

# Sustainable but uneven: How corporate governance influences environmental and social priorities<sup>1</sup>

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## Abstract

**Frame of the research:** Environmental and social issues have become among the most pressing global challenges. As a result, firms are increasingly evaluated on their ability to address ESG issues.

**Purpose of the paper:** An integrated approach simultaneously advancing all ESG pillars is essential to achieve sustainability. However, firms often exhibit an imbalance in performance across the environmental and social pillars, i.e., an ESG gap. This study examines how board characteristics influence the magnitude of this gap.

**Methodology:** This study applies a two-way fixed effects model, controlling for heterogeneity at the industry and country levels, with standard errors clustered at the firm level, on an unbalanced panel dataset comprising 8,014 firms from 39 countries over the period 2013-2023.

**Findings:** The presence of women directors is associated with a reduction in the ESG gap. Similarly, CEO duality and the establishment of a CSR committee are associated with a reduction in the ESG gap, although their effect is not consistent across all model specifications. In contrast, the presence of independent directors and directors with industry-specific or financial expertise is associated with a wider ESG gap.

**Research limits:** Data is obtained from a single source, which may introduce common method bias. The ESG gap relies on measures that may capture formal disclosure practices rather than substantive ESG performance. Our measure of the ESG gap captures the magnitude of the imbalance between environmental and social performance, but not its direction. Causal relationships cannot be fully established. Sectoral or institutional heterogeneity are not explored. How the board of directors evaluates and manages trade-offs between environmental and social objectives is not investigated.

**Practical implications:** Increasing the presence of women directors may reduce the ESG gap. CEO duality should be promoted with caution, and CSR committees should be meaningfully integrated into strategic decision-making, with sufficient authority and expertise. Conversely, overreliance on independent directors and directors with industry-specific or financial expertise should be avoided. Policymakers and regulators should guide firms in this direction and encourage them to provide more comprehensive disclosures on both environmental and social performance.

**Originality of the paper:** This study extends the application of the attention-based view to the ESG domain by explaining why ESG gaps may emerge. It introduces the ESG gap as a distinct construct. It integrates attention-based view and upper echelons

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**Key words:** board of directors; ESG gap; environmental performance; social performance; attention-based view; upper echelons theory

## 1. Introduction

Currently, environmental and social issues represent some of the most pressing global concerns, requiring coordinated action by governments, firms, and institutions to be effectively addressed (Arayakarnkul *et al.*, 2022; Saif-Alyousfi and Alshammari 2025). Since firms are increasingly assessed not only on their financial results but also on their ability to manage environmental and social issues responsibly (Duque-Grisales *et al.*, 2021), Environmental, Social, and Governance (ESG) issues have become a central component of firm strategy and evaluation.

According to previous literature, ESG dimensions are interconnected, and an integrated approach simultaneously advancing all three pillars is essential to achieve sustainability (Svensson and Wagner 2015; Islam 2025). However, firms often exhibit imbalanced performance across the three ESG pillars. This asymmetry, referred to in this study as the ESG gap, reflects the uneven prioritization of environmental and social objectives, despite both being critical. In line with the attention-based view (Ocasio 1997), attention is a scarce organizational resource, and firms may allocate it disproportionately to either environmental or social concerns, generating an ESG gap. Therefore, while sustainability in principle requires balanced attention to environmental and social dimensions, implying a null ESG gap, firms in practice frequently display a non-zero ESG gap, as resources and strategic priorities are allocated asymmetrically between the two pillars.

Corporate governance plays a key role in determining how firms translate sustainability ambitions into concrete outcomes and how ESG priorities are defined (Giannarakis *et al.*, 2023; Dong *et al.*, 2025). Within this system, the board of directors, as the highest decision-making body, determines the degree to which environmental and social issues are integrated into strategic agendas (Abdullah *et al.*, 2024), thus affecting the ESG gap.

Despite extensive research linking the board of directors to sustainability outcomes, prior studies have largely treated ESG performance as a single aggregate construct (Odriozola *et al.*, 2024). This represents a significant limitation, as the board of directors influences not only the overall level of ESG engagement but also the balance between environmental and social performance (Guangqi *et al.*, 2024; Oyinlola 2024). By conceptualizing ESG performance as a unidimensional construct, potential trade-offs and strategic imbalances across its pillars may be obscured, making it difficult to assess whether the board of directors promotes an integrated sustainability approach or selectively prioritizes specific dimensions. Understanding how the characteristics of the board of directors shape

discrepancies between environmental and social priorities is therefore crucial to explaining why some firms achieve a balanced ESG profile, thus fostering genuine and lasting sustainability (Svensson and Wagner 2015; Islam 2025), while others concentrate disproportionately on selected pillars, contributing unevenly to different dimensions of sustainability.

Addressing this gap, this study investigates how board characteristics influence the ESG gap, defined as the absolute difference between the environmental and social performance. Specifically, this study examines whether board composition (presence of independent directors), board diversity (presence of women directors), board competencies (directors' specific expertise), CEO power (CEO duality), and sustainability governance (presence of a CSR committee) reduce or widen the ESG gap. The study builds upon two theories: first, the attention-based view (Ocasio 1997) to understand why an ESG gap may emerge; and second, the upper echelons theory (Hambrick and Mason 1984) to examine the relationship between board characteristics and the ESG gap.

To empirically test our hypotheses, the study relies on an unbalanced panel dataset comprising 8,014 firms from 39 countries over the period 2013-2023. Employing two-way fixed effects models, controlling for heterogeneity at the industry and country levels, with standard errors clustered at the firm level, we assessed how board characteristics affect the ESG gap. Our findings show that the presence of women directors is associated with a reduction in the ESG gap. Similarly, CEO duality and the establishment of a CSR committee are associated with a reduction in the ESG gap, although their effect is not consistent across all model specifications. In contrast, the presence of independent directors and directors with industry-specific or financial expertise is associated with a wider ESG gap.

This study advances prior literature as follows. First, the study extends the application of the attention-based view (Ocasio 1997) to the ESG domain by explaining ESG gaps as the result of selective attention allocation within the board of directors. Second, it introduces the ESG gap as a distinct construct by highlighting trade-offs between environmental and social performance rather than treating ESG as a unidimensional measure. Third, it integrates attention-based view (Ocasio 1997) and upper echelons theory (Hambrick and Mason 1984) to show that board characteristics shape not only overall ESG performance but also how ESG priorities are strategically distributed across ESG dimensions.

The remainder of the paper is organized as follows. Section 2 discusses the concept of the ESG gap and develops the theoretical framework and hypotheses to examine the effects of board characteristics on the ESG gap. Section 3 presents the data and empirical strategy. Section 4 reports the main results and robustness checks. Section 5 discusses the results. Section 6 concludes with theoretical, managerial, and policy implications.

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## 2. Theoretical framework and hypothesis development

### 2.1 The concept of the ESG gap

In light of pressing environmental challenges such as climate change, pollution, and biodiversity loss and persistent social issues related to health and safety and human rights (Arayakarnkul *et al.*, 2022; Saif-Alyousfi and Alshammari 2025), firms are increasingly expected to integrate ESG considerations into their strategic decision-making (Endrikat *et al.*, 2021).

This growing engagement with ESG practices can be interpreted through the lenses of stakeholder and legitimacy theories. Stakeholder theory posits that firms must address the needs and expectations of multiple stakeholder groups (Freeman, 1984). Accordingly, investments in environmental and social initiatives help firms strengthen stakeholder relationships, enhance reputation, and build sustainable competitive advantages (Shahbaz *et al.*, 2020; Ananzeh *et al.*, 2022). Legitimacy theory offers a complementary explanation, arguing that firms maintain their inherent right to operate only when their values and actions align with prevailing societal norms and expectations (Dowling and Pfeffer 1975). From this perspective, ESG engagement enables firms to signal social responsibility, enhance organizational legitimacy, and secure continued access to the social and institutional resources necessary for long-term survival (García-Meca *et al.*, 2024).

Previous literature suggests that ESG dimensions are deeply interconnected and mutually reinforcing, and an integrated approach simultaneously advancing all pillars is essential to achieve genuine and lasting sustainability (Svensson and Wagner 2015; Islam 2025). Specifically, while environmental factors prompt firms to allocate resources to improve their environmental performance and mitigate their ecological impact (Islam 2025), attention to social issues, for instance through the development of closer relationships with stakeholders and the protection of their interests, is equally critical in supporting firms' efforts to contribute to sustainable development (Li *et al.*, 2018; Siakwah *et al.*, 2019).

However, despite this conceptual complementarity, firms frequently display uneven performance across ESG pillars (Islam 2025). This imbalance, defined in this study as the ESG gap, captures the extent to which firms disproportionately prioritize one dimension over the other, even though both are fundamental to advance sustainability (Islam 2025). To theoretically explain this asymmetry, we draw on the attention-based view of the firm (Ocasio 1997), which conceptualizes attention as a scarce resource that is selectively and strategically allocated and is shaped by organizational structures, communication channels, and decision makers' cognitive frames (Hu *et al.*, 2025). Organizations are thus systems of distributed attention in which decision makers selectively focus on a limited subset of issues (Ocasio 1997). In complex domains characterized by multiple competing objectives, attention is unlikely to be evenly distributed across all organizational demands. Instead, it tends to concentrate on issues perceived as more urgent, salient, or strategically relevant (Ocasio *et al.*, 2018). Firm strategy can therefore be understood

as the outcome of this selective allocation of attention across competing demands (Ocasio 1997).

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Applied to our study, ESG can be understood as a complex domain where multiple objectives coexist and compete for organizational resources, with the ESG gap emerging as an outcome of the selective allocation of organizational attention across these competing demands. When the board of directors allocates disproportionate attention to either environmental or social concerns, it generates an ESG gap. This selective attention may be driven not only by governance characteristics (Martiny *et al.*, 2024) and internal factors (e.g., expertise and cognitive biases), but also by external pressures (e.g., regulation and stakeholder expectations) or institutional and industry contexts. For instance, environmentally intensive industries (e.g., manufacturing, energy) may be subject to stronger regulatory and stakeholder pressures on environmental performance, whereas service-oriented sectors (e.g., healthcare, education) may prioritize social dimensions such as employee well-being or customer relations (Ioannou and Serafeim 2012).

Therefore, although achieving sustainability conceptually requires balanced attention to both environmental and social dimensions (Svensson and Wagner 2015; Islam 2025), implying a null ESG gap, in practice, firms may rationally exhibit a non-zero ESG gap as a result of both selective attention processes and contextual contingencies. The board of directors' selective attention, together with the distinct characteristics of these dimensions and the industry context in which the firm operates, may lead firms to allocate resources unevenly, thereby generating an ESG gap.

While the attention-based view explains that imbalances in ESG dimensions may emerge as a result of selective attention allocation, it does not fully explain how such attention patterns are formed. To address this limitation, we complement the attention-based view with the upper echelons theory, which posits that organizational outcomes reflect the cognitive frames, values, and experiences of top decision makers (Hambrick and Mason 1984). In this study, we argue that board characteristics shape how attention is directed across ESG dimensions, thereby linking the formation of attention with its allocation.

## 2.2 *The impact of board characteristics on the ESG gap*

Given that attention is both limited and selectively allocated (Ocasio 1997) and that such allocation is shaped by the cognitive characteristics of top decision makers (Hambrick and Mason 1984), the characteristics of the board of directors may influence how attention is distributed between environmental and social issues, thereby affecting the magnitude of the ESG gap. Specifically, board composition (presence of independent directors), diversity (presence of women directors), competencies (directors' specific expertise), CEO power (CEO duality), and sustainability governance (presence of a CSR committee) may play a key role in this process.

The impact of board characteristics on the ESG gap can be explained through the upper echelons theory, according to which organizational outcomes, i.e., strategies and performance, including those regarding

ESG issues, reflect the demographic and cognitive characteristics of top executives (Hambrick and Mason 1984). A heterogeneous board of directors in terms of, for example gender, expertise, and professional experience provides a broader range of perspectives and decision-making heuristics, which are particularly valuable when addressing sustainability issues (Oyinlola 2024). Moreover, different personal and professional backgrounds shape directors' cognitive frames and values, influencing how they perceive trade-offs between environmental and social initiatives (Dong *et al.*, 2025). Consequently, directors' attributes affect the extent to which firms align, or unbalance, their environmental and social performance, thereby affecting their ESG gap (Oyinlola 2024; Dong *et al.*, 2025).

In the following sections, we examine how specific board characteristics influence the ESG gap: board composition (presence of independent directors), board diversity (presence of women directors), board competencies (directors' specific expertise), CEO power (CEO duality), and sustainability governance (presence of a CSR committee).

#### *2.2.1 Board composition (Presence of independent directors)*

We investigate the effect of board composition on the ESG gap by focusing on the presence of independent directors. Independent directors are widely considered a pillar of good governance and an essential mechanism for improving corporate ESG performance (Guangqi *et al.*, 2024). Their independence from executive management enhances oversight and transparency, leading to more rigorous monitoring of corporate behavior and disclosure (Guangqi *et al.*, 2024; Papadopoulou *et al.*, 2025). In line with upper echelons theory, independent directors may bring distinct interpretative lenses to sustainability issues and foster both environmental and social performance. Due to their professional backgrounds, fiduciary responsibilities, and tendency to emphasize accountability and measurable results, they are often more sensitive to external pressures and compliance-based environmental objectives (such as emissions control, energy efficiency, or waste management) (Nekhili *et al.*, 2019). At the same time, independent directors play a crucial role in advancing social performance, as their external perspective and stakeholder orientation enable them to prioritize social concerns, mitigate conflicts of interest, and balance financial and non-financial goals (Hussain *et al.*, 2018; Kwarteng *et al.*, 2023). They also contribute specialized expertise and networks relevant to social issues (Ananzeh *et al.*, 2022; Lin and Nguyen 2022).

Consequently, by broadening the board of directors' perspective and strengthening its stakeholder orientation, the presence of independent directors is expected to promote a more balanced focus on the environmental and social dimensions of sustainability, thereby reducing the ESG gap. We therefore hypothesize that:

*Hypothesis 1: A higher proportion of independent directors reduces the ESG gap.*

### 2.2.2 Board diversity (Presence of women directors)

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Researchers increasingly recognize the presence of women on the board of directors as a key aspect of corporate governance (Odriozola *et al.*, 2024). In line with the upper echelons theory, women directors bring unique skills, knowledge, and viewpoints to the board of directors (Nielsen and Huse 2010), promoting better decisions, higher managerial effectiveness, and a greater capacity to adapt to evolving environmental and societal demands (Ananzeh *et al.*, 2022; Odriozola *et al.*, 2024). Moreover, in line with the social construction theory (Ridgeway 1991), according to which gender roles are shaped by early socialization processes that define socially expected behaviors for men and women, women are generally associated with greater empathy, altruism, and sensitivity to stakeholders' needs (Biswas *et al.*, 2018). As a result, women directors are more inclined to promote ESG practices (Kyaw *et al.*, 2017) and enable a more proactive and comprehensive sustainability strategy (Shaukat *et al.*, 2016). In line with this evidence and the upper echelons theory (Hambrick and Mason 1984), several studies report a positive association between the presence of women directors and environmental performance, indicating that their participation fosters the implementation of more robust environmental practices (Orazalin and Mahmood 2021; Issa and Bensalem 2023; Ashraf *et al.*, 2025; Oussii and Jeriji 2025). Moreover, empirical evidence consistently shows that women directors promote social performance as they tend to be more attentive to the interests and well-being of employees, customers, and communities (Alazzani *et al.*, 2017; Arayakarnkul *et al.*, 2022; Giannarakis *et al.*, 2023; Odriozola *et al.*, 2024).

Overall, by improving the board of directors' responsiveness to environmental and social concerns, the presence of women directors is expected to foster a more balanced approach to sustainability, mitigating the asymmetry between environmental and social dimensions and reducing ESG gap. We therefore hypothesize that:

*Hypothesis 2: A higher proportion of women directors reduces the ESG gap.*

### 2.2.3 Board competencies (Directors' specific expertise)

Directors' industry-specific and financial expertise represents a key resource for navigating the complexity of strategic sustainability decisions (Dong *et al.*, 2025; Karasamani *et al.*, 2026). Directors with industry-specific backgrounds can strengthen ESG performance by leveraging their in-depth understanding of industry dynamics and competitive conditions to identify strategic vulnerabilities, evaluate ESG-related risks and opportunities, and effectively guide the formulation and implementation of ESG objectives (Della Corte *et al.*, 2025). Instead, directors with financial expertise contribute to more efficient resource management and risk assessment of ESG initiatives (Dong *et al.*, 2025). Moreover, their background enables them to recognize that investors and other stakeholders often perceive strong sustainability performance as a signal of long-term value creation,

ultimately contributing to improved financial outcomes (Shahab *et al.*, 2020).

The presence of directors with specific expertise thus fosters a more integrated view of environmental and social priorities, resulting in more coherent and balanced ESG strategies (Odrizola *et al.*, 2024; Dong *et al.*, 2025). Evidence shows that professional diversity within the board of directors improves the ability to develop environmental innovation (Della Corte *et al.*, 2025) and, at the same time, promotes long-term social initiatives (Harjoto *et al.*, 2015).

Overall, directors' industry-specific and financial expertise strengthens the strategic ability to combine economic efficiency with environmental and social sustainability, contributing to a more balanced ESG approach and to a reduction in the ESG gap. We therefore hypothesize that:

*Hypothesis 3: A higher proportion of board members with industry-specific or financial expertise reduces the ESG gap.*

#### 2.2.4 CEO power (CEO duality)

CEO duality arises when the same individual holds both the positions of CEO and chairperson of the board (Finkelstein and D'Aveni 1994). This concentration of power can weaken board monitoring effectiveness, increase information asymmetry, and heighten the risk of opportunistic behavior (Dwekat *et al.*, 2022; Endrikat *et al.*, 2021). Consequently, CEO duality often undermines stakeholder trust and accountability, whereas separating the two roles (CEO non-duality) is considered a hallmark of sound governance (Giannarakis *et al.*, 2023).

CEO duality can lead to a narrower strategic focus (Finkelstein and D'Aveni 1994). CEO duality may lead to a prioritization of compliance-driven environmental actions (e.g., emission reduction and energy efficiency), as the CEO may be more inclined to integrate climate-related considerations into strategic decision-making and champion initiatives aimed at strengthening the firm's environmental performance (Elsayih *et al.*, 2021; Khan *et al.*, 2021). At the same time, CEO duality may reduce attention to socially responsible initiatives, such as those related to employee welfare, diversity, and community engagement, because these programs often yield less immediate and measurable outcomes, while CEO duality is often associated with short-term orientation and reduced stakeholder consideration (Beji *et al.*, 2021; Govindan *et al.*, 2021). This imbalance reflects a governance configuration that limits pluralism in strategic deliberation and reduces sensitivity to stakeholder concerns (Giannarakis *et al.*, 2023).

Overall, CEO duality is expected to enhance environmental performance while constraining social performance, thereby widening the ESG gap. We therefore hypothesize that:

*Hypothesis 4: CEO duality increases the ESG gap.*

2.2.5 Sustainability governance (Presence of a CSR committee)

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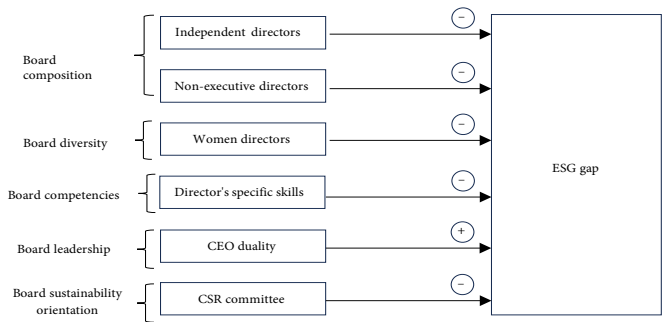
As part of their sustainability strategy, firms often establish a CSR committee, which provides specialized expertise and supports the development and implementation of CSR policies (Abdullah *et al.*, 2024; Giannarakis *et al.*, 2023). The CSR committee plays a crucial role in the environmental and social domains. Regarding environmental initiatives, it integrates environmental considerations into corporate decision-making processes, promotes compliance with environmental standards, and oversees actions aimed at reducing emissions and improving resource efficiency (Giannarakis *et al.*, 2023). By coordinating the planning, implementation, and monitoring of environmental policies, it strengthens companies' long-term commitment to sustainability and improves overall environmental performance (Giannarakis *et al.*, 2023; Odriozola *et al.*, 2024). In the social domain, the CSR committee identifies and addresses stakeholders' needs, enhances stakeholders' engagement, and ensures compliance with social and ethical standards (Shahbaz *et al.*, 2020; Ananzeh *et al.*, 2022). The CSR committee thus contributes to generate long-term value for shareholders and stakeholders alike (Endrikat *et al.*, 2021).

Overall, given the CSR committee's attention to both environmental and social initiatives, we expect it to contribute to maintaining a balanced performance across these two dimensions, ultimately reducing the ESG gap. We therefore hypothesize that:

*Hypothesis 5: The presence of a CSR committee reduces the ESG gap.*

Figure 1 shows the theoretical framework underlying the hypotheses.

Fig. 1: Framework



Source: Our elaboration

3. Method

3.1 Data

This study utilizes data from LSEG Data & Analytics, formerly known as Refinitiv Eikon Datastream, a leading database specializing in ESG

information. LSEG Data & Analytics is widely regarded as the most comprehensive and comparable source of ESG-related data (Uyar *et al.*, 2020) and is recognized for its high standards of accuracy and transparency (Giannarakis *et al.*, 2023).

Our unbalanced panel dataset comprises 8,014 firms from 39 countries, resulting in 45,040 firm-year observations spanning the 2013-2023 period. The sample includes firms headquartered in the following countries: Australia, Austria, Belgium, Bulgaria, Canada, Chile, China, Colombia, Costa Rica, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, and the United States of America. The list of countries included in the analysis was initially defined by considering Member States of the European Union and OECD countries, with the addition of China due to its economic relevance. The final sample was then refined based on data availability, excluding countries for which the LSEG database did not report ESG information for at least one firm headquartered in the respective country. The resulting set of countries encompasses some of the world's largest economies alongside medium-sized and smaller ones and includes both advanced and emerging markets, thereby ensuring substantial economic and institutional heterogeneity. This cross-country coverage enables the capture of variation in institutional environments, legal traditions, investor protection regimes, and sustainability regulations. Such heterogeneity is particularly relevant in the ESG context, as environmental and social priorities are shaped not only by firm-level characteristics but also by national governance systems, regulatory pressures, and stakeholder expectations (Ioannou and Serafeim 2012). With regard to the choice of the 2013-2023 period, the adoption of Directive 2014/95/EU, known as the Non-Financial Reporting Directive (NFRD), represents a major regulatory milestone, as it required large public-interest entities with more than 500 employees to disclose their ESG performance. Its introduction was preceded by a phase of increasing regulatory and institutional pressure around 2013 (Korca and Costa 2021). Extending the sample period to 2023 enables the analysis to incorporate the most recent ESG developments while maintaining a sufficiently long time horizon to examine medium- to long-term sustainability dynamics and mitigate the influence of short-term fluctuations in ESG scores (Minev *et al.*, 2025).

### 3.2 Method

To test our hypotheses, we employed a two-way fixed effects model that controlled for heterogeneity at both the industry and country levels, with standard errors clustered at the firm level (Model 1).

$$ESG\ gap_{it} = \alpha + \beta_j Board\ characteristics_{it} + \delta_j Control\ variables_{it} + \alpha_i + \gamma_t + \varepsilon_{it}$$

where:

- Board characteristics include *Independent directors*, *Women directors*, *Specific skills*, *CEO duality*, and *CSR committee*;
- Control variables include *Board size*, *Firm size*, *Firm age*, *ROA*, *Leverage*, and *Risk*;
- $i$  indicates the firm;
- $t$  indicates the year;
- $\alpha_i$  indicates the industry fixed effects;
- $\gamma_t$  indicates the country fixed effects;
- $\epsilon_{it}$  indicates the idiosyncratic error term.

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The use of a two-way fixed effects specification allows us to control for time-invariant unobserved heterogeneity at the industry and country levels and to capture structural differences in institutional environments, regulatory frameworks, and sector-specific ESG pressures. This approach reduces the risk that omitted contextual factors drive the observed relationships.

In addition, to address potential common method bias arising from the use of a single data source, as well as endogeneity concerns, all explanatory variables are lagged by one year. This temporal separation between independent variables and the ESG gap reduces the risk of simultaneity and mitigates, though does not fully eliminate, the possibility that the observed relationships are driven by contemporaneous measurement effects rather than substantive associations.

Nevertheless, lagged specifications cannot fully rule out endogeneity concerns or common method bias, as unobserved factors and potential reverse causality may still bias the estimates.

To further validate our results, we conducted three additional analyses. First, we excluded U.S. firms to mitigate potential bias arising from their overrepresentation in the dataset and to improve the generalisability of our findings, given that ESG practices and reporting in the United States exhibit distinctive institutional and regulatory characteristics (Model 2) (Matten and Moon 2008). Second, we removed financial firms due to the distinct nature of their operations, regulatory requirements, and reporting standards (Model 3) (Biswas *et al.*, 2018). Third, we extended the lag of all explanatory variables to two years to account for their potentially slower effects on the ESG gap (Model 4) (Tamayo-Torres *et al.*, 2019). These additional analyses provide further support for the robustness of our findings, although they do not fully address endogeneity.

### 3.3 Variable definition

Table 1 provides a description of dependent, independent, and control variables used in this study.

**Dependent variable.** The dependent variable is *ESG gap*, measured as the absolute difference between the Environmental Pillar Score and the Social Pillar Score. The Environmental Pillar Score measures a company's environmental performance based on reported information across three main areas: emissions, environmental innovation, and resource use. Similarly, the Social Pillar Score measures social performance based on four dimensions: product responsibility, workforce practices, human

rights, and community relations. Both scores range from 0 to 100, with higher values indicating better performance.

The ESG gap captures the magnitude of the imbalance between environmental and social performance. The use of the absolute value is motivated by the need to measure the intensity of the asymmetry between the two sustainability dimensions, regardless of its direction. In this context, what is relevant is not whether firms perform better in environmental or social dimensions, but rather the extent to which their performance is unbalanced across these two pillars. Moreover, the use of the absolute value instead of a simple difference measure avoids treating firms with similar absolute levels but opposite directions as systematically different.

Since the study focuses on firms' orientation toward environmental and social dimensions and on board characteristics as key explanatory variables, the governance pillar of ESG is intentionally excluded from the construction of the ESG gap. Including the governance pillar in the dependent variable would introduce conceptual and empirical overlap between independent and dependent variables, since board characteristics already capture governance-related aspects. By isolating the environmental and social dimensions, the ESG gap more clearly reflects how governance mechanisms influence the allocation of attention and resources across these two pillars while avoiding potential endogeneity and measurement overlap concerns.

*Independent variables.* The independent variables are *Independent directors*, *Women directors*, *Specific skills*, *CEO duality*, and *CSR committee*. *Independent directors* is measured by the percentage of independent directors (Ananzeh *et al.*, 2022). *Women directors* is measured by the percentage of women directors (Shahbaz *et al.*, 2020). *Specific skills* is measured by the percentage of board members who have either an industry-specific background or a strong financial background (Giannarakis *et al.*, 2023). *CEO duality* is a dummy variable equal to 1 if the CEO simultaneously chairs the board or has the chairman of the board of directors, and 0 otherwise (Beji *et al.*, 2021). *CSR committee* is a dummy variable equal to 1 if the firm has a CSR committee, and 0 otherwise (Ananzeh *et al.*, 2022).

*Control variables.* The control variables include *Board size*, *Firm size*, *Firm age*, *ROA*, *Leverage*, *Risk*, *Industry*, and *Country*. *Board size*, measured as the logarithm of the total number of directors (Arayakarnkul *et al.*, 2022), is included since larger boards of directors may facilitate more balanced oversight and resource allocation across environmental and social initiatives (Ananzeh *et al.*, 2022), thus reducing the ESG gap. *Firm size*, calculated as the logarithm of total assets, captures the tendency of larger firms to address both environmental and social issues (Cabral and Sasidharan 2021), potentially narrowing the ESG gap. Similarly, *Firm age*, defined as the logarithm of years since firm foundation, reflects the maturity of the firm, which may contribute to more balanced environmental and social performance (Arayakarnkul *et al.*, 2022), thus potentially reducing the ESG gap. *Return on assets (ROA)*, measured as net income divided by total assets, indicates the firm's financial capacity to invest in both environmental and social initiatives (Ananzeh *et al.*, 2022), thus potentially

narrowing the ESG gap. *Leverage*, expressed as the ratio of total debt to total assets, is included because highly leveraged firms may have limited resources to invest simultaneously in environmental and social activities (Baraibar-Diez and Odriozola 2019), which could widen the ESG gap. *Risk*, measured as the standard deviation of ROA in the past five years, is included since higher ROA volatility may reduce overall ESG investment and alter the balance between environmental and social priorities, potentially widening the ESG gap (De Abreu *et al.*, 2023). *Industry*, a dummy variable identifying the firm's sector, is considered to account for sector-specific stakeholder pressures that may differentially shape environmental and social performance, thereby affecting the ESG gap (Hafsi and Turgut 2013). *Country*, a dummy variable capturing the firm's location, is included because country-level macroeconomic and governance characteristics may affect environmental and social performance and, consequently, the ESG gap (Giannarakis *et al.*, 2023).

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Tab. 1: Variable definition

| Variable              | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Source                             |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Dependent variable    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |
| ESG gap               | Absolute value of the difference between the Environmental Pillar Score and Social Pillar Score, where both scores range from 0 to 100 and measure how the firm performs in environmental and social activities, respectively                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Our elaboration based on Refinitiv |
| Independent variables |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |
| Independent directors | Percentage of independent directors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Refinitiv                          |
| Women directors       | Percentage of women directors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Refinitiv                          |
| Specific skills       | Percentage of board members who have either an industry-specific background or a strong financial background                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Refinitiv                          |
| CEO duality           | Dummy variable equal to 1 if the CEO simultaneously chair the board or has the chairman of the board of directors, and 0 otherwise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Refinitiv                          |
| CSR committee         | Dummy variable equal to 1 if the firm has a CSR committee, and 0 otherwise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Refinitiv                          |
| Control variables     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |
| Board size            | Logarithm of the total number of directors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Our elaboration based on Refinitiv |
| Firm size             | Logarithm of total assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Our elaboration based on Refinitiv |
| Firm age              | Logarithm of years since firm foundation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Our elaboration based on Refinitiv |
| ROA                   | Return on assets, defined as the ratio of net income on total assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Refinitiv                          |
| Leverage              | Ratio of debt to total assets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Refinitiv                          |
| Risk                  | Standard deviation of ROA on the past five years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Our elaboration based on Refinitiv |
| Industry              | Dummy variable equal to 1 if the firm belongs to a specific sector, and 0 otherwise. Industries: Agriculture, forestry and fishing; Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities; Construction; Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities; Information and communication; Financial and insurance activities; Real estate activities; Professional, scientific and technical activities; Administrative and support service activities; Public administration; Education; Human health and social work activities; Arts, entertainment and recreation; Other service activities | Refinitiv                          |
| Country               | Dummy variable equal to 1 if the firm is located in a specific country, and 0 otherwise. Countries: Australia, Austria, Belgium, Canada, Chile, China, Colombia, Costa Rica, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Malta, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States                                                                                                                                                                                                                                                                                                        | Refinitiv                          |

Source: Our elaboration

## 4. Results

## 4.1 Descriptive statistics

The descriptive statistics reveal substantial variation in both the ESG gap and board characteristics among the firms in the sample (Table 2). The ESG gap has a mean of 17.93, indicating that, on average, firms exhibit a moderate disparity between their environmental and social performance. However, there is considerable heterogeneity across firms: while some companies show similar levels of environmental and social performance, others focus predominantly on one dimension. Regarding board composition, independent directors account for an average of 62.56% of the board, reflecting a good level of board independence. Women directors make up only 20.09% on average, highlighting the underrepresentation of women directors in the sample. 51.13% of directors have either industry-specific expertise or a strong financial background, indicating that, on average, boards of directors possess substantial capability to address ESG issues. CEO duality is present in about 35.94% of the firms, suggesting that in roughly one-third of cases the CEO also serves as board chair. Finally, a CSR committee exists in 52.32% of firms, showing that slightly more than half of the firms have formal oversight of CSR activities.

Tab. 2: Descriptive statistics

| Variable                                                             | Mean     | Standard Deviation | Min      | Max      |
|----------------------------------------------------------------------|----------|--------------------|----------|----------|
| ESG gap                                                              | 17.9311  | 13.3905            | 0.0004   | 91.0794  |
| Independent directors                                                | 62.5644% | 25.3587            | 0%       | 100%     |
| Women directors                                                      | 20.0905% | 14.1552            | 0%       | 100%     |
| Specific skills                                                      | 51.1283% | 22.0544            | 0%       | 100%     |
| CEO duality                                                          | 35.9369% | 0.4798             | 0        | 1        |
| CSR committee                                                        | 52.3180% | 0.4995             | 0        | 1        |
| Board size                                                           | 2.2040   | 0.3406             | 0        | 4.7791   |
| Firm size                                                            | 22.0607  | 1.9488             | 10.4619  | 29.3111  |
| Firm age                                                             | 1.4643   | 0.3390             | 0.3010   | 2.4814   |
| ROA                                                                  | 2.3545%  | 0.1118             | -0.7602  | 31.3629% |
| Leverage                                                             | 0.2555   | 0.4018             | 0        | 43.1818  |
| Risk                                                                 | 0.0191   | 0.1613             | -15.2509 | 0.6376   |
| Agriculture, forestry and fishing                                    | 0.3686%  | 0.0606             | 0        | 1        |
| Mining and quarrying                                                 | 6.2655%  | 0.2423             | 0        | 1        |
| Manufacturing                                                        | 34.6270% | 0.4758             | 0        | 1        |
| Electricity, gas, steam and air conditioning supply                  | 3.2127%  | 0.1763             | 0        | 1        |
| Water supply; sewerage, waste management and remediation activities  | 0.6217%  | 0.0786             | 0        | 1        |
| Construction                                                         | 3.4058%  | 0.1814             | 0        | 1        |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 7.7842%  | 0.2679             | 0        | 1        |
| Transportation and storage                                           | 3.6856%  | 0.1884             | 0        | 1        |
| Accommodation and food service activities                            | 1.2567%  | 0.1114             | 0        | 1        |
| Information and communication                                        | 9.0564%  | 0.2870             | 0        | 1        |
| Financial and insurance activities                                   | 15.9525% | 0.3662             | 0        | 1        |
| Real estate activities                                               | 5.1310%  | 0.2206             | 0        | 1        |
| Professional, scientific and technical activities                    | 4.2429%  | 0.2016             | 0        | 1        |
| Administrative and support service activities                        | 1.9472%  | 0.1382             | 0        | 1        |
| Public administration                                                | 0.0111%  | 0.0105             | 0        | 1        |
| Education                                                            | 0.3552%  | 0.0595             | 0        | 1        |
| Human health and social work activities                              | 1.1434%  | 0.1063             | 0        | 1        |
| Arts, entertainment and recreation                                   | 0.6461%  | 0.0801             | 0        | 1        |
| Other service activities                                             | 0.2864%  | 0.0534             | 0        | 1        |
| Australia                                                            | 5.5662%  | 0.2293             | 0        | 1        |
| Austria                                                              | 0.4996%  | 0.0705             | 0        | 1        |
| Belgium                                                              | 0.7282%  | 0.0850             | 0        | 1        |
| Canada                                                               | 5.4019%  | 0.2261             | 0        | 1        |
| Chile                                                                | 0.7149%  | 0.0843             | 0        | 1        |
| China                                                                | 9.3783%  | 0.2915             | 0        | 1        |
| Colombia                                                             | 0.3419%  | 0.0584             | 0        | 1        |
| Costa Rica                                                           | 0.0044%  | 0.0067             | 0        | 1        |
| Cyprus                                                               | 0.0910%  | 0.0362             | 0        | 1        |
| Czech Republic                                                       | 0.0555%  | 0.0236             | 0        | 1        |
| Denmark                                                              | 0.7771%  | 0.0878             | 0        | 1        |
| Finland                                                              | 0.8059%  | 0.0894             | 0        | 1        |
| France                                                               | 2.3846%  | 0.1526             | 0        | 1        |
| Germany                                                              | 2.7176%  | 0.1626             | 0        | 1        |
| Greece                                                               | 0.4663%  | 0.0681             | 0        | 1        |
| Hungary                                                              | 0.1021%  | 0.0319             | 0        | 1        |
| Iceland                                                              | 0.0355%  | 0.0188             | 0        | 1        |
| Ireland                                                              | 0.7971%  | 0.0889             | 0        | 1        |
| Israel                                                               | 0.4219%  | 0.0648             | 0        | 1        |
| Italy                                                                | 1.3322%  | 0.1146             | 0        | 1        |
| Japan                                                                | 9.0453%  | 0.2868             | 0        | 1        |
| Luxembourg                                                           | 0.3730%  | 0.0610             | 0        | 1        |
| Malta                                                                | 0.0511%  | 0.0226             | 0        | 1        |
| Mexico                                                               | 0.8570%  | 0.0922             | 0        | 1        |
| Netherlands                                                          | 1.0280%  | 0.1009             | 0        | 1        |
| New Zealand                                                          | 0.8459%  | 0.0916             | 0        | 1        |
| Norway                                                               | 0.7815%  | 0.0881             | 0        | 1        |
| Poland                                                               | 0.6727%  | 0.0817             | 0        | 1        |
| Portugal                                                             | 0.2176%  | 0.0466             | 0        | 1        |
| Romania                                                              | 0.0244%  | 0.0156             | 0        | 1        |
| Slovakia                                                             | 0.0022%  | 0.0047             | 0        | 1        |
| Slovenia                                                             | 0.0155%  | 0.0123             | 0        | 1        |
| South Korea                                                          | 2.6266%  | 0.1599             | 0        | 1        |
| Spain                                                                | 1.0835%  | 0.1035             | 0        | 1        |
| Sweden                                                               | 2.5733%  | 0.1583             | 0        | 1        |
| Switzerland                                                          | 2.1936%  | 0.1465             | 0        | 1        |
| Turkey                                                               | 0.8526%  | 0.0919             | 0        | 1        |
| United Kingdom                                                       | 7.1448%  | 0.2576             | 0        | 1        |
| United States                                                        | 36.9916% | 0.4828             | 0        | 1        |

Source: our elaboration

The correlation matrix shows acceptable correlation coefficients (Table 3) (Wooldridge 2019).

Emilia Filippi  
Chiara Leggerini  
Sustainable but uneven:  
How corporate governance  
influences environmental  
and social priorities

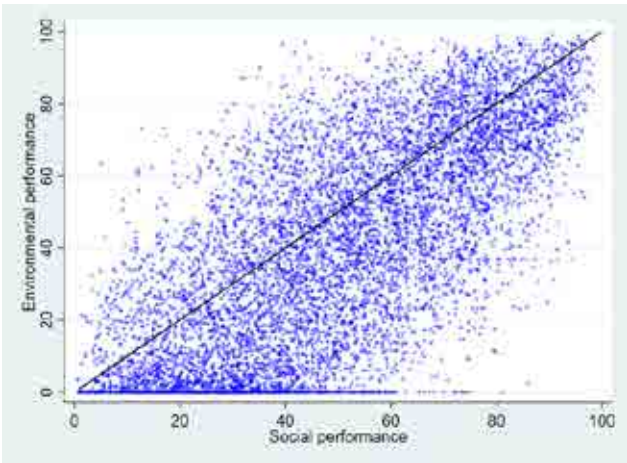
Tab. 3: Correlation matrix

| Variables                 | (1)    | (2)    | (3)    | (4)    | (5)    | (6)   | (7)   | (8)   | (9)    | (10)   | (11)   | (12)  |
|---------------------------|--------|--------|--------|--------|--------|-------|-------|-------|--------|--------|--------|-------|
| (1) ESG gap               | 1.000  |        |        |        |        |       |       |       |        |        |        |       |
| (2) Independent directors | 0.120  | 1.000  |        |        |        |       |       |       |        |        |        |       |
| (3) Women directors       | 0.002  | 0.313  | 1.000  |        |        |       |       |       |        |        |        |       |
| (4) Specific skills       | 0.098  | -0.004 | -0.167 | 1.000  |        |       |       |       |        |        |        |       |
| (5) CEO duality           | 0.022  | 0.129  | -0.025 | 0.116  | 1.000  |       |       |       |        |        |        |       |
| (6) CSR committee         | -0.178 | -0.023 | 0.176  | -0.068 | -0.048 | 1.000 |       |       |        |        |        |       |
| (7) Board size            | -0.077 | -0.100 | 0.037  | -0.082 | 0.080  | 0.236 | 1.000 |       |        |        |        |       |
| (8) Firm size             | -0.154 | -0.040 | 0.046  | -0.072 | 0.048  | 0.351 | 0.558 | 1.000 |        |        |        |       |
| (9) Firm age              | -0.098 | -0.120 | 0.025  | -0.051 | 0.005  | 0.189 | 0.181 | 0.192 | 1.000  |        |        |       |
| (10) ROA                  | -0.145 | -0.072 | 0.020  | -0.048 | 0.025  | 0.121 | 0.092 | 0.209 | 0.158  | 1.000  |        |       |
| (11) Leverage             | -0.025 | 0.008  | 0.020  | -0.003 | 0.028  | 0.022 | 0.013 | 0.035 | -0.025 | -0.050 | 1.000  |       |
| (12) Risk                 | -0.126 | -0.066 | 0.027  | -0.048 | 0.014  | 0.121 | 0.097 | 0.224 | 0.150  | 0.648  | -0.052 | 1.000 |

Source: Our elaboration

Figure 2 illustrates the positioning of firms according to their environmental and social performance, with the diagonal line representing equal performance across the two pillars and, therefore, a null ESG gap. Most firms are clustered around the diagonal, suggesting that while ESG profiles are often asymmetric (with performance in one dimension exceeding the other), overall ESG gaps tend to remain relatively limited. Nevertheless, the clustering of observations at lower environmental scores, especially along the horizontal axis, highlights the presence of firms characterized by poor environmental performance and varying levels of social performance. Overall, the figure shows that ESG gaps exist across firms, although these gaps are generally contained.

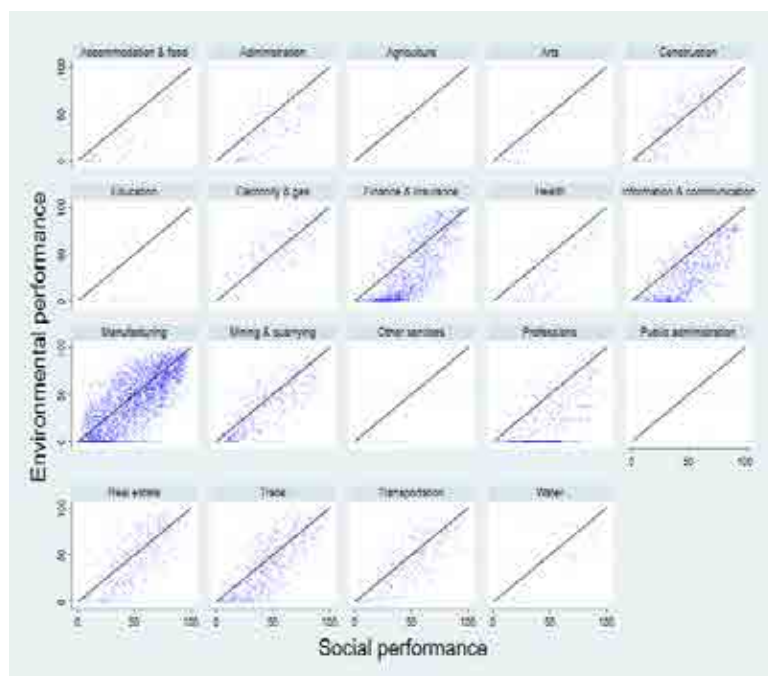
Fig. 2: Environmental versus social performance. Reference year: 2022



Source: Our elaboration

Figure 3 illustrates the positioning of firms according to their environmental and social performance across different industries, highlighting significant cross-industry differences. In some industries (e.g., manufacturing, construction, and real estate), most firms are clustered around the diagonal, suggesting that while ESG profiles are often asymmetric, overall ESG gaps tend to remain relatively limited. In contrast, in other industries (e.g., finance and insurance, information and communication, and professional services), firms are mostly positioned below the diagonal, highlighting asymmetric ESG profiles where social performance exceeds environmental performance, resulting in larger ESG gaps. This pattern is consistent with the heterogeneous pressures faced by firms across industries: environmentally intensive sectors such as manufacturing and construction are more exposed to regulatory and stakeholder scrutiny on environmental performance, whereas socially oriented service industries tend to prioritize social dimensions such as employee well-being and customer relations. As a result, the relative salience of environmental versus social issues varies systematically across industries, contributing to differences in ESG gaps. Overall, the figure shows that the industry in which a firm operates influences the ESG gap across firms.

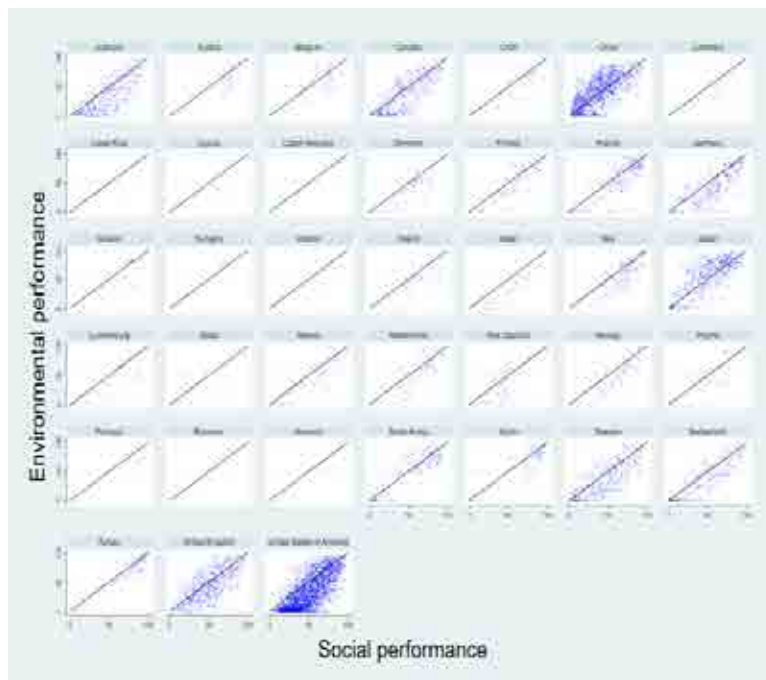
*Fig. 3: Environmental versus social performance across industries.  
Reference year: 2022*



Source: Our elaboration

Figure 4 illustrates the positioning of firms according to their environmental and social performance across different countries, highlighting some cross-country differences. In the majority of countries, most firms are clustered around the diagonal, suggesting that while ESG profiles are often asymmetric, overall ESG gaps tend to remain relatively limited. Instead, in some countries (i.e., Australia, Canada, Germany, Italy, Mexico, Sweden, Switzerland, and the United States of America), firms are more frequently positioned below the diagonal, highlighting asymmetric ESG profiles where social performance exceeds environmental performance, resulting in larger ESG gaps. Overall, the figure provides evidence of an ESG gap across firms, which appears to be influenced by the country in which the firm operates.

Fig. 4: Environmental versus social performance across countries.  
Reference year: 2022



Source: Our elaboration

## 4.2 Empirical results

Table 4 presents regression results for both baseline and additional analyses.

In Table 4, Model 1, Independent directors has a positive and statistically insignificant coefficient ( $b = 0.0249$ ,  $p < 0.01$ ), suggesting that a higher proportion of independent directors is associated with a wider ESG gap; therefore, Hypothesis 1 cannot be supported. Women directors

has a negative and statistically significant coefficient ( $b = -0.0177$ ,  $p < 0.1$ ), indicating that a higher proportion of women directors is associated with a reduction in the ESG gap; therefore Hypothesis 2 is supported. *Specific skills* has a positive and statistically significant coefficient ( $b = 0.0318$ ,  $p < 0.01$ ), suggesting that a higher proportion of directors with industry-specific or financial expertise is associated with a wider ESG gap; therefore, Hypothesis 3 cannot be supported. *CEO duality* has a negative and statistically significant coefficient ( $b = -0.4923$ ,  $p < 0.1$ ), indicating that the concentration of power in the CEO is associated with a reduction in the ESG gap; therefore Hypothesis 4 cannot be supported. Finally, *CSR committee* has a negative and statistically significant coefficient ( $b = -1.6035$ ,  $p < 0.01$ ), suggesting that the presence of a CSR committee may effectively reduce the ESG gap; therefore, Hypothesis 5 is supported.

Tab. 4: Regression results

| Variables             | Model 1 Baseline (1-year lag) | Model 2 - Non-US firms | Model 3 - Non-financial firms | Model 4 - 2-year lag   |
|-----------------------|-------------------------------|------------------------|-------------------------------|------------------------|
| Independent directors | 0.0249***<br>(0.0065)         | 0.0186**<br>(0.0073)   | 0.0242***<br>(0.0070)         | 0.0221***<br>(0.0070)  |
| Women directors       | -0.0177*<br>(0.0091)          | -0.0307***<br>(0.0111) | -0.0244**<br>(0.0098)         | -0.0242**<br>(0.0101)  |
| Specific skills       | 0.0318***<br>(0.0053)         | 0.0233***<br>(0.0066)  | 0.0337***<br>(0.0059)         | 0.0277***<br>(0.0056)  |
| CEO duality           | -0.4923*<br>(0.2544)          | -0.0330<br>(0.3356)    | -0.6695**<br>(0.2802)         | -0.4211<br>(0.2716)    |
| CSR committee         | -1.6035***<br>(0.2595)        | -0.2142<br>(0.3131)    | -1.5607***<br>(0.2855)        | -1.8478***<br>(0.2854) |
| Board size            | 0.4151<br>(0.3890)            | -0.2249<br>(0.4568)    | 0.1391<br>(0.4330)            | 0.4581<br>(0.4182)     |
| Firm size             | -0.9238***<br>(0.0838)        | -0.7156***<br>(0.1077) | -0.7022***<br>(0.0990)        | -1.0659***<br>(0.0900) |
| Firm age              | -0.9955***<br>(0.3653)        | -0.0885<br>(0.4623)    | -1.1704***<br>(0.4037)        | -0.8944**<br>(0.3836)  |
| ROA                   | -7.0895***<br>(1.1075)        | -5.9465***<br>(1.4690) | -8.0693***<br>(1.1588)        | -5.8042***<br>(1.2882) |
| Leverage              | -0.3048**<br>(0.1330)         | -0.0337<br>(0.1849)    | -0.3466***<br>(0.1287)        | -0.3603**<br>(0.1697)  |
| Risk                  | -0.2121<br>(0.3786)           | 4.1084***<br>(1.4287)  | -0.4047<br>(0.4164)           | -1.2228<br>(0.7774)    |
| Constant              | 37.1243***<br>(1.6666)        | 31.1059***<br>(2.1325) | 32.4794***<br>(1.9281)        | 40.5701***<br>(1.8066) |
| Industry              | Yes                           | Yes                    | Yes                           | Yes                    |
| Country               | Yes                           | Yes                    | Yes                           | Yes                    |
| Observations          | 45,040                        | 28,379                 | 37,855                        | 37,176                 |
| R-squared             | 0.1375                        | 0.0577                 | 0.1311                        | 0.1404                 |
| Adj R-squared         | 0.1362                        | 0.0556                 | 0.1296                        | 0.1389                 |
| Root MSE              | 12.4450                       | 12.1456                | 12.3605                       | 12.4211                |

So

urce: Our elaboration

Among the control variables, *Firm size*, *Firm age*, *ROA*, and *Leverage* have a negative and statistically significant coefficient, suggesting that larger firms, older firms, more profitable firms, and higher leveraged firms tend to have narrower ESG gaps. Other control variables (i.e., *Board size* and *Risk*) have statistically insignificant coefficients.

The additional analyses largely confirm the baseline results (Table 4). Specifically, when excluding U.S. firms, the coefficient of CEO duality and CSR committee become statistically insignificant, while the coefficients of the other main independent variables remain unchanged (Model 2). When financial firms are excluded, the coefficients for all main independent variables are confirmed (Model 3). Finally, when extending the lag of all explanatory variables to two years, the coefficient of *CEO duality* becomes statistically insignificant, whereas the coefficients of the other main independent variables remain unchanged (Model 4). Overall, these findings provide further support for the robustness of our baseline results.

## 5. Discussion

This study shows that the presence of women directors is associated with a reduction in the ESG gap. Similarly, CEO duality and the establishment of a CSR committee are associated with a reduction in the ESG gap, although their effect is not consistent across all model specifications. In contrast, the presence of independent directors and directors with industry-specific or financial expertise is associated with a wider ESG gap.

Regarding the presence of women directors, previous literature suggests that they exhibit a greater capacity to respond to evolving environmental and societal expectations (Ananzeh *et al.*, 2022; Odriozola *et al.*, 2024), thereby promoting ESG practices (Kyaw *et al.*, 2017) and supporting comprehensive sustainability strategies (Shaukat *et al.*, 2016). Consistently, previous literature shows that the presence of women directors improves both environmental performance (Orazalin and Mahmood 2021; Issa and Bensalem 2023; Ashraf *et al.*, 2025; Oussii and Jeriji 2025) and social performance (Alazzani *et al.*, 2017; Arayakarnkul *et al.*, 2022; Giannarakis *et al.*, 2023; Odriozola *et al.*, 2024). Our results extend this stream of research by showing that women directors enhance ESG performance and contribute to a more balanced allocation of attention across environmental and social dimensions, thereby reducing the ESG gap. These findings can be interpreted through social construction theory (Ridgeway 1991), which suggests that gendered behavioral expectations are shaped by early socialization processes so that women are generally associated with higher empathy, stakeholder sensitivity, and prosocial orientation (Biswas *et al.*, 2018), which may enhance attention to both environmental and social demands. When interpreted through the joint lens of the attention-based view and upper echelons theory, this result suggests that gender diversity does not simply promote ESG engagement but broadens the cognitive frames through which sustainability issues are interpreted, thus reducing the likelihood that attention becomes concentrated on a single ESG dimension.

Similarly, our results suggest that CEO duality is associated with a reduction in the ESG gap, although its effect is not consistent across all model specifications. Previous literature suggests that CEO duality is associated with a prioritization of compliance-driven environmental actions (Elsayih *et al.*, 2021; Khan *et al.*, 2021) and reduced attention to social initiatives

(Beji *et al.*, 2021; Govindan *et al.*, 2021), indicating a potential increase in the ESG gap. Instead, our results indicate that CEO duality is negatively and significantly associated with the ESG gap in the baseline model and in the subsample excluding financial firms, while the effect becomes statistically insignificant in the subsample excluding U.S. firms. These findings suggest that the impact of CEO duality on the balance between environmental and social dimensions is not uniform but varies across institutional and sectoral contexts. In particular, CEO duality may, in some contexts, reduce the ESG gap by fostering a more centralized and coherent allocation of attention across competing sustainability priorities. From an attention-based perspective, the concentration of decision-making power may reduce internal fragmentation and facilitate the alignment of environmental and social initiatives within a unified strategic direction. However, the lack of significance in the non-U.S. subsample suggests that this effect may depend on institutional environments characterized by stronger ESG regulation, disclosure standards, or stakeholder pressures, which may either reinforce or substitute the role of CEO power in shaping sustainability priorities. Overall, these results indicate that CEO duality does not have a universally beneficial effect on ESG balance but rather interacts with contextual factors that shape how attention is distributed across environmental and social domains.

Our results also suggest that the presence of a CSR committee is associated with a reduction in the ESG gap, although its effect is not consistent across all model specifications. Previous literature highlights the strategic role of the CSR committee in balancing sustainability outcomes, as it facilitates the integration of environmental considerations into corporate decision-making and promotes compliance with environmental standards (Giannarakis *et al.*, 2023), while also strengthening stakeholder engagement in the social domain (Shahbaz *et al.*, 2020; Ananzeh *et al.*, 2022). Our findings indicate that while the CSR committee is associated with a lower ESG gap in the baseline model, its effect becomes weaker or insignificant in some robustness checks, suggesting that its impact may not be uniform across contexts. This opens the possibility that CSR committees may, in some cases, play a symbolic rather than substantive role (e.g., Baraibar-Diez and Odriozola 2019), being established to signal commitment to stakeholders without necessarily ensuring effective integration of environmental and social objectives. From an attention-based perspective, this finding implies that the mere presence of formal governance structures may not be sufficient to guarantee a balanced allocation of attention across ESG dimensions, unless these structures are actively embedded in decision-making processes and supported by real authority and expertise.

In contrast, our results show that a higher proportion of independent directors is associated with a wider ESG gap. Previous literature highlights that independent directors are generally considered more sensitive to compliance-based environmental objectives (Nekhili *et al.*, 2019) and important contributors to social performance improvement (Hussain *et al.*, 2018; Kwarteng *et al.*, 2023). However, our findings suggest that independent directors may inadvertently contribute to an unbalanced

allocation of attention across ESG dimensions. One possible explanation is that independent directors, due to their monitoring role and emphasis on accountability, may prioritize ESG initiatives that are more easily measurable, standardized, and externally verifiable, such as environmental compliance indicators, rather than more complex and less quantifiable social outcomes. From an attention-based perspective, this implies that board independence may not broaden attention across ESG dimensions, but rather channel it toward specific domains that are more aligned with external pressures, regulatory frameworks, or disclosure requirements. In other words, while independent directors may improve oversight and accountability, they may not ensure a balanced integration of environmental and social priorities and may reinforce selective attention patterns that increase the ESG gap.

Finally, our results suggest that a higher proportion of directors with industry-specific or financial expertise is associated with a wider ESG gap. Previous literature highlights the positive role of industry-specific or financial expertise in improving resource allocation efficiency, risk management, and environmental and social performance (Harjoto *et al.*, 2015; Della Corte *et al.*, 2025; Dong *et al.*, 2025). However, our findings suggest that rather than promoting a balanced ESG strategy, industry-specific or financial expertise may act as a selective attention amplifier, leading experienced directors to focus more intensively on specific ESG domains that are more aligned with their background, experience, or performance metrics. Directors with industry-specific expertise may prioritize ESG dimensions that are more salient within their industry context (e.g., environmental issues in pollution-intensive sectors), while directors with financial expertise may emphasize initiatives with clearer and more immediate economic returns. As a result, expertise does not necessarily broaden attention across ESG dimensions but may instead reinforce domain-specific priorities, leading to a more uneven allocation of resources and, consequently, a wider ESG gap. This interpretation is consistent with the attention-based view, which emphasizes that attention is not only limited but also path-dependent and shaped by actors' prior experiences and knowledge structures.

Overall, this study suggests that not all governance mechanisms are equally effective in shaping the distribution of attention across ESG dimensions. In particular, the presence of women directors, CEO duality, and the establishment of a CSR committee are associated with more balanced attention across ESG dimensions and a reduction in the ESG gap, whereas the presence of independent directors and directors with industry-specific or financial expertise is associated with the opposite effect.

## 6. Conclusion

Building on the attention-based view (Ocasio 1997) and upper echelons theory (Hambrick and Mason 1984), this study examined whether board composition (presence of independent directors), board diversity (presence of women directors), board competencies (directors' specific

expertise), CEO power (CEO duality), and sustainability governance (presence of a CSR committee) reduce or widen the ESG gap, defined as the absolute difference between environmental and social performance. The fixed-effects panel regression analysis on an unbalanced panel dataset comprising 8,014 firms from 39 countries over the period 2013-2023 revealed that the presence of women directors, the presence of CEO duality, and the establishment of a CSR committee are associated with a reduction in the ESG gap. Instead, the presence of independent directors and directors with industry-specific or financial expertise are associated with a wider ESG gap.

This study advances prior literature in three ways. First, the study extends the application of the attention-based view (Ocasio 1997) to the ESG domain. While prior research has relied predominantly on stakeholder or legitimacy theories to explain why firms engage in sustainability initiatives, we move beyond this perspective by showing that it is not only the level of ESG engagement that matters, but also how attention is distributed across its dimensions. By explicitly conceptualizing ESG imbalance as the outcome of selective and uneven attention allocation, the study contributes to ongoing theoretical debates on how firms manage competing sustainability priorities under conditions of limited cognitive and organizational resources.

Second, this study introduces the concept of the ESG gap as a distinct construct, moving beyond the dominant approach that treats ESG performance as a unidimensional aggregate measure (Odriozola *et al.*, 2024). By focusing on the imbalance between environmental and social performance, the study uncovers the trade-offs that remain obscured in aggregate ESG scores, provides a more nuanced view of how firms pursue environmental and social sustainability, and shows that sustainability pillars may, in reality, be unevenly prioritized. In doing so, this study contributes to the broader literature by shifting the focus from ESG performance levels to ESG configuration, highlighting that high ESG scores may mask fundamentally different strategic orientations.

Third, the paper integrates the attention-based view (Ocasio 1997) with upper echelons theory (Hambrick and Mason 1984) to explain how board characteristics shape the distribution of attention across environmental and social issues. This integration advances corporate governance research by demonstrating that board characteristics do not merely influence the overall level of ESG performance, but also determine how ESG priorities are framed and strategically weighted. More specifically, the findings show that different board attributes play heterogeneous roles in shaping attention allocation, acting either as attention broadeners or as attention concentrators, thereby providing a more fine-grained understanding of the mechanisms linking governance and sustainability outcomes.

Overall, the study contributes to bridging corporate governance and ESG literature by showing that governance mechanisms influence not only whether firms engage in ESG activities, but how they structure and prioritize them, thus offering a more process-oriented explanation of ESG outcomes.

From a managerial standpoint, the study provides several actionable insights. Increasing the representation of women directors may enhance board sensitivity to environmental and social issues, promoting a more balanced approach to ESG dimensions and reducing the ESG gap. Similarly, the results on CEO duality and CSR committee indicate a context-dependent effect: while these board characteristics may in some cases support a more aligned and coherent ESG strategy, their effectiveness in reducing imbalances depends on the institutional and sectoral environment. Therefore, managers should promote CEO duality with caution and ensure that CSR committees are not merely formal but are effectively integrated into strategic decision-making processes and supported by adequate authority and expertise. Conversely, the positive and significant association between independent directors and the ESG gap suggests that, while independence strengthens monitoring and accountability, it may also lead firms to prioritize more measurable and compliance-oriented ESG dimensions. Managers should therefore balance board independence with mechanisms that promote a more integrated and holistic sustainability perspective. In addition, excessive reliance on directors with industry-specific or financial expertise may widen the ESG gap, as it could lead to a greater prioritization of either environmental or social performance depending on financial constraints or industry pressures. In this sense, we should complement expertise with diverse perspectives to avoid an overly narrow or domain-specific focus in ESG decision-making. Overall, these findings suggest that effective sustainability governance requires not only formal governance structures but also a shared strategic commitment to long-term and inclusive value creation.

For policymakers and regulators, these results suggest that promoting the presence of women directors can generally enhance firms' ability to integrate social and environmental objectives in a more balanced manner. Instead, governance mechanisms such as board independence and specialized expertise may have unintended effects on the balance of ESG dimensions and should therefore be discouraged. Finally, given the context-dependent effect of CEO duality and CSR committee, policymakers should consider how institutional environments, regulatory pressures, and governance codes interact with these board characteristics in shaping ESG priorities, rather than prescribing one-size-fits-all governance solutions. Therefore, policy interventions should not focus solely on promoting or discouraging the presence of specific board attributes but also on fostering governance frameworks that foster integrated and multidimensional ESG decision-making. Furthermore, disclosure frameworks and sustainability reporting standards should encourage firms to provide more comprehensive information on both environmental and social outcomes, reducing incentives to pursue unbalanced ESG strategies and promoting more integrated ESG performance.

This study has some limitations. First, all data were obtained from a single source, namely LSEG Data & Analytics, which may introduce potential common method bias. To mitigate this issue, all explanatory variables were lagged by one year; however, the problem may still partially persist. Second, the ESG gap is based on the Environmental Pillar Score and the

Social Pillar Score provided by LSEG Data & Analytics, which may capture formal disclosure practices rather than substantive ESG performance. Future studies could address this limitation by incorporating textual or qualitative ESG data describing substantive ESG initiatives. Third, an absolute measure of the ESG gap captures the magnitude of the imbalance between environmental and social performance but does not account for its direction. As a result, we are unable to distinguish whether firms tend to prioritize environmental over social dimensions, or vice versa, when such imbalances occur. Future research could address this limitation by employing directional measures of ESG asymmetry and exploring whether systematic patterns emerge across firms or industries. Fourth, although fixed-effects models and robustness tests (including two-year lags, exclusion of U.S. firms, and exclusion of financial firms) confirm the stability of the results, causal relationships cannot be fully established. Future research could adopt dynamic panel models or instrumental variable approaches to strengthen causal inference. Fifth, the study does not extensively explore sectoral or institutional heterogeneity. Future studies could investigate how industry regulation, cultural norms, or national governance systems moderate the relationship between board characteristics and the ESG gap. Finally, this study does not examine how the board of directors evaluates and manages trade-offs between environmental and social objectives. Future research could adopt qualitative or mixed-method approaches to provide more profound insights.

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