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Investigating How Mandatory Sustainability Reporting Influences Corporate Governance Effects on ESG Performance: From Obligation to Impact for Sustainable Development

Gianluca Vitale¹  | Sebastiano Cupertino²  | Giovanni Schiuma³ | Ciro Troise⁴ 

¹Department of Management and Business Administration, University "G. D'Annunzio" of Chieti-Pescara, Pescara, Italy | ²Department of Business and Law, University of Siena, Siena, Italy | ³Department of Engineering, LUM University, Casamassima, Italy | ⁴Department of Management, University of Turin, Turin, Italy

Correspondence: Ciro Troise (ciro.troise@unito.it)

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ABSTRACT

Under the current global institutional endorsement for corporate sustainability, understanding if companies are effectively improving their ESG performance represents a key topic. Therefore, this research examines whether and how mandatory sustainability reporting affects companies' environmental and social performance. The study also explores how sustainability reporting regulation influences the relationship between corporate governance mechanisms and ESG performance. The analysis adopts a two-stage regression approach using a sample of 840 worldwide companies. The empirical findings are interpreted through institutional logics. The evidence underscores the positive effect of mandatory sustainability reporting on ESG performance. The combination of mandatory sustainability reporting with board gender diversity and board meetings promotes the pursuit of sustainability goals. Conversely, when mandatory sustainability reporting is paired with incentive systems, there is a shift towards traditional market logic. These results present intriguing policy and managerial implications.

1 | Introduction

In recent years, worldwide normative requirements on corporate sustainability created additional pressures on companies to enhance and monitor sustainability performance. Policymakers reconsidered existing normative frameworks and widened sustainability reporting requirements regarding contents and targeted companies (Cerioni et al. 2023). Accordingly, the relevance of sustainability in general and, more specifically, of sustainability reporting is now well recognized and institutionalized. Nonetheless, when an activity is induced out of obligation, managers could do so only because they must and not because they are truly committed (Bhatia and Jakhhar 2021). Therefore, it is relevant to understand if normative requirements

on sustainability reporting¹ can effectively induce companies to produce positive environmental and social impacts or if, conversely, they lead to a mere compliance effort (Chelli et al. 2014). On this point, the literature still produced scant evidence, and scholars recently emphasized the need to understand better whether and how sustainability reporting regulations can affect companies' sustainability performance (Aluchna et al. 2023). To the best of our knowledge, only a few studies investigated such a relationship, and they limited their analysis to single geographical contexts or sustainability dimensions (Aluchna et al. 2023; De Villiers et al. 2024; Downar et al. 2021; Bauckloh et al. 2023).

Furthermore, corporate sustainability performance and corporate governance mechanisms represent crucial drivers in

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directing company management toward improved environmental and social results (e.g., Hussain et al. 2018). Nonetheless, the literature presents fragmented and conflicting results (Karn et al. 2023). Indeed, recent studies have highlighted the need to understand how governance mechanisms are affected by regulatory pressures in directing business toward sustainability (Minciullo 2019; Naciti et al. 2022).

In summary, there is a gap in the current literature on how sustainability legislations affect corporate governance mechanisms (Minciullo 2019; Naciti et al. 2022). Moreover, how mandatory sustainability reporting affects ESG performance still lacks empirical evidence (Aluchna et al. 2023; De Villiers et al. 2024; Downar et al. 2021; Bauckloh et al. 2023).

Given the above background, this study aims to find evidence that can address the following research questions: (i) *Does mandatory sustainability reporting affect companies' environmental and social (ESG) performance?* (ii) *Do specific corporate governance mechanisms influence corporate sustainability performance?* (iii) *Does the transition from voluntary to mandatory sustainability reporting affect the relationship between specific corporate governance mechanisms and ESG performance?* In addressing the above research questions, we adopted the institutional logics theoretical framework, which is based on a consolidated tradition of institutional logics-inspired management studies (see Wu et al. 2023), such theoretical lens allow to understand how a normative requirement on sustainability reporting affects the logic embedded within specific corporate governance mechanisms. It offers a framework to clarify how the introduction of a regulatory logic (inherent in mandatory sustainability reporting) interacted with the pre-existing business logics, influencing their balances or tensions and fostering any changes in corporate governance values, expectations, and behaviors towards sustainability. Empirically, the study is based on a quantitative analysis relying on the ESG data of a sample of 840 globally listed non-financial companies, considering a timeframe of 10 years. Findings suggest that, despite the general positive effect of mandatory sustainability reporting on environmental and social performance, the regulatory logic connected to sustainability legislation does not always lead to strengthening the sustainability logic within the company. In our case, the interaction of regulatory logic with the incentive systems mechanism has led to a strengthening of the traditional self-interest and market logics. This points out that the diffusion of sustainability logic in the company should not be considered as deriving solely from the presence of a regulatory system, but rather from the pursuit of a balance between the different (and sometimes conflicting) logics that guide corporate behaviors.

The remainder of this paper is organized as follows. Section 2 highlights the literature background; Section 3 presents the theoretical background and develops the research hypotheses; Section 4 describes the methodology and data collection; Section 5 reports the main findings of the analysis; Section 6 elaborates on the results' discussion; Section 7 shows the study's contribution to literature and practice as well as policy implications; Section 8 reports conclusions, limitations, and possible future research opportunities.

2 | Literature Review

Corporate governance refers to how companies are controlled and involves exercising ethical and effective leadership to ensure strong oversight and good performance (De Villiers and Dimes 2021). Consequently, corporate governance plays a crucial role in expanding the company's strategic vision to incorporate sustainability issues, thereby influencing ESG performance (Hussain et al. 2018). Over the years, the literature has been enriched by numerous studies examining how corporate governance features and mechanisms impact sustainability performance (Beji et al. 2021; Kock et al. 2012).

The phenomenon has been investigated considered multiple corporate governance mechanisms such as CEO duality, the presence of a sustainability committee, the frequency of board meetings, gender balance, compensation policies, and many others (e.g., De Villiers and Dimes 2021; Karn et al. 2023). The literature is rich in papers that link corporate governance mechanisms with corporate ESG performance.

However, previous studies often yielded conflicting or limited findings on this topic, leaving the debate unresolved (Karn et al. 2023). For this reason, many recent papers stressed the importance to further explore how corporate governance structures affect corporate sustainability practices and performance (e.g., Forte et al. 2025; Zampella et al. 2025). More specifically, there is a need to deepen how peculiar elements of corporate governance influence company sustainability practices, strategies, and performance (Naciti et al. 2022). In Section 4 of this paper, the literature discussing the impacts of specific governance mechanisms on corporate sustainability performance is examined in detail.

Additionally, the literature continues to struggle with identifying how legislation impacts firms' adoption of corporate governance mechanisms, particularly concerning sustainability (Minciullo 2019). Naciti et al. (2022) pointed out that researchers have largely overlooked how policy regulation might shape the relationship between corporate governance mechanisms and sustainability performance. This presents a research opportunity regarding how the influence of governance mechanisms on corporate ESG performance may shift once a regulatory framework on sustainability is implemented.

In the past decade, sustainability reporting has gained significant regulatory support as it has become mandatory in many countries around the globe (Vitale et al. 2023). This situation has prompted questions about whether, and how, regulatory intervention in sustainability reporting affects ESG performance (e.g., De Villiers et al. 2024) or merely encouraged a compliance-driven approach (e.g., Chelli et al. 2014).

Surprisingly, few studies have examined the effects of mandatory sustainability reporting on sustainability performance. Reporting on ESG impacts does not ensure that companies will effectively improve their sustainability performance, as they may limit themselves to mere compliance with the law by only making a disclosure effort (Cordazzo et al. 2020; Mahmood and Uddin 2021). To our knowledge, only a few papers have explored the relationship between mandatory sustainability reporting and

sustainability performance. Notably, two studies focused solely on environmental performance (Downar et al. 2021; Bauckloh et al. 2023), while the other concentrated on specific geographical contexts (Aluchna et al. 2023; De Villiers et al. 2024).

Accordingly, we aim to overcome the current literature shortcomings, investigating how mandatory sustainability reporting affects all the dimensions of sustainability performance (Hussain et al. 2018) adopting a broader geographical perspective (Vitale et al. 2023).

Furthermore, based on the above literature background, we seek to explore how the regulation of sustainability reporting influences the effect of specific corporate governance mechanisms on sustainability performance. We aim to examine whether mandatory sustainability reporting extends beyond its goals of information completeness and reliability, impacting the behaviors of corporate governance stakeholders and guiding them toward improved sustainability performance (Naciti et al. 2022).

Therefore, this study has a threefold objective. First, it seeks to enhance the literature concerning how corporate governance mechanisms influence environmental and social performance. Specifically, the analysis carried out focuses on three notable governance mechanisms: board gender diversity, compensation policies tied to ESG targets, and the frequency of board meetings. We emphasize these mechanisms as they are particularly likely to impact the board's decision-making process, future actions, and the prioritization of institutional logics (e.g., Ji et al. 2020). We identified these potential governance mechanisms as drivers of corporate sustainability according to De Villiers and Dimes (2021). Indeed, we evaluated all the governance mechanisms they identified and excluded from this study those that showed no or weak statistical significance.

Furthermore, considering the significance of these elements in corporate management, numerous studies have highlighted the need to examine their effects on sustainability practices, as existing literature still offers limited, fragmented, or contradictory evidence on this subject (Karn et al. 2023; Naciti et al. 2022). Second, we seek to enhance the limited literature on the effects of mandatory sustainability reporting on sustainability performance. Accordingly, we aspire to build upon previous research insights (e.g., Aluchna et al. 2023; De Villiers et al. 2024) by broadening the geographical context analyzed and incorporating various environmental and social performance proxies. Third, this research points out the importance of investigating how the introduction of a regulatory policy on mandatory sustainability reporting alters the impacts of corporate governance mechanisms on sustainability performance, thereby addressing the call for future research indicated by recent studies (Minciullo 2019; Naciti et al. 2022).

3 | Theoretical Background and Hypotheses Development

3.1 | The Institutional Logics

Institutional logics represent a branch of new institutionalism conceived as advancing the more traditional Institutional Theory. Through institutional logics, we attempt to explain

how organizations are shaped by pre-existing cognitive structures by creating a connection between the macro and micro dimensions or between the institution and action (Thornton and Ocasio 2008). In this regard, actors can replicate behaviors in line with institutional logics, but they can also modify and develop these logics (Thornton et al. 2012).

Institutional Logics can be defined as: “the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (Thornton and Ocasio 1999, 804).

Based on this definition, organizational functioning and individual behaviors should be understood within an institutional context. At the same time, the context in which they are situated provides tools for action and change (Thornton and Ocasio 2008). In other words, Institutional Logics manifest empirically as organizational principles that influence individual behaviors (Ocasio et al. 2017). In this sense, Institutional Logics are integrated into “Embedded agency” approaches, as they activate and shape individual behaviors, thereby contributing to the evolution and transformation of organizations (Friedland and Alford 1991; Ocasio et al. 2017). Thus, Institutional Logics can both constrain and enable the behaviors of individuals and organizations by forming cognitive frameworks (Thornton et al. 2012). From the perspective of Institutional Logics, society can be divided into interinstitutional systems. The latter serves as a model of ideal types or tools to interpret cultural meanings into their logically pure components (Thornton et al. 2012, 52). These systems consist of institutional orders, which are further composed of elemental categories representing the cultural symbols and material practices that characterize that order (Thornton et al. 2012, 54). The primary institutional orders identified in the literature are market, community, profession, family, corporate, and state (Friedland and Alford 1991; Thornton and Ocasio 1999; Thornton et al. 2012) (see Figure 1). These orders are defined by different values, expectations, relationships, and behaviors (Thornton and Ocasio 2008). Therefore, it is essential to understand the content of the logics, the symbols, the motivations, and the associated practices to explain the potential effects that the logics can produce on organizations and individuals (Friedland and Alford 1991).

Over the years, institutional logics theory has been widely expanded and has undergone significant advancements. Among the various Institutional Logics proposed in the literature, sustainability is currently one of the most researched topics due to its relevance in today's business landscape. The development of this logic follows the mechanisms identified by the theory of Institutional Logics, whereby the sequence of events, actions of institutional actors, and overlap of structures contribute to a shift in attention toward a new logic (Laasch 2018). In this context, a series of events related to environmental and social issues may encourage individuals to integrate these factors into decision-making processes based on their frequency and significance (Silva and Figueiredo 2017). This can lead to changes in the dominant logics, prompting a move toward a Sustainability Logic (Laasch 2018; Silva and Nunes 2022). Consequently, individuals who adopt new practices and activities prompted by Sustainability Logic can influence a new direction for

Y-Axis:	X-Axis: Institutional Orders						
Categories	Family 1	Community 2	Religion 3	State 4	Market 5	Profession 6	Corporation 7
Root Metaphor 1	Family as firm	Common boundary	Temple as bank	State as redistribution mechanism	Transaction	Profession as relational network	Corporation as hierarchy
Sources of Legitimacy 2	Unconditional loyalty	Unity of will Belief in trust & reciprocity	Importance of faith & sacredness in economy & society	Democratic participation	Share price	Personal expertise	Market position of firm
Sources of Authority 3	Patriarchal domination	Commitment to community values & ideology	Priesthood charisma	Bureaucratic domination	Shareholder activism	Professional association	Board of directors Top management
Sources of Identity 4	Family reputation	Emotional connection Ego-satisfaction & reputation	Association with deities	Social & economic class	Faceless	Association with quality of craft Personal reputation	Bureaucratic roles
Basis of Norms 5	Membership in household	Group membership	Membership in congregation	Citizenship in nation	Self-interest	Membership in guild & association	Employment in firm
Basis of Attention 6	Status in household	Personal investment in group	Relation to supernatural	Status of interest group	Status in market	Status in profession	Status in hierarchy
Basis of Strategy 7	Increase family honor	Increase status & honor of members & practices	Increase religious symbolism of natural events	Increase community good	Increase efficiency profit	Increase personal reputation	Increase size & diversification of firm
Informal Control Mechanisms 8	Family politics	Visibility of actions	Worship of calling	Backroom politics	Industry analysts	Celebrity professionals	Organization culture
Economic System 9	Family capitalism	Cooperative capitalism	Occidental capitalism	Welfare capitalism	Market capitalism	Personal capitalism	Managerial capitalism

FIGURE 1 | Example of interinstitutional system. Source: Thornton et al. (2012).

companies (Silva and Nunes 2022). For the aim of our study, we define the sustainability logic as a company's balanced attitude toward environmental, social, and economic sustainability (Sayed et al. 2017).

Within the framework of Institutional Logics and corporate commitment to sustainability, one of the most significant studies is by Mahmood and Uddin (2021). The authors explore the various logics that compel organizations to engage in environmental and social initiatives. In this regard, Mahmood and Uddin (2021) identify four Institutional Logics:

1. *Business Logic* (connected to market and corporate institutions): Sustainability is functional to pursuing an economic interest.
2. *Transparency Logic* (connected to the professional order): the organizations' commitment to sustainability is motivated by the need to be accountable to stakeholders.
3. *Responsibility Logic* (connected to community order): The Responsibility Logic sees the need to adhere to the collective norms and values of the community in which companies operate as the primary motivation behind sustainability.
4. *Regulatory Logic* (connected to the institution of the state): The Regulatory Logic sees the role of the state and regulatory bodies at the center of the motivations for the corporate commitment to sustainability.

Following the theoretical assumptions presented, companies are embedded within broader systems of meaning that activate multiple, often conflicting, institutional logics, which can either enable or constrain organizational decisions, practices, and actions (Sharma et al. 2020). Companies must navigate the tensions between the various institutional logics and the related

interpretations held by their members. In this context, a crucial and contemporary logic, such as sustainability, may be set aside if a company's top management gives precedence to other institutional logics. In an environment characterized by institutional complexity due to the simultaneous existence of multiple and conflicting logics, companies are prompted to prioritize sustainability if there is an appropriate set of incentives (Sharma et al. 2020), strong managerial commitment (Vitale et al. 2019), or normative requirements that demand it (Aluchna et al. 2023). In this scenario, corporate governance bodies play a vital role in prioritizing institutional logics, thereby encouraging one course of action over another. Van Hoang et al. (2021) highlighted that firms with inadequate corporate governance are less likely to engage with environmental and social issues, while companies with superior ESG performance typically exhibit committed and well-structured corporate governance. Thus, the mechanisms and attributes of corporate governance can be crucial in guiding companies to achieve sustainability goals and enhance ESG performance (De Villiers and Dimes 2021).

This study utilizes the theoretical lens of institutional logics to understand how specific corporate governance mechanisms influence companies' inclination to pursue enhanced environmental and social performance, thereby prioritizing sustainability logic. Additionally, it investigates how regulatory logic, exemplified by legislation on mandatory sustainability reporting, impacts corporate sustainability. Finally, it assesses whether and how the effects of corporate governance mechanisms on sustainability performance shift when a company transitions from voluntary to mandatory sustainability reporting. In doing so, we analyze the moderating impact of sustainability reporting legislation on the relationship between corporate governance mechanisms and sustainability performance. In pursuing our research aims, we considered the governance mechanisms outlined by the framework of De Villiers and Dimes (2021). However, we excluded

from the study all the governance mechanisms whose reference variables did not produce statistically significant evidence. This led us to consider the following governance mechanisms: gender diversity on boards of directors, ESG compensation policies, and board meetings frequency. In the next section, we will develop the research hypotheses.

3.2 | Hypotheses Development

3.2.1 | Gender Diversity on Boards of Directors and Sustainability Performance

Institutional logics do not have the expected effects in all contexts since cultural differences affect how individuals process logics (Heales et al. 2023).

Gender diversity is a significant cultural factor that can have a critical impact on how individuals interpret institutional logics (Heales et al. 2023). Indeed, women can embody different logics within the company, which increases the number of competing institutional demands from within the organization (Heales et al. 2023). In this context, female characteristics are often defined by traits such as sensitivity, altruism, and strong communication skills (Eagly et al. 2003). These traits suggest that women are generally more open and inclined to address environmental and social issues compared to their male counterparts (Atif et al. 2021; Nadeem et al. 2020). Since women process institutional logics differently than men and advocate for prioritizing sustainability, we can conclude that boards of directors with a strong presence of women are more likely to prioritize environmental and social issues in their decision-making processes (Bear et al. 2010; Post et al. 2011; Williams 2003). Indeed, Sharma et al. (2020) indicate that diverse perspectives influence an organization's sustainability practices and affect how conflicting institutional logics shape management decision-making. This implies that gender diversity on boards of directors can broaden the scope of business issues addressed, including sustainability.

Several studies have found that companies with more women on their boards tend to achieve better environmental and social performance. Nicolò et al. (2022) found a positive correlation between the presence of women on boards of directors and each dimension of ESG performance. Similarly, Bear et al. (2010) and Post et al. (2011) discovered that a higher presence of women on boards of directors is associated with elevated corporate ESG ratings. Birindelli et al. (2019) and Williams (2003) emphasized that, from a social perspective, women seem to exhibit greater openness and empathy, which fosters the board's commitment to philanthropic activities. Despite these positive insights from the literature, Cucari et al. (2018) noted a negative relationship between the increasing presence of women on boards of directors and ESG scores. According to Cucari et al. (2018), this is due to the fact that the introduction of these individuals is not always linked to competence and experience; rather, it often results from compliance with regulations and rules.

Based on what has been argued so far, there is a strong consensus in the literature on the positive impact of the presence of women on the board of directors on sustainability performance. We, therefore, develop the following hypothesis:

H1. *The board's gender diversity positively affects corporate sustainability performance.*

3.2.2 | Compensation Policies and Sustainability Performance

Sustainability logic, especially in a voluntariness context, can be either dismissed or strategically reshaped to focus solely on aspects that conveniently align with the company's interests (Pizzi et al. 2021). In this setting, sustainability logic can overlap with (or be subordinated to) other principles, such as community or market logics, to the extent that sustainable activities effectively legitimize the company's status in society by enhancing its reputation or increasing profits through greater market share. Institutional complexity compels individuals to interpret institutional logics in various ways, resulting in potential discrepancies between planned objectives and actual outcomes. Numerous studies highlight that a decoupling exists between what companies claim to pursue and what they truly enact regarding corporate sustainability initiatives (e.g., Van Zanten and Van Tulder 2021). The arguments presented thus far raise a widely discussed question in the literature: how to align personal agency, particularly among managers, with corporate objectives and interests. According to agency theory, economic institutions (nations, companies, groups, or individuals) are expected to maximize their own interests, often at the expense of other members of society (Haque and Ntim 2020). To guide managers' interests toward a balanced achievement of corporate goals and foster long-term value creation, boards of directors must provide appropriate incentives to their managers (Flammer et al. 2019). Thus, a key corporate governance practice is to link executive compensation to social and environmental performance (Flammer et al. 2019).

Especially in the sustainability context, managerial motivations are a key element in guaranteeing the pursuit of environmental and social objectives (Vitale et al. 2019). In this regard, an ESG compensation policy can be a valuable tool to incentivize managers and directors to prioritize and implement sustainability initiatives (e.g., Keddie and Magnan 2023). Indeed, remuneration policies linked to ESG objectives can influence managers' and directors' behavior by prompting them to act for the well-being of the society in which they operate (Baraibar-Diez et al. 2019) and strengthen the relationship of trust with stakeholders (Chen et al. 2023; Flammer et al. 2019). In line with this, remuneration policies linked to ESG objectives can drive better sustainability performance, shifting an organization's focus on pursuing long-term corporate value through implementing sustainable practices (Adu et al. 2022; Flammer et al. 2019).

Based on the arguments presented, several studies have explored the relationship between remuneration policies and sustainability performance. Baraibar-Diez et al. (2019) emphasized that sustainability-related compensation policies positively influence ESG scores, noting that this effect is more pronounced when a sustainability committee exists. Chen et al. (2023) discovered that the positive impact on corporate ESG performance grows with monetary incentives provided to managers, even if these incentives have a limited effect when management is already committed to sustainable corporate development. Adu

et al. (2022) validated the positive influence of the CEO's compensation on sustainability practices, also indicating a greater effectiveness of compensation tied to achieving long-term goals. Given that the literature primarily emphasizes a positive relationship between compensation policies and sustainability performance, we hypothesize that:

H2. *The compensation policy related to ESG targets positively affects corporate sustainability performance.*

3.2.3 | Board Meetings Frequency and Sustainability Performance

The board of directors is typically composed of a diverse group of individuals representing specific categories of share/stakeholders, each carrying different (and often conflicting) logics (e.g., ownership logic, market logic, financial investor logic, non-profit and/or sustainability logic, responsibility logic, regulatory logic, etc.) (e.g., Olsen et al. 2017). Consequently, board meetings become venues for expressing these various and competing logics of individuals (or groups of individuals) (Olsen et al. 2017). By negotiating a suitable course of action based on the individuals' ingrained understanding of the situation, the board makes decisions regarding future choices by contextually favoring some logics over others (e.g., Zilber 2024). Given the complexity that arises from multiple and competing logics, the board may require several meetings to make decisions and determine which logics to prioritize (Zilber 2024). As a result, as a firm's institutional complexity increases, board meetings are likely to occur more frequently (e.g., Vafeas 1999). Considering this, a high frequency of board meetings may not indicate greater efficiency in decision-making; in fact, it can be symptomatic of poor corporate performance (Ji et al. 2020; Vafeas 1999). In this context, the influence of increased board meeting frequency is debatable (Lagasio and Cucari 2019). The literature lacks a consensus on its relationship with corporate performance. Within the sustainability context, mixed evidence exists regarding how board meeting frequency impacts environmental and social performance. Many scholars argue that a high frequency of board meetings can signify higher quality corporate governance, enhancing commitment to sustainability practices (e.g., Kumari et al. 2022; Jizi 2017). Al Amosh and Khatib (2021) noted that numerous board meetings may correlate with better ESG performance as they provide opportunities for discussion and implementation of diverse strategies while enhancing transparency, reducing information asymmetry, and addressing stakeholder expectations. Conversely, substantial empirical studies indicate that board meeting frequency does not correlate with sustainability performance. Jensen (1993) pointed out that more rigorous board activity can be linked to poor performance. Indeed, when performance declines in crisis, boards tend to become more active in addressing urgent issues, taking on a reactive rather than a proactive role (Vafeas 1999). More recently, Disli et al. (2022) identified no connection between the number of board of directors' meetings and improved sustainability performance. They explained this finding by asserting that more frequent meetings are scheduled to address identifiable inefficiencies. Finally, Kamaludin et al. (2022) found a negative correlation between the annual frequency of board meetings and the overall ESG

score, reinforcing that greater meeting frequency is associated with lower performance.

Given the argumentation presented so far, we assume that the complexity induced by the simultaneous presence of multiple competing institutional logics can lead to decision-making delays and inefficiencies, implying a higher board meeting frequency and lower sustainability performance. Therefore, we formulate the following hypothesis:

H3. *A high board meeting frequency is associated with low corporate sustainability performance.*

3.2.4 | Mandatory Sustainability Reporting and Sustainability Performance

The introduction of legislative obligations affects company practices and activities. In this context, the regulatory logic, heralded by law, influences the adoption of practices due to the potential for reward or the threat of punishment (Higgins et al. 2018). However, implementing a regulatory logic may not yield the expected effects and does not necessarily play a dominant role. Ahlström and Monciardini (2021) demonstrated how the rollout of the EU sustainable finance regulation resulted in contradictions and limitations when trying to shift from traditional market and financial logic to sustainability. The authors showed that the EU reforms were initially well-supported, and sustainability logic complemented the financial perspective. Nonetheless, as time passed, misaligned interests emerged, limiting the policy's impacts on sustainability outcomes. Jamali et al. (2017) found that the spread of sustainability logic through a state institutional order is hindered and complicated by inherent governance structure inefficiencies and voids, as well as by localized and entrenched institutional logics (such as religion, market, and family), which drive a readaptation of sustainability logic in line with pre-existing interests.

Following this line of thought, a recent debate has emerged regarding the ability of regulatory logic to foster meaningful corporate sustainability outcomes. A recent body of research has focused on whether sustainability reporting obligations influence companies' sustainability performance. This focus stems from the notion that regulations requiring mandatory sustainability reporting often allow companies to comply merely by communicating their activities, without making a genuine commitment to mitigating the damage caused, while also improving environmental and social performance (Cordazzo et al. 2020; Mahmood and Uddin 2021).

To our knowledge, few papers have addressed this topic. Aluchna et al. (2023) analyzed the impact of the European Directive 2014/95/EU on the ESG performance of Polish companies. They noted a positive effect of the Directive on the aggregate ESG score, as well as on the specific environmental and social aspects they examined. In contrast, De Villiers et al. (2024) found that Directive 2014/95/EU did not improve the sustainability outcomes of European companies, emphasizing the ineffectiveness of mandating sustainability disclosures to enhance performance. Downar et al. (2021) and Bauckloh et al. (2023) investigated the relationship between

mandatory carbon emission disclosure and environmental performance in the UK and the US, respectively. They observed a generally positive effect of compulsory carbon disclosure on environmental performance. Considering the aforementioned research, prior studies have found mixed and limited evidence regarding the phenomenon being investigated. Therefore, we aim to extend the results of previous studies by analyzing the impact of mandatory sustainability reporting on companies' environmental and social performance worldwide. In doing so, we seek to understand if introducing a regulatory logic can concretely foster companies' transition toward sustainability. In light of all the above, we propose the following research hypothesis:

H4. *Mandatory sustainability reporting positively affects corporate sustainability performance.*

A regulatory logic can significantly influence corporate governance mechanisms, as the state's institutional order establishes the "rules of the game" for the society in which companies operate, directing human activity through legal and bureaucratic hierarchies (Friedland and Alford 1991). Companies cannot entirely dismiss a regulatory framework shaped by valuable data laws; at most, they can supplement it or advocate for a readjustment (Ahlström and Monciardini 2021; Jamali et al. 2017).

In recent years, the regulatory endorsement of a sustainable corporate mindset has spread widely (Cerioni et al. 2023). This implies deep changes on a societal level that are reflected in existing logics, especially the logic of capitalist markets with the primacy of profit maximization (Kunz et al. 2025). In other words, the entry into force of a corporate sustainability regulation can affect the pre-existing logics that guide managers' actions (e.g., professional, market, profit maximization, transparency, etc.), prompting them to respond to the renewed social circumstances. In this sense, macro-level logics integrate with meso-level (or organizational) and individual logics, simultaneously altering how actors perceive sustainability practices and, more broadly, corporate management (e.g., Milosevic et al. 2023). Consequently, introducing a new regulatory framework can alter the balance and prioritization of existing logics within the board of directors (Kock et al. 2012). Board members will inevitably have to consider legislative requirements in the decision-making process, which may affect the negotiation of proposed actions and modify individuals' taken-for-granted assumptions. Regarding this topic, Kock and Min (2016) noted that sustainability-oriented regulations can transform the traditional shareholder logic by imposing non-compliance costs. Thus, even if the regulation does not directly alter the values and beliefs inherent in actors' institutional logics, it can promote alternative values that align firms' environmental and financial performance (Kock and Min 2016). In this context, Kock and Min (2016) emphasized that corporate governance mechanisms play a crucial role in promoting corporate sustainability practices, while legal origins significantly influence the tendency of corporate governance to adopt stakeholder-oriented logics. Considering these reflections, we contend that legislation requiring mandatory sustainability reporting can positively affect the influence of corporate governance mechanisms on sustainability performance.

In line with this, we assume that mandatory sustainability reporting positively moderates the relationship between the investigated corporate governance mechanisms and environmental and social performance. As a result, we propose the following research hypotheses:

H5. *Mandatory sustainability reporting positively moderates the relationship between the board's gender diversity and corporate sustainability performance.*

H6. *Mandatory sustainability reporting positively moderates the relationship between compensation policy related to ESG targets and corporate sustainability performance.*

H7. *Mandatory sustainability reporting positively moderates the relationship between board meeting frequency and corporate sustainability performance.*

4 | Data and Method

This study presents a quantitative analysis of a sample of globally listed non-financial companies (NFCs), covering a 10-year time-frame (respectively: 2010–2019 and 2011–2020). We selected the last decades due to the increasing global normative pressure on corporate sustainability reporting activities (Cerioni et al. 2023). Additionally, we focused our analysis on global NFCs because of their significant role in production levels and their impact on business cycles (Orhangazi 2008), as well as the (un)sustainability of socioeconomic systems (Cupertino et al. 2022). Moreover, the analyzed sample includes companies with substantial experience in voluntary and mandatory sustainability reporting over an extended period. We used the Refinitiv Eikon database to gather financial and non-financial firm-level data and to define the examined sample. The initial universe consisted of approximately 9634 listed NFCs. Data cleaning resulted in the removal of several companies due to incomplete information. Furthermore, we winsorized each observed variable to reduce the influence of outliers in the analysis. Consequently, the sampling process yielded a final, well-balanced data panel comprising 840 companies. We conducted our empirical analysis using STATA software. Table 1 presents the industry distribution of the final scrutinized sample.

This research is in the wake of prior studies (Beji et al. 2021; De Villiers and Dimes 2021; Hussain et al. 2018) and aims to study whether and how different corporate governance characteristics could affect corporate environmental and social performance. Contextually, we investigated the possible direct impacts of sustainability reporting regulations on firms' environmental and social performance. Moreover, the moderating effects of mandatory sustainability reporting on the relationship between corporate governance settings and sustainability performance have been examined. Therefore, to validate our research hypotheses, we designed two general models (i.e., **Model 1** and **Model 2**), focusing separately on the environmental and social sustainability perspectives. Moreover, four analytical variants (i.e., **Model 1_{A/B}**, **Model 2_{A/B}**) have been defined. Model variants vary for different dependent variables (DVs) represented by distinctive, well-known Refinitiv Eikon ESG scores as proxies of environmental and social performance (Refinitiv 2022).

TABLE 1 | Final sample industry distribution.

Industry	Companies	%	Cum.
Basic materials	93	11.07	11.07
Consumer discretion	143	17.02	28.1
Consumer staples	78	9.29	37.38
Energy	73	8.69	46.07
Health care	64	7.62	53.69
Industrials	200	23.81	77.5
Real estate	16	1.9	79.4
Technology	61	7.26	86.67
Telecommunications	36	4.29	90.95
Utilities	76	9.05	100
Total	840	100	

Notably, **Model 1_A** reports a score that estimates the firm's commitment and effectiveness in decarbonizing business processes (i.e., $GHGsEmissions_{(i,t)}$) as DV. Differently, **Model 1_B** reports the score that assesses the firms' capability to reduce the use of materials/natural resources to improve the sustainability of the supply chain (i.e., $ResourceUse_{(i,t)}$) as DV. On the other hand, we defined **Model 2_A** including another ESG score that reflects the firm's capacity to increase its employees' loyalty/productivity by promoting an effective life-work balance, a family-friendly environment, and equal opportunities (i.e., $Workforce_{(i,t)}$) as DV. Finally, we defined **Model 2_B**'s DV using the ESG score that estimates the managerial attitude towards maintaining the corporate reputation within the society (i.e., $Community_{(i,t)}$).

Model 1 and **Model 2** also diverge on the independent variables (IVs) side. Regarding mandatory sustainability reporting effects, we included two different dichotomous independent variables, $EnvRegulation_{(i,t-1)}$ for **Model 1_{A/B}** and $SocRegulation_{(i,t-1)}$ for **Model 2_{A/B}**. To define such explanatory dummy variables, we relied on Dal Maso et al. (2020) framework, retrieving and analyzing information from the "Carrots & Sticks" database regarding local regulations and legislations on mandatory sustainability reporting. Carrots & Sticks proved to be a valuable data source since it rigorously reports on existing voluntary and mandatory sustainability reporting local regulations, also providing information on the year of the normative enactment (see Cerioni et al. 2023; Lopatta et al. 2023). We attributed the value 1 to $EnvRegulation_{(i,t-1)}$ and $SocRegulation_{(i,t-1)}$ when we found that an existing national corporate environmental or social reporting regulation was in force for each analyzed country-year matching. Conversely, we assigned the value 0 to these variables. The use of such IVs, as highlighted in prior studies (Vitale et al. 2023; Cupertino et al. 2022), proved suitable for investigating the direct effects of mandatory environmental and social reporting on sustainability performance. We adopted this methodological approach to demonstrate evidence for **H4**. Table 2 reports the geographical distribution of the final sample, national regulations on environmental and social corporate reporting, and the related period in which they have been put in force.

We fine-tuned our models based on insights from the latest studies (Chen et al. 2023; Kumari et al. 2022; Nicolò et al. 2022), which suggest that formal corporate governance structures and mechanisms may influence various aspects of sustainability and dimensions of sustainability performance. From this perspective, we posited that the gender composition of the board, the managers' compensation tied to ESG targets, and the frequency of board meetings could impact sustainability performance. We included the percentage of women on the board of directors (i.e., $BoardDiversity_{(i,t-1)}$) as a helpful IV to validate **H1**. Moreover, to validate **H2**, we used a dummy IV (i.e., $ESGExecutivesInc_{(i,t-1)}$) that considers if a company has (or has not) defined board directors' remuneration mechanisms related to ESG objectives. Furthermore, we considered the number of board meetings during the year (i.e., $BoardMeetings_{(i,t-1)}$) as another explanatory variable to validate **H3**. Finally, we employed some controls to enhance our study's statistical validity and capture other possible side effects on the investigated variables. Notably, we included the total number of board of directors members at the end of the fiscal year (i.e., $BoardSize_{(i,t-1)}$) as a control variable (CV) to check for possible effects of managerial ability and expertise on ESG performance (Endrikat et al. 2021). Moreover, in line with the Slack Resources Theory postulates (Waddock and Graves 1997), we included the Return on Equity (i.e., $ROE_{(i,t-1)}$) ratio since it estimates corporate profitability and the corporate capacity to generate available slack resources useful to support both subsequent core business and sustainability activities. Furthermore, we included the natural logarithm of companies' market capitalization (i.e., $Size_{(i,t-1)}$) and the industry dummy variables (i.e., $Industry_{(i,t-1)}$) to control the impacts on the main investigated relationships produced respectively by the corporate sizes characteristics and the sector's specific features (Andersen and Dejoy 2011).

In addition, to validate **H5**, **H6**, and **H7**, we used $EnvRegulation_{(i,t-1)}$ and $SocRegulation_{(i,t-1)}$ to create combined explanatory variables by multiplying each IV previously identified as typical aspects of corporate governance. Indeed, including such variables in the analysis has been useful in examining possible moderating effects on sustainability performance due to the interaction between sustainability reporting regulation and peculiar corporate governance characteristics.

Finally, we established a 1-year lag between the dependent variable (DV) and independent variables (IVs) for each analytical model to investigate the short-term effects of governance mechanisms and normative impacts on subsequent sustainability performance.

Table 3 reports the definitions of dependent and independent variables under study, while Table 4 shows the specifications of models employed in the analysis.

As Sarhan and Al-Najjar (2023) pointed out, studies investigating the relationships between corporate governance and business financial or sustainability performance may suffer from endogeneity issues. This criticality often arises from the complexity involved in identifying exogenous factors or conducting natural experiments that are useful for adequately examining the interactions in question (Wintoki et al. 2012). Therefore,

TABLE 2 | Geographical distribution and non-financial reporting legislation by countries.

NFD legislations					
Country	Companies	%	Cum.	Mandatory environmental reporting (year of the enactment)	Mandatory social reporting (year of the enactment)
Australia	45	5.36	5.36	National Greenhouse and Energy Reporting (2007)	Guide to reporting under the Workplace Gender Equality Act 2012 (2012)
Austria	5	0.6	5.95	Transposition of NFR Directive 2014/95/EU: Sustainability and Diversity Improvement Act 257/ME (2016)	Austrian Code of Corporate Governance (2009)
Belgium	11	1.31	7.26	Article 4.1.8 of VLAREM II (1995)	4 Aout 1996 – Arrêté royal relatif au bilan social (1996)
Canada	70	8.33	15.6	The Greenhouse Gas Emissions and Environmental Reporting Program (1999)	—
China	6	0.71	16.31	Measures on Open Environmental Information & Guidelines on Listed Companies' Environmental Information Disclosure (2008)	—
Denmark	4	0.48	16.79	The Danish Financial Statements Act (2008)	—
Finland	18	2.14	18.93	The Finnish Accounting Act (1997)	—
France	42	5	23.93	Nouvelles Régulations Économiques #2001-420 (2003), Grenelle Act II (2010), and amendments to the Law on Accounting PZE No. 51 due to the transposition of NFR Directive 2014/95/EU (2016)	—
Germany	20	2.38	26.31	SD-KPI Standard 2010–2014 (2010) & CSR Directive Implementation Act (2016)	—
Greece	3	0.36	26.67	Law 4403/2016 and Circular ΨOYΨ465X18-BM, transposition of NFR Directive 2014/95/EU: Sustainability and Diversity Improvement Act 257/ME (2016)	—
Hong Kong	34	4.05	30.71	—	—
Hungary	1	0.12	30.83	Amendments to Accounting Act C of 2000, transposition of NFR Directive 2014/95/EU (2016)	—
India	11	1.31	32.14	Environment (Protection) Act, Annual “environmental audit report” (1986) & Corporate Responsibility for Environmental Protection (CREP) (2003)	—
Ireland	4	0.48	32.62	Amendments to the Companies Act 2014 due to the transposition of EU NFR Directive (2016)	—
Italy	7	0.83	33.45	Legislative Decree 30 December 2016, n. 254, transposition of NFR Directive 2014/95/EU (2016)	—
Japan	19	2.26	35.71	Mandatory GHG Accounting System & Law Concerning the Promotion of Business Activities with Environmental Consideration (2005)	Act on Promotion of Female Employment (2015)
Luxembourg	1	0.12	35.83	Law of 23 July 2016 on the Publication of Non-financial Information and Information on Diversity A156, transposition of NFR Directive 2014/95/EU (2016)	—

(Continues)

TABLE 2 | (Continued)

NFD legislations					
Country	Companies	%	Cum.	Mandatory environmental reporting (year of the enactment)	Mandatory social reporting (year of the enactment)
Malaysia	9	1.07	36.9	Amendments to Main Market Listing Requirements relating to Sustainability Statements in Annual Reports and Issuance of the Sustainability Reporting Guide and Toolkits (2015)	Amendments to Main Market Listing Requirements relating to Sustainability Statements in Annual Reports and Issuance of the Sustainability Reporting Guide and Toolkits (2015), Malaysian Code of Corporate Governance (2017)
Netherlands	13	1.55	38.45	Decree Disclosure of Non-financial Information PbEU, 2014, L330 (2014)	Decree Disclosure Diversity Policy PbEU, L330 (2014)
Norway	7	0.83	39.29	EU Modernization Directive (2003/51/EC) (2005) & Act amending the Norwegian Accounting Act (2013)	EU Modernization Directive (2003/51/EC) & Norwegian Code of Practice for Corporate Governance (2018)
Philippines	2	0.24	39.52	SEC Memorandum Circular No. 4 – Sustainability Reporting Guidelines for Listed Companies (2019)	Corporate Social Responsibility Act (2011)
Portugal	5	0.6	40.12	The Financial Reporting Accounting Standard n° 26 (2010) & Decreto-Lei n. 89/2017 (2017), de 28 de julho (2015) that transposed NFR Directive 2014/95/EU	Lei n. 7 (2009), Decreto-Lei n. 89/2017 (2017) that transposed NFR Directive 2014/95/EU
Russia	2	0.24	40.36	Russian Government Directive 1710-13 (2013)	Corporate Governance Code (2014)
Singapore	16	1.9	42.26	Energy Conservation Act, 2012; SGX-ST Listing Rules Practice Note 7.6 Amendments to Sustainability Reporting Guide (2012)	Practice Note 7.6 Sustainability Reporting Guide (2016)
South Africa	5	0.6	42.86	King III Code (2010)	—
South Korea	1	0.12	42.98	Environmental Information Disclosure Policy (2012)	National Accounting Plan (2007) & Spanish Organic Law 3/2007 for Effective Equality between Women and Men (2007)
Spain	5	0.6	43.57	National Accounting Plan (2007)	—
Sweden	20	2.38	45.95	Act No 3/2006 Amendments of Annual Accounts Act (1995) & Corporate Reporting on Sustainability and Diversity Policy CU2 that transposed NFR Directive 2014/95/EU (2016)	Corporate Reporting on Sustainability and Diversity Policy CU2 that transposed NFR Directive 2014/95/EU (2016)
Switzerland	18	2.14	48.1	—	—

(Continues)

TABLE 2 | (Continued)

NFD legislations					
Country	Companies	%	Cum.	Mandatory environmental reporting (year of the enactment)	Mandatory social reporting (year of the enactment)
Taiwan	4	0.48	48.57	Taiwan Stock Exchange Corporation Rules Governing the Preparation and Filing of Corporate Social Responsibility Reports by TWSE-Listed Companies (2019)	—
Thailand	3	0.36	48.93	—	—
United Kingdom	89	10.6	59.52	The Companies Act 2006 Regulations (2013)	Equality Act (2006)
United States	340	40.48	100	Mandatory Greenhouse Gas Reporting Rule (2010)	Section 709(c), Title VII, Civil Rights Act (1967) as Amended by the Equal Employment Opportunity Act (1972)
Total	840	100			

in light of recent insights (e.g., Akhter and Hassan 2024), we treated $BoardDiversity_{(i,t-1)}$, $ESGExecutivesInc_{(i,t-1)}$, and $BoardMeetings_{(i,t-1)}$ as endogenous instrumental variables. Importantly, we assumed that interactions with other variables within the model could also influence their values. The Durbin and Wu-Hausman test confirmed our assumption in this context, as detailed in Table 5 below.

Additionally, consistent with common practices in the literature on corporate governance (Li et al. 2021), we included additional instruments in the analysis (i.e., $l.BoardDiversity_{(i,t-2)}$, $l.ESGExecutivesInc_{(i,t-2)}$, and $l.BoardMeetings_{(i,t-2)}$) to control for endogeneity effects. In doing so, we assumed that these extra instruments would be neither directly nor indirectly associated with the dependent variables defined in this study. From a methodological perspective, additional instruments are correlated with the endogenous independent variables and uncorrelated with the disturbance term of our analytical models by default. We conducted the well-known robust and conservative Stock-Yogo F -statistics test (Bascle 2008) to assess the explanatory power of the identified instruments. According to Stock and Yogo (2004), if the analysis includes three instruments, the F -statistics should exceed a threshold of 9.08 to confirm the validity of such excluded exogenous variables. Consequently, as shown in Table 6, we found that the identified instrumental variables are relevant and exogenous.

Finally, in line with what Lu et al. (2018) stated, we considered our models to be “just-identified.” Therefore, testing for overidentifying restrictions was unnecessary due to the equal number of independent endogenous variables and additional instruments.

Following Papies et al. (2017), we used relevant instrumental variables in this study to decompose the observed variations in instrumental variables (IVs) between exogenous and endogenous components. Exogenous variations can be isolated by performing a preliminary “first stage” regression. Therefore, we conducted a robust dynamic two-stage least squares (TSLS) analysis with instruments to mitigate endogeneity caused by simultaneity bias or reverse causality while also addressing potential heteroscedasticity issues (Atif et al. 2021; Usman et al. 2022). Additionally, we adopted a fixed effects analytical approach because the Hausman (1978) confirmed that the individual-specific effects are correlated with the explanatory variables (Greene 2008). This evidence indicated the absence of significant random effects in our study. Consequently, we controlled for year-fixed effects in the regression analysis.

In line with Murray (2006), who did not consider instruments of a 2SLS analysis mere explanatory variables, we formally excluded such parameters among the IVs used in the second stage of our regressions.

As for possible collinearity biases in the analysis, we tested that variance inflation factors (VIFs) for all independent variables (IVs) and control variables (CVs) were approximately 1.00. Consequently, each model variant exhibited mean VIFs averaging around 1.17. Second, results showed that every IV in our analytical models presented tolerance values exceeding 0.10 (ranging from 0.98 to 0.70). Finally, we observed condition

TABLE 3 | The main scrutinized variables.

Variables	Description	Role in the analysis
<i>ResourceUse</i>	It is a score that ranges between 0% and 100% and reflects the firm's capability in rationalizing the employment of production inputs and redesigning procurement activities through the adoption of eco-friendly solutions (Refinitiv 2022).	DV
<i>GHGsEmissions</i>	It is a score that ranges between 0% and 100% and assesses the corporate commitment and effectiveness to decarbonize production and operational processes (Refinitiv 2022).	DV
<i>Workforce</i>	It is a score that ranges between 0% and 100% and estimates a company's effectiveness in achieving job satisfaction, a healthy and safe workplace, and equal development opportunities for its workforce (Refinitiv 2022).	DV
<i>Community</i>	It is a score that ranges between 0% and 100% and reflects corporate commitment towards being a good citizen, protecting public health and respecting business ethics (Refinitiv 2022).	DV
<i>EnvRegulation</i>	It is the dummy variable that takes value 1 when there is a mandatory NFD regulation including environmental aspects, while it takes value 0 in case of the absence of a mandatory NFD regulation treating environmental aspects.	IV
<i>SocRegulation</i>	It is the dummy variable that takes value 1 when there is a mandatory NFD regulation including social aspects, while it takes value 0 in case of the absence of a mandatory NFD regulation treating social aspects.	IV
<i>BoardDiversity</i>	It measures the percentage of women on board at the end of the fiscal year retrieved from the Refinitiv database.	Endogenous IV
<i>ESGExecutivesInc</i>	It is the dummy variable that takes value 1 if the senior executive's compensation is linked to sustainability targets retrieved from the Refinitiv database.	Endogenous IV
<i>BoardMeetings</i>	It measures the number of board meetings during the year retrieved from the Refinitiv database.	Endogenous IV
<i>BoardSize</i>	It measures the total number of board of directors members of scrutinized companies at the end of the fiscal year, as retrieved from the Refinitiv database.	CV
<i>ROE</i>	It reflects corporate profitability as a determinant of slack resources useful for developing business activities.	CV
<i>Size</i>	It represents the natural log of the company's capitalization. We computed this size proxy in the logarithmic form to normalize data.	CV
<i>Industry</i>	It stands for dummy variables that take values 1 to allocate a firm in the specific non-financial sub industry in which it operates and check for sectors' unobservable possible effects.	CV

numbers of approximately 2.00 for each model. Considering these results, and consistent with Allison (1999), we determined that this study did not experience multicollinearity issues.

5 | Results

Table 7 presents the main descriptive statistics that characterize our variables. Table 8 shows the linear associations between the scrutinized variables considering the three standard levels of statistical significance (i.e., $\rho < 0.01$, $\rho < 0.05$, $\rho < 0.1$). Evidence related to industry dummy variables was excluded due to their not being statistically significant results.

For brevity, we reported in Tables 9 and 10 the main results produced by performing “second-stage” regressions carried out.

The analysis indicated that a significant number of women on board can promote the reduction of the firm's emissions and the eco-efficient management of resources in production and supply chain activities. Furthermore, evidence demonstrated that board diversity could strengthen business ethics, corporate citizenship, and the sustainable management of human resources. These outcomes align with H1. Simultaneously, this evidence reflects the body of literature that posits gender diversity on the board as a catalyst for corporate sustainability (Birindelli et al. 2019; Nicolò et al. 2022; Williams 2003). Gender-balanced boards are characterized by greater effectiveness in decision-making (Birindelli et al. 2019). Indeed, according to the gender-social role theory (Eagly 1987), women tend to be more attuned to environmental (Nadeem et al. 2020) and social issues, as they likely possess a heightened sense of ethics and social welfare (Atif et al. 2021).

TABLE 4 | The main models of the analysis.

Models	Equations
1 _A	$ \begin{aligned} (ResourceUse)_{i,t} = & \alpha_0 + \alpha_1(EnvRegulation)_{i,t-1} + \alpha_2(BoardDiversity)_{i,t-1} \\ & + \alpha_3(EnvRegulation * BoardDiversity)_{i,t-1} + \alpha_4(ExecutivesESGInc)_{i,t-1} \\ & + \alpha_5(EnvRegulation * ESGExecutivesInc)_{i,t-1} + \alpha_6(BoardMeetings)_{i,t-1} \\ & + \alpha_7(EnvRegulation * BoardMeetings)_{i,t-1} + \alpha_8(BoardSize)_{i,t-1} + \alpha_9(ROE)_{i,t-1} \\ & + \alpha_{10}(Size)_{i,t-1} + \alpha_{11}\left(\sum_{j=1}^{10} Industry\right)_{i,t-1} + \varepsilon_{i,t-1} \end{aligned} $
1 _B	$ \begin{aligned} (GHGsEmissions)_{i,t} = & \theta_0 + \theta_1(EnvRegulation)_{i,t-1} + \theta_2(BoardDiversity)_{i,t-1} \\ & + \theta_3(EnvRegulation * BoardDiversity)_{i,t-1} + \theta_4(ExecutivesESGInc)_{i,t-1} \\ & + \theta_5(EnvRegulation * ExecutivesESGInc)_{i,t-1} + \theta_6(BoardMeetings)_{i,t-1} \\ & + \theta_7(EnvRegulation * BoardMeetings)_{i,t-1} + \theta_8(BoardSize)_{i,t-1} + \theta_9(ROE)_{i,t-1} \\ & + \theta_{10}(Size)_{i,t-1} + \theta_{11}\left(\sum_{j=1}^{10} Industry\right)_{i,t-1} + \varepsilon_{i,t-1} \end{aligned} $
2 _A	$ \begin{aligned} (Workforce)_{i,t} = & \beta_0 + \beta_1(SocRegulation)_{i,t-1} + \beta_2(BoardDiversity)_{i,t-1} + \beta_3(SocRegulation * BoardDiversity)_{i,t-1} \\ & + \beta_4(ExecutivesESGInc)_{i,t-1} + \beta_5(SocRegulation * ExecutivesESGInc)_{i,t-1} + \beta_6(BoardMeetings)_{i,t-1} \\ & + \beta_7(SocRegulation * BoardMeetings)_{i,t-1} + \beta_8(BoardSize)_{i,t-1} + \beta_9(ROE)_{i,t-1} + \beta_{10}(Size)_{i,t-1} \\ & + \beta_{11}\left(\sum_{j=1}^{10} Industry\right)_{i,t-1} + \varepsilon_{i,t-1} \end{aligned} $
2 _B	$ \begin{aligned} (Community)_{i,t} = & \gamma_0 + \gamma_1(SocRegulation)_{i,t-1} + \gamma_2(BoardDiversity)_{i,t-1} + \gamma_3(SocRegulation * BoardDiversity)_{i,t-1} \\ & + \gamma_4(ExecutivesESGInc)_{i,t-1} + \gamma_5(SocRegulation * ExecutivesESGInc)_{i,t-1} + \gamma_6(BoardMeetings)_{i,t-1} \\ & + \gamma_7(SocRegulation * BoardMeetings)_{i,t-1} + \gamma_8(BoardSize)_{i,t-1} + \gamma_9(ROE)_{i,t-1} + \gamma_{10}(Size)_{i,t-1} \\ & + \gamma_{11}\left(\sum_{j=1}^{10} Industry\right)_{i,t-1} + \varepsilon_{i,t-1} \end{aligned} $

TABLE 5 | The Durbin and Wu–Hausman test results.

Model	Robust score χ^2	ρ
1 _A	24.76	0.000
1 _B	22.52	0.0001
2 _A	29.44	0.000
2 _B	31.24	0.000

The analysis also revealed that linking managers' compensation to ESG targets can enhance firms' sustainability performance. This evidence aligns with **H2** and the findings of previous studies (Adu et al. 2022; Baraibar-Diez et al. 2019; Chen et al. 2023; Flammer et al. 2019), which indicate that tying top management's financial incentives to sustainability objectives can reduce agency costs and improve environmental and social performance.

Furthermore, we found that a higher frequency of board meetings positively impacts sustainability performance, as highlighted in prior studies (Al Amosh and Khatib 2021; Kumari et al. 2022; Jizi 2017), validating **H3**. This evidence aligns with insights from legitimacy theory (Al Amosh and Khatib 2021). Agency theory suggests that regular meetings can enhance a firm's monitoring activities and enrich the decision-making process by incorporating diverse perspectives, thereby improving sustainability performance. Similarly, according to the

legitimacy theory, frequent meetings can encourage companies to adopt effective sustainability practices to gain competitive advantages and meet stakeholders' expectations.

Focusing on the normative pressure regarding sustainability reporting activities, our results highlighted that mandatory sustainability reporting positively impacts firms' environmental and social performance. This evidence confirms **H4** and aligns with previous studies (Aluchna et al. 2023; Bauckloh et al. 2023; Downar et al. 2021). Therefore, institutional pressures for mandatory sustainability reporting, which impose greater transparency on companies, encourage them to enhance their commitment and efforts toward sustainability. In this context, normative requirements actively contribute to improving companies' ESG performance.

Finally, this study highlighted a significant negative indirect effect of sustainability reporting regulations on the relationship between corporate governance characteristics and sustainability performance. This finding led us to reject hypotheses **H6** and **H7**. Conversely, our results confirmed only hypothesis **H5**. Notably, we discovered that mandatory environmental reporting positively moderates the beneficial relationship between gender diversity at the top management level and the managerial attitude toward decarbonizing business activities. Furthermore, the findings indicated that the positive correlation between the presence of women on the board of directors and the sustainable management of human resources is positively moderated by mandatory social reporting.

TABLE 6 | The weak instrument test summary statistics.

Instrument	R ²	Adjusted R ²	Partial R ²	F-statistics	Prob > F
<i>BoardDiversity</i>	0.9303	0.9301	0.3007	197.806	0.000
<i>ESGCompIncent</i>	0.8998	0.8996	0.3705	102.768	0.000
<i>BoardMeetings</i>	0.8479	0.8475	0.2055	40.339	0.000

TABLE 7 | Descriptive statistics.

Variable	Mean	Median	SD
<i>ResourceUse</i>	57.5511	63.765	31.39973
<i>GHGsEmissions</i>	55.80786	60.545	30.96278
<i>Workforce</i>	64.63111	69.065	25.2631
<i>Community</i>	65.96275	70.925	26.04469
<i>EnvRegulation</i>	0.8686905	1	0.3377587
<i>SocRegulation</i>	0.7978571	1	0.4016221
<i>BoardDiversity</i>	19.09686	18.18	12.27097
<i>ESGExecutivesESGInc</i>	0.3577381	0	0.479363
<i>BoardMeetings</i>	8.562738	8	4.160418
<i>BoardSize</i>	10.72048	10	2.979864
<i>ROE</i>	15.10103	13.01	31.39463
<i>Size</i>	8.771345	8.76	1.408147

6 | Discussion

The results indicate that mandatory sustainability reporting has a direct and positive effect on both environmental and social performance. This enables us to strengthen earlier insights from the literature on this topic (Aluchna et al. 2023).

In addition, we found that depending on whether a company is in a voluntary or mandatory sustainability reporting regime, corporate governance components produce different effects on environmental and social performance. In particular, the transition from one reporting regime to another means that some corporate governance mechanisms strengthen or change their effects on performance due to pressures from different logics that influence the priority attributed to different corporate issues (Thornton and Ocasio 2008).

In the absence of sustainability reporting regulations, women on boards of directors ensure the presence of responsibility and transparency logics (Thornton et al. 2012) related to their accountability toward the society in which companies operate. Furthermore, women's actions could be driven by their desire to strengthen their professional reputation by asserting their sensitivity towards environmental and social issues. In this sense, women embody professional and sustainability logics that encourage top management to incorporate the values of the community, workers, and environmental protection into corporate decisions. The implementation of sustainability reporting regulation introduces a regulatory logic (Mahmood and Uddin 2021) that strengthens the established professional, transparency, and

sustainability logics, enhancing commitment to environmental and labor issues. Conversely, mandatory sustainability reporting has negatively impacted the effect of board diversity on community, partially downsizing the responsibility logic. Corporate responsibility towards community suffers from the introduction of regulatory logic, likely due to the content of the normative requirements, which may overlook the organization's relationship with the community in favor of a greater emphasis on workers' rights. Despite this exception, the combined effect of the regulation and the board's gender diversity reinforces the sustainability logic within the board of directors.

The number of board meetings serves as a crucial corporate governance mechanism for integrating environmental and social issues into corporate decisions (e.g., Kumari et al. 2022; Jizi 2017). In the absence of a regulatory obligation for sustainability reporting, an increase in the number of board meetings raises the likelihood that sustainability issues will be discussed during board meetings, influencing the decision-making process. Consequently, as the number of board meetings rises, the environmental and social issues considered in the board's decision-making process are further emphasized. This relationship is evidenced by improved environmental and social performance linked to the frequency of board meetings. This can be associated with a sense of responsibility towards the community driven by the pursuit of legitimacy within the external environment (Al Amosh and Khatib 2021). In the absence of regulation, we therefore posit that, beyond traditional business and market dynamics, the behaviors of the board of directors may be swayed by a responsibility logic that encourages the board to pursue sustainability objectives as well.

The implementation of mandatory sustainability reporting regulations alters the impact that the frequency of board meetings has on environmental and social performance. The combined effect of mandatory sustainability reporting and the number of board meetings has a negative correlation with the assessed proxies of environmental and social performance. This finding can be explained as follows: the legislation elevates sustainability issues to the same level of importance as financial ones. By mandating the disclosure of sustainability information, the regulation reduces information asymmetry with stakeholders, resulting in increased transparency regarding the decisions made by the board of directors. Consequently, similar to financial performance, a higher frequency of board meetings may indicate inadequate environmental and social performance that the board of directors seeks to manage through increased meetings (Jensen 1993; Vafeas 1999). Consistent with these arguments, we posit that the regulatory framework, represented by mandatory sustainability reporting, encourages the establishment of a culture of transparency within the board of directors, prompting members to meet

TABLE 8 | Covariant analysis results.

Variable	ResourcesUse	GHGsEmissions	Workforce	Community	EnvRegulation	SocRegulation	BoardDiversity	ESGExecutivesESGInc	BoardMeetings	BoardSize	ROE	Size
ResourcesUse	1											
GHGsEmissions	0.797***	1										
Workforce	0.697***	0.717***	1									
Community	0.472***	0.439***	0.406***	1								
EnvRegulation	0.006	0.003	0.009	0.164***	1							
SocRegulation	0.079***	0.059***	0.066***	0.174***	0.727***	1						
BoardDiversity	0.297***	0.289***	0.293***	0.210***	0.247***	0.351***	1					
ESGExecutivesESGInc	0.126***	0.138***	0.131***	0.159***	0.078***	0.062***	0.091***	1				
BoardMeetings	0.075***	0.100***	0.110***	0.01	0.030***	-0.016	0.072***	0.041***	1			
BoardSize	0.308***	0.302***	0.248***	0.168***	-0.006	0.036***	0.109***	0.059***	-0.026**	1		
ROE	0.073***	0.057***	0.077***	0.057***	-0.023**	-0.004	0.041***	-0.01	-0.054***	0.015	1	
Size	0.461***	0.446***	0.390***	0.398***	0.050***	0.089***	0.155***	0.104***	-0.043***	0.370***	0.193***	1

Note. ***p < 0.01, **p < 0.05, *p < 0.1.

TABLE 9 | Regressions results of models 1_A and 1_B.

IVs and CVs	Model variants	
	Model 1 _A	Model 1 _B
	DVs	
	ResourcesUse	GHGsEmissions
EnvRegulation	5.65* (3.49)	7.14* (3.91)
BoardDiversity	0.48*** (0.16)	0.37** (0.15)
EnvRegulation * BoardDiversity	0.16 (0.16)	0.26* (0.15)
ExecutivesESGInc	25.15*** (6.71)	22.02*** (6.58)
EnvRegulation * ExecutivesESGInc	-22.66*** (6.71)	-19.55*** (6.58)
BoardMeetings	1.71*** (0.37)	2.28 (0.46)
EnvRegulation * BoardMeetings	-1.10*** (0.38)	-1.55*** (0.46)
BoardSize	1.48*** (0.10)	1.38*** (0.11)
ROE	-0.10 (0.01)	-0.01 (0.01)
Size	8.73*** (0.23)	8.43*** (0.23)
BasicMaterials	12.31*** (1.24)	8.79*** (1.20)
ConsumerDiscretion	2.43** (1.22)	-4.68*** (1.20)
ConsumerStaples	5.74*** (1.28)	-2.32* (1.30)
Energy	2.29* (1.30)	2.05* (1.23)
HealthCare	-2.92** (1.43)	-9.45 (1.45)
Industrials	5.03*** (1.13)	-1.67 (1.11)
RealEstate	5.45** (2.76)	5.33* (2.79)
Technology	8.45*** (1.46)	1.21 (1.45)
Telecommunications	-0.092 (1.49)	-7.55*** (1.62)

(Continues)

TABLE 9 | (Continued)

IVs and CVs	Model variants	
	Model 1 _A	Model 1 _B
	DVs	
	ResourcesUse	GHGsEmissions
Utilities	a	a
_cons	-63.80*** (3.85)	-59.10*** (4.33)
R ²	0.3086	0.3058
Observations	8399	8399

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; robust standard errors in parentheses.

Instrumented: *BoardDiversity*; *ESGComplIncent*; *BoardMeetings*.

Instruments: *EnvRegulation*; *EnvRegulation * BoardDiversity*; *EnvRegulation * ExecutivesESGInc*; *EnvRegulation * BoardMeetings*; *Size*; *ROE*; *BasicMaterials*; *ConsumerDiscretion*; *ConsumerStaples*; *Energy*; *HealthCare*; *Industrials*; *RealEstate*; *Technology*; *Telecommunications*; *Utilities*; *L.BoardDiversity*; *L.ESGComplIncent*; *L.BoardMeetings*.

^aOmitted due to collinearity.

regularly to tackle inefficiencies related to environmental and social challenges.

The final corporate governance mechanism analyzed is the compensation policies related to sustainability performance. Based on the analysis conducted, when there is no legislation on sustainability reporting, compensation policies tied to ESG performance serve as a valuable mechanism to mitigate managers' self-interest, encouraging them to pursue sustainability objectives and performance (Baraibar-Diez et al. 2019). In this context, the presence of incentives associated with ESG issues shows a positive and significant correlation with the environmental and social performance proxies considered. However, when regulatory requirements arise due to the enactment of sustainability reporting legislation, the impact of compensation policies on sustainability performance changes dramatically. Under a mandatory sustainability reporting framework, the existence of incentives adversely affects sustainability performance. This can be explained as follows: legislation on sustainability reporting integrates environmental and social issues into managers' daily responsibilities. In other words, in a voluntary system, sustainability is optional for managers (which must therefore be incentivized). In contrast, in a mandatory system, managers must address business sustainability issues. Thus, under a mandatory sustainability reporting framework, incentive systems lose their effectiveness regarding ESG issues, and managers are likely to refocus on incentives tied to company profitability goals. This, in turn, may diminish managers' commitment to corporate sustainability practices. In this scenario, the regulatory framework on mandatory sustainability reporting ensures that the incentive system mechanisms favor self-interest and market dynamics, as managers revert to favoring incentives linked to profit maximization objectives.

The results of our analysis demonstrate that regulation on sustainability issues does not always strengthen corporate sustainability. Partially in contrast to previous studies (e.g., Aluchna et al. 2023; Kock and Min 2016; Kock et al. 2012), we found that sustainability regulation can induce some governance mechanisms to change their dominant logic(s) but not always towards

TABLE 10 | Regression results of models 2_A and 2_B.

IVs and CVs	Model variants	
	Model 2 _A	Model 2 _B
	DVs	
	Workforce	Community
<i>SocRegulation</i>	6.03*** (2.54)	20.89*** (2.43)
<i>BoardDiversity</i>	1.57*** (0.26)	0.46*** (0.11)
<i>SocRegulation * BoardDiversity</i>	0.29*** (0.10)	-0.24** (0.11)
<i>ExecutivesESGInc</i>	18.71*** (3.58)	28.29*** (3.88)
<i>SocRegulation * ExecutivesESGInc</i>	-15.79*** (3.59)	-24.15*** (3.90)
<i>BoardMeetings</i>	1.57*** (0.26)	0.47* (0.25)
<i>SocRegulation * BoardMeetings</i>	-0.95*** (0.27)	-0.54** (0.25)
<i>BoardSize</i>	1.07*** (0.09)	-0.02 (0.01)
<i>ROE</i>	0.01* (0.01)	-0.02 (0.01)
<i>Size</i>	5.55*** (0.19)	6.99*** (0.20)
<i>BasicMaterials</i>	7.81*** (1.12)	9.88*** (1.67)
<i>ConsumerDiscretion</i>	5.87*** (1.08)	2.88** (1.11)
<i>ConsumerStaples</i>	2.83** (1.17)	1.22 (1.22)
<i>Energy</i>	6.73*** (1.13)	2.53** (1.25)
<i>HealthCare</i>	9.80*** (1.23)	3.39*** (1.26)
<i>Industrials</i>	5.05*** (1.02)	5.25*** (1.05)
<i>RealEstate</i>	13.59*** (2.21)	10.39*** (2.31)
<i>Technology</i>	11.42*** (1.24)	10.80*** (1.26)
<i>Telecommunications</i>	0.58 (1.35)	4.96*** (1.60)

(Continues)

TABLE 10 | (Continued)

IVs and CVs	Model variants	
	Model 2 _A	Model 2 _B
	DVs	
	Workforce	Community
Utilities	a	a
_cons	−25.06*** (3.01)	−24.46*** (3.04)
R ²	0.2453	0.2061
Observations	8399	8399

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; robust standard errors in parentheses.

Instrumented: BoardDiversity; ESGComplncnt; BoardMeetings.

Instruments: SocRegulation; SocRegulation*BoardDiversity;

SocRegulation*ExecutivesESGInc; SocRegulation*BoardMeetings; Size;

ROE; BasicMaterials; ConsumerDiscretion; ConsumerStaples; Energy;

HealthCare; Industrials; RealEstate; Technology; Telecommunications; Utilities;

L.BoardDiversity; L.ESGCompInc; L.BoardMeetings.

^aOmitted due to collinearity.

sustainability. Indeed, a sustainability regulatory framework sometimes can lead to an increased emphasis on certain sustainability dimensions at the expense of others (as in the case of women on the board of directors, where there is a reduction in community commitment) and sometimes to prioritize traditional profit and self-interest logics (as in the case of incentive systems).

The following Table 11 summarizes the main study results and compares them with the theoretical assumptions.

7 | Theoretical, Practical, and Policy Implications

7.1 | Contributions to the Literature

From a theoretical point of view, this research proposes original insights that contribute to the current knowledge of institutional logic in several ways. In particular, the study showed how the tensions and hybridizations between the different institutional logics guide and modify the behaviors of the various components of corporate governance, thus influencing sustainability performance.

Our analysis showed how regulatory logic can modify the dynamics of interaction between other institutional logics by modifying their priorities and, at the same time, changing the relative effects that the individual mechanisms of corporate governance have on performance.

The transition from one institutional regime to another (from voluntary to mandatory sustainability reporting) indeed involved a rebalancing of logics and an adaptation to the context in which external pressures reshaped the scale of the organization's priorities (Thornton and Ocasio 1999). The introduction of the regulatory logic altered the relationship between pre-existing logics, creating situations of stability and strengthening (as in the case of gender diversity) or change, where certain logics dominate and prevail over others (as in the case of board meetings and compensation policies). Accordingly, the regulatory logic has proven to be a catalyst for change and stabilization (depending on the governance mechanisms analyzed),

surprisingly stimulating self-interest and market logic in some cases. Consequently, although the literature on sustainability logics (Silva and Figueiredo 2017; Laasch 2018; Silva and Nunes 2022) argues that the presence of a normative structure strengthens sustainability practices by defining their rules, this study demonstrated how regulation on sustainability issues can instead weaken sustainability logics while strengthening traditional market logics (Ahlström and Monciardini 2021).

This indicates that the sustainability logic is not solely based on the mere existence of the business, transparency, responsibility, and regulatory logics, but rather on the balance between their tensions and hybridizations. Indeed, the study emphasized how the logics underlying corporate commitment to sustainable activities (i.e., business logic; transparency logic; responsibility logic; regulatory logic) can conflict, dominate one another, and change in terms of prioritization. This enables a contribution to Mahmood and Uddin (2021) and generally enriches the literature on sustainability logic (Silva and Figueiredo 2017; Laasch 2018; Silva and Nunes 2022).

This study contributes to the literature by expanding on the work of Aluchna et al. (2023), providing global empirical evidence of the effects of sustainability reporting regulations on corporate environmental and social performance. Additionally, we uncovered original and robust evidence regarding how different corporate governance mechanisms influence sustainability performance. In this context, our findings demonstrated how sustainability normative requirements impact the ability of corporate governance mechanisms to enhance sustainability performance (Naciti et al. 2022). By doing so, we responded to the call from several scholars (Minciullo 2019; Naciti et al. 2022) for deeper exploration into how policy regulation might shape the relationship between corporate governance mechanisms and sustainability performance.

In summary, our research findings advance the existing literature by emphasizing the direct influence that sustainability reporting requirements and corporate governance mechanisms can exert on corporate ESG performance. Additionally, this study offers new insights into how mandatory sustainability reporting moderates the relationship between corporate governance mechanisms and ESG performance, thereby contributing to the ongoing limited discussion on this topic.

7.2 | Managerial Implications

This study reveals some key managerial implications. Given the crucial role of female board members in fostering sustainability logic, we argue that firms should employ more women in top management positions to improve their commitment to environmental and social issues. Female sensitivity to sustainability issues can be a good driver for strengthening and disseminating sustainability logic within the company.

Moreover, companies should establish internal board sustainability committees to encourage ongoing discussion of ESG issues. Companies with a sustainability committee on the board tend to be proactive in responding to regulatory pressures and meeting ESG requirements (Del Valle et al. 2019).

TABLE 11 | Main empirical results associated with the theoretical assumptions.

Investigated relationship	Main results	Institutional logics involved
Direct effects		
Presence of women on board of directors → environmental & social performance	The presence of women on the board of directors favors an improvement in environmental and social performance.	Responsibility, sustainability, transparency and professional logics.
Frequency of board meetings → environmental & social performance	To a higher frequency in board meetings is associated an improvement in environmental and social performance.	Responsibility logic.
ESG incentives → environmental & social performance	Setting ESG incentives linked to sustainability objectives improves environmental and social performance.	Market logic (self-interest) and sustainability logic (hybridization of conflicting logics).
Sustainability reporting regulation → environmental & social performance	The existence of a regulation on sustainability reporting improves environmental and social performance.	Regulatory logic.
Moderating effects of reporting regulation on direct relationships		
Presence of women on board of directors → environmental & social performance	Under the moderation of a sustainability reporting regulation, the presence of women on the board of directors still produces positive effects on environmental and social performance. Nevertheless, commitment to the community turns out to be penalized.	The regulation downsized the responsibility logic but reinforced sustainability and transparency logics.
Frequency of board meetings → environmental & social performance	Under the moderation of a sustainability reporting regulation, the board of directors tend to meet more frequently to address sustainability problems.	The regulation strengthened the responsibility logic and made the transparency logic arise.
ESG incentives → environmental & social performance	Under the moderation of a sustainability reporting regulation, ESG incentives lose their effectiveness in fostering sustainability issues.	Market logic (self-interest and business profits) is prioritized to the detriment of the sustainability logic.

As for compensation policies, we argue that, despite the results, companies should not be discouraged from defining incentive systems linked to ESG performance. Top management could set up compensation policies linked not to mere regulatory compliance but to the achievement of challenging ESG objectives and targets that aim to improve corporate impacts in the long term (Adu et al. 2022). In other words, the board of directors should find a proper balance between profit maximization and sustainability logics in setting incentives so as not to monopolize managers' attention on financial issues to the detriment of environmental and social ones.

7.3 | Policy Implications

Sustainability regulations can be crucial in enhancing sustainability logic and performance within companies. For example, since women are bearers of corporate sustainability logics, policymakers should reinforce or introduce (where it is absent) the regulation on gender balance in the board of directors. This could foster the spread of sustainability logic within a company and align corporate behaviors towards sustainability. Moreover,

policymakers should focus on issuing regulations that ensure a proper balance among diverse sustainability concerns while encouraging companies to improve their impacts rather than merely engaging in superficial communication efforts. Nevertheless, a rigid imposition by the regulator may induce companies to pursue a financial logic to compensate for the costs incurred for sustainability and to comply with the law. Policymakers should support companies in moving from the search for a trade-off between the sustainability dimensions (weak sustainability) to the pursuit of their mutual reinforcement (strong sustainability) (Laine et al. 2021). In doing so, it is appropriate to integrate sustainability regulations with incentives and tax relief policies that support companies in making investments in sustainable innovation and activities. In this way, companies can concretely shift corporate management towards sustainability logic without compromising profitability. To this end, the disclosure on the impact of sustainability issues on financial performance and viceversa (e.g., double materiality principle) appears to be more important than ever to increase awareness on the need to foster a strong sustainability approach. Finally, policymakers should modulate regulation based on company size and production sector to increase the accountability of the companies with the highest impacts.

We believe that the above solutions could improve companies' environmental and social impacts significantly and bridge the gap between compliance with disclosure requirements and actual outcomes.

8 | Conclusions, Limitations, and Future Developments

8.1 | Concluding Remarks

This study explored the direct effects of mandatory sustainability reporting on sustainability performance and deepened its moderating effects on the relationship between corporate governance mechanisms and ESG performance. It intended to contribute to the still scant debate on the ability of sustainability regulations to improve companies' sustainability by affecting the actions and behaviors of corporate governance actors (Aluchna et al. 2023; Minciullo 2019; Naciti et al. 2022).

Through the theoretical lens of institutional logics, the analysis carried out produced original insights, thus contributing to the relevant literature in several ways. First, it expanded and reinforced the evidence of Aluchna et al. (2023), finding worldwide evidence of the positive direct impacts of mandatory sustainability reporting on corporate environmental and social performance.

Second, our study enriched the literature by providing fresh and robust evidence on how various corporate governance mechanisms influence sustainability performance (Beji et al. 2021; Karn et al. 2023; Kock et al. 2012). Third, this research contributed to the literature on institutional logics by demonstrating how the institutional logics underlying sustainability interact, hybridize, and impact organizations' priorities. In this context, this study found that the regulatory logic, depending on the governance mechanisms it interacts with, has proven to be both a driver of stabilization and the strengthening of sustainability practices and a factor that weakens ESG performance by promoting self-interest and market logs.

Lastly, this paper offers an original contribution toward understanding the moderating effects of mandatory sustainability reporting on the relationship between corporate governance mechanisms and sustainability performance. This encourages further debate on whether, and how, legislation steers corporate governance mechanisms toward sustainability, addressing recent calls for papers on this topic (Minciullo 2019; Naciti et al. 2022).

8.2 | Limitations of the Study and Future Research Opportunities

As for the limitations, we acknowledge the possible biases affecting Refinitiv's data. Following De Villiers et al. (2024), we relied on an alternative dataset (i.e., Bloomberg), finding similar evidence to mitigate such a limitation. Accordingly, future studies can explore the phenomenon using primary data (such as actual GhGs emissions) to provide more accurate analyses. Since this research adopts a short-term investigation lens, future

studies can explore the investigated relationships expanding the time lag. Moreover, scholars could examine the investigated topics using other statistical regression analyses such as Generalized Method of Moments (GMM) or the difference-in-differences approach.

Additionally, further research could encompass other components and mechanisms when analyzing the impacts of corporate governance on sustainability performance. Factors such as board size, board independence, CEO duality, and the existence of a sustainability committee are important mechanisms that can influence corporate sustainability performance and warrant further analysis. Future studies might also investigate alternative factors that could significantly sway the dynamics between sustainability reporting and corporate sustainability outcomes, particularly through qualitative research. Similarly, future research could consider the presence of different formal and informal institutional factors (Kalanoski et al. 2025). Qualitative studies are also welcome to better explore how specific institutional logics affect corporate governance behaviors towards sustainability. Other investigations could further examine the direct effects of various sustainability regulations on corporate sustainability performance and their potential to influence the relationship between corporate governance and sustainability performance. Legislative requirements associated with sustainable finance, sustainable risk management, and sustainable business practices are all examples of regulations that may affect corporate ESG performance as well as the behavior of corporate governance actors.

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Endnotes

¹We use “normative requirements on sustainability reporting” to identify the law on sustainability reporting. Conversely, we use “mandatory sustainability reporting” to refer to the disclosure regime under which the companies operate.

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