results of environmental auditing to enhance innovation and competitiveness: The results of environmental auditing should be used as a tool to support institutional innovation and the development of environmentally friendly practices, in a way that enhances competitiveness, and ensures the sustainability of resources and continuity of operations in a rapidly changing economic and environmental environment.

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