Management Decision

Driving ESG performance: CEO succession impact in European listed firms

Domenico Rocco Cambrea
Department of Communication and Economics, University of Modena and Reggio Emilia, Reggio Emilia, Italy
Fabio Quarato
Department of Management and Technology, Bocconi University, Milano, Italy
Giorgia Maria D'Allura
Department of Economics and Business, University of Catania, Catania, Italy, and
Francesco Paolone
Department of Economics and Law, Universitas Mercatorum, Rome, Italy

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Abstract

Purpose – The purpose of the paper is to examine the effect of chief executive officer (CEO) succession on environmental, social and governance (ESG) performance and whether the characteristics of the incoming CEO, in terms of both gender and career horizon, are able to affect the relationship between CEO succession and ESG score.

Design/methodology/approach – The paper investigates a sample of European-listed companies between 2010 and 2021. Difference-in-difference and fixed-effects regressions are employed as the base empirical methodology. In addition, the robustness of the empirical findings is assessed by employing alternative methodologies and a different ESG proxy.

Findings – The empirical findings show the existence of a positive link between CEO succession and ESG performance and that this relationship is affected by two characteristics of the incoming CEO. Specifically, the empirical evidence indicates that the positive effect is magnified by the gender and the career horizon of the incoming CEO.

Originality/value – Considering the lack of research, this paper is the first one that opens a debate about the effects of CEO succession on corporate ESG performance in several European countries. By employing a unique sample of European listed firms, which has never been examined in other empirical research, this study highlights the importance of the demographic features of the incoming CEOs that should be taken into consideration during their selection process.

Keywords CEO succession, Female CEO, CEO career horizon, ESG performance

Paper type Research paper

1. Introduction

Recent studies have recognized the increasing significance of environmental, social and governance (hereafter ESG) activities within business (Huarng and Yu, 2024; Reber *et al.*, 2022). Several scholars have devoted notable attention to comprehending the roles of firms'

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decision-makers in facilitating ESG activities (Aabo and Giorici, 2023; Cooper, 2017; Mahran and Elamer, 2024). In this context, a stream of strategy scholars, inspired by the upper echelon theory (UET by Hambrick and Mason, 1984), consider a company's chief executive officer (CEO) as the most powerful actor in a firm; consequently, a huge number of academic researchers examined how CEO-related factors, including cognition, personalities and levels of compensation, influenced a firm's strategic decisions and, therefore, its performance.

While existing literature has explored the influence of CEO characteristics on corporate decisions regarding ESG activities (Mahran and Elamer, 2024), there is a research gap in studies examining how CEO succession affects ESG performance, leaving almost totally unexplored a crucial topic related to the strategies of a company, which could, thus, not recognize the importance of CEO turnover as a tool to affect ESG performance.

In this vein, our aim is to fill the existing gap in the literature by investigating the relationship between CEO succession and ESG performance. The recent literature review by Mahran and Elamer (2024) showed that a significant number (102) of studies explored the impact of CEO characteristics on firms' environmental performance and a significant portion of empirical research examined the relationship between firms' environmental performance and CEO demographic characteristics such as CEO tenure, duality, background, gender, age and connections.

Thus, after inspecting the direct link between CEO succession and ESG performance, our research explores whether the gender and the career horizon of the incoming CEO may enhance or inhibit ESG performance after succession. With regard to the first moderator, our decision to include gender is grounded in recent legislative developments, particularly the European Union's mandate for increased female representation in executive positions (Lefley and Janeček, 2024). This directive aims to achieve a minimum of 40% female representation in non-executive director positions by 2026. With gender diversity in leadership gaining traction due to these regulatory changes, we anticipate a potential surge in the appointment of female CEOs within European-listed companies, providing evidence for ESG performance. Concerning the second moderator, scholars have recently turned their attention to exploring the concept of the CEO's "career horizon," encompassing the remaining tenure as the CEO approaches retirement (Kang, 2016; Matta and Beamish, 2008). Scholars have found that CEOs with shorter career horizons tend to favor risk-averse strategies, leading to what is termed the CEO's "horizon problem" (Hambrick and Mason, 1984). In this path of research, scholars have demonstrated that a CEO's career horizon significantly influences several strategic decisions, including corporate social responsibility (Kang, 2016). Therefore, appointing new CEOs with longer time horizons may be advantageous for firms seeking to invest in ESG activities, as it aligns with their heightened interest in enhancing their legitimacy over an extended career path.

The rationale for CEO succession proposed in our study is grounded in the legitimacy theory (Cyert and March, 1963), which suggests that firms seek to maintain their social and environmental legitimacy in the eyes of their stakeholders. According to this theory, organizations ought to align their activities and behaviors with the values and expectations of society to maintain their "social license to operate" (Gehman *et al.*, 2017). Indeed, in scholarly investigations inspired by the UET, the designation of a new CEO usually affects both performance and the degree of uncertainty faced by firms (Tao and Zhao, 2019).

We test our research hypotheses on a sample of 227 European listed firms for the period 2010–2021.

The manual data collection made it possible to identify all the CEO successions that occurred in the 12 years of the research period and represents a unique sample that has never been investigated in previous empirical studies focused on single-country analyses (Bernard *et al.*, 2018; Liu, 2020), with limited attention to cross-country comparisons. The empirical findings support our three research hypotheses, indicating that CEO succession is positively associated with superior ESG performance and that the positive effect is magnified when the incoming CEO is a woman and has a longer career horizon.

The contribution of this paper is twofold. First, we contribute to the field of corporate governance studies by analyzing the impact of CEO succession on firm performance. More specifically, in the context of legitimacy theory, CEO succession is a pivotal governance choice justified by the imperative to enhance firm legitimacy, which reinforces the organization's enduring commitment to prevailing societal norms and expectations. The relevance of this inquiry is especially pronounced in the case of publicly listed firms, where the preservation of legitimacy is a precondition to ensure their evaluation by investors. Thus, we contribute to the extant body of corporate governance literature, providing nuanced insights into the motivations and ramifications of CEO succession concerning the maintenance of corporate legitimacy. Second, we extend the UET theory to reveal how CEO attributes are pertinent to explaining ESG performance. UET posits that individuals' demographics, backgrounds, experiences and values influence their decision-making and behaviors within an organization (Hambrick and Mason, 1984). Within this framework, we provide a deeper understanding of how the CEO's gender and career horizon may impact ESG performance. Specifically, we shed light on the nuanced relationship between CEO attributes and sustainable performance within the context of UET, contributing to a more comprehensive understanding of the CEO selection process (Schepker *et al.*, 2017; Shen and Cannella, 2002).

Our study has important implications for practice, as it suggests considering which career horizon and gender the new CEOs should have to operate effectively to meet financial goals within ESG scopes. Specifically, we show how CEO turnover may help to reach superior ESG scores, and we demonstrate how this positive link is influenced by the career horizon and gender of the incoming CEOs. Companies benefit in terms of ESG performance when a younger CEO or a women CEO becomes the leader of the board of directors. Our study provides guidance for designing governance structures that are also in line with ESG goals, suggesting that the positive effect arising from the change of CEOs could be further improved in the presence of a CEO with a longer career horizon and from hiring a woman CEO.

The remainder of the paper is structured as follows: Section 2 discusses previous literature on this topic and develops testable hypotheses. Section 3 presents the data and research design. Empirical results, discussions and implications are covered in Section 4. Section 5 outlines the conclusion and limitations while offering suggestions for further research.

2. Literature review and theoretical framework

2.1 CEO succession and ESG performance

CEO succession is a crucial moment for firms, as it plays a pivotal role in shaping their trajectory, as new leadership is expected to better align resources with the environment and initiate strategic change with expectations to increase firm performance (Giambatista *et al.*, 2005). Therefore, the selection of CEO successors is also crucial to identify individuals whose characteristics will positively influence firm strategy and performance (Schepker *et al.*, 2017).

Recently, sustainable activities have become a strategic necessity for firms. Thus, among the requests placed upon a CEO, there is the call to integrate ESG activities into the firm's strategy to meet the business' social obligations while safeguarding the benefits that a higher ESG rating may lead. The role of the CEO in sustainable activities has been described as determinant (Schepker *et al.*, 2017), with CEO capabilities identified as critical for achieving ESG performance by effectively managing complex stakeholder expectations (Heubeck, 2024). Despite this, only a few studies have addressed the relationship between CEO succession and ESG performance.

Some scholars have been interested in understanding the interactions between ESG and CEO turnover, showing an increase in the likelihood of being dismissed when the risk associated with ESG issues reaches high levels (Colak *et al.*, 2024). Similarly, Hubbard *et al.* (2017) demonstrated that increasing investments in CSR were connected to a greater likelihood of CEO succession in the context of poor financial performance. Meng *et al.* (2013) focused on the relationship between top management turnover and environmental responsibility using a sample of 782 manufacturing listed companies in China. Building on the hypothesis that governance and stakeholders' pressures influence environmental disclosure, they observed that environmental responsibility is negatively associated with negative turnover (i.e. dismissal and forced resignation) and not associated with normal turnover (i.e. retirement and contract expiration). Bernard *et al.* (2018) highlighted that turnover among CEOs of French firms can improve corporate sustainability performance, especially when the incumbent CEOs are recruited from outside the organization.

The application of legitimacy theory to examine the nexus between CEO succession and ESG performances assumes relevance for our investigation, given that we are analyzing listed companies. The CEO assumes a dual responsibility, overseeing both external interactions and internal affairs (Harrison *et al.*, 1988). Accordingly, we seek to explore how a change in leadership may serve as a transformative moment (Conger, 1999). The underlying assumption is that, even for firms less involved in sustainability efforts, a change in CEO provides a timely opportunity to align organizational strategies with heightened societal expectations related to ESG activities. Consequently, through the lens of legitimacy theory, we aim to examine how CEO succession affects ESG performance in firms, thereby contributing to a deeper comprehension of which CEO characteristics facilitate significant changes in ESG performance.

From a legitimacy theory lens, CEO successors are motivated to enhance ESG performance to acquire and/or reinforce the relationship with multiple stakeholders and achieve legitimacy (Ahn and Park, 2018; Liu, 2020; Schepker *et al.*, 2017), which would positively affect the boards' evaluation of the CEO successor, thus facilitating the improvement of its leadership position. Consequently, we expect an increase in ESG performance following the CEO's succession.

Accordingly, we formulate the following hypothesis:

H1. There is a positive relationship between CEO succession and ESG performance.

2.2 The moderating effect of gender and career horizon on the relationship between CEO succession and ESG performance

The UET suggests that management executives' features are predictors of strategic choices and behaviors, thereby influencing organizational outcomes (Hambrick and Mason, 1984). Based on UET theory, organizational outcomes reflect the values and cognitive biases of top managers in the organization. Accordingly, the experiences, backgrounds and characteristics of top managers shape their cognitive perspectives and explain the differences in organizational performance (Abatecola and Cristofaro, 2020). Among the top management team, CEOs are the most powerful actors in adapting the organization's strategic direction to its dynamic environment (Schepker *et al.*, 2017). Accordingly, the UET plays a crucial role in explaining the effects of CEO succession on corporate strategic actions (Elosge *et al.*, 2018). Following this theory, several contributions find some moderating effects on the relationship between CEO succession and performance. Slater and Dixon-Fowler (2009) demonstrate that CEOs with international assignment experience and an output functional background (marketing and sales) are positively associated with greater corporate social performance. Past research on top managers' roles in firms' ESG performance has focused mostly on executive compensation (Deckop *et al.*, 2006), experience and skills (Slater and Dixon-Fowler, 2009) and gender (Manner, 2010).

Following, we draw on the UET as a framework to examine the moderating impact of CEO gender and career horizon on the association between CEO succession and ESG performance.

This analysis seeks to explain the considerations influencing the choice of a CEO, particularly the inclination toward specific traits and the rationale driving such preferences. UET scholars have long been investigating both gender and career horizon as two moderators capable of influencing the relationship between CEOs and strategic choices. In the following sections, we will provide a literature review supporting this aspect. Further, other aspects need to be highlighted to support the logic of our theoretical framework. Concerning gender, this motivation is associated with the application of legitimacy theory lenses and policy incentives. The presence of women in leadership roles is anticipated to increase in the coming years, given the policy indications at the European level. Moreover, the mere presence of women can enhance the firm's legitimacy in this context. Therefore, investigating how the selection of a female CEO moderates the relationship between CEO succession and ESG performance appears urgent and necessary. Similarly, in line with legitimacy theory lenses, we contend that a CEO's inclination to invest in ESG activities is influenced by their career perspective. We believe that the CEO's need to establish legitimacy is tied to their potential to leverage this competence throughout their career.

2.3 CEO gender

Women have received considerable attention due to the significance of gender diversity as a strategic management tool used by firms to address CSR-related concerns. Several studies have highlighted how women, more than men, when occupying the position of CEO, pay greater attention to environmental protection and consequently implement actions for sustainability (Haque, 2017; Post *et al.*, 2015). However, the gender of the CEO impact in the context of CEO succession is still unexplored. Male CEOs are often considered suitable candidates for leadership positions, while females are viewed as unfit for top positions because of a perceived lack of various qualities along with leadership skills (Dwivedi *et al.*, 2018).

The state of the art informs us that women are more inclined towards sustainability than men (Bannò *et al.*, 2023). This inclination can be elucidated by multifaceted factors encompassing cultural, social and economic dimensions that influence cognitive processes and behavioral patterns (Berger and Luckmann, 1966). Therefore, women consistently demonstrate a greater level of awareness and a heightened degree of concern in contrast to men regarding the intricate links between environmental detriment and personal well-being, as elucidated by Stern *et al.* (1993).

Within leadership roles, women evince a predilection for prioritizing stakeholders and embracing a protracted temporal perspective to a greater extent than their male counterparts, even when such a disposition necessitates the relinquishment of immediate financial gains (Yang *et al.*, 2019). Conspicuously, women demonstrate a heightened proficiency in orchestrating the harmonization of diverse stakeholder interests, encompassing communities, employees, suppliers and customers, with the performance-centric considerations of shareholders (Adams, 2016). This unwavering dedication to stakeholder integration serves to augment the reliability of decisions and actions undertaken by women leaders, thereby fortifying the ethical underpinnings of their leadership approaches (Adams and Funk, 2012). Female CEOs are capable of offering new experiences, insights and knowledge that enable the strategies of the firm. Their greater social orientation than their male counterparts may encourage female CEOs to contribute to more effective decision-making on ESG issues.

According to these arguments, we expect a significant influence of ESG activities on corporate strategic decision-making when the CEO succession incorporates a gender shift from male to female. Therefore, the following hypothesis is proposed:

H2. The incoming female CEO positively moderates the relationship between CEO succession and ESG performance.

2.4 CEO career horizon

Investment decisions are influenced by CEOs' career concerns (Li *et al.*, 2017). The concept of career horizon pertains to the timeframe during which a CEO anticipates their tenure and future career prospects, and it heavily influences their decision-making regarding long-term investments and organizational strategies (Matta and Beamish, 2008).

Previous research on career horizons suggests that a CEO's desire to preserve their legacy and their evaluations within the labor market could influence their decision-making and the risk behavior of the firm (Kang, 2016; Matta and Beamish, 2008). Strategy scholars have extensively studied the myopic behaviors exhibited by CEOs as they near retirement, behaviors that could result in their overlooking long-term strategic investments (Matta and Beamish, 2008). For instance, based on their need for "legacy conservation" – to preserve their legacy of success – CEOs near retirement should abstain from risky acquisition decisions (Matta and Beamish, 2008).

Conversely, we consider in the context of our analysis – ESG activities to gain corporate legitimacy – that the behavioral inclinations of a CEO with a long career horizon may depend on the extent to which they are willing to preserve his legacy, referring to their ESG performances. Thus, older CEOs often exhibit a preference for options that yield immediate rewards, leading to decisions such as reducing investments in research and development (R&D) (Heyden *et al.*, 2017), while younger CEOs with longer career horizons place greater value on long-term reputation and stakeholder legitimacy (Hubbard *et al.*, 2017).

Building on labor market evaluations and legacy conservation motivation perspectives (Kang, 2016) that explain risk aversion by CEOs facing a short career horizon, our study seeks to reveal if a CEO's career horizon affects ESG performance. We believe that a CEO with a longer career horizon, typically a younger individual, may be more inclined to invest in ESG initiatives to establish and sustain organizational legitimacy over the long term (Reimer *et al.*, 2018). In contrast, older CEOs with shorter career horizons may prioritize short-term gains and be less inclined to invest in ESG activities (Chowdhury and Fink, 2017).

Based on the above assumptions, we posit that CEO career horizon significantly influences the extent to which CEOs prioritize and invest in ESG activities. Therefore, the following hypothesis is proposed:

H3. The career horizon of the incoming CEO positively moderates the relationship between CEO succession and ESG performance.

3. Methodology

According to previous literature that examined the effect of CEO succession on firm outcomes (Liu and Atinc, 2021; Amore *et al.*, 2021) and considered the longitudinal structure of our dataset, the research hypotheses were tested by employing the generalized difference-in-differences (DiD) technique using fixed effects panel regressions (Calabrò *et al.*, 2018, 2023). All empirical models included robust standard errors to control for heteroscedasticity and serial correlation. To account for endogeneity problems related to CEO succession, we employed a two-stage model. This technique introduced an adjustment term (i.e. *endogeneity correction*) into all empirical models (Heckman, 1979) to correct potential endogeneity issues. Specifically, we used a probit model to analyze the predicted values of CEO succession estimated by regressing the dummy succession against variables (we employed all control variables used in our main empirical models as well as industry and year dummies). Then, we included the predicted values of CEO succession (i.e. *endogeneity correction*) in our regression models.

3.1 Sample

Our initial sample is based on the entire population of European-listed firms at the end of 2021. The dataset are assembled using detailed and updated information from three different sources. First, we obtained ESG data of European listed firms from the Refinitiv Eikon dataset, collecting information for 622 firms. Second, we merged this sample with BoardEx data on board characteristics and CEO succession events that occurred in the period 2010–2021, which were manually inspected firm by firm. Following Calabrò *et al.* (2018), we excluded firms that experienced multiple successions, as it would be difficult to identify a clear pre- and post-succession period for our analyses, and firms with CEOs temporary appointments, defined as cases where the incoming CEO remained in office for less than three years. After this selection, the sample was reduced to 356 firms. Finally, we merged the sample with financial variable data from Compustat. Following this procedure, the other 129 firms were removed. Consequently, our final sample is a strongly balanced panel data set consisting of 1,704 firm-year observations for a total of 227 European listed firms over a 12-year period.

3.2 Dependent variable

The dependent variable employed in the empirical analyses is the ESG score, which was collected for the whole investigated period of 2010–2021 by Refinitiv Eikon, which is a database widely used in the empirical literature on corporate social responsibility. The ESG score is an overall company score based on self-reported information on the environmental, social and corporate governance pillars (Reber *et al.*, 2022). The score ranges from 0 to 100, with a score superior to 75 indicating excellent ESG performance and a high degree of transparency in reporting material ESG data publicly (Cambrea *et al.*, 2023).

3.3 Independent and moderating variables

Concerning the main independent variable of the research, we identified a variable named Succession as a dummy variable equal to one if there was a change in the name and surname of the CEO and zero otherwise. Following previous literature (Liu, 2020; Bernard *et al.*, 2018), succession is a dummy equal to one for the post-succession period ([0,+2] years after succession) and zero for the pre-succession period ([−3,−1] years before succession). Additionally, firms that have not experienced CEO succession have been coded with zero in all the years considered. After the exclusion of firms with missing information on CEOs, we were able to identify 148 unique CEO successions.

To investigate whether both the gender and the career horizon of the incoming CEO are able to affect ESG performance after CEO succession, we created two variables named female CEO and CEO career horizon, respectively. Female CEO is a dummy variable equal to one when the incoming CEO is a female (Rigolini *et al.*, 2021) and zero when the incoming CEO is a male. At the same time, CEO succession involving male-to-male and female-to-female transitions was tabulated as zero. It means that the male-to-female CEO succession was compared with the same-gender succession (i.e. male-to-male and female-to-female). The CEO's career horizon is measured as the number of years until retirement, derived by subtracting the CEO's age from 70 (Al-Najjar and Abualqumboz, 2023).

3.4 Control variables

The empirical regressions included several control variables, which have been identified in the literature as determinants of corporate ESG performance. Specifically, we considered firm-level characteristics such as firm size, cash holdings, debt, capital expenditures (capex), research and development expenses (RDS), ROE, firm age, CEO education level, CEO tenure and board age. Firm size is measured as the natural logarithm of total sales. According to Baldini *et al.* (2018), larger firms are more likely to disclose information than small ones and, thus, we expect a positive relationship between firm size and ESG score. Cash holdings are the ratio of cash and cash equivalents to total assets (Cambrea *et al.*, 2023). We expect that firms with greater cash reserves will have more resources to invest in social and environmental initiatives. Debt is calculated as the ratio between long-term debt and total assets (Erhemjamts *et al.*, 2013). Capex is computed as capital expenditures divided by total sales (Erhemjamts *et al.*, 2013). Both of these proxies imply that a firm has less financial freedom to invest in long-term projects, such as social and environmental initiatives (Tashman and Rivera, 2010) and therefore, we will predict a negative link with the ESG score. R&D is the ratio of research and development expenses to sales. Consistent with Miller *et al.* (2007), we coded the firm's R&D expenditure as zero if research and development data were missing. According to Padgett and Galan (2010), firms with higher R&D investments are more likely to invest in their social and environmental performance to protect their competitive advantage. ROE is computed as net income divided by stockholders' equity (Cambrea *et al.*, 2023). Firms with superior profitability may opt to address more assets for social purposes to ensure continued support from their stakeholders (Kim and Lyon, 2015). Firm age is computed as a logarithmic factor of the number of years since the firm's founding (Cambrea *et al.*, 2023). Despite Huarng and Yu's (2024) description of the existence of causal relationships between ESG and old firms, they suggest that an older company is less inclined to invest in ESG activities. Board size is measured as the number of members of the board of directors. The recent meta-analysis by Zubeltzu-Jaka *et al.* (2020), coherent with the stakeholder theory, argues that a larger board brings greater opportunities for more links to other stakeholders, introducing social, environmental and ethical approaches. In this vein, we foresee a positive association with ESG performance (McGuinness *et al.*, 2017). CEO education level is a dummy variable equal to one if the CEOs hold a Master in Business Administration (MBA) or Ph.D. degree and zero otherwise. Following Amore *et al.* (2019), we expect that highly educated CEOs will lead to greater sustainability in corporate actions. The CEO tenure is calculated as the natural logarithm of the number of years a CEO has served (Chen *et al.*, 2019). Consistently with Al-Najjar and Abualqumboz's (2023) arguments, we presume that CEO tenure has a positive association with environmental performance. Board age is the average age of directors on the board (Cucari *et al.*, 2018). An older board of directors is more independent from any pressure and has superior expertise; they can provide ideas to successfully change corporate processes to meet CSR challenges. Thus, it is expected to have a positive link between the average age of board directors and ESG performance. To mitigate the impact of outliers, all the variables were winsorized at the 1% and 99% levels to alleviate the effects of extreme values. In addition, all models include year dummies to account for possible macroeconomic effects, such as those resulting from the COVID-19 pandemic, occurring during the analysis period.

4. Analyses and results

Table 1 shows the main descriptive statistics for the investigated sample of firms and the correlation among the variables used in the empirical analyses. Regarding the main independent variable of the study, this research examines 148 CEO succession events. More in detail, in 88% of the succession cases, the CEOs have been replaced with a younger CEO, where the incoming CEO has an average age between 50 and 51 years and an average career horizon between 19 and 20 years. Concerning the gender of the incoming CEO, 4.72% of CEOs have been substituted by a woman CEO.

The findings indicate acceptable levels of correlation among all the variables in the empirical models, indicating that multicollinearity is not a major issue in our analyses.

Table 1. Descriptive statistics and correlation matrix

	Variables	Mean	SD	1	2	3	4	5	6	7
1	ESG score	0.594	0.171	1						
2	Succession	0.249	0.432	0.174***	1					
3	Female CEO	0.030	0.170	−0.00890	0.0582*	1				
4	CEO career horizon	14.830	7.019	−0.117***	0.289***	0.0779**	1			
5	Firm size	8.653	1.667	0.496***	0.0892***	−0.0360	−0.109***	1		
6	Debt	0.195	0.137	0.170***	0.0433	0.00800	0.0319	0.0282	1	
7	Cash holdings	0.093	0.070	−0.0925***	0.00196	0.0409	−0.0745**	−0.191***	−0.195***	1
8	Capex	0.065	0.072	−0.0349	0.0150	−0.0101	0.0128	−0.0568*	0.212***	−0.116***
9	R&D	0.027	0.058	−0.00379	−0.0339	−0.0400	−0.0202	−0.145***	−0.0981***	0.241***
10	ROE	0.127	0.188	0.0501*	−0.0338	0.0533*	0.142***	0.0923***	−0.0585*	−0.00210
11	Firm age	63.717	52.110	0.151***	0.0138	0.0797***	−0.0160	0.125***	−0.0303	−0.00805
12	Board size	11.177	4.149	0.377***	0.0151	−0.0913***	−0.135***	0.345***	0.176***	−0.0501*
13	CEO education level	0.359	0.480	0.0912***	0.0416	0.0623*	0.0571*	0.0691**	−0.0515*	0.0409
14	CEO tenure	7.784	6.183	0.0465	−0.0625**	−0.0341	−0.257***	0.137***	−0.0217	−0.0425
15	Board age	57.669	3.715	0.170***	−0.0689**	0.00630	−0.438***	0.107***	−0.00526	0.111***

	Variables	8	9	10	11	12	13	14	15
1	ESG score								
2	Succession								
3	Female CEO								
4	CEO career horizon								
5	Firm size								
6	Debt								
7	Cash holdings								
8	Capex	1							
9	R&D	−0.148***	1						
10	ROE	−0.136***	−0.0479*	1					
11	Firm age	−0.199***	−0.0558*	0.0664**	1				
12	Board size	0.0594*	−0.0589*	−0.0650**	0.0571*	1			
13	CEO education level	0.0249	0.113***	0.0158	0.121***	0.0920***	1		
14	CEO tenure	−0.00575	−0.0558*	−0.0247	0.0469	0.156***	−0.0569*	1	
15	Board age	−0.0689**	0.101***	−0.0464	0.112***	0.00246	0.0741**	−0.0477*	1

Note(s): $^{*}p < 0.05$, $^{**}p < 0.01$ and $^{***}p < 0.001$
Source(s): Created by the authors

Table 2 shows the econometric estimates for all the research hypotheses investigated, considering the ESG score as the dependent variable. Each regression includes the above-mentioned control variables and both the year and firm-fixed effects. To minimize a reverse causality issue, all empirical models used lagged independent and control variables by one year (Cambrea *et al.*, 2023). Model 1 shows the basic econometric results of how CEO succession affects ESG corporate performance. Models 2 and 3 report the findings after adding in the regressions the interaction variables between succession and female CEO and

Table 2.
CEO succession and ESG score

Variables	(1) ESG score	(2) ESG score	(3) ESG score	(4) ESG score
Succession	0.012*	0.009	−0.020	−0.023
	(0.072)	(0.167)	(0.294)	(0.242)
Female CEO		−0.026*		−0.027
		(0.095)		(0.117)
Succession*Female CEO		0.061*		0.060*
		(0.060)		(0.081)
CEO career horizon			−0.001	−0.001
			(0.134)	(0.210)
Succession*CEO career horizon			0.002**	0.002**
			(0.042)	(0.050)
Firm size	0.016	0.015	0.014	0.014
	(0.168)	(0.181)	(0.210)	(0.218)
Debt	−0.113**	−0.118**	−0.120**	−0.124**
	(0.041)	(0.032)	(0.034)	(0.029)
Cash holdings	−0.197*	−0.200*	−0.209*	−0.209*
	(0.061)	(0.056)	(0.054)	(0.054)
Capex	−0.157**	−0.168**	−0.162**	−0.171**
	(0.026)	(0.017)	(0.024)	(0.017)
R&D	0.718***	0.726***	0.725***	0.730***
	(0.000)	(0.000)	(0.000)	(0.000)
ROE	0.031	0.032	0.032	0.033
	(0.117)	(0.108)	(0.104)	(0.103)
Firm age	−0.065	−0.065*	−0.069*	−0.069*
	(0.101)	(0.100)	(0.085)	(0.082)
Board size	0.006***	0.005***	0.006***	0.006***
	(0.007)	(0.008)	(0.005)	(0.005)
CEO education level	−0.012	−0.011	−0.015	−0.014
	(0.210)	(0.239)	(0.127)	(0.151)
CEO tenure	0.009*	0.010*	0.010*	0.010*
	(0.074)	(0.069)	(0.064)	(0.063)
Board age	0.655**	0.670**	0.696**	0.703**
	(0.025)	(0.021)	(0.020)	(0.019)
Endogeneity correction	−0.216*	−0.222*	−0.234**	−0.235**
	(0.061)	(0.054)	(0.048)	(0.048)
Constant	−1.607*	−1.653*	−1.694*	−1.716*
	(0.089)	(0.079)	(0.078)	(0.073)
Fixed effects	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
R-squared	0.502	0.504	0.505	0.506
Number of Id	227	227	227	227
Observations	1,704	1,704	1,704	1,704

Note(s): Robust pval in parentheses ***p < 0.01, **p < 0.05 and *p < 0.1
Source(s): Created by the authors

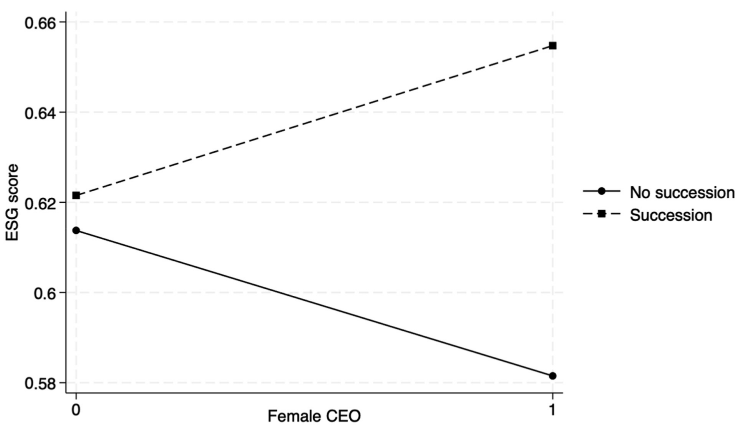
CEO career horizon, respectively. Finally, Model 4 considers both moderating variables in the same empirical regression.

The findings reported in Model (1) of Table 2 confirm Hypothesis 1, as the coefficient of the variable succession is positive and marginally significant at the 10% level (ß = 0.012, $p = 0.072$). Therefore, this result indicates that CEO succession is associated with superior ESG performance. The findings regarding the role of gender and the career horizon of the incoming CEO are shown in Model (4) and were tested by adding two moderating variables to the regression in Model (1). The interaction "Succession*Female CEO" tests the moderating effect of gender on the influence of CEO succession on ESG. The interaction "Succession*CEO career horizon" estimates how the age of the incoming CEO moderates the impact of CEO succession on a firm's ESG performance. Both of these two interaction terms have positive and statistically significant coefficients (ß = 0.060, $p = 0.081$; ß = 0.002, $p = 0.050$), even if at the marginal level of 10% and 5%, respectively. The findings indicate that the positive effect of CEO succession on ESG performance is enhanced when the incoming CEO is female, the incoming CEO is younger and the incoming CEO has a potentially longer career horizon for the future.

To better interpret how female CEO and CEO career horizon moderate the link between succession and ESG score, we plotted the moderating effects in Figures 1 and 2. Figure 1 reveals that firms experiencing CEO succession are associated with better ESG scores when the incoming CEO is female. Figure 2 suggests that CEO turnover in firms hiring a CEO with a longer career horizon (i.e. a younger CEO) is associated with better ESG performance when compared to firms in which the incoming CEO has a shorter career horizon. In other words, the graphical representation shows that a female's succession increases ESG performance, while successions with a younger CEO exert a positive impact on ESG performance.

4.1 Robustness checks

In this section, we provided additional tests to check the robustness of the baseline results presented in Table 2. First, because ESG performance can be affected by sector, we employed a random effects panel model, which is a different econometric methodology, enabling us to use the industry and the country dummies as control variables and, therefore, examine ESG performance irrespective of any industry-wide factors that may affect their score. Industries were defined according to the Standard Industrial Classification (SIC) code (see https://www.



Source(s): Created by the authors

Figure 1. The moderating effect of female CEO

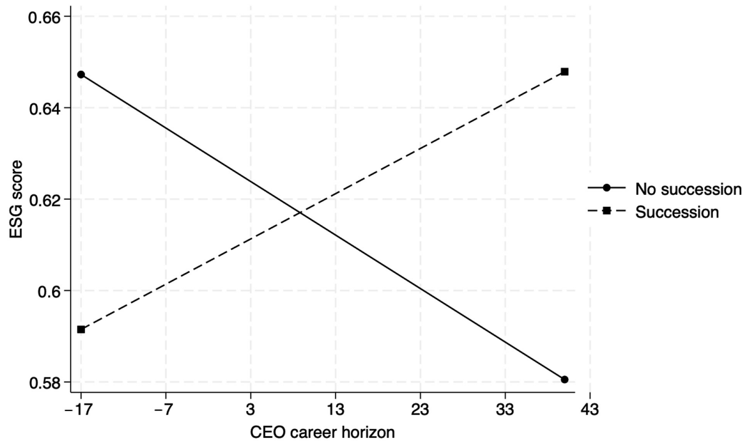


Figure 2.
The moderating effect of CEO career horizon

Source(s): Created by the authors

naics.com/business-lists/counts-by-sic-code/for a detailed definition). The main findings are identical to those presented in Table 2. Second, we performed additional regressions employing the *emissions score* as an alternative measure of ESG performance. The emissions score measures a firm's commitment to and effectiveness in reducing environmental emissions in production and operational processes (Asset4 ESG Data Glossary). Our results partially confirm the main findings. Indeed, the standalone impact of CEO succession on the emission score proxy is not statistically significant. Lastly, we ran the analyses presented in Table 2, considering alternative operationalizations of the pre- and post-succession periods. Specifically, the post-succession period is defined as four years after succession (i.e. [0, +3] years after succession) and the pre-succession period is defined as three years before succession (i.e. [−3, −1] years before succession). The main findings are unchanged compared to those presented in Table 2.

Table 3 shows all the additional analyses performed, in which we present only Models 1 and 4 that are related to the research hypotheses. Findings do not substantially change the main conclusions in terms of the direct effect of CEO succession on ESG performance and regarding the role of the moderating variables (i.e. female CEO and CEO career horizon) in shaping the link between CEO succession and ESG performance.

5. Discussion

The analysis presented confirms a significant direct link between CEO succession and ESG performance. Given the significance of the CEO's role in shaping firms' strategic decisions and performance, strategy scholars have consistently sought to understand the factors influencing CEO choices. In the literature, there are two approaches, respectively, based on economics and cognitive science (Kang, 2016). Applying economics-based approaches means assuming that managers are self-interest-seeking agents; thus, this approach focuses on how the alignment or misalignment of incentives between owners and managers affects managerial decisions (Sanders, 2001). On the other hand, cognitive-based approaches rely on how cognitive frames, influenced by non-economic factors such as personal values (e.g. beliefs and ethics), personalities (e.g. hubris and optimism) and past experiences, affect managerial decisions (Chatterjee and Hambrick, 2007). Rooted in the latter, we consider that the personal inclination (expressed by gender) and goal (preserve legitimacy for their career) of a new CEO affect their

Variables	Different Econometric model (1) ESG score	(2) ESG score	Different Dependent variable (3) ESG score	(4) ESG score	Different Succession measure (5) ESG score	(6) ESG score
Succession	0.012*	−0.024	−0.004	−0.050	0.013*	−0.023
	(0.087)	(0.226)	(0.768)	(0.142)	(0.077)	(0.242)
Female CEO		−0.028		−0.097*		−0.027
		(0.109)		(0.094)		(0.117)
Succession*Female CEO		0.060*		0.129*		0.060*
		(0.077)		(0.080)		(0.081)
CEO career horizon		−0.001		−0.004**		−0.001
		(0.212)		(0.018)		(0.210)
Succession*CEO career horizon		0.002*		0.004*		0.002*
		(0.056)		(0.055)		(0.057)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Fixed effects	No	No	Yes	Yes	Yes	Yes
Random effects	Yes	Yes	No	No	No	No
Country dummies	Yes	Yes	No	No	No	No
Industry dummies	Yes	Yes	No	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.504	0.509	0.259	0.268	0.501	0.506
Number of Id	227	227	227	227	227	227
Observations	1,704	1,704	1,704	1,704	1,704	1,704

Note(s): Robust pval in parentheses ***p < 0.01, **p < 0.05 and *p < 0.1
Source(s): Created by the authors

Table 3.
CEO succession and ESG score – robustness checks

strategic decision in ESG activities that, in turn, affect ESG performance after succession. To the best of our knowledge, this study represents an initial exploration of this critical relationship, thus providing empirical evidence that bolsters the argument for appointing a new CEO to reinforce corporate legitimacy. Consistent with our primary goal, this paper makes a contribution to the role of a new CEO on ESG performance, considering two moderators that are in line with female inclusion on the board and the search for corporate legitimacy that firms have in the current landscape, due to the relevance of ESG performance.

5.1 Implications for theory

CEO succession is a pivotal and strategic turning point for firms (Shen and Cannella, 2002), specifically for publicly listed companies. In this context, the designation and transition of the CEO constitute a decision that exerts a profound influence, not only merely upon financial performance but also upon the enduring sustainability and societal role of the firm (Schepker *et al.*, 2017). Within the context of publicly traded firms, the process of CEO succession garners assiduous scrutiny from investors, stakeholders and discerning analysts. Consequently, the study of CEO succession becomes decisive, particularly when juxtaposed with ESG issues.

This article makes a contribution to both theories employed in our theoretical framework.

First, the study contributes to enriching the Legitimacy Theory, which states that "firms seeking continuous operation must act within the bounds of what society recognizes as acceptable behavior" (Lu *et al.*, 2022, Page 5). Consequently, for companies operating in the current entrepreneurial context, characterized by a high level of stakeholders' attention towards corporate social responsibility activities, identifying practices suitable for achieving goals in line with the expectations of corporate stakeholders becomes crucial. In this vein, in addition to confirming ESG performance as a useful scope to satisfy corporate stakeholders' expectations, our study proposes a strategic governance decision (i.e. the replacement of the CEOs) for firms as a useful instrument to achieve or sustain the legitimacy of companies (Crane and Glozer, 2016). In fact, the results of the study confirm that companies replacing CEOs have better results in terms of ESG performance. Future studies should explicitly include in their theorization whether a strategic action has a direct effect on firm legitimacy or whether the effect is nuanced and difficult to discern, as in the case of leadership succession.

Our study extends the CEO succession literature by addressing recent calls to take into greater account environmental practices surrounding a CEO succession (Bernard *et al.*, 2018; Liu, 2020), given that only a few articles on CEO succession have explicitly considered the effects on ESG activities (e.g. Bernard *et al.*, 2018; Liu, 2020).

We also respond to calls for bringing upper-echelons perspectives into research on CEO succession (Chen *et al.*, 2016) and on ESG performance (Dabbebi *et al.*, 2022). Indeed, while prior studies mainly employed UET to examine variation in firm performance (Bernard *et al.*, 2018; Chen *et al.*, 2016), our research focuses on incoming CEOs characteristics and ability to affect ESG performance, offering new specific insights on the career horizon and gender of the new CEOs. The perspective of upper echelons makes the attributes and backgrounds of top executives, including CEOs, crucial in influencing corporate ESG outcomes after a CEO succession event. Thus, the upper echelons' view is a promising route to better contextualizing how CEOs features can affect important lines of corporate strategies, such as ESG activities.

Finally, by employing the UET, our study responds to the call by Neely *et al.* (2020) for devoting attention to the real-world applicability of the research. In this vein, our results significantly contribute to the deepening and broadening of our comprehension concerning the nexus between CEO succession and ESG performance (Bernard *et al.*, 2018; Chiu and Walls, 2019), which is currently a challenge for strategic leaders. Thus, our study presents valid research that has an impact on leaders and how their organizations manage the real stakeholders' requirements to meet ESG goals in corporate strategy.

5.2 Managerial implications

Our results provide important managerial insights. Our study suggests CEO selection criteria that, among several personal characteristics, could be considered for choosing the CEOs if a firm desires to improve its ESG performance. Our results encourage listed firms to carefully consider the profiles of the new CEOs in terms of gender and career horizon.

Regarding female CEOs, the European Union reached a political agreement on a law that would require listed companies to move toward 40% female representation in non-executive director positions by 2026. This percentage may be reduced to 33% for women in all senior roles, such as chief executive and chief operating officer. We expect this recent directive could lead to an increase in female CEOs in European-listed companies and, thus, we strongly believe that female CEO succession will be a relevant topic in the next years. Our empirical results can be a reference point for all those subjects who are called upon to make decisions on the leadership of companies.

About CEOs' career horizons, our study suggests that incoming younger CEOs are associated with better ESG performance. Thus, the board of directors could carefully consider the years of the potential appointing CEO. It may be beneficial to identify the successor whose age is lower than that of the outgoing CEO. Given that a CEO's time perspective can matter to environmental decisions, our finding recommends placing an individual with a long-term perspective as the CEO of the company.

In sum, our research seeks to offer valuable managerial guidance by emphasizing the selection of CEOs with strong sustainability orientations, particularly women and younger individuals and by highlighting the need for CEO training to effectively steer the organization towards sustainability goals.

5.3 Limitations and future inquiry

Our study is not without limitations, which might open interesting avenues for future research. First, our study is limited to a sample of European listed firms, for which sustainability data are more readily available. However, ESG data availability significantly restricted our sample size, suggesting updating the analysis when more ESG data increases. Also, our sample is characterized by a low frequency of female CEOs, and this is a common reality in all European countries. Thus, the research could be revisited in the next few years, when the European listed firms have to comply with the EU directive aiming to improve gender balance among the directors of listed companies. We expect to see a larger increase in women directors in top positions, so that future research could explore the heterogeneity of the incoming women CEOs.

Second, the relationship between CEO succession and ESG can also be explored in the future through the stakeholder theory. Under this lens, future research can delve deeper into how CEO successions align with stakeholder expectations related to ESG performance. Specifically, future investigation and research design can explore how stakeholders, including investors, may play an active role in influencing CEO selection based on ESG issues. Moreover, future analysis can investigate the long-term effects of such CEO successions on stakeholder satisfaction and value creation. This should be an integration of our current work.

Third, the empirical analyses do not employ all the types and kind of education that a CEO may hold (Ricciotti *et al.*, 2022). Therefore, we recommend that future research consider not only other control variables but also taking into consideration how the personal characteristics related to ESG activities (e.g. ESG expertise, educational background, previous ESG experience and ESG committee) of the incoming CEOs can affect the relationship between CEO succession and ESG performance.

6. Conclusion

In the current economic landscape, especially publicly traded firms are presently under the imperative to harmonize their strategic endeavors with ESG activities; this imperative arises from the escalating expectations of discerning stakeholders who seek a more conscientious and responsible approach to business operations. On the one hand, ESG performance has a relevant impact on both corporate brand and firm reputation (Lee *et al.*, 2022), fostering public trust. On the other hand, neglecting ESG principles could lead to reputational damage (Nirino *et al.*, 2021). Thus, increased commitments to ESG activities attract more investors and enhance firms' market positioning, customer loyalty and talent acquisition efforts.

Our results suggest that the characteristics of the incoming CEOs are very relevant in affecting the ESG performance of the firms. In particular, we find that both women CEOs and the career horizons of the CEOs will support the transition in improving corporate ESG performance. Therefore, our research suggests that the demographic features of the incoming CEOs should be taken into serious consideration during their selection process.

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Corresponding author
Domenico Rocco Cambrea can be contacted at: domenicorocco.cambrea@unimore.it