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[Ioannis Passas](#)<sup>\*</sup>, Erasmia Angelaki, [Despoina Kounali](#), [Stavros Garefalakis](#), [Rahat Munir](#)

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Article

# Chartered Accountants and the ESG Landscapes

Ioannis Passas <sup>1,\*</sup>, Erasmia Angelaki <sup>1</sup>, Kounali Despoina <sup>1</sup>, Stavros Garefalakis <sup>2</sup>  
and Rahat Munir <sup>3</sup>

<sup>1</sup> Department of Business Administration and Tourism, Hellenic Mediterranean University, 714 10 Iraklio, Greece

<sup>2</sup> Department of Management Science and Technology, University of Western Macedonia, GR50100 Kozani, Greece

<sup>3</sup> Department of Accounting and Corporate Governance, Macquarie University, Sydney, NSW, Australia

\* Correspondence: ipassas@hmu.gr

## Abstract

This study investigates the role of Greek chartered accountants in implementing ESG criteria, crucial as businesses prioritize sustainability. Chartered accountants, responsible for accurate ESG reporting, face challenges due to inconsistent reporting standards, complicating cross-company comparisons. This research seeks to understand accountants' knowledge of ESG implementation, perceptions of its effectiveness, and the challenges faced. A quantitative cross-sectional survey was conducted with 100 chartered accountants, utilizing a structured questionnaire with SPSS software for data analysis. Independent t-tests and one-way ANOVA examined the influence of factors like experience and training on ESG related views. The results show moderate ESG adoption, with higher implementation in data security and lower indirect emissions. Accountants with ESG training are more supportive of comprehensive ESG practices, recognizing benefits such as enhanced client trust, competitive advantage, and risk mitigation. Findings underscore the need for standardized ESG frameworks and ongoing training to support effective ESG integration in Greek corporate governance.

**Keywords:** chartered accountants; ESG; accounting; auditing

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## 1. Introduction

The global business environment is increasingly recognizing the importance of integrating Environmental, Social, and Governance (ESG) factors into corporate decision-making and reporting processes [1]. Chartered accountants, as key figures in corporate governance and financial reporting, play a crucial role in ensuring the accuracy, completeness, and transparency of ESG-related data [2,3]. However, they face numerous challenges in fulfilling this responsibility, highlighting the need for continuous professional development and awareness of emerging trends and best practices in ESG reporting.

One of the main challenges is the absence of a uniform set of ESG reporting standards. While several frameworks, such as the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD), provide guidance, the lack of universally accepted standards creates difficulties in comparing and evaluating ESG reports across companies [1,4,5]. This inconsistency forces auditors to navigate multiple frameworks and determine which are most relevant based on industry-specific and regional considerations [6–8].

Moreover, assessing and verifying ESG data pose additional challenges the reliability and accuracy of ESG information are essential for credible corporate reporting [9–11]. Chartered accountants must be equipped with the skills and tools to identify and rectify inaccurate or

misleading data, while also keeping up with evolving methods for assessing the environmental and social impacts of corporate activities [12].

Ethical concerns also play a significant role in ESG reporting [13–15]. Chartered accountants must remain mindful of the ethical implications of ESG assessments, particularly regarding transparency, employee treatment, and environmental responsibility. Their ability to assess and verify the credibility of ESG disclosures is vital to maintaining the trust of investors and the public [12,16].

Furthermore, the rapidly changing nature of ESG criteria, coupled with involving regulatory requirements, demands that auditors stay agile and responsive to new developments. Continuous training in ESG practices has become increasingly important, as ESG assessment is now a fundamental aspect of corporate transparency and reporting [1].

Given these challenges, chartered accountants are positioned to play a central role in integrating ESG factors into corporate reporting. By adopting best practices and remaining informed about current developments, they can contribute significantly to the successful implementation of ESG strategies and promote more sustainable and responsible business practices [17].

Despite the growing recognition of the importance of embedding ESG into business models and corporate cultures, accountants face multifaceted challenges. The lack of standardized reporting frameworks complicates their tasks, leading to potential ambiguities in assessing ESG factors for individual organizations. Addressing these challenges through thoughtful strategies can enable companies to integrate ESG principles effectively while navigating the complexities of corporate reporting.

In light of the above, this research aims to address the following research questions:

RQ1: What level of knowledge do chartered accountants possess about ESG criteria?

RQ2: To what extent are ESG criteria implemented in practice by chartered accountants?

RQ3: What are the perceptions of chartered accountants regarding the effectiveness of ESG criteria?

RQ4: What do chartered accountants perceive as the main challenges to ESG implementation?

The structure of this paper is as follows: Section 2 defines the concept of ESG and discusses the challenges faced by chartered accountants in its application. Section 3 outlines the methodology employed in this study. Section 4 presents the results, visualized using SPSS software. Section 5 discusses the findings and proposes directions for future research, while Section 6 offers concluding remarks.

## 2. Literature Review

Corporate reputation is widely regarded as one of the most critical intangible assets for businesses, influencing not only customer perceptions but also relationships with suppliers and other stakeholders. A company's reputation is inherently linked to its transparency, social responsibility, and the quality of its products and services. Existing research emphasizes that maintaining a positive reputation requires continuous efforts aimed at building customer trust and satisfaction [18–20].

Strategic risk management plays a crucial role in protecting corporate reputation, as firms must navigate unpredictable threats that could undermine their image. Through systematic risk assessment, companies can adapt to changing conditions and mitigate potential reputational damage [21].

The integration of ESG principles has shown significant benefits for businesses [22,23]. Studies indicate that companies investing in sustainable practices not only enhance their competitiveness and productivity but also gain access to emerging markets and strengthen relationships with investors [24,25]. Sustainability is increasingly seen as a key driver of innovation, prompting firms to develop new products and services that meet the rising demand for environmentally and socially responsible options.

Adopting ESG principle can significantly improve a company's reputation by demonstrating a commitment to ethical practices, social responsibility, and environmental stewardship [26,27]. This

commitment fosters trust among stakeholders, including customers, investors, and employees, thereby strengthening the company's market position. For instance, integrating ESG considerations into human resource management can enhance entrepreneurial effectiveness by aligning organizational practices with broader societal values [28].

Additionally, adopting ESG principles can lead to improved economic efficiency through initiatives such as resource recycling and cost reduction. Companies implementing these strategies can achieve cost savings while building consumer and investor trust, thus creating a strong competitive advantage [29–31].

However, the relationship between environmental practices and economic performance is not always straightforward. While long-term benefits often accrue from environmental investments, short-term impacts can be more complex [32,33]. Nevertheless, addressing global challenges such as climate change and pollution has become essential for sustainable development. Key industries such as energy, manufacturing, and transportation are critical areas for emission reduction, facilitating the shift towards more sustainable business models [34].

Incorporating ESG factors into risk management strategies enables companies to identify and mitigate potential risks related to environmental impact, social responsibility, and governance issues. This proactive approach not only safeguards the company's reputation but also contributes to financial performance by attracting investors who prioritize sustainable practices. A strategic roadmap for ESG in construction risk management illustrates how integrating ESG considerations can lead to long-term value creation and environmental protection [35,36].

The social dimension of sustainable development encompasses issues of social equity, justice, and community engagement. Collaboration among governments, businesses, and communities is essential for promoting social cohesion and addressing inequalities [37,38]. Sustainable business practices not only serve economic objectives but also contribute to improving the quality of life for individuals impacted by corporate activities.

The intersection of ESG principles and digital transformation presents new opportunities for companies to innovate and enhance their sustainability efforts. Digital technologies can facilitate the implementation of ESG strategies by providing tools for better data collection, analysis, and reporting, thereby improving transparency and accountability. A study on the impact of digital transformation in SMEs highlights how embracing digital technologies can support sustainable practices and operational efficiency [39,40].

The field of sustainability accounting has experienced significant growth, as more companies recognize the need to integrate ESG principles into their operations. This trend has increased demand for accounting professionals who are knowledgeable about sustainability reporting standards, such as the GRI, SASB, and TCFD [41,42]. Educational institutions are also adapting their curricula to equip future accountants with the necessary skills to meet these challenges.

However, the integration of ESG principles into accounting education faces challenges, particularly in the areas of practical training and the ethical considerations of transparent reporting. Accountants are increasingly encountering ethical dilemmas, especially in an international context where cultural norms and ethical standards vary widely [43]. It is essential to provide education that addresses the ethical dimensions of ESG accounting to prepare future professionals to apply these principles responsibly and promote sustainability within organizations [44,45].

In conclusion, incorporating ESG criteria into business strategy and accounting education is not merely a passing trend but a vital approach for promoting long-term sustainable growth and enhancing social and environmental value. This research aims to explore the perspectives of chartered accountants on the application of ESG criteria within the Greek business context [46].

### 3. Materials and Methods

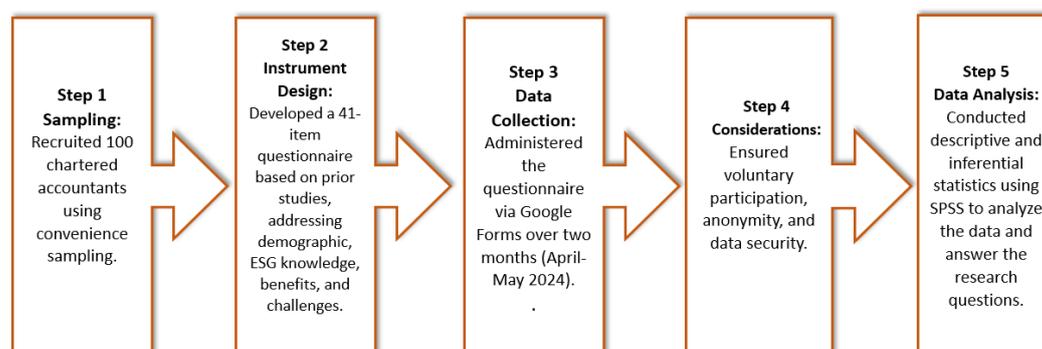
This study investigates the perspectives of chartered accountants in Greece regarding the application of ESG criteria. A quantitative, cross-sectional survey design was adopted to ensure a systematic and efficient approach to data collection from a substantial and representative sample.

The research utilized a structured questionnaire as the primary data collection instrument, which was carefully designed to align with the study's objectives and informed by relevant academic literature [47–49].

The questionnaire consisted of 41 items and was structured to comprehensively address the research objectives. It included questions that collected demographic information, alongside items that assessed participants' knowledge of ESG principles, their application of these criteria, and their perceptions of the benefits and challenges associated with ESG implementation. A variety of question formats, including closed-ended, open-ended, and Likert-scale items, were incorporated to enable a nuanced exploration of the topic.

Participants were fully briefed on the purpose of the study and informed that the research was conducted as part of an academic investigation. Ethical considerations were rigorously observed throughout the process. Participation was entirely voluntary, and all responses were collected anonymously and treated with strict confidentiality. Participants were also informed that their data would be securely stored for one year and subsequently deleted, in accordance with data protection regulations. Constant information was provided to ensure transparency and address any inquiries, reinforcing trust and accessibility through the study.

Data analysis was performed using SPSS software and consisted of two main stages. The first stage involved descriptive statistical analyses, including the calculation of frequencies, means, and standard deviations, to summarize participant responses. The second stage employed inferential statistical methods to examine relationships and differences within the data. Specifically, independent t-tests were conducted to assess the relationships between binary categorical variables and continuous dependent variables [50,51]. Additionally, one-way ANOVA was applied to investigate associations between multi-level categorical variables and continuous outcomes. These statistical techniques were selected for their robustness and ability to detect significant group differences and correlations, thereby ensuring the reliability of the findings. The methodological steps are summarized in the following table.



**Table 1.** Summarized methodological steps.

## 4. Results

### 4.1. Implementation of Key ESG Factors

Regarding the implementation of key ESG indicators by companies where the chartered accountants were employed or which they audited, 40% of respondents ( $n = 40$ ) reported a moderate application of ESG criteria concerning direct emissions (Figure 1), while 36% ( $n = 36$ ) indicated a moderate application for indirect emissions. Interestingly, 28% ( $n = 28$ ) noted that ESG criteria for indirect emissions were not applied at all (Figure 2). Similar trends were identified for energy consumption and production (Figure 3), while responses diverged on stakeholder engagement (Figure 4). A one-way ANOVA was performed to examine potential differences in opinions based on

years of service, but no statistically significant correlations were found, as the significance values (sig) for all tests exceeded the threshold of 0.05.

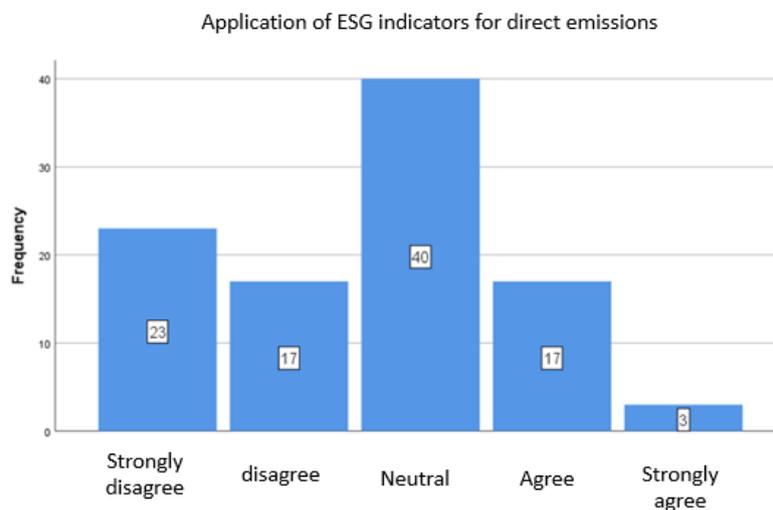


Figure 1. Application of ESG Indicators for Direct Emissions.

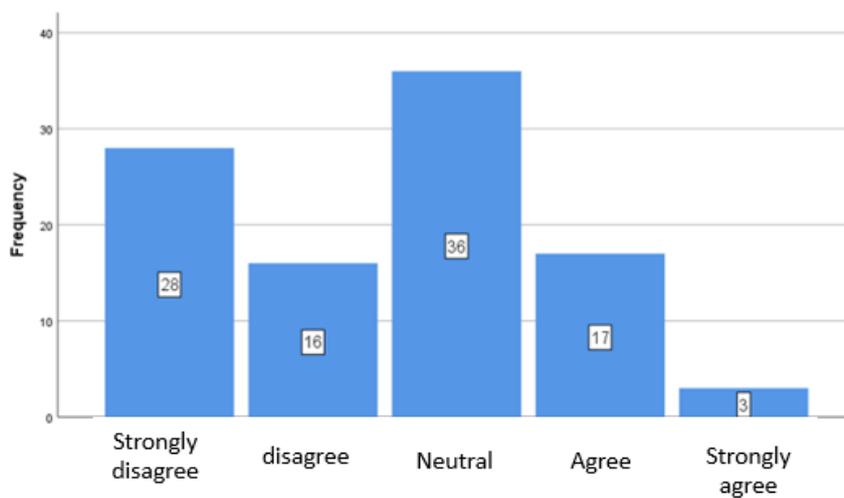
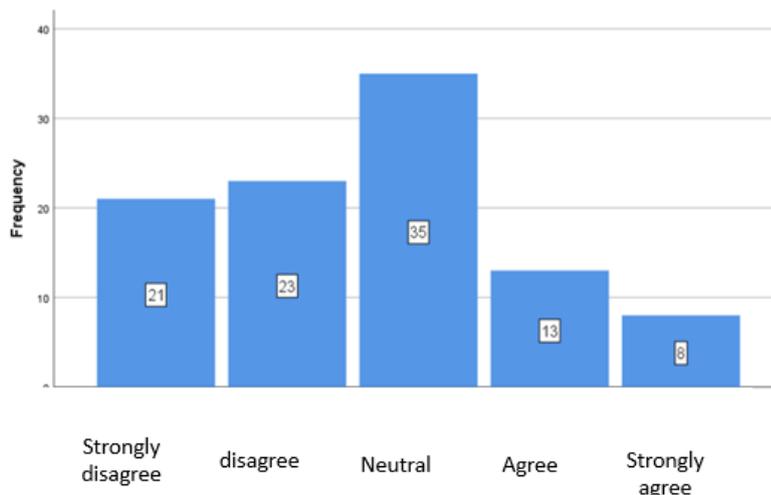
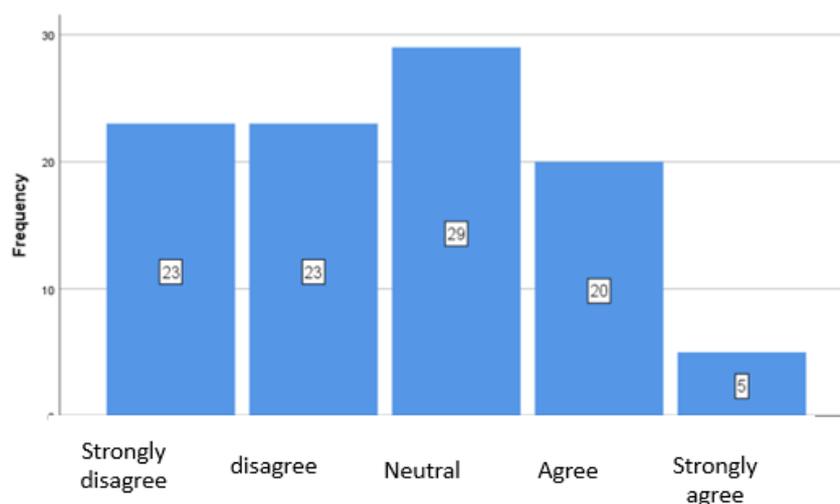


Figure 2. Application of ESG Indicators for Indirect Emissions.



**Figure 3.** Application of ESG Indicators for Energy Consumption and Production.



**Figure 4.** Application of ESG Indicators for Stakeholder Engagement.

#### 4.2. Influence on ESG Training on Options

To determine if ESG training influenced options, independent t-tests were conducted. Statistically, significant differences emerged across several areas. Chartered accountants with ESG training demonstrated a higher level of understanding of ESG criteria ( $p = .000$ ) and expressed stronger support for the application of ESG indicators in direct emissions ( $p = .000$ ), indirect emissions ( $p = .000$ ), energy consumption and production ( $p = .000$ ), and stakeholder engagement ( $p = .000$ ). Additionally, those with ESG training showed stronger endorsement for the application of ESG criteria related to female employees ( $p = .000$ ), women in managerial positions ( $p = .000$ ), staff mobility ( $p = .000$ ), employee training ( $p = .000$ ), human rights policies ( $p = .000$ ), collective bargaining agreements ( $p = .000$ ), supplier evaluation ( $p = .000$ ), board composition ( $p = .000$ ), and business ethics policies ( $p = .000$ ).

Moreover, trained accountants expressed stronger beliefs in the effectiveness of ESG criteria for attracting new clients ( $p = .000$ ), gaining competitive advantage ( $p = .000$ ), increasing revenue ( $p = .000$ ), enhancing firm credibility ( $p = .000$ ), mitigating risk ( $p = .000$ ), attracting new investors ( $p = .000$ ), and improving productivity and adaptability to technological, customer, and regulatory

changes ( $p = .000$ ). Those with ESG training also highlighted more significant challenges to ESG implementation, including climate change ( $p = .000$ ), human resource management ( $p = .000$ ), corruption and bribery ( $p = .000$ ), and the absence of standardized evaluation guidelines or regulatory oversight ( $p = .000$ ) (Table 1\_Appendix).

#### 4.3. ESG Criteria in Specific Practices

There were variations in the responses regarding specific ESG criteria. For example, 38% ( $n = 38$ ) of respondents reported a moderate number of female employees in their organizations (Figure 5), while 31% ( $n = 31$ ) indicated moderate representation of women in managerial positions (Figure 6). Interestingly, 33% ( $n = 33$ ) noted that ESG criteria related to staff mobility were strongly enforced (Figure 13), and 36% ( $n = 36$ ) reported moderate application of ESG criteria for employee training (Figure 7). However, there were conflicting views on collective labor agreements (Figure 8) and supplier evaluation (Figure 9), with 32% ( $n = 32$ ) noting moderate application of ESG criteria for board composition (Figure 10).

In general, ESG criteria were moderately applied, with lower implementation rates for indirect emissions ( $M = 2.51$ ,  $SD = 1.159$ ) and higher implementation for data security policies ( $M = 3.30$ ,  $SD = 1.168$ ) (Table 2).

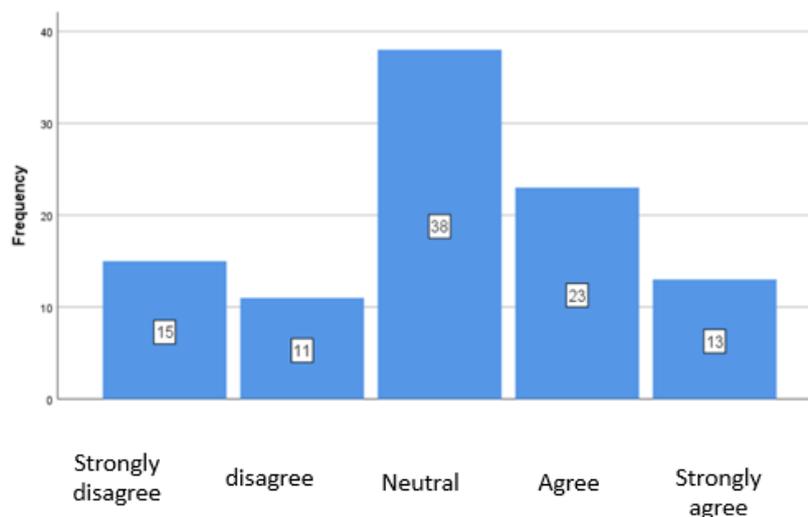


Figure 5. Application of ESG Criteria for Female Employees.

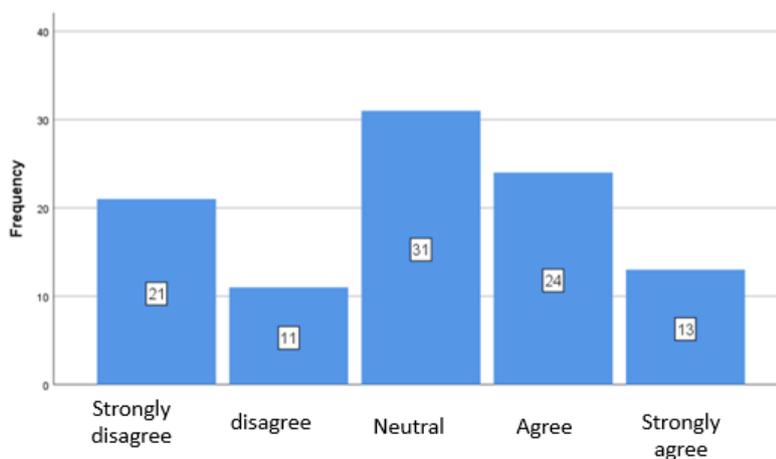


Figure 6. Application of ESG Criteria for Female Employees in Managerial Positions.

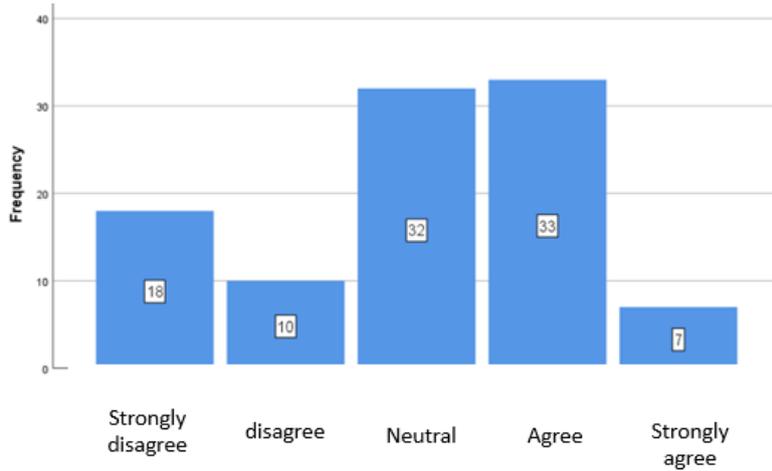


Figure 7. Application of ESG Criteria for Staff Mobility.

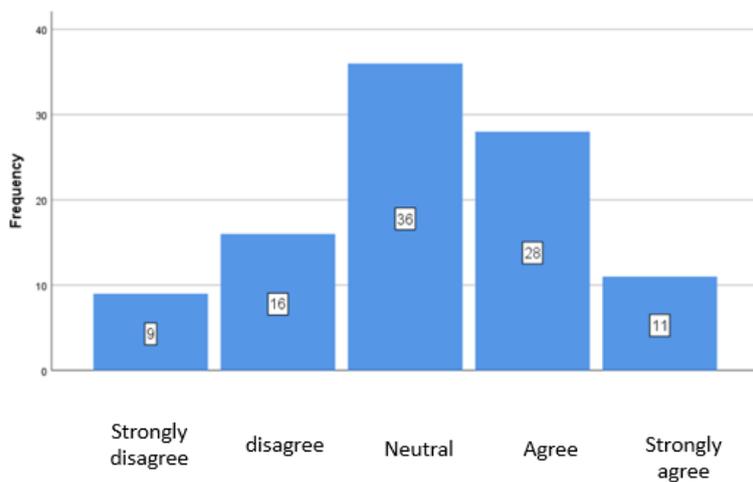


Figure 8. Application of ESG Criteria for Employee Training.

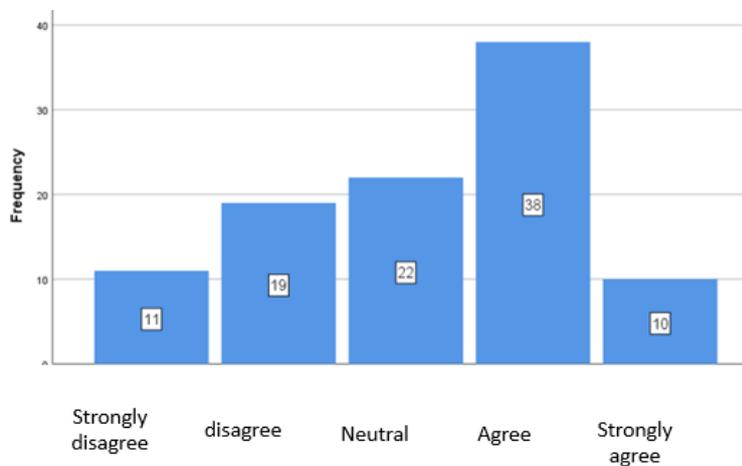
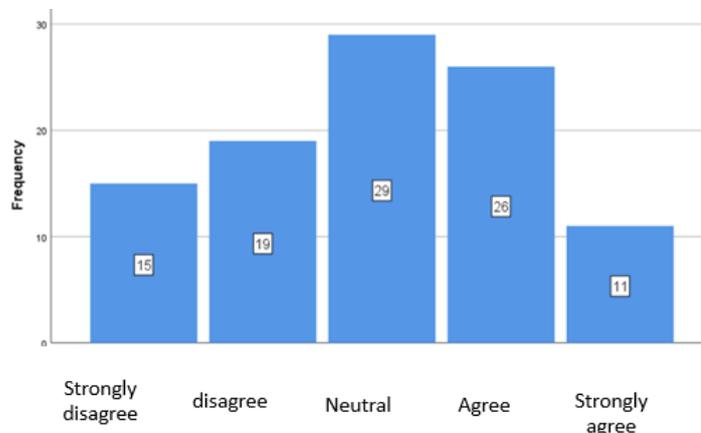
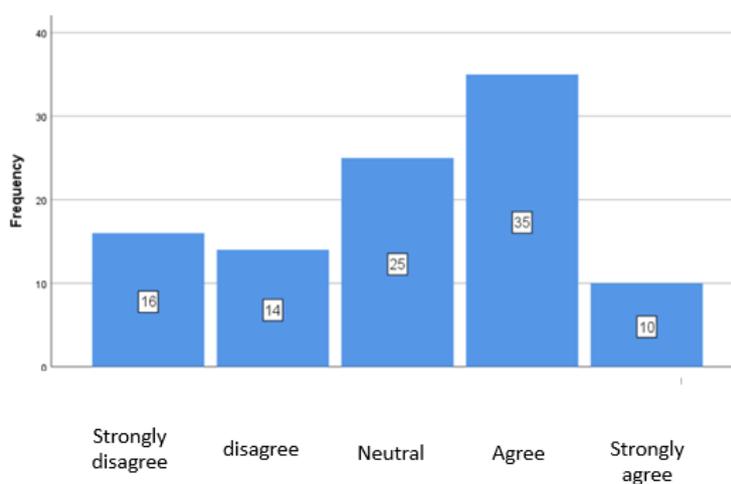


Figure 9. Application of ESG Criteria for Human Rights Policy.

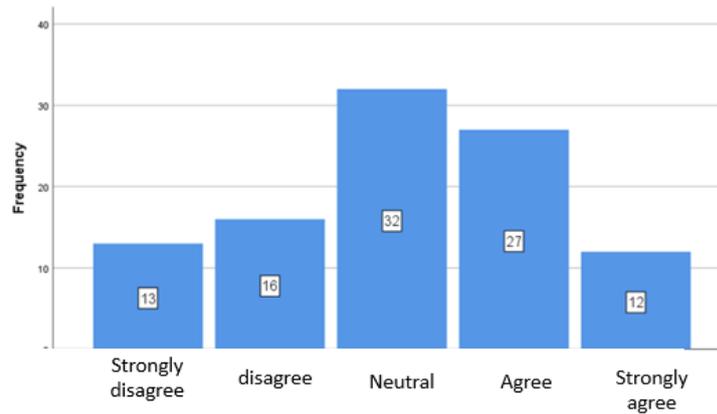
Conflict opinions were observed on the application of ESG criteria for collective labor agreements (Figure 10) and supplier evaluation (Figure 11). Additionally, 32% (n = 32) of respondents stated that ESG criteria for board composition were moderately applied (Figure 12). Similarly, the implementation of ESG criteria for sustainable development monitoring, substantive issues, sustainability policy, business ethics policy, and data security policy followed the same pattern.



**Figure 10.** Application of ESG Criteria for Collective Labor Agreements.



**Figure 11.** Application of ESG Criteria for Supplier Evaluation.



**Figure 12.** Application of ESG Criteria for Board Composition.

In conclusion, while ESG indicators were generally implemented to a moderate degree, indirect emissions ( $M = 2.51$ ,  $SD = 1.159$ ) showed lower implementation, while data security policies ( $M = 3.30$ ,  $SD = 1.168$ ) were applied more extensively. (Table 2\_Appendix).

#### 4.4. Age Based Correlations

To examine the influence of the age on the opinions of chartered accountants regarding ESG (Environmental, Social, and Governance) implementation, a one-way ANOVA analysis was conducted. The results indicated several statistically significant correlations. Younger accountants exhibited greater support for ESG initiatives, particularly in areas such as gender diversity (female employees) ( $p = .039$ ), employee mobility ( $p = .011$ ), employee training programs ( $p = .043$ ), business ethics policies ( $p = .017$ ), and data security policies ( $p = .003$ ). Moreover, younger accountants perceived ESG criteria as being more effective for attracting new clients ( $p = .001$ ), gaining a competitive edge ( $p = .002$ ), increasing revenue ( $p = .000$ ), enhancing the organization's credibility ( $p = .000$ ), reducing business risks ( $p = .019$ ), and improving opportunities for growth and adaptability to change ( $p = .000$ ). They also identified greater challenges associated with ESG implementation, such as climate change ( $p = .002$ ), corruption and bribery ( $p = .000$ ), and a lack of transparency in evaluation processes ( $p = .001$ ) (refer to Table 6).

#### 4.5. Educational Level – Based Correlations

A similar one – way ANOVA analysis was conducted to explore how opinions varied based on educational attainment[52,53]. The findings revealed that respondents with higher levels of education demonstrated better knowledge of ESG criteria ( $p = .000$ ) and stronger support for the application of key ESG indicators across multiple domains. These domains included direct and indirect emissions, energy consumption, stakeholder participation, and sustainability policies, with most cases showing a p-value of .000. Furthermore, chartered accountants with higher education levels believed that ESG indicators were more effective in attracting new clients, enhancing competitive advantage, increasing firm credibility, reducing risks, and improving adaptability to evolving business conditions ( $p = .000$ ). This group also viewed challenges, such as climate change, human resource management, and the absence of standardized evaluation oversight, as more significant (refer to Table 7).

#### 4.6. Training on ESG Assessment

The impact of ESG assessment training on accountants' opinions was also evaluated using independent t-tests. Several statistically significant correlations were found. Chartered accountants

who had received training on the proper assessment of ESG indicators exhibited a deeper knowledge of ESG criteria ( $p = .000$ ) and were more supportive of applying ESG indicators in various areas. These areas included direct and indirect emissions ( $p = .000$ ), energy consumption and production ( $p = .000$ ), stakeholder engagement ( $p = .000$ ), female representation in the workforce and managerial roles ( $p = .000$ ), employee mobility ( $p = .000$ ), employee training ( $p = .000$ ), human rights policies ( $p = .000$ ), collective agreements ( $p = .000$ ), supplier evaluation ( $p = .000$ ), board composition ( $p = .000$ ), sustainable development oversight ( $p = .000$ ), substantive issues ( $p = .000$ ), sustainability policies ( $p = .000$ ), business ethics policies ( $p = .000$ ), and data security policies ( $p = .000$ ).

Additionally, chartered accountants with ESG training were more likely to perceive ESG criteria as effective in attracting new clients ( $p = .000$ ), gaining a competitive advantage ( $p = .000$ ), increasing revenue ( $p = .000$ ), enhancing firm credibility ( $p = .000$ ), reducing risks ( $p = .000$ ), attracting new investors ( $p = .000$ ), boosting productivity ( $p = .000$ ), increasing growth opportunities ( $p = .000$ ), and improving adaptability to technological, customer, and regulatory changes ( $p = .000$ ). Furthermore, they were more likely to identify significant challenges in ESG implementation, including climate change ( $p = .000$ ), human resource management ( $p = .000$ ), corruption and bribery ( $p = .000$ ), the lack of common evaluation guidelines ( $p = .000$ ), the absence of evaluation oversight authorities ( $p = .000$ ), a lack of transparency in evaluations ( $p = .000$ ), and difficulties in regulatory compliance ( $p = .000$ ) (refer to Table 9).

## 5. Discussion & Conclusions

The study examined the perspectives of chartered accountants of chartered accountants regarding the implementation of Environmental, Social, and Governance (ESG) criteria in Greece. The findings suggest that chartered accountants possess only a basic understanding of ESG, which is consistent with prior research, such as the study conducted by [54]. This limited knowledge emphasizes the importance of enhancing education and professional training on ESG issues, a need similarly identified by [55].

With respect to ESG implementation, respondents reported a moderate degree of adoption, with the least progress made in the area of indirect emissions and the most progress observed in the implementation of data security policies. These results mirror global patterns, as identified by [45,56], who highlighted that data governance is often more widely implemented due to regulatory pressures, whereas environmental metrics tend to lag behind.

Respondents perceived ESG criteria as positively impacting key areas such as attracting new clients, gaining competitive advantage, and enhancing organizational credibility. Nonetheless, they also identified considerable challenges to ESG implementation, notably in addressing climate change and the lack of a formal oversight body for ESG assessments. Interestingly, issues related to corruption and bribery were viewed as moderate challenges, which stands in contrast to traditional governance concerns reported in the International Transparency (2019) report.

Additionally, the study found that younger accountants, as well as those with higher levels of education, were more likely to apply ESG criteria and acknowledge the challenges involved in their implementation. This aligns with the conclusions of Adams and [57], who emphasize the role of education in promoting a deeper understanding and effective application of ESG criteria, thereby contributing to a stronger commitment to sustainability.

Continuous professional development in ESG topics is therefore crucial. Integrating sustainability into the education of accountants can enhance their ability to apply ESG criteria effectively. In addition, the use of robust measurement tools for environmental indicators is recommended to support the improved implementation of ESG within professional practices.

Future research should consider cross-regional comparative studies to identify universal trends and explore contextual variations in ESG adoption. Understanding regional differences may guide the development of educational programs and regulatory frameworks tailored to the specific needs of diverse markets. Moreover, incorporating qualitative methods, such as interviews and focus groups, would offer deeper insights into the motivations and challenges behind ESG adoption.

Investigating the direct link between ESG practices and financial performance in future research could also provide valuable insights into the business case for sustainability, which may encourage more widespread adoption of ESG measures.

Several limitations of the current study should be acknowledged. The results may not be fully generalizable due to the relatively small sample size, and the sample was predominantly male, limiting gender diversity. Additionally, the study relied on self-reported data, which may introduce response bias. Furthermore, the research focused on a limited set of ESG indicators, potentially overlooking other significant aspects of ESG that are relevant to the accounting profession. Important topics, such as biodiversity, water management, waste management, and specific social governance issues, were not comprehensively addressed in this study.

**Author Contributions:** For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used “Conceptualization, I.P. and E.A.; methodology, D.K.; software, E.A. ; validation, I.P., S.G and E.A.; formal analysis, E.A.; investigation, D.K.; resources, R.M.; data curation, E.A and D.K.; writing—original draft preparation, I.P., R.M. and E.A.; writing—review and editing, I.P., E.A and S.G.; visualization, D.K.; supervision, I.P.; project administration, I.P.; funding acquisition, R.M. All authors have read and agreed to the published version of the manuscript.”

## Appendix A

### A.1.1. Application of Key ESG Indicators

	<b>M</b>	<b>SD</b>
Application of key ESG indicators_Direct emissions	2,60	1,110
Application of key ESG indicators_Direct emissions	2,51	1,159
Application of ESG_Energy consumption and production key indicators	2,64	1,185
Implementation of ESG_Stakeholder participation key indicators	2,61	1,188
Application of ESG_Women workers key indicators	3,08	1,212
Implementation of ESG_Women employees in managerial positions	2,97	1,314
Implementation of ESG_Personnel mobility key indicators	3,01	1,202
Application of ESG_Employee training key indicators	3,16	1,108
Application of ESG_Human rights policy key indicators	3,17	1,181
Implementation of key ESG indicators_Collective labour agreements	2,99	1,227
Implementation of ESG key indicators_Supplier assessment	3,09	1,240
Implementation of ESG core indicators_Board composition	3,09	1,198
Implementation of ESG key indicators_Sustainable development monitoring	2,89	1,214
Implementation of ESG KPIs_Substantial issues	2,78	1,219
Implementation of ESG core indicators_Sustainability policy	2,96	1,348
Implementation of ESG core indicators_Business ethics policy	3,00	1,385
Implementation of ESG_Geographical security policy	3,30	1,168

### A.1.2. Correlations with Age

	<b>Age</b>	<b>M</b>	<b>SD</b>	<b>p</b>
How well do you know the ESG criteria?	Up to 30 years old	3,27	0,467	0,156
	31-40 years old	2,79	0,992	
	41-50 years old	3	0,943	
	51-60 years old	2,62	0,921	
	Over 60 years old	2,29	1,254	
Application of key ESG indicators Direct emissions	Up to 30 years old	2,91	1,044	0,081
	31-40 years old	2,64	1,084	
	41-50 years old	2,79	1,228	
	51-60 years old	2,24	0,944	
	Over 60 years old	2,29	1,254	
Application of key ESG Indirect emissions indicators	Up to 30 years old	2,91	1,044	0,173
	31-40 years old	2,58	1,146	
	41-50 years old	2,79	1,228	

	51-60 years old	2	1,095	
	Over 60 years old	2	0,816	
Application of ESG Energy consumption and production key indicators	Up to 30 years old	3,18	1,401	
	31-40 years old	2,61	0,998	
	41-50 years old	2,79	1,228	0,245
	51-60 years old	2,43	1,326	
	Over 60 years old	2	0,816	
Implementation of ESG_Stakeholder participation key indicators	Up to 30 years old	3,09	1,136	
	31-40 years old	2,76	1,2	
	41-50 years old	2,61	1,066	0,26
	51-60 years old	2,33	1,39	
	Over 60 years old	2	0,816	
Application of ESG_Women workers key indicators	Up to 30 years old	3,55	1,44	
	31-40 years old	3,39	1,059	
	41-50 years old	3,07	1,086	0,039
	51-60 years old	2,62	1,284	
	Over 60 years old	2,29	1,254	
Implementation of ESG_Women employees in managerial positions	Up to 30 years old	3,27	1,191	
	31-40 years old	3,24	1,119	
	41-50 years old	3,07	1,359	0,139
	51-60 years old	2,48	1,504	
	Over 60 years old	2,29	1,254	
Implementation of ESG_Personnel mobility key indicators	Up to 30 years old	3,45	0,522	
	31-40 years old	3,33	1,137	
	41-50 years old	2,86	1,177	0,011
	51-60 years old	2,9	1,446	
	Over 60 years old	1,71	0,488	
Application of ESG Employee training key indicators	Up to 30 years old	3,73	1,104	
	31-40 years old	3,33	1,051	
	41-50 years old	3,18	1,02	0,043
	51-60 years old	2,86	1,276	
	Over 60 years old	2,29	0,488	
Application of ESG Human rights policy key indicators	Up to 30 years old	3,45	0,82	
	31-40 years old	3,12	1,111	
	41-50 years old	3,57	1,168	0,08
	51-60 years old	2,76	1,375	
	Over 60 years old	2,57	0,976	
Implementation of key ESG indicators Collective labour agreements	Up to 30 years old	3,09	0,701	
	31-40 years old	3,12	1,364	
	41-50 years old	2,96	1,232	0,854
	51-60 years old	2,9	1,338	
	Over 60 years old	2,57	0,976	
Implementation of ESG key indicators Supplier assessment	Up to 30 years old	3,27	0,467	
	31-40 years old	3,21	1,364	
	41-50 years old	3,36	1,162	0,177
	51-60 years old	2,67	1,461	
	Over 60 years old	2,43	0,535	
Implementation of ESG core indicators Board composition	Up to 30 years old	3,64	0,505	
	31-40 years old	3,18	1,31	
	41-50 years old	2,93	1,12	0,48
	51-60 years old	2,9	1,446	
	Over 60 years old	3	0,816	
Implementation of ESG key indicators Sustainable development monitoring	Up to 30 years old	3,27	0,467	
	31-40 years old	2,94	1,368	
	41-50 years old	3,21	1,101	0,069
	51-60 years old	2,38	1,359	
	Over 60 years old	2,29	0,488	
Implementation of ESG KPIs_Substantial issues	Up to 30 years old	3,55	0,934	
	31-40 years old	2,82	1,236	0,208
	41-50 years old	2,68	1,124	

	51-60 years old	2,48	1,504	
	Over 60 years old	2,71	0,488	
Implementation of ESG core indicators Sustainability policy	Up to 30 years old	3,73	0,905	
	31-40 years old	3,06	1,391	
	41-50 years old	2,89	1,343	0,162
	51-60 years old	2,48	1,504	
	Over 60 years old	3	0,816	
Implementation of ESG core indicators Business ethics policy	Up to 30 years old	3,91	0,831	
	31-40 years old	3,18	1,402	
	41-50 years old	3	1,388	0,017
	51-60 years old	2,24	1,446	
	Over 60 years old	3	0,816	
Implementation of ESG_Geographical security policy	Up to 30 years old	3,91	0,831	
	31-40 years old	3,36	1,27	
	41-50 years old	3,61	0,685	0,003
	51-60 years old	2,48	1,289	
	Over 60 years old	3,29	1,254	
ESG effectiveness in attracting new customers	Up to 30 years old	4,27	0,786	
	31-40 years old	3,12	0,927	
	41-50 years old	3,14	0,97	0,001
	51-60 years old	2,62	1,284	
	Over 60 years old	2,57	0,976	
ESG effectiveness for competitive advantage	Up to 30 years old	4,27	0,467	
	31-40 years old	3,45	1,201	
	41-50 years old	3,46	0,922	0,002
	51-60 years old	2,86	1,108	
	Over 60 years old	2,57	0,976	
ESG effectiveness for revenue growth	Up to 30 years old	4,09	0,701	
	31-40 years old	3,21	0,96	
	41-50 years old	3,25	0,585	0
	51-60 years old	2,76	1,044	
	Over 60 years old	2,29	0,488	
ESG effectiveness for increasing business credibility	Up to 30 years old	4,45	0,522	
	31-40 years old	3,82	0,392	
	41-50 years old	3,75	0,799	0
	51-60 years old	3,14	1,558	
	Over 60 years old	2,29	0,488	
ESG effectiveness to reduce risk	Up to 30 years old	3,73	0,905	
	31-40 years old	3,36	0,699	
	41-50 years old	3,25	0,752	0,019
	51-60 years old	2,95	1,499	
	Over 60 years old	2,29	0,488	
ESG effectiveness for attracting new investors	Up to 30 years old	4,27	0,467	
	31-40 years old	3,85	0,712	
	41-50 years old	3,96	0,693	0
	51-60 years old	3,05	1,284	
	Over 60 years old	2,57	0,976	
ESG effectiveness to increase productivity	Up to 30 years old	4,09	0,701	
	31-40 years old	3,36	0,895	
	41-50 years old	3,25	0,752	0
	51-60 years old	2,86	1,108	
	Over 60 years old	2	0	
ESG effectiveness to increase opportunities for growth	Up to 30 years old	4,27	0,786	
	31-40 years old	3,82	0,882	
	41-50 years old	3,36	1,129	0
	51-60 years old	3,1	1,338	
	Over 60 years old	2,29	0,488	
ESG effectiveness to improve adaptability to technological, customer and regulatory changes	Up to 30 years old	4,45	0,522	
	31-40 years old	4,12	0,485	0
	41-50 years old	3,75	0,799	

	51-60 years old	3,05	1,284	
	Over 60 years old	2,29	0,488	
ESG implementation challenges Climate change	Up to 30 years old	4,64	0,505	
	31-40 years old	4,27	0,977	
	41-50 years old	3,89	0,737	0,002
	51-60 years old	3,57	1,207	
	Over 60 years old	3,29	0,488	
ESG Human Resources Management implementation challenges	Up to 30 years old	4,45	0,522	
	31-40 years old	3,82	0,882	
	41-50 years old	3,71	0,659	0
	51-60 years old	3,43	1,165	
	Over 60 years old	1,86	0,9	
ESG Corruption and bribery implementation challenges	Up to 30 years old	4,09	0,701	
	31-40 years old	3,52	1,253	
	41-50 years old	3,21	0,917	0
	51-60 years old	3,57	1,287	
	Over 60 years old	2,57	0,535	
ESG implementation challenges Lack of common guidelines for ESG assessment	Up to 30 years old	4,45	0,522	
	31-40 years old	4,03	0,883	
	41-50 years old	3,43	1,034	0,047
	51-60 years old	3,52	1,289	
	Over 60 years old	2,57	0,535	
ESG implementation challenges Lack of a supervisory authority for ESG evaluations	Up to 30 years old	4,27	0,467	
	31-40 years old	4,09	0,98	
	41-50 years old	3,71	0,937	0
	51-60 years old	3,67	1,278	
	Over 60 years old	2,29	0,488	
ESG implementation challenges Lack of transparency of ESG assessments	Up to 30 years old	4,27	0,467	
	31-40 years old	4	1,031	
	41-50 years old	3,71	0,81	0,001
	51-60 years old	3,71	1,309	
	Over 60 years old	2,29	0,488	
ESG implementation challenges Difficulty in complying with regulations	Up to 30 years old	4,27	0,467	
	31-40 years old	4,06	0,788	
	41-50 years old	3,93	0,858	0
	51-60 years old	3,67	1,278	
	Over 60 years old	2,29	0,488	

### A.1.3. Correlations with Educational Level

	Educational level	M	SD	p
How well do you know the ESG criteria?	Graduate of higher education institution	2,3	0,65	
	Master's degree holder	2,9	0,9	0
	Doctorate holder	5	0	
Application of key ESG indicators Direct emissions	Graduate of higher education institution	2,4	0,68	
	Master's degree holder	2,6	1,11	0
	Doctorate holder	5	0	
Application of key ESG Indirect emissions indicators	Graduate of higher education institution	2,2	1,08	
	Master's degree holder	2,5	1,09	0
	Doctorate holder	5	0	
Application of ESG Energy consumption and production key indicators	Graduate of higher education institution	2,4	1,07	
	Master's degree holder	2,6	1,14	0
	Doctorate holder	5	0	
Implementation of ESG Stakeholder participation key indicators	Graduate of higher education institution	2,6	1,26	
	Master's degree holder	2,5	1,1	0
	Doctorate holder	5	0	
Application of ESG Women workers key indicators	Graduate of higher education institution	2,6	1,01	
	Master's degree holder	3,1	1,21	0

	Doctorate holder	5	0	
Implementation of ESG Women employees in managerial positions	Graduate of higher education institution	2,5	1,17	
	Master's degree holder	3	1,29	0
	Doctorate holder	5	0	
Implementation of ESG Personnel mobility key indicators	Graduate of higher education institution	2,7	1,1	
	Master's degree holder	3	1,18	0
	Doctorate holder	5	0	
Application of ESG Employee training key indicators	Graduate of higher education institution	3	1,03	
	Master's degree holder	3,1	1,09	0
	Doctorate holder	5	0	
Application of ESG Human rights policy key indicators	Graduate of higher education institution	2,7	1,06	
	Master's degree holder	3,2	1,16	0
	Doctorate holder	5	0	
Implementation of key ESG indicators Collective labour agreements	Graduate of higher education institution	2,6	0,69	
	Master's degree holder	3	1,27	0
	Doctorate holder	5	0	
Implementation of ESG key indicators Supplier assessment	Graduate of higher education institution	2,6	1,17	
	Master's degree holder	3,1	1,21	0,02
	Doctorate holder	5	0	
Implementation of ESG core indicators Board composition	Graduate of higher education institution	3	0,88	
	Master's degree holder	3	1,23	0,02
	Doctorate holder	5	0	
Implementation of ESG key indicators Sustainable development monitoring	Graduate of higher education institution	2,7	1,16	
	Master's degree holder	2,9	1,18	0,05
	Doctorate holder	5	0	
Implementation of ESG KPIs Substantial issues	Graduate of higher education institution	2,7	1,05	
	Master's degree holder	2,7	1,21	0
	Doctorate holder	5	0	
Implementation of ESG core indicators Sustainability policy	Graduate of higher education institution	2,7	1,05	
	Master's degree holder	2,9	1,38	0
	Doctorate holder	5	0	
Implementation of ESG core indicators Business ethics policy	Graduate of higher education institution	2,8	1,3	
	Master's degree holder	3	1,38	0
	Doctorate holder	5	0	
Implementation of ESG Geographical security policy	Graduate of higher education institution	3	1,11	
	Master's degree holder	3,3	1,15	0
	Doctorate holder	5	0	
ESG effectiveness in attracting new customers	Graduate of higher education institution	2,6	1,26	
	Master's degree holder	3,2	1,04	0
	Doctorate holder	4	0	
ESG effectiveness for competitive advantage	Graduate of higher education institution	2,7	0,87	
	Master's degree holder	3,5	1,13	0
	Doctorate holder	4	0	
ESG effectiveness for revenue growth	Graduate of higher education institution	2,6	0,9	
	Master's degree holder	3,3	0,9	0
	Doctorate holder	4	0	
ESG effectiveness for increasing business credibility	Graduate of higher education institution	2,9	1,29	
	Master's degree holder	3,8	0,88	0
	Doctorate holder	4	0	
ESG effectiveness to reduce risk	Graduate of higher education institution	2,6	1,07	
	Master's degree holder	3,3	0,92	0
	Doctorate holder	4	0	
ESG effectiveness for attracting new investors	Graduate of higher education institution	3	1,03	
	Master's degree holder	3,8	0,9	0
	Doctorate holder	4	0	
ESG effectiveness to increase productivity	Graduate of higher education institution	2,8	0,96	
	Master's degree holder	3,3	0,96	0
	Doctorate holder	4	0	
ESG effectiveness to increase opportunities for growth	Graduate of higher education institution	3,1	1,18	
	Master's degree holder	3,6	1,12	0

	Doctorate holder	4	0	
ESG effectiveness to improve adaptability to technological, customer and regulatory changes	Graduate of higher education institution	3,1	1,18	
	Master's degree holder	3,9	0,9	0
	Doctorate holder	4	0	
ESG implementation challenges Climate change	Graduate of higher education institution	3,7	0,67	
	Master's degree holder	4,1	1,04	0
	Doctorate holder	4	0	
ESG Human Resources Management implementation challenges	Graduate of higher education institution	3,2	1,17	
	Master's degree holder	3,7	0,97	0
	Doctorate holder	4	0	
ESG Corruption and bribery implementation challenges	Graduate of higher education institution	3,1	0,81	
	Master's degree holder	3,5	1,19	0
	Doctorate holder	4	0	
ESG implementation challenges Lack of common guidelines for ESG assessment	Graduate of higher education institution	3,5	0,91	
	Master's degree holder	3,7	1,12	0
	Doctorate holder	4	0	
ESG implementation challenges Lack of a supervisory authority for ESG evaluations	Graduate of higher education institution	3,3	0,75	
	Master's degree holder	3,9	1,12	0
	Doctorate holder	4	0	
ESG implementation challenges Lack of transparency of ESG assessments	Graduate of higher education institution	3,3	0,75	
	Master's degree holder	3,9	1,11	0
	Doctorate holder	4	0	
ESG implementation challenges Difficulty in complying with regulations	Graduate of higher education institution	3,4	0,77	
	Master's degree holder	3,9	1,04	0
	Doctorate holder	4	0	

#### A.1.4. Links to Training on ESG Criteria

		M	SD	p
How well do you know the ESG criteria?	Yes	3,61	0,838	0
	No	2,39	0,704	
Application of key ESG indicators Direct emissions	Yes	3,58	0,732	0
	No	2,05	0,881	
Application of key ESG Indirect emissions indicators	Yes	3,47	0,941	0
	No	1,97	0,89	
Application of ESG Energy consumption and production key indicators	Yes	3,61	0,964	0
	No	2,09	0,921	
Implementation of ESG Stakeholder participation key indicators	Yes	3,44	0,877	0
	No	2,14	1,082	
Application of ESG Women workers key indicators	Yes	3,89	0,919	0
	No	2,63	1,12	
Implementation of ESG Women employees in managerial positions	Yes	3,83	0,845	0
	No	2,48	1,285	
Implementation of ESG Personnel mobility key indicators	Yes	3,64	0,867	0
	No	2,66	1,224	
Application of ESG Employee training key indicators	Yes	3,92	0,906	0
	No	2,73	0,98	
Application of ESG Human rights policy key indicators	Yes	3,94	0,893	0
	No	2,73	1,102	
Implementation of key ESG indicators Collective labour agreements	Yes	3,61	1,103	0
	No	2,64	1,16	
Implementation of ESG key indicators Supplier assessment	Yes	3,69	0,98	0
	No	2,75	1,247	

Implementation of ESG core indicators Board composition	Yes	3,75	0,841	0
	No	2,72	1,215	
Implementation of ESG key indicators Sustainable development monitoring	Yes	3,94	0,893	0
	No	2,3	0,937	
Implementation of ESG KPIs_Substantial issues	Yes	3,67	0,986	0
	No	2,28	1,046	
Implementation of ESG core indicators Sustainability policy	Yes	3,97	1,028	0
	No	2,39	1,163	
Implementation of ESG core indicators Business ethics policy	Yes	4	1,069	0
	No	2,44	1,22	
Implementation of ESG_Geographical security policy	Yes	3,97	1,108	0
	No	2,92	1,028	
ESG effectiveness in attracting new customers	Yes	3,81	0,668	0
	No	2,72	1,105	
ESG effectiveness for competitive advantage	Yes	4,03	0,845	0
	No	2,98	1,061	
ESG effectiveness for revenue growth	Yes	3,61	0,728	0
	No	2,91	0,938	
ESG effectiveness for increasing business credibility	Yes	4,08	0,732	0
	No	3,36	1,06	
ESG effectiveness to reduce risk	Yes	3,75	0,806	0
	No	2,91	0,955	
ESG effectiveness for attracting new investors	Yes	4,11	0,747	0
	No	3,42	1,005	
ESG effectiveness to increase productivity	Yes	3,61	0,871	0
	No	2,98	0,951	
ESG effectiveness to increase opportunities for growth	Yes	4,11	0,887	0
	No	3,13	1,106	
ESG effectiveness to improve adaptability to technological, customer and regulatory changes	Yes	4,11	0,82	0
	No	3,47	1,007	
ESG implementation challenges Climate change	Yes	4,14	0,351	0
	No	3,91	1,178	
ESG Human Resources Management implementation challenges	Yes	4,17	0,775	0
	No	3,34	1,027	
ESG Corruption and bribery implementation challenges	Yes	4,08	0,906	0
	No	3,08	1,074	
ESG implementation challenges Lack of common guidelines for ESG assessment	Yes	4,14	0,639	0
	No	3,45	1,181	
ESG implementation challenges Lack of a supervisory authority for ESG evaluations	Yes	4,06	0,791	0
	No	3,64	1,173	
ESG implementation challenges Lack of transparency of ESG assessments	Yes	4,14	0,762	0
	No	3,56	1,139	
ESG implementation challenges Difficulty in complying with regulations	Yes	4,17	0,697	0
	No	3,66	1,087	

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