

# Environmental Accounting And Environmental Performance: A Study On Perfume And Cosmetics Companies

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**Citation:** Dr. Mostefaoui Omar, et al (2023) Environmental Accounting And Environmental Performance: A Study On Perfume And Cosmetics Companies, *Educational Administration: Theory and Practice*, 29(4), 3332-3343, Doi: 10.53555/kuey.v29i4.7909

## ARTICLE INFO

**Received:** 02-04-2023

**Accepted:** 01-10-2023

**Published:** 15-11-2023

## ABSTRACT

Environmental issues have become significant in recent years, prompting substantial efforts to address these concerns as they negatively impact sustainable development. Industrial institutions, often identified as the primary contributors to environmental degradation, are now compelled to focus on environmental issues and work towards reducing their harmful effects. This study aims to explore the impact of environmental accounting implementation in institutions on improving their environmental performance.

**Methodology:** The study was performed on a sample of perfume and cosmetic companies in El-Oued region. A questionnaire was employed to gather necessary data from the relevant individuals which comprised two main sections designed to cover various aspects of environmental accounting, including disclosure mechanisms and environmental performance evaluation. The first addressed the institution's environmental interest, while the second focused on ascertaining how aware these institutions were of Environmental Accounting. To meet the study's objectives, the data were processed and analyzed using the appropriate statistical packages to determine whether the institutions practice environmental accounting and their impact on environmental performance.

**Results:** The results showed that perfume and cosmetic companies in El-Oued adopted environmental accounting and this led them to achieve a better level of environmental performance as well as increase their sustainability and efficiency in dealing with environmental issues.

**Conclusion:** The study confirmed that environmental accounting in perfume and cosmetic companies has a significant role in improving their environmental performance.

The study recommends the development of the environmental disclosure standards regarding sustainable development, and providing new insights and tools for environmental preservation.

**Keywords:** Environmental Accounting, Sustainability, Environmental Performance, Pollution, Algeria.

## Introduction

Global interest in environmental problems closely related to sustainable development has increased significantly, which has raised increasing interest in environmental accounting as an effective tool capable of improving the environmental performance of economic institutions, in order to achieve sustainable development. This can be achieved if environmental policies are evaluated and the necessary measures to enhance environmental compliance are identified.

Environmental accounting has many areas, as it is not limited to recording revenues and costs related to environmental activities, but extends beyond that, as it also includes assessing the environmental impact of institutions' activities, in addition to developing policies aimed at reducing the waste of their activities that are harmful to the environment, such as applying environmental taxes; therefore, including an environmental accounting system within the framework of environmental performance of institutions is a necessary matter and an urgent need that cannot be ignored. The information disclosed in the published financial statements is traditional and insufficient to evaluate the environmental performance of institutions; which has required accountants to pay attention to what achieves a balance between environmental and social performance, in addition to the economic, within a comprehensive framework for sustainable environmental accounting. Perfume and cosmetics establishments are among the establishments that must pay special attention to environmental accounting, as the nature of their products often includes chemicals that can cause more harm to the environment than some establishments with other activities; therefore, compliance with environmental standards and environmental performance can be improved in these establishments specifically if an environmental accounting system is applied as an effective tool that contributes to reducing the negative impact on the environment resulting from the establishments' waste such as waste, pollution, etc., leading to success in achieving sustainable development goals.

The following question summarizes the study problem: Is there a relationship between the application of environmental accounting and improving environmental performance in perfume and cosmetics establishments? The following sub-questions arise from this question:

1. Do perfume and cosmetics establishments take into account environmental accounting procedures and rules?
2. Is there a statistically significant relationship between environmental accounting and environmental performance?

### Study objectives

This study seeks to explore the impact of economic establishments' application of environmental accounting on improving their environmental performance. To achieve this goal, some perfume and cosmetics establishments were targeted in an attempt to project the theoretical aspect onto the practical aspect to reach:

1. Analyze the extent to which perfume and cosmetics establishments adhere to environmental accounting procedures and rules.
2. Know the impact of adopting environmental accounting in reducing the negative impacts on the environment resulting from the activities and operations of establishments.

### Importance of the study

The importance of this study is evident in several dimensions:

1. Environmental Dimension: This study enhances the understanding of the function performed by environmental accounting in order to reduce the negative impacts of institutions' activities and operations on the environment, especially those whose operations require the use of chemicals.
2. Economic Dimension: It is represented in clarifying how environmental accounting can improve the efficiency of economic institutions, and reduce the costs of managing waste and pollution.
3. Practical Dimension: The study provides a practical framework for institutions that enables them to apply environmental accounting effectively in order to achieve tangible improvements in their environmental performance.
4. Scientific Dimension: It seeks to enhance scientific knowledge and practical applications of environmental accounting, and support research and practices in this field

### Theoretical Framework of the Study

#### 1. Environmental Pollution of Institutions

The most important reasons for not achieving sustainable development are due to the activities of institutions and the pollution caused by their waste. According to the US Environmental Protection Agency (EPA), pollution has been defined as causes or pollutants present in soil, air, or water that negatively affect the environment and cause harm to human senses and health, and affect the quality of the natural environment (Environmental Protection Agency, n.d).

Environmental pollution is divided into several sections based on the aspects affected by it, according to Suleiman (2017):

**First:** Material pollution: This pollution surrounds humans and is felt by their impact and is tangible, perceptible and visible to the naked eye. In many cases, humans are the main cause of its occurrence. Humans' constant distraction with modern technology and their neglect of themselves have led to disruption of the environmental balance and pollution of air, water, soil and food.

**Second:** Moral pollution: This is invisible and intangible pollution, and humans imagine that it does not affect the dynamics of the natural and societal system; therefore, they neglect it, which leads to dangers that

result in organic and psychological damage. Its types include: auditory, cultural, moral, intellectual and value-based pollution.

Given the multiple negative effects of pollution, which leave traces that extend over time and whose effects are suffered by future generations, the impact of environmental pollution on obstructing sustainable development has become a topic of interest to researchers. In this regard, the study by Freija and Al-Fahla (2018) examined the impact of environmental pollution on development; with the aim of addressing the problems arising from various development sectors and the damage to the lives of the population. The study found that environmental elements are exploited and wasted in an unscientific and unstudied manner; which has a direct negative impact on development and in several areas. The study recommended the need to intensify international efforts to address the problems of pollution that harm the environment and hinder development. Similarly, the study by Al-Maamaria (2022) examined the impact of environmental pollution during armed conflicts on sustainable development. The results indicated that armed conflicts leave behind environmental pollution with severe and long-term damage that affects successive generations, and it was found that they double the costs of sustainable development. The study recommended the need to strengthen international environmental law that includes sustainable environment within its provisions, and addresses environmental protection in its contents, especially during armed conflicts. Gao et al. (2023) developed an economic model to evaluate the relationship between green finance (funding for renewable energy projects, such as wind and solar energy) and environmental pollution on economic development in 30 provinces in China. The study concluded that green finance promotes economic development despite pollution hindering it. The study also showed that if the industrial structure is modified and scientific and technological growth is promoted, this will mitigate the negative effects of pollution on economic development. Finally, Wang & Luo (2020) indicated that pollution is a global problem that both developed and developing countries share in bearing its burdens. Despite the increasing global interest in it, it remains a major challenge facing humanity due to its severe long-term consequences. The study confirmed that reducing environmental pollution and increasing investments in green finance are crucial elements for achieving sustainable development, especially in the Yangtze River Economic Belt region. The study recommended several solutions to combat pollution in order to achieve a sustainable environment. In conclusion, by reviewing previous studies, we can see the importance of addressing environmental pollution from In order to promote sustainable development. The results of these studies agree on the need to intensify international cooperation to promote sustainable environmental policies to ensure a better future for future generations. Achieving this requires concerted efforts between governments, organizations, and researchers to develop effective strategies that balance environmental protection and economic development.

**2. What is Environmental Accounting?** The branch of accounting that specializes in documenting, analyzing and preparing financial and environmental reports related to the activities of economic institutions, and provides necessary information for sustainability decision makers, is known as environmental accounting (Schaltegger and Burritt, 2000). It is clear from this that environmental accounting includes environmental financial accounting and environmental management accounting. On the one hand, environmental financial accounting specializes in recording and analyzing environmental financial information and preparing the necessary reports for external users of the statements. On the other hand, environmental management accounting focuses on internal aspects such as identifying, monitoring and analyzing data on costs and environmental performance to help decision makers make appropriate decisions that improve environmental performance and increase efficiency towards the environment. This can be achieved by reducing environmental costs and achieving sustainability goals (Environmental Protection Agency, 1995).

### **3. Environmental accounting disclosure and its role in improving environmental performance and achieving sustainable development**

Environmental performance disclosure is a process through which institutions provide information related to their environmental impacts based on their belief in social responsibility and commitment to transparency. It is also part of institutions' strategies to manage their relationships with stakeholders and environmental pressure groups, which enhances transparency and accountability (Roberts, 1992). Environmental disclosure is used to organize the concept of "environment" and determine the institution's position within society (Gray et al., 2003). It is also a means of negotiating emerging environmental issues, and it represents part of the institution's organizational behavior in dealing with these issues according to the theory of stakeholders (Guthrie & Parker, 1989; Patten, 1992).

Many researchers have made significant contributions to developing the modern concept of environmental disclosure, in addition to linking it to the concepts of sustainable development. This confirms the essential role of environmental transparency in practicing institutional sustainability. The study (1987) by Gray et al. Among the first to link environmental disclosure to social responsibility, it also pointed to improving transparency and accountability in order to enable environmental disclosure to support sustainable development practices. Hart (1995) pointed to the relationship between the exploitation of natural resources and environmental disclosure as part of a corporate strategy to achieve sustainable development. Elkington & Rowlands (1999) indicated that environmental disclosure should be an integral part of an approach for organizations to balance financial, environmental and social performance, and thus promote sustainable

development. Bebbington (2001) discussed how environmental disclosure can guide companies towards more sustainable practices.

Companies disclose their environmental costs in their financial statements directed to users. However, there is still a growing need for these institutions to be more disclosing and transparent. Environmental disclosure has become a major requirement for stakeholders, who seek additional information related to the environmental and social performance of economic institutions, in addition to mandatory disclosure (Al-Toum Al-Hajj, 2017)

Environmental disclosure plays an important media role in supporting sustainable development, by providing a comprehensive picture of everyone involved in the extent of depletion of natural resources and the extent of damage to the environment as a result of the institution's activities and operations. Thus, decision-makers, governments and institutions can assess the current impact of institutions' activities on the current environment and its repercussions in the future. This assessment, in turn, will help secure the needs of current generations and not compromise the opportunities of future generations to achieve their requirements. Through transparent environmental disclosure, indicators of national product and national income can be adjusted to reflect the true values of natural resources and the impact of environmental pollution. If institutions continue to ignore these facts, the day will come when these resources will be depleted and the environment will be unable to meet the needs of future generations. Ecosystems will collapse. Many studies have contributed to enriching the topic of the importance of environmental disclosure in order to improve environmental performance and support sustainable development. In Egypt, Hilal's study (2017) was conducted on a sample of chemical companies, and it was found that environmental disclosure has a positive impact on sustainable development.

The study recommended the need to enhance environmental disclosure and improve its quality, in addition to preparing non-financial reports that complement sustainable development reports. As for the study by Muslimi et al. (2020), it focused on the impact of accounting disclosure on the use of environmental fuel alternatives in energy-intensive industries in order to identify pollutants resulting from the energy sources used, and their environmental and societal impacts. It was found that accounting disclosure of the environmental impact of the energy used contributes to making sound administrative decisions. In addition, paying attention to environmental expenses improves the facility's environment internally and externally, in addition to improving its economic situation. It recommended encouraging industries to use more environmentally friendly energy sources.

In Jordan, Almydeen et al.'s study (2023) aimed to explore the relationship between disclosure of sustainable development information related to environmental, social, and economic aspects and earnings quality. The study showed that companies that fully disclose sustainable development accounting standards have higher earnings quality compared to companies that do not. A positive relationship was also found between accounting disclosure of environmental and social aspects and increased investor confidence in companies' performance and the credibility of financial reports. Thus, a balance is achieved between the economy, society, and the environment, which is in line with the comprehensive sustainable development goals. As for Alassuli's study (2024), which aimed to examine the impact of environmental accounting on the social responsibility of a sample of industrial companies listed on the Amman Stock Exchange. The results confirmed the positive relationship between environmental accounting practices and social responsibility, and called on industrial companies to take serious measures to adopt environmental accounting practices, to improve the overall performance of companies and promote sustainable development, especially in light of the growing challenges imposed by globalization at the global level. In a study conducted in Indonesia by Homan (2016) on the hotel sector, in an attempt to link economic and environmental interests, it was found that the application of environmental accounting can improve environmental performance and reduce pollution from tourism activities. The study recommended the adoption of environmental accounting as a tool to balance economic and environmental interests. In Nigeria, Joyce (2020) aimed to assess the impact of environmental disclosure on the financial performance of a sample of oil and gas companies. The results showed that environmental disclosure can improve corporate reputation and financial performance. However, it was found that some companies do not adhere to sufficient disclosure, which may negatively affect market performance and investor confidence. This study provided valuable insights on how to make environmental disclosure part of the overall strategy of oil and gas companies, which helps improve their financial performance and promote sustainable development. At the level of emerging and developed economies, the study by et al. (2023) Singh The strong relationship between environmental disclosure, green innovations and energy efficiency on sustainable development. The study indicated that there are differences in the impact of these factors on advanced and emerging economies, which indicates the need to adopt strategies tailored to each of them to support enhancing environmental performance in different contexts.

As for the study by Amir and Al-Arabi (2018), which reviewed previous studies related to environmental accounting and environmental performance at the local and international levels, it concluded that improving environmental performance is linked to the process of measuring and disclosing environmental costs. However, many institutions refuse to make such disclosure due to the lack of strict binding laws. The study recommended that institutions should fulfill their duty towards the environment by preparing international reports that include measuring and disclosing environmental costs.

Despite the positives shown by some studies on environmental accounting practices, many studies have shown that the results obtained from environmental accounting practices may differ based on the executive and regulatory context. Environmental disclosure may not lead to a tangible improvement in environmental performance; If it is a form of green marketing without taking actual actions to improve the sustainability of corporate activities, or because it is often limited and formal, it is used as a means to reduce pressure from stakeholders only, which reduces its effectiveness in achieving environmental goals. In a study (2022) Gianni et al. on the impact of environmental information disclosure and greenhouse gas emissions on corporate environmental performance, financial and environmental data of internationally listed companies were analyzed from 2011 to 2017. The results showed that environmental disclosure, even after controlling for environmental performance, is often not statistically significant, meaning that the impact of environmental disclosure is limited if not absent. This confirms that the quality of environmental disclosure plays a minor role in influencing actual environmental performance. The study recommended the need to focus on improving actual environmental performance rather than focusing on the quality of environmental disclosure, as it was found that financial markets seem more interested in the information companies provide about environmental performance than in actual environmental performance. Lu & Taylor (2018) also concluded that environmental disclosure does not necessarily lead to improved environmental performance, as environmental disclosure reflects the level of transparency in announcing companies' environmental practices, but it does not necessarily improve actual environmental performance. The results indicated that companies that provide good disclosures about their environmental performance may not necessarily achieve strong financial performance or actual environmental improvement. Disclosure can be just a means to enhance the company's public image or to comply with environmental standards. In fact, environmental disclosure can sometimes negatively affect environmental performance due to its failure to adhere to correct environmental practices, if used as a means. Therefore, the study recommended implementing effective environmental strategies rather than just disclosing, with the need to have systems to monitor and evaluate environmental performance periodically to ensure compliance with effective environmental practices.

In the context of Asian countries, Ifada & Saleh (2022) indicated that environmental performance can positively influence environmental disclosure, but environmental cost disclosure may act as a mediating factor in this relationship. It was found that companies with high environmental costs may be less transparent in environmental disclosure, which weakens the strength of the positive relationship between performance and environmental disclosure, especially in emerging countries with less developed markets. In China, which is one of the world's leading manufacturing countries, pollution from manufacturing waste has become a major environmental concern, so Agyemang et al. (2021) investigated the relationship between environmental information disclosure and environmental performance for a sample of listed mining companies, and it was found to be positive and statistically significant. However, it was found that the presence of some factors may adversely affect this relationship. In some cases, when profitability is high, or when relying on debt for financing, companies may be less interested in improving their actual environmental practices, and disclosure becomes a mere marketing tool rather than an indicator of a real commitment to environmental improvement. In other cases, environmental disclosure may be a mere response to external pressures or regulatory policies without any tangible improvement in environmental performance.

Therefore, from the above, it can be said that different contexts must be taken into account when evaluating the relationship between environmental disclosure and environmental performance.

### Research Hypotheses

To achieve the objectives of the study, and to find answers to the questions raised, the following hypotheses were developed:

Hypothesis 1: Perfume and cosmetic establishments are committed to applying environmental accounting rules and procedures.

Hypothesis 2: Applying environmental accounting leads to improving environmental performance.

### Methodology

#### Study sample

The study focused on analyzing a sample of perfume and cosmetic establishments in the Oued region in Algeria.

#### Data collection sources

#### Secondary data:

Books, periodicals and publications available on environmental accounting and its impact on improving environmental performance were reviewed, in addition to any references that enrich the study and enhance scientific knowledge. These references contributed to identifying the foundations and methods of writing the theoretical framework in a correct scientific manner, in addition to their contribution to reviewing the latest developments in the field of study.



### Primary data:

In order to evaluate the reality of the institutions' application of environmental accounting and to improve their environmental performance, and due to the insufficiency of secondary sources to achieve this, the analytical approach was used by designing a questionnaire that included closed and open questions that addressed various aspects of environmental accounting such as institutions' compliance with environmental rules, evaluating their environmental policies, the extent of the impact of these policies on their environmental performance, and identifying the significant relationships between environmental accounting and environmental performance, by analyzing the collected data using appropriate statistical analysis methods. The study sample numbered 35 institutions to which questionnaires were distributed on paper, two questionnaires for each institution, and they were delivered to two employees who have the necessary experience such as the financial manager, the accountant, and those responsible for quality and environmental safety management, who have the ability to evaluate environmental accounting standards and are aware of the fact that they support sustainable development.

The number of questionnaires distributed was 70, of which 62 were returned, after excluding two for being unsuitable. The final number of questionnaires valid for the study was 60. The questionnaire was designed and its questions were formulated after adopting the study hypotheses and referring to the relevant studies and scientific references. To ensure the validity of the questionnaire and its suitability to the study topic, the researchers presented the questionnaire to a number of referees, and their comments were taken into consideration by reconsidering some of the paragraphs and questions included in the questionnaire. The questionnaire was divided into two main parts:

**Part One:** includes a set of questions about the personal data of the study community, and consists of 4 paragraphs: (age, educational level, professional experience, and job position.)

**Part Two:** includes the axes of the study topic, and consists of 20 statements distributed equally on two axes, so that each axis includes 10 paragraphs as follows:

**Axis One:** discusses the institution's application to the environment.

**Axis Two:** discusses the interest of environmental accounting.

To test the study hypotheses to achieve its objectives, and to obtain answers to the questionnaire questions, a five-point Likert scale was used. According to this scale, the alternatives to answer the questions posed were as shown in Table No. (1) below.

**Table No. (1): Five-point Likert scale**

Strongly disagree	Disagree	neutral	agree	Strongly agree
1	2	3	4	5

Programs and data processing tools:

The Statistical Package for the Social Sciences (SPSS) program, version 25, was used to analyze the data collected by the questionnaire. A set of statistical tests were conducted:

A. Cronbach's Alpha Test: To judge the accuracy of the measurement by determining the stability of the measurement tool represented by the questionnaire.

B. Validity Coefficient: It is mathematically equal to the square root of the stability coefficient (Cronbach's Alpha Coefficient); to know whether the scale actually measures what it is intended to measure.

C. Frequencies and percentages: To know the distribution of the personal study sample data.

D. T-test: It is one of the most common significance tests in social, psychological and educational research, and is used to measure the significance of the differences in averages between variables.

E. Pearson Correlation Coefficient: It measures the size and direction of the relationship between variables. It is used if the relationship is linear between the two variables, and is symbolized by the symbol  $r$ .

Measuring the reliability and validity of the questionnaire

The (Cronbach's Alpha) test was used to test the internal consistency of the items and calculate the reliability of the questionnaire, and the results are shown in Table No (2) below:

**Table No. (2): Cronbach's alpha value**

decision	Cronbach's alpha coefficient value	Number of items	Axes
Statistically significant	0.793	10	Environmental concern in the organization
Statistically significant	0.779	10	Application of environmental accounting in the organization
Statistically significant	0.855	20	Total score of the questionnaire

From the previous table, we find that the value of Cronbach's alpha (internal consistency degree) for all the axes was positive as follows: for the axis of concern for the environment in the institution it is equal to 0.793,

and for the items forming the axis of applying environmental accounting in the institution it is equal to 0.779, and with regard to the questionnaire as a whole, the degree of internal consistency for all questionnaire items is equal to 0.855, and thus it can be said that all the items of the questionnaire axes interact with each other in a way that contributes to the stability and consistency of the questionnaire. Regarding the validity coefficient, the results indicated that the questionnaire axes achieved high degrees of validity, as they were close to the correct one, as follows:

The validity coefficient for the first axis is  $\sqrt{0.793}$  and equals 0.891

The validity coefficient for the second axis is  $\sqrt{0.779}$  and equals 0.883

The validity coefficient for the questionnaire as a whole is  $\sqrt{0.855}$  and equals 0.925

## Results

Analysis of the characteristics of the study sample

The following table No. (3) shows the frequencies and percentages of the variables related to the characteristics of the study sample.

**Table No. (3): Sample characteristics variables**

variable	%	Repetition	Category
Age (years)	18.3	11	Less than 30
	40	24	30-40
	23.3	14	40-50
	18.3	11	More than 50
Educational level	1.7	1	Without a certificate
	21.7	13	secondary
	60	36	University
	16.7	10	Professional Certificate
Professional Experience (Years)	11.7	07	Less than 5
	25	15	5-10
	31.7	19	10-15
	16.7	10	15-20
	14.9	09	More than 20
Career Center	26.7	16	Financial Process
	25	15	accountant
	48.3	29	Another job

By reviewing Table (3), we find that the study sample members vary in terms of demographic characteristics. In terms of age, we find that most of the study sample members are between 30-40 years old, which indicates that this age group is often in the peak stage of their career. While those under 30 or over 50 are the lowest percentage. As for those under 30, the reason may be attributed to their failure to reach leadership positions, while those over 50 may have started to head towards retirement. In terms of educational level, the number of bachelor's degree holders (university) reached 36 individuals, representing 60%, which is the highest percentage. This may indicate that perfume companies are interested in appointing people with university education, as they are supposed to have greater awareness of the important and effective role played by environmental accounting. As for those without a certificate, their number was one person at a rate of 1.7%, which is the lowest percentage, and this may be due to the fact that working in these institutions requires certain educational levels, which reduces the number of individuals without certificates working in these institutions. With regard to years of professional experience, the highest percentage was for individuals with 10-15 years of professional experience, which amounted to 19 individuals at a rate of 31.7%, and this may indicate that this category has sufficient experience, which provides valuable insights into the subject of the study based on their diverse experience.

As for those with less than 5 years of professional experience, their percentage was the lowest, as their number was 7 individuals at a rate of 11.7%, and this may indicate that the opportunities available to this category to occupy financial or administrative positions are few due to the unwillingness of these institutions to fill these positions with those with less than five years of experience. Finally, looking at the job position, we find that the number of individuals who hold another job is 29 individuals at a rate of 48.3%, which is the highest percentage, and this may indicate that people in different jobs may have an impact on environmental performance, such as those responsible for managing quality and environmental safety, production managers, workers in the purchasing department, and workers in the legal departments concerned with the extent of the institution's compliance with environmental regulations and laws. As for the lowest percentage, it was 25%, which is for individuals who hold the position of accountant, whose number is 15 individuals, and the reason may be attributed to the accountants practicing traditional accounting more than practicing environmental accounting. Based on what was mentioned above, it can be said that the study sample includes

a noticeable diversity in terms of characteristics, and this diversity enhances the comprehensiveness of the study, as it provides the opportunity to understand the different effects of demographic characteristics on the subject of the study, which may contribute to providing multiple and comprehensive visions on this topic. This diversity in the sample makes the study more comprehensive and capable of providing accurate and applicable results. Testing the study hypotheses

#### First: Testing the first hypothesis

The first hypothesis states that: Perfume and cosmetics establishments are committed to applying the rules and procedures of environmental accounting.

A simple sample "T" test (One Sample T-test) was conducted to examine this hypothesis. Table No. (4) below shows the opinions of the sample members on the first axis related to the application of environmental accounting. The results indicated that the calculated T value for all axis items was greater than the tabular T value (1.671), and therefore these results are statistically significant at the 5% level. As for the general trend for all axis paragraphs, the T value of 13.282 indicates the presence of strong statistical significance, which reinforces the rejection of the null hypothesis and the acceptance of the alternative hypothesis, and confirms that perfume and cosmetics establishments are committed to the rules and procedures of environmental accounting seriously. Accordingly, the first hypothesis is accepted.

This finding is consistent with the study by Naamane & Djamel (2024) conducted on a cement factory in the Algerian state of Tebessa, which showed that this institution is committed to accounting disclosure of its environmental performance in financial reports, and focused on environmental protection expenses and measures under the environmental management system. The study criticized the lack of quantitative disclosure of negative environmental impacts, such as emissions and waste, indicating that disclosure may be limited in terms of transparency. This finding is also supported by the study by Jaaffar et al. (2019), which indicated that there is a commitment to environmental disclosure among listed companies in Malaysia, although to varying degrees among companies. The study by Flammer et al. (2021) also showed that companies operating in the United States tend to voluntary environmental disclosure in response to the wishes of shareholders, especially long-term institutional shareholders, despite the lack of mandatory disclosure requirements.

On the other hand, the results of this study differed from the study of Abdel Samad and Makri (2016), which was conducted on a sample of cement companies in Algeria, as it was found that these companies did not apply environmental accounting practices in a tangible way despite the availability of many necessary components. The study recommended the need to review accounting legislation and amend it to include the requirements of environmental accounting measurement and disclosure. Also, the study of Saeedi (2013) found that there is a limitation in measuring and disclosing environmental impacts, as the focus was on environmental protection investments and fines and taxes imposed without full disclosure of environmental impacts. The study of Charshafa (2019) confirmed the weak level of environmental disclosure in environmentally sensitive Algerian companies compared to what is required, recommending the need to provide appropriate frameworks to create an environment that encourages the disclosure of environmental information in a more detailed and transparent manner.

**Table No. (4): Simple sample "T" test related to the application of environmental accounting**

decision	Significance level	degree of freedom	Calculated T value	Paragraph
We accept H1	0.000	59	7.587	1
We accept H1	0.000	59	2.509	2
We accept H1	0.000	59	4.999	3
We accept H1	0.000	59	4.606	4
We accept H1	0.000	59	6.957	5
We accept H1	0.000	59	9.873	6
We accept H1	0.000	59	8.756	7
We accept H1	0.000	59	8.844	8
We accept H1	0.000	59	9.264	9
We accept H1	0.000	59	8.724	10
We accept H1	<b>0.000</b>	<b>59</b>	<b>13.282</b>	General direction of the axis "Application of Environmental Accounting"

#### Second: Testing the second hypothesis

The second hypothesis states that: Applying environmental accounting leads to improving environmental performance.

To test this hypothesis, Pearson's correlation coefficient was calculated between the items of the first axis (implementing environmental accounting) and the second axis (concern for environmental performance),



and the results reached were presented in Table No. (5) below. It was found that the value of Pearson's correlation coefficient ( $r$ ) between the axes of environmental accounting and environmental performance equals 0.415, which is statistically significant at the 1% level, which means that there is a strong positive relationship between them, which means that enhancing and improving environmental accounting practices positively affects environmental performance and can work to improve it. Accordingly, the second hypothesis is accepted.

This result is consistent with the findings of many studies that indicated that environmental accounting can be used as a tool to reduce the damage of institutional waste to the environment. Among these studies, the study (2023) Almbydeen et al. Alassuli (2024) in the Jordanian context, Hilal (2017) and Muslim et al.(2020) in Egypt, Homan (2016) in Indonesia, Joyce (2020) in Nigeria, and finally, in the context of emerging and advanced economies, Singh et al. (2023) supported this trend. However, this result partially contradicts the results of some studies that found that the results obtained from environmental accounting practices may differ according to the organizational and implementation context, as is the case in the studies of Gianni et al. (2022), Lu & Taylor (2018), and Ifada & Saleh (2022) in the context of Asian countries, and Agyemang et al. (2021) in China showed that some organizational factors may adversely affect this relationship.

**Table No.(5): Pearson's coefficient for the relationship between environmental accounting and environmental performance**

VARIABLES	STATISTICAL SIGNIFICANCE SIG.	Correlation coefficient value $r$	NUMBER OF SAMPLE MEMBERS	STATISTICAL DECISION
Environmental Accounting	0.001	0.415	60	Statistically significant at the 0.01 level
Environmental Performance				

### Conclusion

After addressing the theoretical framework related to the study variables and trying to cover all aspects of the subject, and after analyzing the questionnaire data, the study reached the following results and recommendations:

### Results

The results showed that perfume and cosmetics establishments in the valley are committed to the rules and procedures of environmental accounting in an effective manner, and this commitment reflects their response to environmental standards and legislation.

The results showed a positive and statistically significant relationship between environmental accounting and environmental performance in perfume and cosmetics establishments in the valley, meaning that the application of environmental accounting practices contributes to improving the environmental performance of these establishments, and this comes from their response to environmental challenges, and their awareness of the importance of enhancing environmental performance and achieving sustainable development.

The study highlighted the importance of environmental disclosure in supporting sustainable development, by the administration informing information users, and enhancing their ability to understand the extent of damage related to environmental pollution and depletion of natural resources; which enables them to make sound and appropriate decisions that reduce the environmental impact and enhance sustainability.

Attention to environmental information and environmental performance assessment has become an imperative and urgent necessity at the local and global levels. This is an essential step to achieve community welfare, reduce economic and environmental problems, and achieve a competitive advantage by improving the quality of products and services provided. Accordingly, it can be said that the results of this study support the viewpoint supporting the idea that environmental accounting is a means of supporting environmental performance and enhancing sustainability, from its role in enhancing the efficiency of institutions in effectively facing environmental challenges and obstacles to achieve environmental sustainability.

### Study Limits:

This study was surrounded by objective, spatial, temporal and human limits due to its nature and method of implementation, which we present as follows:

#### Objective Limits

The study was limited to a specific topic related to the role of applying environmental accounting to improve the environmental performance of institutions, and other aspects that may play an important role in

improving environmental performance were not raised for many reasons: such as time, available resources, and the nature of available data.

### **Spatial boundaries:**

The study was conducted in the field on perfume and cosmetics institutions in the valley region. However, it was not possible to conduct the study on all institutions in the state, as the questionnaire was distributed to some of them that were available to conduct the study and could be accessed.

### **Time boundaries:**

The data for this study were collected during the period from 01/01/2023 to 10/04/2023, which may affect the extent of the update that reflects the latest developments in this field.

### **Human boundaries**

The study was limited to workers in perfume and cosmetics institutions, who are related to the subject of the study, including accountants, financial managers, and other concerned individuals; as they are among the most important institutions concerned with applying environmental accounting, due to the impact of their activity waste on the environment. However, it should be noted that there are other institutions that may also play an important role in influencing the environment and sustainable development, but they were not part of the scope of this study.

### **Recommendations**

Based on the findings, the study recommends the following:

- The need to develop and create rules for the accounting system to serve environmental accounting, and adapt it to provide outputs for environmental purposes, not just economic ones, that contribute to environmental sustainability, by creating accounting standards that aim to measure environmental performance in addition to economic performance, and integrating them to be part of the traditional accounting system.
- The need to develop local environmental disclosure standards to enhance the transparency of environmental reports.
- The need to enact strict legislation and laws that require institutions to apply environmental accounting.
- The need for industrial institutions to adopt the best global environmental practices that aim to achieve environmental sustainability, which contributes to improving the reputation of these institutions and increasing the confidence of investors and customers.
- Organizing training courses and workshops to familiarize stakeholders in institutions with the nature of environmental accounting and how to apply it effectively. This contributes to building the capabilities of employees and enhancing their understanding of the importance of environmental accounting, which leads to improving the application of environmental practices within institutions.
- Providing new insights and advanced tools to improve environmental performance. This can be achieved by encouraging partnerships with international and local environmental organizations to exchange knowledge and expertise that contribute to the adoption of new technologies that reduce the impact of their activities on the environment.
- Continuous monitoring of progress and improvement, which can be achieved by establishing a system to evaluate and measure the impact of applying environmental accounting on the environmental performance of institutions, with the necessity of publishing the results of this evaluation in periodic reports. This process allows for the identification of strengths and weaknesses and taking appropriate corrective measures in a timely manner, leading to sustainable development and its goals.

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