

Do CEO and board characteristics matter in the ESG performance of their firms?

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Abstract

Purpose – This study investigates the impact of chief executive officers (CEOs) and board members' personal characteristics on their firms' environmental, social and governance (ESG) performance.

Design/methodology/approach – Using a sample of 120,834 firm-year observations, this study used fixed-effect ordinary least squares regression analysis to empirically identify which characteristics of the CEO and board members are linked to ESG performance.

Findings – The results from analyzing archival data of privately held Finnish firms show that education level positively influences ESG performance, while age and income negatively affect total ESG performance.

Research limitations/implications – The findings highlight the importance of these characteristics in promoting ESG practices in private firms. Therefore, it will enable regulators to encourage diversity among the board members and the CEO, thereby helping to identify potential areas for improvement in corporate governance and leadership practices. The results also provide insights into how organizations can better align their actions with their values and goals.

Originality/value – This study adds to existing literature on corporate governance and ESG performance by identifying the specific personal characteristics of the directors, such as previous conviction, age, income and marital status, and their influences on ESG performance in privately held firms in Finland.

Keywords Sustainability, ESG performance, Personal characteristics, CEO, Board members

Paper type Research paper

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1. Introduction

The influence of executives' personal characteristics on corporate performance and decision-making has become a prime focus in both corporate governance and management studies (Chijoke-Mgbame *et al.*, 2023; Hazaea *et al.*, 2023; Maneenop *et al.*, 2023; Orazalin and Mahmood, 2021; Suherman *et al.*, 2023; Zaccone and Argiolas, 2023). Yet, there is little evidence of executives' personal characteristics that affect the environmental, social and governance (ESG) performance of private companies. In addition, existing literature primarily uses financial performance measures for firm performance (e.g. Hazaea *et al.*, 2023; Hossain and Bhuyan, 2023; Rose, 2005). While financial indicators are important, relying solely on them can be considered too restrictive, as it overlooks other critical aspects of long-term value creation. Further, the majority of prior studies have concentrated on specific dimensions of ESG, particularly environmental performance, while often neglecting the overall ESG performance (e.g. Kizys *et al.*, 2023; Lewis *et al.*, 2014; Orazalin and Mahmood, 2021; Villalba-Ríos *et al.*, 2023). We fill this gap by asking the question:

Q1. What role do the personal characteristics of the chief executive officers (CEOs) and board members play in their firms' ESG performance?

To answer this question, we focus on personal characteristics such as the board members' and CEOs' previous criminal convictions, age, educational qualification, marital status, total

income and how these characteristics influence the ESG performance of Finnish private companies.

ESG is gaining recognition among investors, regulators and the public as a critical criterion for assessing businesses' ethical and sustainable practices, driven by increased awareness and stakeholder pressure for transparency (Zaid and Issa, 2023). ESG actions in private firms involve integrating societal problems into commercial operations, which requires the involvement of the CEO and board members. Therefore, the directors, who hold significant decision-making power, can influence the achievement of ESG goals and contribute to sustainability performance. Specifically, sustainability is a critical issue that corporations must address, and the directors play an essential role in this regard (Villalba-Ríos *et al.*, 2023). Primarily, they are responsible for safeguarding shareholders' interests and achieving strategic goals (Chijoke-Mgbame *et al.*, 2023). Particularly, firms are now compelled to prioritize stakeholders' interests beyond pure financial wealth maximization (D'Augusta *et al.*, 2024). Further, the characteristics of the executives and the board's structure have emerged as determining factors for the firm's non-financial and financial performance (e.g. Abdul-Baki *et al.*, 2024; Chijoke-Mgbame *et al.*, 2023; Villalba-Ríos *et al.*, 2023).

Also, the board of directors' success can be measured by their commitment to corporate social responsibility and business ethics (Huang, 2013). Boards are responsible for decisions on investments in ESG activities, making board characteristics essential for achieving this goal (Maneenop *et al.*, 2023). We believe that the role of the CEOs and board members in shaping their firms' ESG performance is critical, and certain characteristics of these executives, such as their educational qualifications, age, marital status, criminal history and income, could affect the ESG performance of their companies. Further, we assume that diverse directors, including those with different traits, bring a unique perspective to the boardroom, which can foster innovation, creativity and better decision-making when it comes to ESG activities.

In Finland, sustainability policies have been exceptional when compared to other countries. Finland, for instance, held the top spot for many years, according to the Global Sustainable Competitiveness Index 2023. The country was the first to introduce a carbon tax in 1990 and has been a leader in environmental awareness (Mickwitz *et al.*, 2011). Most people in Finland perceive the government as helpful, honest and transparent, which can lead to a high level of trust in the governmental institutions of the country. Owing to these cultural characteristics, Finnish firms have long acknowledged and implemented voluntary measures to promote sustainability in businesses (Fifka and Drabble, 2012). Finnish firms increasingly rely on stakeholders while also balancing their interests and strategies in their decision-making processes (Juholin, 2004). As a result, it is critical to assess how the executives' characteristics affect the ESG practices of these firms.

Our empirical analyses are based on archival data from Suomen Asiakastieto Oy and Statistics Finland for the period from 2014 to 2019. Our analyses reveal that the educational qualifications of the executives positively impact their firm's ESG performance. However, firms led by older CEOs have a greater likelihood of experiencing a decline in their ESG performance. Additionally, the results indicate a negative relationship between the board members' total income and the ESG performance of the firms. Surprisingly, the executives' prior criminal record is not related to their firm's ESG performance.

This study adds to the knowledge of how the personal characteristics of board members and CEOs affect ESG performance. As far as we are aware, this research is the first to examine these characteristics and their associations with ESG performance in private firms. By exploring the executives' characteristics and ESG performance, we gain important insights into how organizations can better align their actions with their values and goals. Also, our empirical evidence will enable regulators to encourage diversity among the board

members and the CEO, thereby helping to identify potential areas for improvement in corporate governance and leadership practices. This can ultimately lead to more sustainable and responsible business practices. Furthermore, this study holds significance for stakeholders and investors alike, as there is a growing expectation among stakeholders that private firms should demonstrate their dedication to sustainable operations. If these stakeholders are more aware of the factors influencing ESG performance, they can make better-informed decisions about which companies to support and where to invest their funds.

Further, this study has significant practical implications for companies aiming to enhance their ESG performance. Promoting sustainability through informed leadership choices has broader societal benefits because companies that excel in sustainability are more likely to safeguard the environment, promote social well-being and assure long-term economic health. Also, this research provides actionable recommendations for stakeholders, particularly regulators and policymakers. Therefore, the findings can inform the development of policies and frameworks that promote diversity and sustainability in corporate governance.

The remainder of the paper consists of the following. We develop our hypothesis and conduct a literature review in Section 2. Section 3 addressed the methodology. The main results are discussed in Section 4 and the conclusion in Section 5.

2. Literature review and hypothesis development

2.1 Corporate sustainability

Corporate sustainability initiatives have become a critical issue for organizations due to their impact on society. Hence, accountants must reconsider unique strategies to influence business behavior and improve ESG performance, contributing to sustainable development and corporate behavior (Mistry *et al.*, 2014). Also, disregarding the concerns and interests of stakeholders could potentially impact the firm's public perception, which could subsequently hinder its performance. Further, stakeholder theory highlights the interdependence between corporations and their various stakeholders. This theory posits that the primary responsibilities of managers involve creating mutual benefits for stakeholders rather than focusing on tradeoffs (Liu *et al.*, 2023; Zhang *et al.*, 2018). Consequently, firms ought to incorporate the concerns and interests of all stakeholders in their decision-making procedures. Therefore, it is crucial for CEOs and Board members to be accountable and improve the social, governance and environmental situation internally and externally to stakeholders. According to Papoutsis and Sodhi (2020), a significant emphasis of sustainable company management is meeting stakeholder desires and needs.

Further, the upper echelons theory builds on the notion that the experiences, expertise and knowledge of an organization's executives influence its success. Wang *et al.* (2016) show that the personal characteristics of the CEO shape the future performance of the company. Accordingly, these characteristics, such as age, education, marital status and cognitive diversity, among others, can influence the prioritization of ESG initiatives within organizations. According to Lewis *et al.* (2014) and Liu *et al.* (2023), CEOs with diverse educational backgrounds tend to engage in ESG activities to enhance their company's performance. Likewise, Wang *et al.* (2016) argue that older executives may be more committed, which could lead to improved performance in the future.

2.2 Executive characteristics and corporate environmental, social and governance performance

CEOs and board members significantly influence corporations' decision-making, operational and strategic decisions and sustainability policies. Researchers have shown

how corporate board characteristics are associated with sustainability performance (e.g. [Abdul-Baki et al., 2024](#); [Villalba-Ríos et al., 2023](#)). Nonetheless, the roles of CEOs and board members in private firms remain understudied by scholars. [Hambrick \(2007\)](#) suggested that understanding organizational behavior and performance requires considering top executives' demographic and observable characteristics, as these factors indicate their cognitive value-based filters. Further, performance scholars often draw on the upper echelon theory to determine how the CEO's qualities influence business performance (e.g. [Chijoke-Mgbame et al., 2023](#); [Liu et al., 2023](#)). For instance, age, gender, educational qualification, professional experiences, remuneration and heterogeneity or homogeneity within top management teams can potentially affect their choices.

[Orazalin and Mahmood \(2021\)](#) found that board gender diversity and a sustainability committee positively impacted environmental performance, thereby enhancing the board's role in resource provision. Characteristics of the CEO may provide insight into the different performance between companies ([Suherman et al., 2023](#)). Specifically, [Suherman et al. \(2023\)](#) found that CEO characteristics positively influence firm performance. Further, [Abdul-Baki et al. \(2024\)](#) suggest that a board composition improves environmental performance, potentially by prioritizing stakeholder interests alongside shareholder wealth maximization. We can therefore argue that the CEO's and board members' characteristics matter as they influence the organization's strategic decisions, which in turn impact organizational performance.

2.3 Hypothesis development

2.3.1 Previous criminal convictions and environmental, social and governance performance. Executives' past criminal behavior can have significant consequences for the company they lead. It can harm the company's reputation, erode trust with stakeholders, or pose a higher risk for ESG impacts. Recently, understanding the relationship between executives' criminal histories and corporate performance has become an increasingly popular topic of study. [Amir et al. \(2014\)](#) document that the earnings of firms decline and become less relevant where there are more fraudulent board members. Specifically, the board members' and CEOs' attributes that indicate a propensity toward unethical conduct have an adverse impact on the organization's performance ([Amir et al., 2014](#)). This could be because of excessive risk-taking and poor monitoring.

Further, ESG performance has become a crucial factor for companies to consider, as stakeholders increasingly demand that companies operate sustainably and responsibly. It is believed that firms with top executives who do not have ethical violations or misconduct tend to positively influence ESG performance. Therefore, the ethical conduct of CEOs and board members is crucial for a company's management and could have a substantial impact on its ESG performance. To explore this relationship, we argue that the directors' previous criminal convictions have an adverse effect on their firms' ESG performance. Thus, our hypotheses are as follows:

H1a. Companies led by CEOs with prior convictions for crimes have lower ESG performance.

H1b. Companies led by board members with prior convictions for crimes have lower ESG performance.

2.3.2 Age and environmental, social and governance performance. In comparison with younger executives, older executives are commonly believed to have a competitive advantage on account of their extensive experience. [Bertrand and Schoar \(2003\)](#) suggest that older executives' conservative decision-making may impact a firm's performance, potentially affecting ESG performance positively or negatively. [Davidson et al. \(2007\)](#) show that in the year preceding turnover, corporations led by CEOs approaching retirement age accumulated substantial discretionary accruals. Also, it is believed that older CEOs tend to

select profitable projects prior to their retirement. [Rose \(2005\)](#) concludes that boards with younger members outperform boards with older members, indicating that the age of directors influences how much risk they are willing to take and what decisions they are likely to pursue. Thus, we propose the hypotheses below for the CEOs and board members, respectively:

H2a. CEO's age is negatively related to the ESG performance of their firm.

H2b. Board members' age is negatively related to the ESG performance of their firm.

2.3.3 Educational qualifications and environmental, social and governance performance.

Research indicates that executives' educational qualifications significantly impact corporate decision-making processes (e.g. [Darmadi, 2013](#); [Lewis et al., 2014](#); [Wang et al., 2016](#)). Nevertheless, there is limited research on how the directors' and CEO's educational qualifications affect ESG performance within private companies. According to [Wang et al. \(2016\)](#), the educational qualifications of firms' executives can have a significant impact on firms' outcomes. They demonstrate that the formal education of CEOs contributes to the enhancement of their organizations' performance. [Liu et al. \(2023\)](#) show that female CEOs and those with higher education levels have a stronger influence on business ESG performance. In addition, environmental information disclosure is more prevalent among CEOs who hold an MBA degree ([Lewis et al., 2014](#)). In relation to board members' level of education, [Darmadi \(2013\)](#) asserts that the educational background of the directors impacts the firm's financial success. Building on these findings, the following hypotheses were formulated for CEOs and board members, respectively:

H3a. CEO's education level is positively related to the ESG performance of their firm.

H3b. The board members' educational level is positively related to the ESG performance of their firm.

2.3.4 Marital status and environmental, social and governance performance.

Previous research suggests that the personal characteristics of CEOs and board members have a significant impact on their approaches to leadership ([Chijoke-Mgbame et al., 2023](#); [Hegde and Mishra, 2019](#); [Hossain and Bhuyan, 2023](#)). Specifically, studies have linked the executives' marital status to their stability and risk-taking propensity. [Hossain and Bhuyan \(2023\)](#) report that married CEOs are generally perceived as more risk-averse and long-term-oriented, partly due to their responsibilities towards their families. In contrast, single CEOs may exhibit higher levels of risk-taking and a focus on short-term achievements, which can be detrimental to a firm's ESG efforts. [Hegde and Mishra \(2019\)](#) document that firms led by married CEOs perform better in terms of social responsibility. We expect single CEOs and board members to exhibit less engagement in ESG implementation. Thus, we propose the following hypothesis:

H4a. Firms led by single CEOs have a lower ESG performance than those led by married CEOs.

H4b. Firms led by single board members have lower ESG performance than those led by married board members.

2.3.5 Income and environmental, social and governance performance.

A critical component of corporate governance is executives' income (e.g. [Kweh et al., 2022](#)). Hence, understanding how it is related to ESG performance can provide insight into the alignment of CEO and board member income with the company's long-term sustainability objectives. Presumably, CEOs and board members who are accountable for ESG performance hold significant equity interests in their firms and have a vested interest in achieving their ESG goals. Hence, we argue that CEOs and board members with higher incomes would prioritize ESG strategies to minimize environmental and social impacts, enhance operational efficiency and foster positive stakeholder relationships. As such, it is interesting to empirically explore whether there is a link between the executives' total income and their

firm's ESG performance. Therefore, we formulated the following hypotheses for CEOs and board members, respectively:

H5a. There is a positive relation between the CEO's income level and the ESG performance of their firm.

H5b. There is a positive relation between the board members' income level and the ESG performance of their firm.

3. Data and variables

3.1 Data sources

We used data from Suomen Asiakastieto Oy and Statistics Finland. Personal data for CEOs and board members were obtained from Statistics Finland, while the ESG variables and financial statement data were extracted from Suomen Asiakastieto Oy. Our initial sample consisted of 596,272 firm-year observations. To avoid the influence of very small, inactive firms, we exclude firms with total assets of less than 100,000 Euros. We further require each firm to have data on both the CEO and at least one board member other than the CEO. After deleting firm-years with missing data, our final sample consists of 120,384 firm-year observations and 30,934 executives of Finnish limited liability firms during the period from 2014 to 2019. We include also financial firms in our sample as we want to examine the association between executive characteristics and ESG performance across a variety of industries.

3.2 Measurement of variables

The dependent variable is the firm's total ESG score, which is a proxy for its ESG performance. The data set contained ten different ESG scores (see [Appendix 1](#)). These ESG performance indicators were classified into three categories: environmental liability inspections, social responsibility inspections and governance inspections.

We focus on five major characteristics of the CEO and board members as independent variables, which include previous criminal convictions, the age of the executives, their educational qualifications, whether they are single or married and their total income. Following [Amir et al. \(2014\)](#), the previous criminal conviction is measured by an indicator variable of one if the CEO was convicted of any crime in the past and zero otherwise, while the board members' conviction is the percentage of convicted board members. We measure the executives' age in years (e.g. [Hegde and Mishra, 2019](#); [Suherman et al., 2023](#)). We divided the educational background into four categories (e.g. [Liu et al., 2023](#); [Hilary et al., 2017](#); [Wang et al., 2016](#)). Regarding marital status, a dummy variable of one for the single CEO and zero otherwise, while for the board members, it is the percentage of single board members (e.g. [Hilary et al., 2017](#); [Hossain and Bhuyan, 2023](#)). The CEOs and board members' total income is the reported total income of the executives at the end of the financial year ([Brick et al., 2006](#); [Core et al., 1999](#)).

Prior research has connected performance to a number of firm-specific variables ([Artiach et al., 2010](#); [Orazalin, 2019](#); [Orazalin and Mahmood, 2021](#); [Suherman et al., 2023](#)). Therefore, we use the following firm-specific variables in our multivariate analysis to identify potential factors that could impact a firm's ESG performance, comprising profitability, firm size and financial leverage. Based on the literature, we assume that ESG performance is positively associated with firm profitability, size and financial leverage, as larger and less leveraged firms have more resources to engage in long-term investment in ESG activities. Further, at the individual level, we also include variables such as CEO_MALE_{it} (a dummy variable of 1 if the CEO is male and 0 if female), $BOARD_MALE_{it}$ (the percentage of male board members), $CEO_BUS_DEG_{it}$ (a dummy variable of 1 if the CEO has a business degree) and $BOARD_BUS_DEG_{it}$ (the percentage of board members with a business

degree). In addition, we predict that having a business degree and being a male leader is positively associated with ESG performance, as business education gives relevant knowledge and skills, and male-led firms have been reported to exhibit better performance (e.g. [Amaran, 2011](#); [Huang, 2013](#); [Lewis et al., 2014](#)).

3.3 Empirical model

In line with earlier literature on corporate sustainability performance (e.g. [Jia et al., 2022](#); [Kizys et al., 2023](#)), we used ordinary least squares (OLS) regression models to empirically evaluate the relationship between CEOs' and board members' personal characteristics and their firm's ESG performance. We estimated the OLS regression Model (1) to investigate the relationship between the personal characteristics of CEOs and the ESG performance of their firms. Model (1) is as follows:

$$\begin{aligned}
 ESG_{it} = & \alpha_0 + \beta_1 CEO_CONV_{it} + \beta_2 CEO_AGE_{it} + \beta_3 CEO_SINGLE_{it} + \beta_4 CEO_EDU_{it} \\
 & + \beta_5 CEO_INCOME_{it} + \beta_6 CEO_MALE_{it} + \beta_7 CEO_BUS_DEG_{it} + \beta_8 SIZE_{it} \\
 & + \beta_9 EQUITY_{it} + \beta_{10} ROA_{it} + \sum YEAR\ FIXED\ EFFECT_{it} \\
 & + \sum INDUSTRY\ FIXED\ EFFECT_{it} + \varepsilon_{it}
 \end{aligned} \tag{1}$$

Next, we estimate the OLS regression Model (2) to examine how the board members' characteristics affect the firm's ESG performance. Model (2) is as follows:

$$\begin{aligned}
 ESG_{it} = & \alpha_0 + \beta_1 BOARD_CONV_{it} + \beta_2 BOARD_AGE_{it} + \beta_3 BOARD_SINGLE_{it} \\
 & + \beta_4 BOARD_EDU_{it} + \beta_5 BOARD_INCOME_{it} + \beta_6 BOARD_MALE_{it} \\
 & + \beta_7 BOARD_BUS_DEG_{it} + \beta_8 SIZE_{it} + \beta_9 EQUITY_{it} + \beta_{10} ROA_{it} \\
 & + \sum YEAR\ FIXED\ EFFECT_{it} + \sum INDUSTRY\ FIXED\ EFFECT_{it} + \varepsilon_{it}
 \end{aligned} \tag{2}$$

All variables in Models (1) and (2) are defined in [Appendix 1](#). We incorporate year-fixed effects and industry-fixed effects to account for systematic variations in ESG performance over time and across industries. In accordance with the approach used by [Amir et al. \(2014\)](#), we also consider firm-level clustering in standard errors.

4. Empirical results

4.1 Summary statistics and correlation analysis

[Table 1](#) reports the summary statistics of the executives in our sample. As seen in Panel A, the proportion of non-convicted CEOs and directors in Finnish private firms exceeds the proportion of convicted CEOs and board members (77.16 vs 22.84). The result also shows that a sizable percentage of the executives are married (71.92 vs 28.08). Interestingly, the representation of women among CEOs and board members stands at a mere 17.50%, while males comprise approximately 82.50% of the board and CEOs. Further, most of the CEOs and directors in our sample are between the ages of 30 and 49, followed by the age group of 50–59. A majority of the executives have vocational degrees, followed by master's degrees, while very few have doctorate degrees and only about 14% of the executives have a business degree.

[Tables 2](#) and [3](#) present the descriptive statistics and correlation analyses of the variables, respectively. The descriptive statistics in [Table 2](#) show that the average ESG score is seven, with a standard deviation of 0.49. Minimum and maximum ESG scores are four and ten, respectively. Regarding CEOs, the mean criminal conviction rate is 0.24, and the standard deviation is 0.44. In contrast, the average criminal conviction rate for board members is 0.20

Table 1 Summary statistics on executives' characteristics

<i>Variables</i>	<i>No. of executives</i>	<i>% of executives</i>
<i>Panel A: Criminal convictions</i>		
Convicted	7,065	22.84
Non-convicted	23,869	77.16
Total	30,934	100.00
<i>Panel B: Marital status</i>		
Married	22,247	71.92
Single	8,687	28.08
Total	30,934	100.00
<i>Panel C: Gender</i>		
Female	5,413	17.50
Male	25,521	82.50
Total	30,934	100.00
<i>Panel D: Age (in years)</i>		
0–29	630	2.04
30–49	13,885	44.89
50–59	9,547	30.86
60–69	5,433	17.56
70+	1,439	4.65
Total	30,934	100.00
<i>Panel E: Level of education</i>		
Vocational degree or less	17,188	55.56
Bachelor's degree	5,212	16.85
Master's degree	7,751	25.06
PhD	783	2.53
Total	30,934	100.00
<i>Panel F: Business degree</i>		
Yes	4,397	14.21
No	26,537	85.79
Total	30,934	100.00

Note: The table describes summary statistics of our sample of 30,934 executives of Finnish limited liability firms during the period 2014–2019

Source: Author's own work

and the standard deviation is 0.34. The mean of gender, marital status and educational qualification of the CEOs are 0.84, 0.26 and 2.20, respectively, while for board members they are 0.72, 0.30 and 2.18, respectively. Also, it is noteworthy that the average age of the executives is 49 years and 50 years, respectively, ranging from a minimum of 18 years to 96 years. The companies' total assets range from 11.55m to 18.43m Euros. The analysis of the firms' profitability ratios, as determined by return on assets (ROA), reveals that our sample has an average ROA of 0.12%, a standard deviation of -0.38 and a maximum of 0.73.

[Table 3](#) presents the correlations between the ESG measures and the characteristics of the CEOs and board members. The results suggest that firms run by convicted CEOs and board members have lower ESG performance. Specifically, at the one percent significance level, the Pearson correlation analysis reveals a statistically significant negative correlation (a correlation coefficient of -0.03) between the CEO's previous criminal convictions and the ESG score. Board members' previous criminal convictions and total ESG score are also significantly negative (correlation coefficient of -0.03) at the 0.01 level of significance. Further, firms led by single executives seem to be less effective in ESG matters, while the educational qualifications of the CEO and board members indicate a positive association with the total ESG performance.

Table 2 Descriptive statistics of the variables used in the analyses

Variables	N	Mean	Median	SD	Min	Max
<i>ESG_{it}</i>	120,384	6.79	7.00	0.49	4.00	10.00
<i>ENVIRONMENTAL_{it}</i>	120,384	2.01	2.00	0.08	1.00	3.00
<i>SOCIAL_{it}</i>	120,384	2.01	2.00	0.12	0.00	3.00
<i>GOVERNANCE_{it}</i>	120,384	2.01	2.00	0.14	0.00	3.00
<i>CEO_CONV_{it}</i>	120,384	0.24	0.00	0.43	0.00	1.00
<i>CEO_AGE_{it}</i>	120,384	49.99	50.00	10.69	18.00	95.00
<i>CEO_MALE_{it}</i>	120,384	0.84	1.00	0.37	0.00	1.00
<i>CEO_SINGLE_{it}</i>	120,384	0.26	0.00	0.44	0.00	1.00
<i>CEO_EDU_{it}</i>	120,384	2.20	2.00	1.45	0.00	5.00
<i>CEO_INCOME_{it}</i>	120,384	11.24	11.17	0.84	8.88	13.22
<i>CEO_BUS_DEG_{it}</i>	120,384	0.14	0.00	0.34	0.00	1.00
<i>BOARD_CONV_{it}</i>	120,384	0.20	0.00	0.34	0.00	1.00
<i>BOARD_AGE_{it}</i>	120,384	50.51	50.80	11.06	18.00	96.00
<i>BOARD_MALE_{it}</i>	120,384	0.72	1.00	0.39	0.00	1.00
<i>BOARD_SINGLE_{it}</i>	120,384	0.30	0.00	0.39	0.00	1.00
<i>BOARD_EDU_{it}</i>	120,384	2.18	2.00	1.32	0.00	5.00
<i>BOARD_INCOME_{it}</i>	120,384	11.10	11.03	0.83	8.67	13.56
<i>BOARD_BUS_DEG_{it}</i>	120,384	0.15	0.00	0.30	0.00	1.00
<i>SIZE_{it}</i>	120,384	13.66	13.40	1.48	11.55	18.43
<i>EQUITY_{it}</i>	120,384	0.49	0.50	0.29	0.00	1.00
<i>ROA_{it}</i>	120,384	0.12	0.09	0.17	-0.38	0.73

Notes: The table presents the descriptive statistics of the variables of all 120,384 firm-year observations involving Finnish limited liability firms during the period 2014–2019. All continuous variables are winsorized at 1 and 99% levels. All variables are defined in [Appendix 2](#)

Source: Author's own work

4.2 Univariate analysis

In the univariate analyses reported in [Table 4](#), we examine whether there exists a distinction between companies exhibiting a high or low ESG score in relation to the personal attributes of their CEOs and directors. We begin by categorizing all firm-year observations according to their ESG rating. We then group observations into categories of “High ESG score” and “Low ESG score”, with scores of four to six belonging to the category of “Low ESG score” and observations with scores of seven and above belonging to the category of “High ESG score.” As CEOs’ variables are binomial, we use the chi-squared test to compare differences between the groups of ESG scores, while we apply the t-test to assess the differences in means of other variables.

The findings presented in [Table 4](#) show that firms committed to ESG matters have fewer board members with criminal convictions (0.19 vs 0.22). Also, the mean of CEOs with previous criminal convictions (0.23 vs 0.27) is lower for firms in the high ESG score group. There are more single executives in firms with low ESG scores. The average age of the CEOs is slightly higher in firms with lower ESG performance (49 years vs 50 years). However, both categories have board members with an average age of 50 years. Large firms’ ESG score is slightly higher, as is their return on assets.

4.3 Multivariate analysis

[Tables 5](#) and [6](#) report the results of our multivariate analysis, which tests the relationship between the CEOs’ and board members’ personal characteristics and the firm’s ESG performance. [Table 5](#) provides the results for CEOs, while [Table 6](#) provides the results for board members. Column 1 of both tables presents the regression results with the ESG scores as the dependent variable, while Columns 2, 3 and 4 present the findings for the ESG sub-scores, respectively. We conduct all the analyses using the fixed-effects regression model. F-values are statistically significant in all models.

Table 3 Correlation analysis of the main variables used in the analyses

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 <i>ESG_{it}</i>															
2 <i>CEO_CONV_{it}</i>	-0.03														
3 <i>CEO_AGE_{it}</i>	-0.02	0.12													
4 <i>CEO_SINGLE_{it}</i>	-0.01	0.03	-0.17												
5 <i>CEO_EDU_{it}</i>	0.17	-0.15	-0.03	-0.08											
6 <i>CEO_INCOME_{it}</i>	0.09	0.05	0.10	-0.11	0.33										
7 <i>BOARD_CONV_{it}</i>	-0.03	0.07	-0.04	0.04	-0.08	-0.02									
8 <i>BOARD_AGE_{it}</i>	0.01	-0.01	0.17	-0.03	0.03	0.03	0.11								
9 <i>BOARD_SINGLE_{it}</i>	-0.03	0.04	-0.02	0.20	-0.09	-0.07	0.04	-0.24							
10 <i>BOARD_EDU_{it}</i>	0.17	-0.08	0.03	-0.08	0.49	0.33	-0.16	-0.04	-0.12						
11 <i>BOARD_INCOME_{it}</i>	0.10	-0.02	-0.02	-0.07	0.30	0.58	0.06	0.11	-0.13	0.40					
12 <i>CEO_MALE_{it}</i>	-0.04	0.17	0.01	-0.03	-0.09	0.10	0.00	-0.02	0.02	-0.03	0.02				
13 <i>BOARD_MALE_{it}</i>	0.00	-0.03	-0.13	0.06	0.02	0.06	0.25	-0.00	0.02	-0.03	0.22	0.01			
14 <i>SIZE_{it}</i>	-0.01	0.02	0.05	-0.08	0.21	0.53	0.01	0.06	-0.06	0.23	0.45	0.10	0.07		
15 <i>EQUITYRATIO_{it}</i>	0.05	-0.04	0.15	-0.02	0.09	0.11	-0.06	0.07	-0.01	0.06	0.03	-0.03	-0.09	0.06	
16 <i>ROA_{it}</i>	0.08	-0.03	-0.07	-0.00	0.09	0.10	-0.03	-0.10	-0.00	0.08	0.08	-0.01	-0.00	-0.08	0.29

Notes: This table reports the Pearson correlation among the main variables used in the empirical analysis, comprising 120,384 firm-year observations of Finnish limited liability firms during the period 2014–2019. All variables are defined in [Appendix 2](#). Italic correlation coefficients are significant at 0.10 level of significance or lower

Source: Author's own work

The findings show that the CEOs' prior criminal convictions have no significant relationship with ESG performance, the result being similar for all sub-scores. Interestingly, this result for the CEO's prior criminal convictions is opposite to those reported by [Su et al. \(2024\)](#) who find a negative relationship between corporate fraud and ESG performance. Both the CEO's and board members' education levels positively influence the ESG performance of the

Table 4 Univariate analysis of how CEOs' and board members' personal characteristics affect the ESG performance of their firm

Variables	High score (7 < ESG < 10) n = 92,354	Low score (4 < ESG < 6) n = 28,030	p-value for difference
<i>CEO_AGE_{it}</i>	49.89	50.32	<0.001
<i>CEO_EDU_{it}</i>	2.35	1.72	<0.001
<i>CEO_INCOME_{it}</i>	11.27	11.12	<0.001
<i>CEO_CONV_{it}</i>	0.23	0.27	<0.001
<i>CEO_SINGLE_{it}</i>	0.26	0.27	<0.001
<i>BOARD_CONV_{it}</i>	0.19	0.22	<0.001
<i>BOARD_AGE_{it}</i>	50.56	50.37	0.014
<i>BOARD_SINGLE_{it}</i>	0.29	0.32	<0.001
<i>BOARD_EDU_{it}</i>	2.31	1.75	<0.001
<i>BOARD_INCOME_{it}</i>	11.14	10.95	<0.001
<i>CEO_MALE_{it}</i>	0.82	0.88	<0.001
<i>BOARD_MALE_{it}</i>	0.72	0.73	0.019
<i>CEO_BUS_DEG_{it}</i>	0.15	0.11	<0.001
<i>BOARD_BUS_DEG_{it}</i>	0.16	0.12	<0.001
<i>SIZE_{it}</i>	13.61	13.81	<0.001
<i>EQUITY_{it}</i>	0.50	0.46	<0.001
<i>ROA_{it}</i>	0.13	0.09	<0.001

Notes: The table reports the mean values of the main variables of interest, which are grouped into high and low ESG scores. The binomial variables (*CEO_CONV_{it}*, *CEO_MALE_{it}*, *CEO_BUS_DEG_{it}* and *CEO_SINGLE_{it}*) were tested using a Chi-squared test. The other variables are tested using a T-test. All variables are defined in [Appendix 2](#)

Source: Author's own work

Table 5 Multivariate analysis of how CEOs' personal characteristics affect the ESG score of their firm

Variables	Exp. sign	Sub-scores			
		ESG _{it} (1)	Environmental _{it} (2)	Social _{it} (3)	Governance _{it} (4)
CEO_CONV _{it}	-	0.001 (0.35)	-0.001 (-0.67)	0.001 (0.84)	0.001 (0.31)
CEO_AGE _{it}	-	-0.015** (-2.53)	-0.003 (-1.57)	-0.004 (-1.31)	-0.008*** (-2.62)
CEO_SINGLE _{it}	-	-0.003 (-0.97)	0.000 (0.07)	-0.001 (-0.89)	-0.002* (-1.12)
CEO_EDU _{it}	+	0.011*** (3.45)	0.000 (0.15)	0.002 (1.60)	0.008*** (5.00)
CEO_INCOME _{it}	+	0.001 (0.62)	0.001 (1.18)	-0.001 (-1.43)	0.001 (1.37)
CEO_BUS_DEG _{it}	+	-0.024*** (-5.12)	0.001 (0.56)	-0.012*** (-7.50)	-0.012*** (-4.85)
CEO_MALE _{it}	+	0.009*** (2.64)	-0.000 (-0.24)	0.005*** (3.42)	0.004** (2.41)
SIZE _{it}	+	0.018*** (11.67)	0.005*** (9.15)	0.005*** (7.89)	0.008*** (10.51)
EQUITY _{it}	+	-0.009** (-2.06)	0.000 (0.21)	-0.002 (-1.14)	-0.007*** (-3.01)
ROA _{it}	+	0.010* (1.88)	-0.002 (-1.03)	0.008*** (3.21)	0.003 (1.02)
Intercept		Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes	Yes
R-Squared		0.027	0.017	0.013	0.023
N		120,384	120,384	120,384	120,384

Notes: The table presents the results of estimating Model (1):

$$\begin{aligned}
 ESG_{it} = & \alpha_0 + \beta_1 CEO_CONV_{it} + \beta_2 CEO_AGE_{it} + \beta_3 CEO_SINGLE_{it} + \beta_4 CEO_EDU_{it} \\
 & + \beta_5 CEO_INCOME_{it} + \beta_6 CEO_MALE_{it} + \beta_7 CEO_BUS_DEG_{it} \\
 & + \beta_8 SIZE_{it} + \beta_9 EQUITY_{it} + \beta_{10} ROA_{it} + \sum YEAR\ FIXED\ EFFECT_{it} \\
 & + \sum INDUSTRY\ FIXED\ EFFECT_{it} + \epsilon_{it}
 \end{aligned}$$

The dependent variable ESG_{it} in column (1) is the total ESG score of firm i at time t . ESG_{it} is replaced with sub-scores $Environmental_{it}$, $Social_{it}$ and $Governance_{it}$ in Model (1) above for the results in columns (2), (3) and (4), respectively. Year-fixed effects and industry-fixed effects are included to control for systematic variations in ESG performance over time and across various industries.

Appendix 2 provides definitions for all other variables. T-statistics are reported in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively. All continuous variables are winsorized to the 1st and 99th percentiles of their distributions

Source: Author's own work

company. This confirms that firms led by executives with higher educational qualifications excel in ESG matters. Also, this result is consistent with [Suherman et al. \(2023\)](#) who report that directors' educational backgrounds are important for the firm's performance. Similarly, [Arumona et al. \(2019\)](#) emphasize that the board's formal education should be highly considered when appointing board members. The result indicates that academically proven CEOs and directors have a comprehensive understanding of their field, significantly influencing the success of their firms through informed ESG decisions.

The results reported in [Table 5](#) show that the age of CEOs has a significant negative adverse effect on a firm's total ESG performance. Accordingly, the results for the governance sub-score show a significant negative relationship with the CEOs' age. This result indicates that younger CEOs, compared to their older counterparts, are more likely to implement ESG activities and perform better, as they are more aware of environmental issues and are more open to innovative strategies. This supports the view that younger CEOs are more open to changes in the business environment and are more inclined to support CSR initiatives (e.g. [Bertrand and Schoar, 2003](#); [Hegde and Mishra, 2019](#)). In contrast, the results reported in [Table 6](#) show that there is no significant relationship between the age of board members and the total ESG performance of their respective companies. This result remains the same for all the sub-scores.

Table 6 Multivariate analysis of how board members' personal characteristics affect the ESG score of their firm

Variables	Exp. sign	Sub-scores			
		ESG _{it} (1)	Environmental _{it} (2)	Social _{it} (3)	Governance _{it} (4)
BOARD_CONV _{it}	-	-0.000 (-0.05)	-0.001 (-0.47)	0.000 (0.07)	0.000 (0.15)
BOARD_AGE _{it}	-	-0.000 (-0.02)	0.001 (0.58)	-0.002 (-0.90)	0.001 (0.40)
BOARD_SINGLE _{it}	-	-0.005 (-1.60)	-0.000 (-0.28)	-0.003** (-2.02)	-0.001 (-0.85)
BOARD_EDU _{it}	+	0.011*** (3.39)	0.001 (0.91)	0.002 (1.06)	0.009*** (4.88)
BOARD_INCOME _{it}	+	-0.005** (-2.35)	-0.001 (-1.06)	-0.002** (-2.55)	-0.002* (-1.68)
BOARD_BUS_DEG _{it}	+	-0.027*** (-5.22)	-0.002 (-1.34)	-0.011*** (-4.67)	-0.013*** (-4.81)
BOARD_MALE _{it}	+	0.011*** (3.25)	0.001 (1.18)	0.004** (2.44)	0.005*** (3.09)
SIZE _{it}	+	0.019*** (12.01)	0.005*** (8.96)	0.005*** (8.16)	0.009*** (11.20)
EQUITY _{it}	+	-0.010** (-2.43)	-0.000 (-0.14)	-0.003 (-1.37)	-0.008*** (-3.30)
ROA _{it}	+	0.015*** (2.78)	-0.000 (-0.24)	0.009*** (3.44)	0.006* (1.89)
Intercept		Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes
Industry FE		Yes	Yes	Yes	Yes
R-Squared		0.023	0.016	0.013	0.022
N		120,384	120,384	120,384	120,384

Notes: This table reports the results from estimating Model (2):

$$\begin{aligned}
 ESG_{it} = & \alpha_0 + \beta_1 BOARD_CONV_{it} + \beta_2 BOARD_AGE_{it} + \beta_3 BOARD_SINGLE_{it} \\
 & + \beta_4 BOARD_EDU_{it} + \beta_5 BOARD_INCOME_{it} + \beta_6 BOARD_MALE_{it} \\
 & + \beta_7 BOARD_BUS_DEG_{it} + \beta_8 SIZE_{it} + \beta_9 EQUITY_{it} + \beta_{10} ROA_{it} \\
 & + \sum YEAR\ FIXED\ EFFECT_{it} + \sum INDUSTRY\ FIXED\ EFFECT_{it} + \varepsilon_{it}
 \end{aligned}$$

The dependent variable ESG_{it} in column (1) is the total ESG score of firm i in year t . ESG_{it} is replaced with sub-scores $Environmental_{it}$, $Social_{it}$ and $Governance_{it}$ in Model (2) above for the results in columns (2), (3) and (4), respectively. Year-fixed effects and industry-fixed effects are included to control for systematic variations in ESG performance over time and across various industries. Appendix 2 provides definitions for all other variables. T-statistics are reported in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively. All continuous variables are winsorized to the 1st and 99th percentiles of their distributions

Source: Author's own work

Results from prior research suggest that board members' and CEOs' marital status is associated with firm performance (e.g. Hegde and Mishra, 2019). Executives' marital status and economic commitment may influence corporate policy choices, as married executives may be less willing to risk family welfare, indicating a greater commitment to their economic and social well-being (e.g. Hilary et al., 2017; Hossain and Bhuyan, 2023). Contrarily, our result shows that an executive's marital status is not related to the firm's ESG performance.

Regarding CEOs' income, the results indicate that there is no significant link between the CEOs' income and the firms' ESG performance. On the other hand, there is a negative relationship between the board members' income and the ESG performance of their company. Brick et al. (2006) argued that excess compensation for directors is associated with firms' underperformance. Therefore, we could attribute the adverse effect to the complexity of the board composition. In other words, the complexity of board composition can negatively impact board members' income if their expertise doesn't align with ESG objectives. For instance, their short-term financial goals may discourage commitment to long-term ESG goals.

Further, Tables 5 and 6 show the findings of the control variables, which predict that companies led by male CEOs and board members will perform better in ESG. Consistently, prior research has found that male-led firms are more successful and have better

performance (e.g. [Amaran, 2011](#)). Moreover, the size of a company positively influences its ESG performance. This result is consistent with [Artiach et al. \(2010\)](#) and [Orazalin \(2019\)](#) finding that a company's size positively impacts its sustainability performance. The results also show that more profitable firms have better sustainable practices, most likely because of their ability to afford high sustainability costs. The relationship between the equity ratio and the total ESG score is significantly negative. Also, the proportion of board members and CEOs with a business degree adversely affects firm's ESG performance. Business school's teaching has been criticized for its excessive emphasis on shareholder value and organizational performance while neglecting the wider societal demands ([Ferlie et al., 2010](#); [Ghoshal, 2005](#)). Therefore, the emphasis on financial metrics and shareholder value in business degree programs may lead executives to prioritize immediate gains rather than long-term ESG performance.

4.4 Additional analysis

We carried out further analyses to verify our findings. First, we re-estimate Models (1) and (2) by including in the estimations additional variable *CHILDREN_UNDER18_{it}*, an indicator variable that is equal to one if the CEO and board members have children under 18 years old and zero otherwise. According to [Cronqvist and Yu \(2017\)](#), the executive's parental status directly influences the firm's CSR practices, particularly if the executive has a daughter. Results in [Table 7](#) indicate no significant slope for this variable, however, all other results remain materially unchanged when compared to our earlier results.

Following earlier literature on ESG performance (e.g. [Jia et al., 2022](#); [Kizys et al., 2023](#); [Tarifa-Fernández et al., 2023](#)), we also conducted ordered logit regression analysis using

Table 7 Multivariate analysis of how CEOs' and board members' personal characteristics affect the ESG score of their firm

Variables	CEOs ESG _{it} (1)	Board members ESG _{it} (2)
<i>CONVICTION_{it}</i>	0.001 (0.35)	-0.000 (-0.04)
<i>AGE_{it}</i>	-0.018*** (-2.64)	-0.001 (-0.15)
<i>SINGLE_{it}</i>	-0.004 (-1.17)	-0.005* (-1.66)
<i>EDUCATION_LEVEL_{it}</i>	0.011*** (3.47)	0.011*** (3.39)
<i>TOTAL_INCOME_{it}</i>	0.001 (0.67)	-0.004** (-2.33)
<i>CHILDREN_UNDER18_{it}</i>	-0.000 (-0.73)	-0.000 (-0.28)
<i>BUSINESS_DEG_{it}</i>	-0.024*** (-5.12)	-0.027*** (-5.22)
<i>MALE_{it}</i>	0.009*** (2.67)	0.011*** (3.26)
<i>SIZE_{it}</i>	0.018*** (11.67)	0.019*** (12.03)
<i>EQUITY_{it}</i>	-0.009** (-2.08)	-0.011** (-2.43)
<i>ROA_{it}</i>	0.010* (1.89)	0.015*** (2.79)
Intercept	Yes	Yes
Year FE	Yes	Yes
Industry FE	Yes	Yes
R-Squared	0.026	0.026
N	120,384	120,384

Notes: This table reports the results from re-estimating Models (1) and (2) by adding a new variable, *CHILDREN_UNDER18_{it}*. The dependent variable *ESG_{it}* in both columns is the total ESG score of firm *i* in year *t*. Column 1 shows the results for the CEOs and Column 2 shows the results for the board members. *CHILDREN_UNDER18_{it}* is an indicator variable equal to one if the executive has children under 18 years old and zero otherwise. Year-fixed effects and industry-fixed effects are included to control for systematic variations in ESG performance over time and across various industries. [Appendix 2](#) provides definitions for all other variables. T-statistics are reported in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively. All continuous variables are winsorized to the 1st and 99th percentiles of their distributions

Source: Author's own work

Models (1) and (2) to assess the robustness of the results by OLS. Ordered logistic regression analysis is appropriate for ordinal variables that have a rank or degree difference (Jia *et al.*, 2022). Thus, a cumulative logistic regression model, where the ESG score is considered an ordinal categorical variable, was used. By fitting this model, we can determine whether the conclusions drawn from the OLS regression hold true when the ordinal nature of the ESG score is properly accounted for. As shown in Table 8, our results remain substantially consistent with those presented in Tables 5 and 6.

5. Conclusions

We explore how the personal characteristics of CEOs and board members are related to the ESG performance of Finnish private companies. Our results indicate that the educational qualifications of the executives have a positive effect on the ESG performance of their respective firms. However, the CEO's age has an adverse impact on their firms' total ESG performance. Also, board members with higher incomes are more likely to prioritize short-term financial gains over a long-term commitment to ESG practices. All other characteristics of CEOs and board members under our investigation indicate a non-significant relationship with total ESG performance. In general, this study demonstrates that when formulating strategic decisions, it is critical to have a diversified board of directors

Table 8 Multivariate analysis of how CEOs' and board members' personal characteristics affect the ESG score of their firm: Ordered logit regressions

Variables	CEOs ESG _{it} (1)	Board members ESG _{it} (2)
CONVICTION _{it}	0.088 (0.90)	0.089 (0.75)
AGE _{it}	-0.570*** (-3.40)	-0.065 (-0.35)
SINGLE _{it}	-0.132 (-1.42)	-0.145* (-1.37)
EDUCATION_LEVEL _{it}	0.325*** (3.42)	0.361*** (3.40)
TOTAL_INCOME _{it}	0.018 (0.37)	-0.142** (-2.78)
BUSINESS_DEGREE _{it}	-0.790*** (-5.77)	-0.910*** (-5.70)
MALE _{it}	0.481*** (3.57)	0.454*** (3.75)
SIZE _{it}	0.360*** (13.78)	0.418*** (15.91)
EQUITY _{it}	-0.233** (-1.83)	-0.262** (-2.05)
ROA _{it}	0.463* (2.75)	0.600*** (3.45)
Intercept	Yes	Yes
Year FE	Yes	Yes
Industry FE	Yes	Yes
N	120,384	120,384

Notes: This table reports the results from estimating the following model:

$$\begin{aligned}
 ESG_{it} = & \alpha_0 + \beta_1 CONVICTION_{it} + \beta_2 AGE_{it} + \beta_3 SINGLE_{it} + \beta_4 EDUCATION_LEVEL_{it} \\
 & + \beta_5 TOTAL_INCOME_{it} + \beta_6 MALE_{it} + \beta_7 BUSINESS_DEGREE_{it} + \beta_8 SIZE_{it} \\
 & + \beta_9 EQUITY_{it} + \beta_{10} ROA_{it} + \sum YEAR\ FIXED\ EFFECT_{it} \\
 & + \sum INDUSTRY\ FIXED\ EFFECT_{it} + \varepsilon_{it}
 \end{aligned}$$

The dependent variable ESG_{it} in both columns is the total ESG score of firm i in year t . Column 1 shows the results for the CEOs and Column 2 shows the results for the board members. Year-fixed effects and industry-fixed effects are included to control for systematic variations in ESG performance over time and across various industries. Appendix 2 provides definitions for all other variables. T-statistics are reported in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively. All continuous variables are winsorized to the 1st and 99th percentiles of their distributions

Source: Author's own work

and CEOs to achieve a balance among various qualities, particularly group decisions involving ESG practices.

This study has several implications. First, we contribute to earlier literature by demonstrating how the board members' and CEOs' criminal convictions, age, marital status and income influence ESG performance in their companies. As far as we know, this study is the first to examine these characteristics and their role in the ESG performance of private firms; several other studies have focused on financial performance. The policy implication of our empirical evidence is that it will enhance regulators to encourage diversity among the board members and the CEO, thereby improving the corporate governance practices of these firms. From a managerial standpoint, our analysis provides evidence of how important it is to have board members and CEOs with diversified traits in value-creation processes. Consequently, to improve ESG performance, businesses need to focus on the personal characteristics of their board members and CEOs.

We believe that firms in other countries can also benefit from the results of this study, as they can use the identification of specific characteristics associated with ESG performance to guide their leadership nomination decisions in a way that prioritizes ESG consideration. Furthermore, this study encourages the incorporation of ESG elements into corporate governance structures. As a result, boards of directors and executive committees can enhance governance processes that support ESG activities in their firms. The findings also enrich constructive recommendations for firms to call for a good environmental policy and coordinated industry efforts to realize ESG goals.

This study has some limitations. Our investigation was conducted on mainly non-listed firms; therefore, our findings might not be applicable to publicly traded corporations. We also recognize that while the fixed effects we have included in our models control for unobserved industry-specific heterogeneity and time-specific shocks, they may not fully address all endogeneity concerns. We leave for future research to explore the other possible forms of endogeneity in the relationship between CEO characteristics and the ESG performance of private firms such as reverse causality, e.g. by using advanced econometric techniques based on instrumental variables. Finally, future research may consider other characteristics, such as specific skills, cultural background and corporate responsibility committees.

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Further reading

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Appendix 1

Table A1 Definition of the ESG measure

<i>Variables</i>	<i>Points</i>
<i>Environmental inspections</i>	
■ Firm has no issues related to environmental liability at court	1
■ Firm has no environmental liability imposed by public authorities such as penalty and failure to pay	1
■ Firm has certificates related to environmental responsibility	1
■ Air emissions from the industry: Low emission industry	1
<i>Social responsibility inspections</i>	
■ Firm has no issue related to the social responsibility at court	1
■ Firm has no liability on social responsibility such as penalty and failure fees	1
■ Firm has certificates related to social responsibility	1
<i>Governance inspections</i>	
■ Firm has no court issues on governance	1
■ Firm has no liability related governance such as authority's penalty and failure fees	1
■ Firm has certificates related to good governance	1
Total points	10

Notes: The table presents the list of indicators for the total ESG score from Suomen Asiakastieto database. The total score was classified into three categories, environmental inspections; social responsibility inspections; and governance inspections

Source: Author's own work

Appendix 2

Table A2 Variable definitions

Variables	Description
ESG_{it}	Total ESG score of firm i in year t
$ENVIRONMENTAL_{it}$	Environmental sub-score of firm i in year t
$SOCIAL_{it}$	Social sub-score of firm i in year t
$GOVERNANCE_{it}$	Governance sub-score of firm i in year t
CEO_CONV_{it}	Indicator variable equal to one if the CEO of firm i has been convicted of a crime in year t , otherwise zero
CEO_AGE_{it}	The age (in years) of the CEO of firm i in year t
CEO_SINGLE_{it}	An indicator variable of one if the CEO of firm i is single in year t , otherwise zero
CEO_EDU_{it}	Educational qualification of the CEO of firm i in year t
CEO_INCOME_{it}	Total income of the CEO of firm i in year t
$BOARD_CONV_{it}$	The percentage of convicted board members in firm i in year t
$BOARD_AGE_{it}$	The average age (in years) of the board members of firm i in year t
$BOARD_SINGLE_{it}$	Percentage of single board members of firm i in year t
$BOARD_EDU_{it}$	The average educational qualification of the board members of firm i in year t
$BOARD_INCOME_{it}$	The average total income of the board members of firm i in year t
CEO_MALE_{it}	An indicator variable equal to one if the CEO of firm i in year t is male, otherwise zero
$BOARD_MALE_{it}$	Percentage of male board members of firm i in year t
$CEO_BUS_DEG_{it}$	An indicator variable equal to one if the CEO of firm i has a business degree in year t , otherwise zero
$BOARD_BUS_DEG_{it}$	Percentage of board members having a business degree of firm i in year t
$SIZE_{it}$	The logarithm of total assets of firm i in year t
$EQUITY_{it}$	Shareholders' equity divided by the total asset of firm i in year t
ROA_{it}	Return on assets, defined as net income divided by total assets of firm i in year t

Source: Author's own work

About the author

Blessing Oyinlola is a doctoral researcher of Accounting at Oulu Business School, University of Oulu. She has a strong focus on environmental, social and governance issues and her research aims to ensure that organizations incorporate ESG considerations into their accounting system and decision-making frameworks. Blessing Oyinlola can be contacted at: blessing.oyinlola@oulu.fi

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