



Research Paper

## Environmental Accounting Practices and Corporate Global Performance in an Emerging Market: The Mediating Role of Environmental Disclosure

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### Abstract

Environmental accounting practices (EAP) serve as a comprehensive system for monitoring and reporting environmental facts, effectively addressing the limitations of traditional accounting. A review of the literature indicates that most studies on EAP have primarily focused on demonstrating their positive impact, particularly on companies' financial performance. The objective of this study is to empirically examine the relationship between EAP and corporate global performance (CGP), incorporating environmental and commercial dimensions. Drawing on the contractual approach and legitimacy theory, we propose a research model that elucidates the mechanisms through which EAP influences CGP, with a focus on the indirect effect of environmental disclosure on this relationship. The primary contribution of this research lies in the development of a conceptual model that integrates variables suggested in the literature but never tested together. To the best of our knowledge, no prior studies have explored the indirect effects of environmental disclosure on the EAP-CGP relationship. Our findings indicate that EAP has a positive influence on all three dimensions of global performance. The results also demonstrate that environmental disclosure mediates the relationship between EAP and the financial and commercial dimensions of performance.

**Keywords:** *Environmental Accounting Practices; Financial Performance; Environmental Performance; Commercial Performance; Environmental Disclosure; Contractual Approach; Legitimacy Theory*

### INTRODUCTION

In recent years, there has been an increased focus on environmental protection, driven by both public authorities and civil society. This shift has heightened stakeholders' demand for environmental information, compelling companies to disclose their policies on environmental protection (Berthelot et al., 2003; Mikol, 2005; Mondal et al., 2023). According to Carlevaro (1994), the desire to meet these new informational needs has spurred discussions on expanding traditional accounting to include the non-commercial activities of companies. Some organizations have even adopted and published "social audit reports" containing sociocultural and environmental information (Chen et al., 2018). Several researchers have explored the development of new techniques for assessing and reporting environmental impacts, collectively referred to as Environmental Accounting (EA) (Antheaume and Christophe, 2005; Mondal et al., 2023). These techniques enable companies to evaluate the ecological consequences of their actions and improve the quality of their environmental disclosures (Antheaume & Christophe, 2005; Rounaghi, 2019).

Despite the growing attention to environmental issues, the relationship between EAP and CGP remains relatively underexplored. Most empirical studies in this area have been descriptive in nature. Furthermore, research on environmental disclosure has largely treated it as either an independent variable that focuses on theoretical links between environmental accounting and disclosure or as a dependent variable in studies that examine the determinants of voluntary disclosure. However, environmental disclosure has rarely, if ever, been analyzed as an intermediary variable. This lack of focus on the mechanisms by which EAP influences CGPs highlights a significant gap in the literature. To address this, we have examined the mediating role

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of environmental disclosure in the relationship between EAP and CGP. Our analysis adopts a multi-theoretical framework that integrates the politico-contractual and neo-institutional legitimacy approaches.

## LITERATURE REVIEW

### Conceptual Framework

Environmental awareness aimed at ecosystem sustainability has been shown to positively influence the development of management practices across various fields. EAP has emerged as a key tool that helps organizations manage their business activities while considering their environmental impacts and related aspects (Sherly & Nawangsari, 2022). Environmental accounting is deeply connected to legitimacy theory, particularly through the political-contractual and neo-institutional approaches. These frameworks enable organizations to align their practices with societal expectations, thereby enhancing their legitimacy. The political-contractual approach emphasizes the social contract between corporations and society and posits that companies must demonstrate accountability and transparency in their environmental practices to maintain legitimacy. This perspective highlights the role of environmental accounting as a tool for corporations to uphold their societal responsibilities and address stakeholder demands for transparency (Riviere, 2006).

Conversely, the neo-institutional approach focuses on the influence of institutional norms and pressures on corporate behavior. According to this perspective, organizations adopt EAP to conform to societal expectations, meet regulatory requirements, and gain legitimacy within their institutional environment. This alignment with institutional norms ensures that companies remain socially acceptable and competitive (Cormier et al., 1999). Together, these approaches underscore the strategic importance of environmental accounting in building and maintaining corporate legitimacy in response to both societal and institutional pressures.

### Hypotheses development

Two types of effects will be studied: the direct impact of EAP on the CGP and the mediation role of environmental disclosure on the EAP-CGP relationship.

#### *EAP-CGP relationship*

EAP encompasses all techniques and procedures that support decision-making, measure company performance, and facilitate the publication of environmental information (Bebbington, 1997). Numerous studies have sought to theoretically analyze the positive effects of EAP on various aspects of company performance, including financial, environmental and commercial outcomes. Lafontaine (2002) highlights that adopting EAP enables companies to complement financial criteria that prioritize the short term, move beyond the traditional assumption of profit maximization, and assess performance using multiple quantitative (financial and physical) and qualitative indicators directly linked to the company's activities and strategy. Similarly, Christophe (1992) offers a broader definition of Environmental Accounting, describing it as an efficient information system on the degree of scarcity of natural elements related to companies' activities, used to reduce this scarcity and to inform stakeholders. Numerous studies have underscored the benefits of transitioning to more responsible accounting practices (Christophe, 1992; Lafontaine, 2002; Jamil & Ferrer, 2020; Tsang et al., 2023; Ayu et al., 2020). The emergence of the EA is attributed to a combination of socioeconomic and legal factors (Michaud, 2008). These factors include increasingly stringent environmental regulations, growing stakeholder pressures, the limitations of traditional accounting in addressing environmental obligations, and the evolution of environmental costs (Lafontaine, 2002; Michaud, 2008; Wei & Chen, 2021; Tsang et al., 2023; Ayu et al., 2020; Zogning,

2017). CGP is broadly understood as the integration of financial, environmental, and commercial performance. Financial performance (FP) refers to value creation for shareholders (Cappelletti & Khouatra, 2002). Environmental performance (EP), as defined by ISO-14001, includes “the measurable results of the Environmental Management System, in relation to the control of its environmental aspects, by the regulatory body on the basis of its environmental policy, objectives, and targets.” Improving commercial performance (CP) involves aligning an organization with customer requirements while considering competitive criteria (Nurfaidah et al., 2024). There is a longstanding debate on the effects of EA on firms, particularly CGPs (Ayu et al., 2020). EA can significantly impact a company’s performance in multiple ways. For instance, the EA facilitates the identification and management of environmental costs, which can support the development of comprehensive environmental management systems (Dunk, 2002; Rounaghi, 2019). This systematic approach not only helps in reducing waste and improving resource efficiency but also enhances a company’s reputation among stakeholders, potentially leading to increased profitability (Amalya et al., 2023; Deb et al., 2022). Jamil & Ferrer (2020) examined EA and firm profitability and value and suggested that, in general, environmental accounting is not significant for both firm profitability and value. However, when environmental accounting disclosure and environmental costs reporting are moderated by certain variables (location, firm size, number of years listed in PSE, and board size), EA is significant (Jamil & Ferrer, 2020). Furthermore, a study shows that firms with sophisticated EAP are likely to experience improved financial outcomes, as these practices can lead to cost savings and operational efficiencies (Benson et al., 2021; Deb et al., 2022). A study of Thai companies also showed a positive relationship between EA and firm value (Connelly & Limpaphayom, 2004 in Jamil & Ferrer, 2020). Scarpellini et al. (2020) found a positive correlation between firms’ circular scope (CS), EAP, and level of corporate social responsibility (CSR) and accountability. In addition to direct financial benefits, environmental accounting can lead to increased company value by aligning corporate strategies with environmental sustainability. This alignment is increasingly recognized as vital for achieving a competitive advantage in today’s market, where consumers and investors are more environmentally conscious (Trumpp & Guenther, 2015). Firms that successfully integrate environmental interests into their strategic planning are better positioned to navigate regulatory changes and market shifts, thereby enhancing their resilience and sustainability (Riyadh et al., 2020). In this perspective, Chukka et al. (2024) argued that integrating EA principles into business operations not only addresses environmental issues but also supports FP, indicating a dual benefit for organizations. Conversely, some studies have suggested that the direct impact of EAP on FP may not always be significant (Ezeagba et al., 2017), particularly in certain sectors where environmental performance does not correlate with financial metrics (Nurfaidah et al., 2024).

This highlights the complexity of the relationship between environmental practices and financial outcomes. On the other hand, EAP not only has a positive impact on FP but also plays a crucial role in enhancing EP by providing companies with tools to measure, manage, and report their environmental impacts. Berthelot et al. (2003) categorize existing approaches to environmental cost accounting, which include assessing costs related to environmental protection and investment decisions, thereby demonstrating how these practices can lead to better resource management and cost savings. Appiah et al. (2020) further support this notion by illustrating that a commitment to environmental management, coupled with effective environmental management accounting practices, can significantly enhance a firm’s environmental performance, particularly under uncertain conditions. This is echoed by Rhouma and Cormier (2007), who found that EA impacts EP by systematically tracking and reporting ecological costs, enhancing stakeholder engagement, and facilitating environmental risk assessments. Consequently, by coordinating financial procedures with sustainability objectives, EAP has a substantial impact on a business’s CP.

In addition to lowering operating costs, this strategy improves stakeholder relations and creates competitive advantages.

In addition, empirical evidence suggests that EAP is a crucial instrument for companies seeking to improve their corporate performance. In addition, companies can improve their corporate value, obtain better financing, and eventually produce better financial results by integrating environmental considerations into their accounting procedures.

[Ambarsari et al. \(2024\)](#) indicated that firms implementing EAP can enhance their market image and meet stakeholder demands for sustainability, thus improving competitiveness. They reported that engaging stakeholders through sustainability initiatives can strengthen corporate reputation and customer loyalty ([Ambarsari et al., 2024](#)). [Quispe et al. \(2024\)](#) asserted that incorporating environmental costs into financial reporting can result in improved decision-making and competitive benefits. [Sundarasan et al. \(2024\)](#) emphasized that EAs incorporate sustainability into corporate practices to promote transparency and accountability. This approach facilitates informed financial decision-making, which enhances market competitiveness and stakeholder engagement, ultimately supporting sustainable revenue growth and long-term success ([Sundarasan et al., 2024](#)). [Otieno and Wanjare \(2024\)](#) concluded that integrating environmental data into accounting systems can lead to cost reduction, improved sustainability, and enhanced stakeholder engagement, thereby supporting CP and ensuring sustainable revenue growth and long-term success for businesses in Turkana County, Kenya. [Hossain and Hasan \(2024\)](#) showed that innovations in managerial accounting, such as Environmental Management Accounting (EMA), enhance cost allocation accuracy and environmental cost tracking, leading to significant cost reductions and improved sustainability performance, ultimately supporting CP and long-term success.

In summary, adopting EAP not only aids in compliance with regulatory pressures but also fosters improved corporate value and FP. By adopting EAP, the company attempts to develop its decision-making process ([Kitzman, 2001](#)), legitimize its actions toward its environment ([Cho & Patten, 2007](#)) or even to improve its performance ([Clarkson et al., 2008](#); [Berthelot et al., 2007](#)).

Based on what has been advanced, we find that EAP positively and significantly influences CGP; therefore, the first hypothesis is described as follows:

- H1: EAP has a positive impact on CGP.
- H1.1: EAP has a positive impact on FP.
- H1.2: EAP have a positive effect on EP.
- H1.3: EAP has a positive effect on CP.

#### *Mediation effect of Environmental Disclosure*

Based on the literature review, environmental disclosure has never been used as an intermediary variable. Numerous researchers who have examined this concept have focused on highlighting its determinants or demonstrating its contribution to improving performance. However, based on the approach of [Baron & Kenny \(1986\)](#) approach, we can assert that analyzing the mediating effects of environmental disclosure becomes feasible. Let us briefly recall that a basic mediating effect represents a hypothetical causal sequence in which an independent variable influences an intermediary variable, which in turn influences a dependent variable ([El Akremi & Roussel, 2003](#)). This process variable allows the effect of the main independent variable on the dependent variable to be transmitted, either fully or partially ([El Akremi & Roussel, 2003](#)). Following the previously indicated methodology, three hypotheses (H2 to H4) need to be investigated to examine the mediating influence in our research model.

The first hypothesis concerns the effect of EAP on environmental disclosure (H2). The second hypothesis relates to the effect of environmental disclosure on CGP (H3). Finally, H4 addresses the

mediating effect of environmental disclosure (H4).

#### *EAP-Environmental Disclosure Relationship*

The body of research on environmental accounting has demonstrated that EAP has a major impact on environmental disclosure by providing a structured methodology for measuring and disclosing environmental effects. This aligns business operations with environmental goals and improves accountability and transparency in corporate processes. Efficient environmental accounting systems are becoming essential as stakeholders increasingly pressure companies to adopt eco-friendly practices. Several studies have indicated that integrating environmental accounting into corporate reporting frameworks enhances the quality and scope of environmental disclosures. These disclosures are increasingly demanded by stakeholders, including investors, regulators, and the public (Stănescu et al., 2021). For instance, Chen et al. (2024) found that high-quality environmental disclosures correlate with lower financing costs because investors favor companies that demonstrate environmental accountability. Abubaker (2024) highlighted that environmental accounting improves environmental disclosure by quantifying corporate environmental impacts, integrating eco-ethics into financial systems, and promoting transparency in risk disclosures. This practice fosters corporate accountability and helps to align pollution-related costs with financial decision-making processes, ultimately mitigating environmental risks (Abubaker, 2024). Moreover, environmental accounting enables organizations to identify and quantify pollution-related costs, which can then be disclosed to stakeholders to enhance transparency (Abubaker, 2024). Studies suggest that implementing EAP allows companies to systematically track environmental costs and benefits, leading to more comprehensive and accurate disclosures in annual reports (Soraya, 2024; Rahayu et al., 2022). This approach not only ensures compliance with regulatory requirements and enhances corporate reputation and stakeholder trust by demonstrating a commitment to sustainability (Lutfillah, 2022). Companies that adopt robust environmental accounting practices are better positioned to meet regulatory standards, which improves disclosure quality (Abubaker, 2024). Additionally, organizations adopting EAP often face increased pressure from consumers and government entities to disclose their environmental performance, leading to a more proactive stance on environmental reporting (Soraya, 2024; Srinammuang & Petcharat, 2018). The research also shows that companies engaged in robust environmental disclosure practices tend to experience improved FP. Such transparency attracts socially responsible investors and fosters brand loyalty among consumers (Lutfillah, 2022; Putri et al., 2019). This correlation underscores that environmental accounting serves not only as a compliance and reporting tool but also as a strategic asset that can drive business value (Masih, 2023; Ayinla, 2024). According to Chen et al. (2024), environmental accounting enhances the quality of environmental disclosures by providing accurate and comprehensive data on a company's environmental impact. This transparency increases investor trust and lowers financing costs because companies that exhibit accountability are more likely to make long-term investment (Lafontaine, 2002). According to Stănescu et al. (2021), companies are more motivated to publish accurate and comprehensive environmental information as they become more aware of the financial consequences of their environmental policies.

Additionally, the evolution of environmental accounting has led to the development of frameworks and standards that guide organizations' reporting practices (Abgineh, 2023). These frameworks place a strong emphasis on developing a sustainable culture within businesses and incorporating environmental factors into management accounting systems (Stănescu et al., 2021; Stănescu et al., 2020). Lastly, Chinanu et al. (2024) highlighted that environmental accounting information disclosure has a substantial influence on shareholder investment decisions, suggesting a close relationship between accounting practices and environmental information transparency.



These arguments suggest that EAP positively affects environmental disclosure, which leads to the formulation of the second hypothesis:

**H2:** Environmental Accounting Practices (EAP) have a positive impact on environmental disclosure.

#### *Environmental Disclosure-CGP relationship*

Environmental disclosure refers to the dissemination of environmental information by companies to a broad range of stakeholders, either in conjunction with or independently of financial reporting (Rhouma & Cormier, 2007). According to Cormier et al. (1995), such disclosure includes details about the past, current, and future financial implications of environmental management decisions and actions. Wilmshurst and Frost (2000) defined environmental disclosure as the communication of any information regarding an organization's ecological impact on the natural environment in which it operates. Empirical studies examining the correlation between environmental disclosure and global performance yield mixed results. While some investigations reveal a positive correlation, indicating that environmental disclosure enhances corporate performance (Wang et al., 2020; Gray et al., 1995; Nguyen et al., 2023; Lambe et al., 2023; Cormier & Magnan, 1997; Stanwick & Stanwick, 1998; Migliavacca 2024), others suggest a negative relationship (Aragon-Correa et al., 2016; Adediran & Alade, 2013; Ezeagba et al., 2017).

Environmental disclosure plays a critical role in corporate performance, with numerous studies highlighting its significant positive effects on various aspects, such as stakeholder trust (Darendeli et al., 2022), corporate reputation, and operational efficiency (Hennig, 2023; Gray et al., 1995). The complexity of this relationship is influenced by factors such as the level of disclosure and the specific industry context. For example, Nur (2023) demonstrated that environmental disclosure positively impacts the FP of Sharia-compliant mining companies in Indonesia. This aligns with the findings of Pramudiati et al. (2022), which showed that effective environmental management enhances both environmental and economic performance. Similarly, Abgineh (2023) argued that enhanced environmental information disclosure improves a company's image and stakeholder perceptions, ultimately leading to better financial outcomes. Saeed (2024) found that environmental sustainability disclosure significantly improves financial performance indicators, such as return on equity (ROE) and net profit margin. Moreover, disclosures about health, safety, and community development initiatives were shown to enhance the ROE of listed manufacturing firms in Ghana (Saeed, 2024). Erinoso and Oyedokun (2022) examined the impact of environmental disclosure and audits on FP in Nigeria. Their findings revealed that environmental disclosure significantly influences key financial metrics, including Return on Assets (ROA), Return on Equity (ROE), and Profit After Tax (PAT). Fan Jing et al. (2024) further emphasized that voluntary environmental information disclosure (VEID) strengthens financial performance by fostering transparency and trust among stakeholders, boosting firms' reputations, and aligning environmental strategies with institutional pressures. Wang (2023) noted that effective environmental disclosure reduces information asymmetry between firms and investors, thereby enhancing FP. This conclusion is corroborated by Zhou (2024), who highlighted a positive relationship between environmental disclosure and FP, particularly in the energy sector. Lastiningsih et al. (2020) also confirmed that environmental performance and disclosure significantly impact financial outcomes, reinforcing the value of transparency in environmental practices. Fan Jing et al. (2024) also found that environmental disclosure enhances FP by increasing economic value through positive media attention, institutional investor shareholding, and corporate R&D investment. Notably, non-monetized disclosures yielded greater benefits than monetized disclosures, with peer effects observed within the same industry and region (Fan Jing et al., 2024). Sunday and Chimezie (2024) indicated that environmental information disclosure

enhances FP by improving corporate reputation and image, which is especially critical for publicly traded companies in heavily polluting industries. This disclosure directly influences financial sustainability by demonstrating effective environmental risk management for stakeholders (Sunday & Chimezie, 2024).

Finally, Safitri et al. (2024) highlighted that environmental disclosure positively affects FP by boosting stakeholder confidence and enhancing corporate reputation. Their study found that transparent sustainability reporting aligns corporate practices with societal expectations, ultimately leading to improved financial outcomes in the target sectors. These findings collectively emphasize the significant benefits of environmental disclosure, highlighting its strategic value in enhancing FP and promoting long-term corporate sustainability. However, the nuanced impacts of environmental disclosure suggest that its effectiveness varies depending on industry-specific and regulatory contexts. For example, Xu and Liu (2024) examined the "Carbon Trading Pilot" in China and found that certain environmental disclosures could negatively impact FP, underscoring the importance of context and the nature of the disclosures. Additionally, they noted that the effectiveness of environmental disclosure depends on the level of detail provided, with specific thresholds necessary to enhance positive financial outcomes. Contrary to the generally positive trend, several studies have reported different outcomes. Aragon-Correa et al. (2016), Adediran & Alade (2013) and Ezeagba et al. (2017) identified a negative relationship between environmental disclosure and FP. Meanwhile, other research, such as that by Galani et al. (2012) and Sarumpaet (2005), suggested that environmental disclosure has no significant relationship with FP. These mixed results suggest that although environmental disclosure often benefits firms, its impacts are not universally positive and may depend on factors like industry characteristics, regulatory frameworks, and the specific nature of the disclosed information. This highlights the necessity of customized strategies for environmental disclosure to optimize its advantages. In conclusion, research has shown that by reporting its environmental commitments, a company seeks to enhance its corporate image (Prabowo, 2021; Yusiana et al., 2021), develop a competitive advantage, and improve its environmental management as well as its performance in environmental protection and restoration (Rhouma & Cormier, 2007; Gauthier & Reynaud, 2005; Berthelot et al., 2003). Based on the preceding discussion, we propose the following third hypothesis:

**H3:** Environmental disclosure is positively related to companies' global performance.

H3.1: Environmental disclosure is positively related to financial performance.

H3.2: Environmental disclosure is positively related to environmental performance.

H3.3: Environmental disclosure is positively related to commercial performance.

#### *Hypothesis Related to the Mediation Effect*

At this stage, we propose the following hypotheses concerning the mediation effect, as suggested by this research:

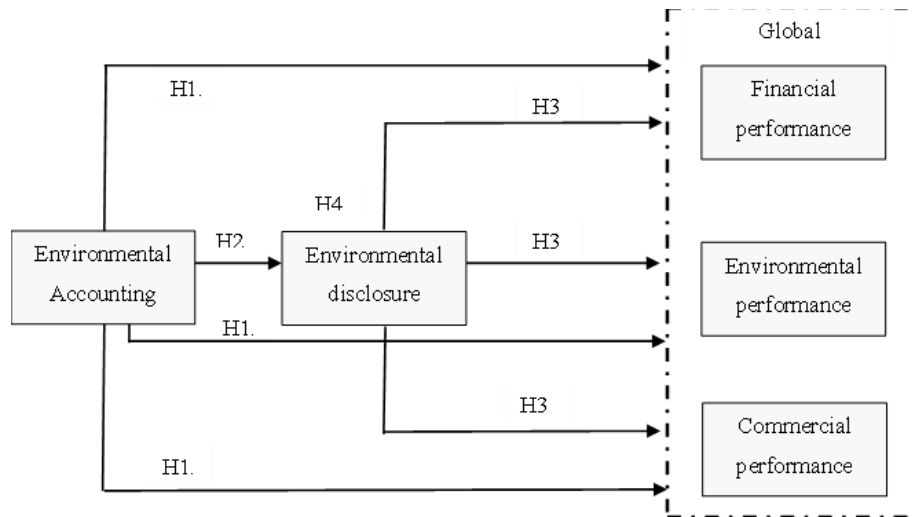
**H4:** Environmental disclosure mediates the relationship between EAP and CGP.

H4.1: Environmental disclosure mediates the relationship between EAP and FP.

H4.2: Environmental disclosure mediates the relationship between EAP and EP.

H4.3: Environmental disclosure mediates the relationship between EAP and CP.

At this point, we propose our conceptual model, which highlights two types of effects: the direct effect of EAP on CGP and the mediation effect of environmental disclosure, which influences how EAP impacts financial, environmental, and commercial performance.



**Figure 1.** Conceptual Model

Source: created by the authors

**RESEARCH METHOD**

**Sample**

The study was conducted using a questionnaire administered to a sample of 118 industrial companies. To successfully conduct our research, we administered a survey targeting companies that align with the dimensions of our conceptual model. Specifically, we focused on firms holding ISO 14001 certification, as this certification reflects a recognized commitment to environmental management systems. By narrowing our scope to ISO 14001-certified companies, we ensured the inclusion of organizations that systematically addressed environmental concerns. This approach provided a relevant and reliable sample for analyzing the factors and impacts related to environmental accounting practices.

**Table 1.** Distribution of the Sample by ISO14001 certification

<b>Certification Status</b>	<b>Number of Companies</b>	<b>Percentage</b>
Certified	79	66,9 %
In the Certification Process	19	16,1 %
Not Certified	20	16,9 %
<b>Total</b>	<b>118</b>	<b>100 %</b>

Source: created by the authors

Furthermore, as the extent of implementation of environmental accounting practices and disclosure varies depending on the size of the company (Berthelot et al., 2003; Rhouma & Cormier, 2007), we chose to test our model on large Tunisian companies or subsidiaries of multinational corporations operating in Tunisia.

**Table 2.** Distribution of the sample by Company Size

<b>Number of Employees</b>	<b>Number of Companies</b>	<b>Percentage</b>
Less than 10	0	0 %
10 à 49	23	19,49 %
50 à 249	47	39,83 %
+ de 250 (hours)	48	40,68 %
<b>Total</b>	<b>118</b>	<b>100%</b>

Source: created by the authors



In addition, drawing on previous studies in the field of environmental accounting, we found that the level of commitment to environmental accounting and disclosure practices may be influenced by the industry sector. Therefore, in this study, we ensured the inclusion of sectors known for their higher environmental impacts (such as the chemical industry, building materials, and leather industry), prioritizing companies from these sectors.

**Table 3.** Distribution of Sample by Industry

<b>Industry Sector</b>	<b>Number of Companies</b>	<b>Percentage</b>
Chemical Industries	46	38.98%
Electrical, Electronic, and Home Appliance Industries	23	19.49%
Mechanical and Metallurgical Industries	17	14.40%
Agro-food Industries	11	9.32%
Construction Materials, Ceramics, and Glass Industries	6	5.09%
Textile and Apparel Industries	5	4.24%
Leather and Footwear Industries	3	2.55%
Miscellaneous Industries	7	5.93%
<b>Total</b>	<b>118</b>	<b>100%</b>

Source: created by the authors

However, due to technical constraints, primarily related to access to information, it was impossible for us to use probabilistic sampling methods. Consequently, we relied on a convenience sample and set a minimum target size of companies to survey ( $\geq 100$ ) in advance. This sample does not allow generalization of the results.

### Data Collection and Operability of the Variables

The primary data collection tool for our empirical study was a questionnaire, administered through face-to-face and telephone interviews. Thus, we present all variables selected for statistical analysis and outline their corresponding measurements:

1. **EAP:** To measure EAP, we utilized the scale developed by the USPEA (1995a) and [Dunk \(2002\)](#), which comprises 10 items (appendix 1).
2. **FP:** FP was assessed using four key indicators (Appendix 2). These indicators provide a comprehensive view of a company's financial performance.
3. **EP:** For EP, we adopted the scale developed and validated by [Knudsen and Madsen \(2001\)](#). This scale consists of three items designed to evaluate a company's environmental achievements (Appendix 3).
4. **CP:** We retained four specific items that reflect market-related outcomes and competitiveness (Appendix 4).
5. **Environmental Disclosure:** environmental disclosure was measured using the [Cormier & Magnan \(1997\)](#) index. This index includes 39 items that are organized into six categories to capture the breadth of a company's environmental reporting practices (Appendix 5).

These measurement tools ensure the reliability and validity of our analysis and provide a robust framework for evaluating the relationships in our conceptual model. To examine the various relationships proposed by our conceptual model, we employed the Partial Least Squares (PLS) approach. This method was selected for two primary reasons:

1. **Suitability for Imperfect and Correlated Data:** The PLS method is particularly effective when dealing with imperfect and often correlated data, making it a practical choice for our study.
2. **Adaptability to Small Sample Sizes:** Given the relatively small sample size ( $n = 118$ ), the PLS

approach provides a robust solution for generating reliable results despite sample size limitations.

To analyze the mediation effect proposed model, we relied on the framework developed by [Baron and Kenny \(1986\)](#). According to their definition, a mediating variable acts as a generative mechanism through which an independent variable influences a dependent variable. Specifically, a variable is considered a mediator if it explains the relationship between an independent variable and a dependent variable. As further elaborated by [El Akremi and Rousset \(2003\)](#), the Baron–Kenny model is widely endorsed by experts in structural equation modeling due to its simplicity, clarity, and flexibility. Moreover, the model is sufficiently robust to accommodate other analytical approaches, such as the differences approach and the products of the coefficient’s method. This framework provides a reliable mechanism for examining how environmental disclosure mediates the relationship between EAP and various performance dimensions.

**FINDINGS AND DISCUSSION**

According to [Fornell and Larcker \(1981\)](#), PLS modeling results are assessed in two steps: evaluation of the measurement model and evaluation of the structural model. To achieve this, we first review the results from the measurement model and then present and discuss the findings of the structural model. This latter model emphasizes two different kinds of links between latent variables (direct and mediating), which is why we will first present the findings of the tests for direct relationships between the EAP and CGP. Next, the results of the tests for the mediating role of environmental disclosure will be exposed. Finally, in the third stage, we will discuss the results of this study. For clarity, we present the different criteria for evaluating the results of the PLS approach in the table below.

**Table 4.** Evaluation Criteria for the PLS Approach

<b>External model (measurement model)</b>	<b>Internal model (structural model)</b>	<b>Global model</b>
-The community	-Redundancy - R2	- GoF

Source: created by the authors

**Results of the Measurement Model**

The presentation of the measurement model results concerns the analysis of the psychometric quality of the measurement instruments. The objective is to verify the relationship between each latent variable and its indicators to assess their ability to measure the latent construct ([Lacroux, 2009](#)). To achieve this, we begin by purifying the measurement scales. Then, we analyze the reliability and validity of each construct.

We initially purified the measuring scales used in this research to examine their unidimensionality and internal consistency. The techniques used for this are principal component analysis (PCA) and Cronbach’s alpha coefficient. These results show that the Cronbach’s alpha coefficient is excellent for all measurements, indicating the scales’ strong reliability. Moreover, the EAP measurement scale was lowered to 9 items in response to the first PCA results. All objects were retained for the other measurement scales.

**Table 5.** Reliability Analysis of Measurement Scales

Reliability of the block (composite reliability):			
Latent Variable	Dimensions	Cronbach's Alpha	D.G.'s Rho (PCA)
EAP	9	0.970	0.977
Environmental disclosure	1		
FP	4	0.984	0.988
EP	3	0.971	0.981
CP	4	0.979	0.985

Source: created by the authors

**Table 6.** Discriminant Validity Analysis of Measurement Scales

Discriminant Validity (Squared Correlations < AVE) (Dimension 1)						
	EAP	E.DISC	FP	EP	CP	(AVE)
EAP	1	0.901	0.767	0.856	0.788	0.817
E.DISC	0.901	1	0.803	0.817	0.813	
FP	0.767	0.803	1	0.873	0.929	0.955
EP	0.856	0.817	0.873	1	0.880	0.949
CP	0.788	0.813	0.929	0.880	1	0.941
(AVE)	0.817		0.955	0.949	0.941	0

Source: created by the authors

**Table 7.** Global Model Quality Assessment

Goodness of Fit (GoF) (1):		
	GoF	GoF (Bootstrap)
Absolute	0.869	0.867
Relative	0.991	0.980
External model	1.000	0.997
Internal model	0.991	0.982

Source: created by the authors

**Results of the Causal Model**

*Direct Links Between EAP and CGP*

The direct effects of EAP on the three dimensions of global performance are summarized in Table 8.

**Table 8.** EAP effect on the three dimensions of performance

Retained Hypothesis	Regression Coefficient	T of Student	Bootstrap Value
H1.1: EAP → FP	0,876	19,57	0.875
H1.2: EAP → EP	0,925	26,258	0,923
H1.3: EAP → CP	0,887	20,742	0,885

Source: created by the authors

According to these results, EAP has a positive and significant impact on all three dimensions of global performance. The high regression coefficients, strong T-statistics, and consistent bootstrap values indicate the robustness of the model. In addition, the quality of the model is

confirmed to be excellent. These findings support and validate the first hypothesis (H1) of the study.

**Testing the Mediation Effect of Environmental Disclosure**

The mediation effect of Environmental Disclosure (Env. Dis) was evaluated using the [Baron & Kenny \(1986\)](#) methodology. Hypotheses H2, H3, and H4 were tested sequentially.

*Effect of Environmental Disclosure on Performance Dimensions*

Table 9 presents the direct impact of environmental disclosure on the three performance dimensions (H3):

**Table 9.** Effect of environmental disclosure on the three performance dimensions

Retained hypothesis	Regression Coefficient	T of Student
H3.1: environmental disclosure → FP	0,896	21,761
H3.2: environmental disclosure → EP	0,904	22,735
H3.3: environmental disclosure → CP	0,902	22,473

Source: created by the authors

The analysis of this table demonstrates that environmental disclosure has a significant effect on all three dimensions of global performance. This significance is evidenced by the high regression coefficients and robust T-statistics, confirming the pivotal role of environmental disclosure in enhancing organizational performance across these dimensions.

1. Mediation of Environmental Disclosure on EAP → FP

The results of this mediation analysis are presented in Table 10.

**Table 10.** Mediation effect of Env. Dis on the EAP - Fin. Perf relation

Regressions	Regression coefficients (+ test value T)	Hypothesis
Effect of X on Y EAP → FP	c = 0.876; t = 19.57	H1 validated
Effect of X on M EAP → Env. Dis	a = 0.949; t = 32.487	H2 validated
Effect of M on Y (multiple regression) EAP + Env. Dis → FP	b = 0.653; t = 5.056 c' = 0.256; t = 1.984	H4.1 validated
The mediation effect	c > c': The mediation effect is established it is low but not null: the mediation is partial	H4.1 validated

Source: created by the authors

The analysis of this table confirms the existence of a mediation effect of environmental disclosure on the relationship between EAP and FP. Specifically, the introduction of environmental disclosure reduces the direct effect of EAP on financial performance, making the link no longer significant (c' = 0.256), compared to its initially significant value (c = 0.76) in the first stage of analysis. This indicates partial mediation because the inclusion of environmental disclosure as a mediating variable does not eliminate the influence of EAP on FP (c' > 0). The partial mediation shows that although environmental disclosure plays a substantial role in bridging the relationship, EAP retains some independent impact on financial performance.

2. Mediation of Environmental Disclosure on EAP → EP

The results are summarized in Table 11.

**Table 11.** Mediation effect of Env. Dis on the EAP- Env. Perf relation

Regressions	Regression coefficients (+ value of the test T)	Hypothesis
Effect of X on Y EAP → EP	c = 0.925; t = 26.57	H1 validated
Effect of X on M EAP → Env.Dis	a = 0.949; t = 32.487	H2 validated
Effect of M on Y (multiple regression) EAP + EP → EP	b = 0.257; t = 2.346 c' = 0.681; t = 2.346	H4.2 non-validated
Mediation effect b is not significant c' remains significant	} Mediation is not established	H4.2 non-validated

Source: created by the authors

Thus, environmental disclosure does not mediate the relationship between EAP and EP. The direct effect of EAP on EP remains significant even after introducing environmental disclosure as a mediating variable, as indicated by the consistent significance of c'. Furthermore, the indirect effect through environmental disclosure (b) is not significant, confirming the absence of a mediation effect in this context.

3. Mediation of Environmental Disclosure on EAP → CP

The results are presented in Table 12.

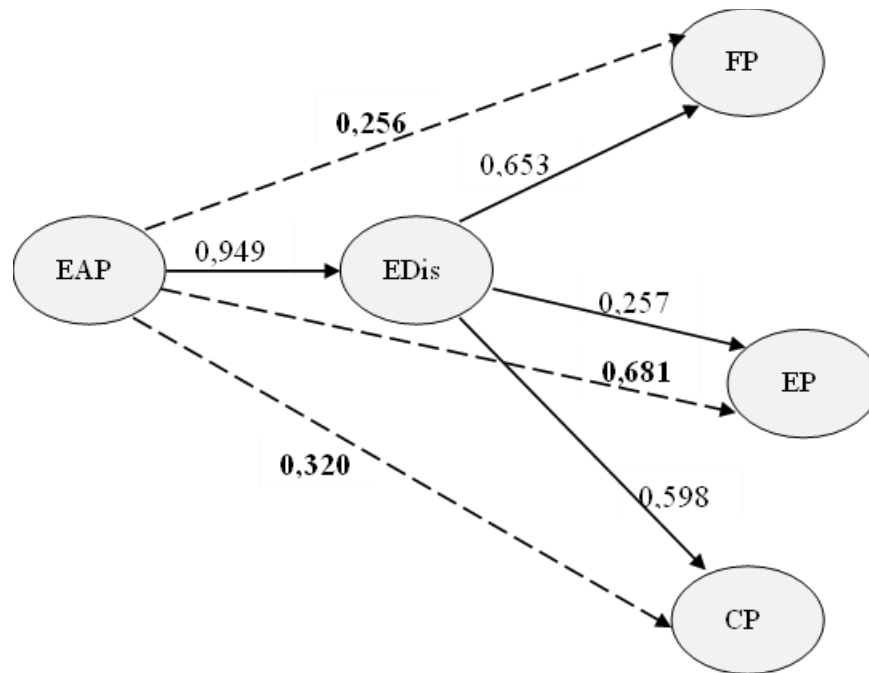
**Table 12.** Mediation effect of Env. Dis on EAP- Com. Perf relation

Regressions	Regression coefficients (+ value of the test T)	Hypothesis
Effect of X on Y EAP → CP	c = 0.887; t = 20.742	H1 validated
Effect of X on M EAP → Env.Dis	a = 0.949; t = 32.487	H2 validated
Effect of M on Y (multiple regression) EAP + Env.Dis → CP	b = 0.598; t = 4.806 c' = 0.320; t = 2.57	H4.3 validated
The mediation effect	c > c': The mediation effect is established It's low but not null: the mediation is partial	H4.3 validated

Source: created by the authors

The analysis of this table demonstrates that environmental disclosure partially mediates the relationship between EAP and CP. The direct effect of EAP on CP (c') remains significant after introducing environmental disclosure as a mediator; however, the regression coefficient decreases compared with the initial direct effect (c). This reduction confirms the presence of a partial mediation effect. Although environmental disclosure does not fully account for the influence of EAP on CP, it plays a meaningful intermediary role, indicating that organizations' transparency in environmental matters contributes to enhanced commercial outcomes.





**Figure 2.** Results of the Structural Model for the Mediating Effect

Source: created by the authors

**Discussion**

The initial hypotheses of this research focused on examining the direct links between EAP and the CGP. Because this study considers three dimensions of performance, (financial, environmental, and commercial), the aim is to analyze the effect of EAP on each dimension. The formulation of these hypotheses is grounded in a multi-theoretical framework. On the one hand, the political-contractual approach frames the implementation of EAP within a value-creation logic. However, the neo-institutional legitimacy approach interprets the adoption of these practices as a means of legitimizing corporate behavior. This research demonstrates, first and foremost, that these two theoretical approaches provide robust foundations for empirical studies on environmental accounting. The results reveal a significant positive relationship between EAP and all three dimensions of global performance.

Moreover, the findings indicate that the environmental dimension is the most strongly influenced by Environmental Accounting Practices (EAP) ( $R^2=0.856$ ), followed by the commercial dimension ( $R^2=0.788$ ) and the financial dimension ( $R^2=0.768$ ). These results support previous research highlighting that the primary goal of EAP is to assess and improve the Environmental Performance (EP) of organizations. Scholars such as Lafontaine (2002), Gray (1992), and Christophe (1992) have emphasized the importance of EAP in achieving this objective. According to Mikol (2005), the main aim of EAP is to clearly identify the economic flows related to environmental activities (primarily environmental protection), determine the relationship between expenses and results, and optimize investments for maximum effectiveness. This perspective closely aligns with the results of this study and underlines the role of EAP in enhancing environmental management practices. Additionally, Lafontaine (2002) argued that systematically assessing the actual costs associated with environmental protection in a documented and objective manner can serve as a powerful incentive for organizations to improve their environmental performance. These findings reinforce the strategic importance of EAP, not only in driving environmental outcomes but also in generating commercial and financial benefits for organizations.

This study also confirms the significant and strong impact of EAP on environmental

disclosure ( $c=0.949$ ). This result is noteworthy, as previous literature has mainly focused on theoretical and descriptive frameworks to explore the link between EAP and environmental disclosure, aiming to identify tools for producing environmental information. Several authors have described various EAP techniques that companies can use to collect, process, and report environmental data (Christophe, 1992; Mikol, 2005; Lafontaine, 2002; Desmazes & Lafontaine, 2007). However, to the best of our knowledge, no previous empirical studies have directly examined the relationship between EAP and environmental disclosure. This study provides empirical evidence of the strength and nature of this link, reinforcing the theoretical assertion that EAP is designed to facilitate the collection, processing, and reporting of environmental data (Lafontaine, 2002; Mikol, 2005; Christophe, 1992). Furthermore, Desmazes and Lafontaine (2007) have argued that EAP enhances the credibility of corporate environmental reporting, particularly by improving the level and quality of the information disclosed.

The third hypothesis (H3) confirms significant positive relationships between environmental disclosure and global performance across all dimensions. Environmental disclosure has the strongest impact on environmental performance (EP,  $c=0.904$ ), followed closely by commercial (CP,  $c=0.902$ ) and financial performance (FP,  $c=0.896$ ). These findings align with the study's theoretical framework and prior research, which suggests that environmental disclosure enhances profitability, reduces agency costs, and legitimizes corporate behavior. Scholars such as Berthelot et al. (2003) highlighted the role of CSR in value creation and CSR. In addition, environmental disclosure improves competitive advantage and environmental management practices, underscoring its strategic importance for organizations.

The final hypothesis (H4) highlights the mediating role of environmental disclosure in the relationship between Environmental Accounting Practices (EAP) and global performance. EAP directly impacts environmental performance ( $c=0.681$ ), whereas environmental disclosure partially mediates its effects on financial and commercial performance. Two logics explain EAP's impact: internal logic, focusing on optimizing costs and sustainability (Lafontaine, 2002) and external logic, emphasizing transparency and stakeholder relations, enhancing corporate image and reducing agency costs (Rhouma & Cormier, 2007). These findings demonstrate EAP's dual role in driving internal environmental outcomes and enhancing external value creation, particularly in the financial and commercial domains.

## CONCLUSIONS

The main objective of this study was to explore the relationship between EAP and CGP, with a particular focus on the mechanisms that explain this link. Our findings revealed that EAP has a positive impact on CGP, which is partially mediated by environmental disclosure. The observed mediation effect highlights that environmental disclosure serves as a channel through which EAP influences financial and commercial performance. Therefore, EAP indirectly affects these two performance dimensions by producing reliable and transparent environmental information. EAP positively enhances environmental disclosure, which in turn exerts a positive influence on financial and commercial performance.

However, the lack of a mediating effect between EAP and EP underscores the inability of environmental disclosure to transmit the significant direct impact of EAP on EP. This finding supports the theoretical view that environmental disclosure operates within the context of societal expectations (Gauthier & Reynaud, 2005). Accordingly, our study aligns with previous research suggesting that environmental disclosure develops in response to increasing user demands for environmental information (Antheaume, 2005).

Theoretically, this research makes a significant contribution to the discourse on environmental accounting and disclosure practices. This study is the first to examine the

relationship between EAP and CGP in the Tunisian context, thereby enhancing the clarity and understanding of the concept. Second, the study adopts a multi-theoretical framework, combining the political-contractual and neo-institutional legitimacy approaches. This dual perspective overcomes the limitations of single-theory frameworks and provides a more holistic understanding of environmental accounting and disclosure practices. Finally, this research integrates the commercial dimension into the analysis of CGP, alongside financial and environmental dimensions. Unlike most existing studies that overlook this aspect, this study emphasizes the role of client expectations in driving environmental accounting and disclosure practices. By adopting these practices, companies seek not only financial gains but also the protection of their image and reputation, ultimately ensuring client retention.

Empirically, the primary contribution of this research is the development of an original model that emphasizes the mediating role of environmental disclosure in the relationship between EAP and CGP. This model fills a gap in the literature by proposing a link between these practices and performance but offering few empirically tested frameworks. The second empirical contribution is the validation of this model. The findings confirm that the political-contractual and institutional approaches provide strong foundations for studying environmental accounting and disclosure practices. The empirical results align with the proposed multi-theoretical framework, thus confirming its validity and practical relevance.

On a managerial level, this study offers practical insights for managers seeking to enhance their performances. This provides evidence that implementing EAP can effectively improve corporate global performance. The findings challenge the economic argument often used to delay or question environmental protection efforts by demonstrating the tangible benefits of adopting innovative practices, such as environmental accounting. These practices rely on new tools and expand the performance framework to encompass stakeholder interests rather than solely focusing on short-term profit maximization (Lepage, 2007). Another significant managerial insight is the importance of environmental disclosure. The study highlights that to leverage environmental issues as a means of improving performance, managers must address stakeholders' environmental information needs. Ensuring the quality and transparency of environmental information disclosed to stakeholders can indirectly enhance financial and commercial performance.

Finally, this research is particularly relevant to companies that have yet to adopt EAP. The findings are particularly significant for Tunisian SMEs, the majority of which have not engaged in such practices. For these SMEs, this research can serve as a compelling incentive to implement environmental accounting practices and integrate environmental considerations into their strategic objectives.

#### **LIMITATION & FURTHER RESEARCH**

Despite these contributions, the study has several limitations. First, focusing on ISO 14001-certified companies reduces the population size from which relevant data could be gathered. Due to technical constraints, a convenience sample of at least 100 companies was used, limiting the generalizability of the results.

Additionally, the sample was limited to large Tunisian companies and multinational corporations, making it inappropriate to extend the findings to small- and medium-sized enterprises (SMEs). Finally, the heterogeneity of sectors and the relatively small sample size (n=118) further limit generalizability, although this limitation is common in management research because of the challenges of conducting large-scale studies.

Building on the limitations identified, several avenues for future research are suggested. The majority of recent research focuses on large corporations, but SMEs may face particular challenges when adopting EAP. Investigating how environmental accounting and disclosure affect corporate

performance and how such practices can be incorporated into non-industrial or budget-constrained contexts could therefore be significant. Furthermore, exploring the relationship between environmental disclosure practices and product or technology innovations that promote environmental sustainability in emerging markets may shed light on how environmental disclosure can serve as a strategic tool to spur business innovation and gain a competitive advantage through the implementation of innovative environmental practices. Another crucial area of study is how environmental accounting and disclosure affect investor behavior, particularly in emerging markets. This could provide insights into how these practices contribute to attracting sustainable investments and fostering trust between businesses and investors. Finally, research that analyses the relationship between environmental disclosure and the establishment of a strong company reputation in competitive markets, as well as the relationship between this relationship and boosting market share and customer loyalty, is still needed.

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## **APPENDICES**

### **Appendix 1: EAP Measurement Scale**

1. Planning and production controls focused on reducing or eliminating harmful waste.
2. Systems for identifying and tracking environmental costs
3. Environmental considerations in policies and investment decisions
4. Environmental factors are integrated into the design or improvement phases of a product.
5. Addressing the environmental concerns of customers and other stakeholders (using product life cycle analysis, sharing environmental information, etc.)
6. A system to ensure compliance with environmental regulations.
7. A system that anticipates and stays ahead of environmental regulations
8. A system to support sustainable profit growth
9. Using tools and techniques to identify materials and products with negative environmental impacts
10. Using tools and techniques to reduce or eliminate materials and products with negative environmental impacts

### **Appendix 2: Financial Performance Measurement Scale**

1. ROA: Return On Assets
2. ROE: Return On Equity
3. ROS: Return On Sales
4. ROI: Return On Investment

### **Appendix 3: Environmental Performance Measurement Scale**

1. Our company employs processes and technologies that mitigate the harmful impact of its activities on the internal environment (staff, subcontractors, etc.).
2. Our company employs processes and technologies that mitigate the harmful impact of its activities on the external environment (the community at large).
3. Our company invests in processes and technologies in which the reduction of harmful environmental effects is well-documented.

### **Appendix 4: Commercial Performance Measurement Scale**

1. Sales Market Share
2. Customer satisfaction level and product return rate

### **Appendix 5: Environmental Disclosure Measurement Scale Expenses and Risks**

1. Investments
2. Operating costs
3. Projected investments
4. Projected operating costs
5. Financing: Investments
6. Environmental liabilities
7. Provisions: Risks
8. Provisions: legal disputes
9. Provisions: future expenses

### **Laws and Regulations**

1. Legal disputes, current and potential
2. Fines
3. Orders to comply
4. Corrective actions
5. Incidents
6. Future legislation/regulations

### **Pollution Standards**

1. Pollutant emissions
2. Spills
3. Waste management
4. Controls: facilities and processes
5. Compliance with relevant standards
6. Noise and odors

### **Sustainable Development**

1. Conservation of natural resources
2. Recycling
3. Conservation of wildlife and flora
4. Site restoration:
5. Sites
6. Rehabilitation efforts
7. Potential liabilities related to restoration
8. Liabilities (current/potential)
9. Spills (number, nature, mitigation efforts)

### **Environmental Management**

1. Environmental policies or awareness of environmental protection
2. Environmental management system
3. Environmental audits
4. Goals and targets
5. Environmental compliance awards
6. Department, group, or service dedicated to the environment
7. ISO 14000 certification
8. Participation of companies in environmental standards development
9. Participation in environmental organizations (sector committees, etc.)
10. Joint projects with other companies