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**How do firms integrate sustainability criteria into executive remuneration
contracts?**

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Introduction to the thesis

The aim of this dissertation is to seek to advance our understanding on how firms integrate sustainability-related criteria into executive remuneration, and to help identify the determinants of a more substantive, rather than merely symbolic, adoption of this form of remuneration among listed companies.

In recent years, the shareholder primacy model, according to which firms' primary objective is to serve the interests of its shareholders only, has been largely overcome. Building upon the premise of stakeholder theory (Freeman, 1984), it is more widely accepted, both in academia and in business practice, that corporate purpose should be extended towards the interests of a broader set of stakeholders. Accordingly, firms face growing pressure to prioritize the interests and the welfare of their stakeholders, rather than focusing solely on shareholder value (e.g., Business Roundtable, 2019; Davos Manifesto, 2019; Bebchuk & Tallarita, 2022; Dechow, 2023).

In response, firms are increasingly incorporating social and environmental initiatives into their core business strategies (Schaltegger et al., 2022; Melis et al., 2024; Morrison et al., 2026). Among these practices, firms are adopting executive remuneration contracts that explicitly integrate sustainability-related metrics into the remuneration design, hereafter referred to as "CSR contracting" (e.g., Flammer et al., 2019; Aresu et al., 2023; Grabner et al., 2025). In these contracts, the variable component of the expected remuneration is linked to the achievement of environmental, social or governance performance targets, such as the reduction of greenhouse gas emissions, employee health and safety, and community development (e.g. Hong et al., 2016; Flammer et al., 2019; Aresu et al., 2023; Ikram et al., 2023; Cohen et al., 2023). As a case in point, Figure 1 shows the design of the CEO's annual bonus of Enel S.p.A. for the financial year 2023 (Enel, 2024). The annual bonus is conditioned upon the achievement of traditional financial targets related to the strategic areas of profitability and financial stability, which weight for the 70 percent of the total realizable bonus, and sustainability-related targets, which account for the remaining 30 percent. Specifically, sustainability-

related targets comprise customer satisfaction (i.e., commercial complaints) and workplace safety (i.e., Work-related Accident Frequency Index).

Key Performance Indicator (KPI)	Gateways	Weight (%)	Strategic Area
Ordinary consolidated net income	–	40	Profitability
Funds from operations/ Consolidated net financial debt	–	30	Steady financial structure
Commercial complaints at the Group level	1) System Average Interruption Duration Index (SAIDI) 2) Commercial complaints on the open commodities market in Italy	10	Sustainable growth
Safety: Work-related Accident Frequency Index	Fatal Accidents	20	Sustainable growth

Figure 1. The design of the CEO annual bonus of Enel S.p.A. for the financial year 2023 (Enel 2024, Remuneration report, p. 42).

Considering the significant attention society gives to executive remuneration (e.g. Bebchuk et al., 2002; Berrone & Gomez-Mejia, 2009; The Guardian, 2014; Financial Times, 2023) and answering the recent call by Dechow (2023), this dissertation aims to explore how firms integrate sustainability criteria into executive remuneration contracts. Recognizing that this form of remuneration may be an effective tool to embrace sustainability issues and stakeholders' claims into the business strategy (Berrone & Gomez-Mejia, 2009; Ritz, 2022), the scrutiny surrounding executive compensation derives from the risk that incentives may be poorly related to the firm's performance and potentially serve rent-extraction purposes. This applies also in the case of CSR contracting (e.g., Bebchuk et al., 2002; Jensen et al., 2004; Bebchuk & Tallarita, 2022), as it may serve different purposes depending on specific details of its design, such as the weight assigned to sustainability performance indicators, their relevance within the core objectives of the firm and external verifiability (e.g., Maas & Rosendaal, 2016; Ikram et al., 2023; Hofer et al., 2024).

Accordingly, most of prior literature focuses on the consequences of the adoption of this form of remuneration, documenting mixed results. CSR contracting was found to improve the overall sustainability performance (e.g., Hong et al., 2016; Flammer et al., 2016; Adu et al., 2022; Liu et al.,

2023; Almici, 2023; Ikram et al., 2023) or the combination of social and environmental performance (e.g., Covaco et al., 2020; Derchi et al., 2021; Cohen et al., 2023). However, studies focusing on the environmental performance only are mixed, as both positive, non-significant or negative relationships are found (e.g., Cordeiro & Sarkis, 2008; Lu & Wang, 2021; Al-Shaer et al., 2023; Mahmoudian et al., 2022; Birindelli & Palea, 2023). Importantly, some studies highlight that the effects of implementing this form of remuneration vary depending on its design. For instance, Maas (2018) finds a positive effect on sustainability-related performance within the use of “hard targets”, while Ikram et al., (2023) finds a more pronounced positive effect related to the explicit specification of the weight of these performance-related metrics. Notably, Yang (2023) documents that the design, rather than the mere adoption, of this form of remuneration plays an important role in a company’s future sustainability performance. Evidence on the financial outcomes is less conclusive: prior studies show positive (e.g., Abdelmotaal & Abdel-Kader, 2016; Flammer et al., 2019), negative (e.g., Liu et al., 2023; Khenissi et al., 2022) and non-significant associations (e.g., Cavaco et al., 2020). Overall, this suggests that the mere adoption of CSR contracting is not, in itself, sufficient; rather, the specific characteristics of its design may play a key role.

Prior literature has also focused, to a lesser extent, on the determinants of CSR contracting. Regarding corporate governance drivers, most studies focus on the role of the board of directors and ownership structure. CSR contracting was found to be more prevalent among firms with boards of directors that are more gender-diverse (Liu et al., 2023), more independent (Hong et al., 2016; Ikram et al., 2023) and within an established CSR-related committee (Al-Shaer & Zaman, 2019; Yang, 2023). While ownership does not play a direct role (Abdelmotaal & Abdel-Kader, 2016), the presence of a blockholder (Hong et al., 2016) and long-term institutional investors (Focke, 2022) are positively associated with the adoption of CSR contracting. Moreover, family firms tend to assign less weight to sustainability indicators (Afridi et al., 2025). In terms of corporate financial determinants, larger firms (e.g., Abdelmotaal & Abdel-Kader, 2016) and those under higher public scrutiny (Grabner et al., 2025), as well as firms operating in socially and environmentally sensitive sectors (e.g., Ikram et

al., 2023; Cohen et al., 2023) are more likely to adopt this form of remuneration. Also, sustainability-related initiatives, such as CSR assurance, are found to be positively associated (Al-Shaer & Zaman, 2019). Importantly, only a limited number of studies focus on country-level institutional mechanisms, finding a positive relationship between social and environmental regulatory pressure (Aresu et al., 2023) or ESG performance (Cohen et al., 2023) and the adoption of CSR contracting.

While empirical findings on the consequences generally suggest that the adoption of CSR contracting enhances sustainability performance, thereby contributing to the firms' willingness to maintain trust with diverse stakeholders (e.g. Flammer et al., 2019), limited or no in-depth studies examine which country or firm-level characteristics shape the extent to which this form of remuneration is implemented. This is a relevant gap in the literature as there is the risk that the implementation of corporate governance practices goes unquestioned (Stathopoulos & Talaulicar, 2023). As with any other component of executive remuneration design (e.g. Jensen & Murphy, 1990; Melis et al., 2012), the key question is not simply whether including sustainability-related criteria constitutes a good corporate governance practice, but rather how these criteria are implemented. Not only is this an important academic gap, but concerns in the corporate world have also been raised about the fact that sustainability-related indicators in executive remuneration contracts are often 'very subjective, fluffy and easily gamed' (Financial Times, 2023). Nonetheless, most of the existent literature focuses on the mere adoption of CSR contracting and does not allow to differentiate between symbolic and substantive CSR practices (e.g., Velte, 2024). Differences in the elements of CSR contracting design may shed light on whether this form of remuneration help incentivize executives to manage the company in a way that pursues stakeholders' interests, or whether it results in executives prioritizing their own interests at the expense of overall stakeholders' welfare (Bebchuk & Tallarita, 2022).

This dissertation will contribute to address these gaps by conducting two archival-based empirical studies that investigate this emerging corporate governance phenomenon in two distinct contexts: the Italian and the broader European settings.

Specifically, the first chapter of this dissertation will focus on the Italian context, examining the extent to which firms whose boards comprise directors appointed by minority shareholders integrate CSR contracting. As most of the existing studies on the adoption of CSR contracting adopt the classical principal-agent conceptual lens (e.g., Velte, 2024), this chapter will advance our understanding of the phenomenon by focusing on Italy, a setting characterised by a principal-principal agency problem, which is commonly prevalent worldwide (e.g., La Porta et al., 1999; Aguilera & Crespi-Cladera, 2016). Under the lens of stakeholder-agency theory, it will shed light on the role of directors appointed by minority shareholders in constraining or fostering the substantive integration of CSR contracting, and whether the role of the board of directors differs depending on the identity of the controlling blockholder. For doing so, the study will be conducted using a novel, hand-collected dataset of non-financial listed firms headquartered in Italy during the period from 2021 to 2023.

The second chapter of this dissertation will extend the focus of analysis to the European context, using a dataset of non-financial listed firms headquartered in Europe during the financial year 2023. As existing studies on this form of remuneration are mostly focused on a single institutional context, the U.S. (e.g., Qin & Yang, 2022; Yang, 2023; Grabner et al., 2025), this study aims to shed light on how different institutional mechanisms shape the extent of its use. Drawing upon institutional and stakeholder-agency theory, this study will help advance the existing comparative approach to CSR (e.g., Jackson & Apostolakou, 2010; Matten & Moon, 2008; Aguilera et al., 2012) by examining how social and environmental regulatory pressure and its interaction with firm-level mechanisms, namely ownership concentration and industry sensitivity to sustainability-related issues, might explain the intense use of CSR contracting among large listed firms in Europe.

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Chapter 1:

The Integration of Sustainability Criteria into Executive Remuneration Contracts and Minority Shareholders' Representation on Boards: Evidence from Italy.

Abstract

This study examines the relationship between the board's decision of integrating sustainability criteria into the executive remuneration design and the presence of directors appointed by minority shareholders. It also examines how the role of the board of directors is shaped by the controlling blockholder's identity. Drawing upon stakeholder-agency theory, this study conducts an empirical analysis using a novel hand-collected dataset of Italian non-financial listed firms during the period from 2021 to 2023. Firms with boards including directors appointed by minority shareholders beyond regulatory requirements are found to support a substantive integration of sustainability criteria into executive remuneration design. The role of the board of directors varies across firms, being weaker in family-controlled firms. This study extends prior literature on the integration of sustainability criteria into executive remuneration by distinguishing substantive from symbolic adoption, highlighting the role of directors appointed by minority shareholders beyond regulatory compliance, and extending the conceptual domain of stakeholder-agency theory. It also conceptualizes interdependent governance relationships as “bundles”, showing how the board's role is shaped by the controlling blockholder's identity. Policymakers could introduce recommendations that strengthen minority shareholders' board representation beyond legal requirements, to better support sustainability-related practices, while accounting for the identity of the controlling blockholder. Investors, especially those with a long-term value horizon, and other corporate stakeholders could find these results useful to help them identify board compositions that substantively embrace executives' incentive alignment with a broad range of corporate stakeholders.

Keywords: corporate governance; CSR Contracting; principal-principal agency problem; Italy.

1. Introduction

Firms are increasingly pressured not to focus solely on financial performance as the measure of their success, but also to consider their broader impact on society (e.g., Berrone & Gomez-Mejia, 2009; Dechow, 2023). Recent editions of Russell Reynolds Associates' Global Corporate Governance Trends (2021, 2022, 2023, 2024) have highlighted that sustainability-related issues are at the core of the challenges and opportunities that boards of directors face each year. There has been a call from leading board practitioners for “More action – and less talk” (Global Corporate Governance Trends, 2024). Even though these issues have become politically polarizing in some parts of the world (e.g., the United States), in others (e.g., Europe), “the mood is different” (Financial times, 2025). Leading policymakers (e.g., the European Commission) are advised that “executive remuneration schemes that fail to include sustainability metrics adversely affect the long-term decision-making process of corporate boards” (European Commission, 2020: 43). Prominent financial and generalist media outlets have reported that “[i]f . . . corporations are sincere about [sustainability], then they must link compensation for the senior executives directly to meeting goals such as cutting carbon emissions, and lowering water and energy use” (The Guardian, 2014). This form of remuneration may serve as a key “needle-moving action” that integrates sustainability into the core of a company's strategy (Wall Street Journal, 2023).

In response to this societal pressure, and among different activities (see, for a review, Morrison et al., 2026), firms are increasingly adopting a remuneration practice that links executive remuneration to non-financial performance metrics related to sustainability criteria (hereafter CSR contracting), such as carbon emissions, employee health and safety, employee diversity and inclusion, compliance with ethical standards, and community development (e.g., Kolk & Perego, 2014; Maas, 2018; Flammer et al., 2019; Bebchuk & Tallarita, 2022; Aresu et al., 2023). As a case in point, Moncler S.p.A., a leading Italian luxury fashion firm, recently integrated both environmental (i.e., extensions of products life cycle and lower-impact packaging) and social criteria (i.e., promotion of a fair and safe workplace)

into its CEO remuneration design (Moncler, 2024), reflecting a broader worldwide trend (e.g., Aresu et al., 2023; Hou et al., 2025).

The prevailing stream of literature on CSR contracting focused on the consequence of adopting this form of remuneration, analysing its impact on firm value, in terms of either sustainability performance (e.g., Flammer et al., 2019; Derchi et al., 2021; Almici, 2023; Cohen et al., 2023; Ikram et al., 2023; Liu, 2024; Hou et al., 2025), or financial performance (e.g., Flammer et al., 2019; Cohen et al., 2023; Hou et al., 2025). An emerging stream of literature on CSR contracting examined the antecedents of this form of remuneration. These studies have identified corporate governance mechanisms, such as board composition (e.g., Hong et al., 2016; Ikram et al., 2023) and ownership structure (e.g., Hong et al., 2016; Focke, 2022; Afridi et al., 2025) as key antecedents of this form of remuneration. However, while it is acknowledged that these oversight mechanisms may affect the mere use of CSR contracting, most existing studies adopt the classical principal-agent conceptual lens (see, for a review, Velte, 2024). They assume, at least implicitly, the prevalence of a principal-agent problem between executives and shareholders. This is despite the principal-principal agency problem (where controlling blockholders effectively monitor senior executives, but this is likely to occur at the expense of minority shareholders) tends to be more prevalent worldwide. This is largely due to the typical ownership and control structures that generally characterize listed firms outside Anglo-American countries (e.g., La Porta et al., 1999; Young et al., 2008; Aguilera & Crespi-Cladera, 2016). This lacuna in the literature is important. While CSR contracting is expected to align the incentives of executives with those of shareholders and other stakeholders, it does not explicitly address minority shareholders, whose objectives may diverge from those of controlling blockholders (e.g., La Porta et al., 1999; Renders & Gaeremynck, 2012). For instance, CSR contracting primarily focuses on other stakeholder groups (e.g., employees, the natural environment). In a principal-agent agency setting, academics, investors and sustainability advisors raised concerns that CSR contracting is employed in a non-substantive manner (e.g., using vague and unverifiable criteria) to fulfil legitimacy expectations (e.g., Ceres & KKS, 2018; Maas, 2018) and may provide self-interested executives with a powerful

mechanism to increase their own financial rewards (e.g., Bebchuk & Tallarita, 2022; Keddle & Magnan, 2023). In contrast, within a principal-principal agency setting, controlling blockholders are likely to effectively monitor senior executives, rendering the scenario of diluted incentives unlikely (e.g., La Porta et al., 1999). Nevertheless, questions remain about the extent to which this form of remuneration integrates stakeholder interests, especially those of minority shareholders.

As a key corporate governance mechanism through which minority shareholders can have their voice heard in the board decision-making is the appointment of directors to the board (e.g., Melis et al., 2012; Belcredi & Enriques, 2015; Gow et al., 2024; Cappellieri et al., 2025; Fera et al., 2025), this leads to the following research question: to what extent do firms with directors appointed by minority shareholders integrate sustainability criteria into executive remuneration contracts? From a theoretical perspective, it remains unclear how the presence of such directors — whether due to external regulatory requirements or an internal, voluntary extension beyond mere regulatory compliance — relates to this board's decision. Specifically, does their presence on the board constrain or foster the substantive integration of sustainability criteria into executive remuneration design? Moreover, will the same board composition result in homogeneous decision-making outcomes across firms? Or might it instead be reflected in heterogeneous responses among firms in the same institutional environment, depending on each firm's ownership structure?

To address these research questions, this study adopts a stakeholder-agency theoretical perspective (Hill & Jones, 1992) and investigates whether, and how, boards of directors characterized by the presence of directors appointed by minority shareholders are more or less likely to substantively integrate CSR contracting. Specifically, it examines whether the use of this form of remuneration represents a manifestation of a principal-principal agency problem, wherein boards dominated by controlling blockholders implement it neglecting minority shareholders, or whether it also reflects the involvement of directors appointed by minority shareholders.

Empirically, this study conducts a systematic examination of a novel, hand-collected dataset of 474 firm-year observations belonging to 168 unique non-financial listed firms headquartered in Italy

during the period from 2021 to 2023. This sample choice allows us to leverage the characteristics of Italy's institutional environment, which provides a unique, almost ideal context for addressing our research questions. First, Italian non-financial listed firms are generally characterized by a principal-principal agency problem arising from the presence of a controlling blockholder, often a family (Melis & Zattoni, 2017). Second, a slate voting system allows directors appointed by minority shareholders to sit on the board (Enriques & Volpin, 2007; Melis & Zattoni, 2017). Third, it is generally accepted as best practice that listed firms should be governed to pursue long-term value for the benefit of shareholders, while considering the interests of other stakeholders (Italian Corporate Governance Code, 2020, Article 1, Principle I).

Our main finding is that firms whose boards comprise directors appointed by minority shareholders beyond merely meeting regulatory requirements tend to integrate sustainability criteria more substantively into the design of executive remuneration — i.e., they are more likely to design a remuneration contract that integrates a broader set of stakeholders, assign higher weight to sustainability metrics, and employ quantifiable criteria with clearly defined performance targets. Notably, the role of the board of directors is not uniform across firms but is conditioned by the existing corporate governance “bundle” with the identity of the controlling blockholder. Specifically, the positive relationship between a substantive integration of sustainability criteria into executive remuneration design and the presence of directors appointed by minority shareholders beyond merely meeting regulatory requirements tends to be weaker in family-controlled firms.

This study makes two main contributions to the corporate governance literature. First, by responding to the recent call made by Dechow (2023), this study contributes to the emerging multidisciplinary literature on the integration of sustainability criteria into executive remuneration contracts (e.g., Flammer et al., 2019; Derchi et al., 2021; Bebchuk & Tallarita, 2022; Aresu et al., 2023; Cohen et al., 2023; Ikram et al., 2023; Keddie & Magnan, 2023; Afridi et al., 2025; Hou et al., 2025). It reveals that, in a principal-principal agency setting, the decision to substantively integrate stakeholders' interests into executive remuneration design does not seem to be the outcome of the agency problem

between the controlling blockholder and minority shareholders. This decision tends to reflect the minority shareholders' voice in the boardroom. This study also advances the emerging corporate governance literature on the role of directors appointed by minority shareholders on the board (e.g., Melis et al., 2012; Belcredi et al., 2015; Moscariello et al., 2019; Cappellieri et al., 2025; Fera et al., 2025). It reveals that, in organizational contexts characterized by principal-principal agency problems, when the presence of these directors extends beyond mere regulatory compliance, such presence may foster inclusive board decision-making and contribute to the development of sustainable corporate governance practices, i.e. "governance that facilitates corporate sustainability" (Kavadis & Thomsen, 2023: 200), such as the substantive integration of sustainability criteria into executive remuneration design.

Second, in addition to addressing an empirical gap, from a theoretical perspective our findings offer novel insights into the conceptual domain of stakeholder-agency theory (e.g., Hill & Jones, 1992; Mitchell, et al., 2015; Zolotoy et al., 2021) as well as the conceptual notion of corporate governance "bundles" (e.g., Rediker & Seth, 1995; Aguilera et al., 2012; Schiehl et al., 2014; Melis & Rombi, 2021). Stakeholder-agency scholarship has yet to develop theory on a traditionally neglected stakeholder: minority shareholders. This study provides insights into how an enhanced presence of directors appointed by minority shareholders — beyond mere regulatory compliance (i.e., with more than one such director) relates to the boards' decision to incentivize executives to balance the demands of relevant stakeholders. Interestingly, this relationship seems significantly weaker in family-controlled firms. This study, therefore, highlights that stakeholder–agency relationships are not inherently independent of one another and contributes to addressing the outstanding question of how corporate governance mechanisms — specifically, the board of directors and blockholder ownership — interact to form a "bundle" and how this "bundle" operates (e.g., Aguilera et al., 2012; Schiehl et al., 2014; Yoshikawa et al., 2014; Melis & Rombi, 2021). Thereby, it moves beyond universalistic approaches that assume a single configuration of corporate governance relationships applies uniformly across firms within a given institutional context.

The remainder of the paper is structured as follows. The next section presents the institutional setting. We then outline the conceptual framework and the hypotheses' development, followed by the research design and the empirical findings. Concluding remarks and limitations of the paper are presented in the final section.

2. Institutional Setting

Italian non-financial listed firms are typically characterised by a concentrated ownership and control structure, along with the presence of a controlling blockholder (a family, state, etc., e.g., Melis & Zattoni, 2017). Controlling blockholders are active shareholders who effectively monitor executive directors, reducing the classical principal-agent problem (Melis, 2000). At the same time, they can also significantly influence a board's decision-making process, as they typically appoint the majority, if not all, of directors on the board, often including themselves, other family members or loyal senior managers as executives (Melis, 2000; Claessens et al., 2002; La Porta et al., 2002; Melis & Zattoni, 2017). As a result, controlling blockholders may benefit from their significant power at the expense of minority shareholders, creating a principal-principal agency problem (La Porta et al., 1999; Melis, 2000; Young et al., 2008; Melis & Zattoni, 2017). As a result of this principal-principal agency problem, controlling blockholders were found to influence the design of executive remuneration in ways that do not align with minority shareholders' interests (e.g., Barontini & Bozzi, 2011; Melis et al., 2012). The Italian regulation offers a specific mechanism to safeguard minority shareholders (e.g., Enriques & Volpin, 2007; Belcredi et al., 2013; Zingales, 2008). Specifically, since 2005 (effective since 2007), Law No. 262 (artt. 147-ter and 148 of the CLFI and art.144-sexies of the Consob Regulation) introduced the slate vote mechanism, according to which board members are appointed based on lists presented by shareholders. This law mandates that listed firms allow at least one board seat to be assigned to a director appointed from the minority shareholders' list (the minimum capital

requirement to present a list is generally 2.5%, with 1% and 0.5% threshold for larger firms), provided that minority shareholders present a list and that this list is independent of the main blockholder¹.

Moreover, Italy is characterized by a moderate to high degree of social and environmental protection and, consequently, by significant regulatory pressures on companies regarding these issues (Aresu et al., 2023). The Italian Corporate Governance Code (2020, Article 1 Principle I) has also recommended that the board of directors should lead the company by pursuing its *sustainable success*, defined as “the objective ... of creating long-term value for the benefit of the shareholders, taking into account the interests of other stakeholders relevant to the company”. This new recommendation has modified the expectations from the board of directors' responsibilities and actions, which should henceforth be oriented to pursue value creation for both shareholders and other stakeholders. However, the Italian Corporate Governance Code (2020) does not explicitly recommend integrating sustainability criteria into the executive remuneration design.

3. Conceptual framework and Hypothesis development

A stakeholder-agency theoretical perspective is grounded in a combination of agency theory and stakeholder theory (Hill & Jones, 1992), expanding the focus of agency issues beyond the shareholder primacy perspective, which solely emphasizes the alignment of executives' interests with those of shareholders (Hill & Jones, 1992; Zolotoy, et al., 2021). It provides a generalized theory of agency that includes the implicit and explicit relationships between all stakeholders (Hill & Jones, 1992; Mitchell, et al., 2016; Zolotoy, et al., 2021). Among stakeholders, corporate executives are the only group that has direct control over corporate activities and enters either a formal or informal ‘contractual’ relationship with all others (Hill & Jones, 1992). This ‘hub’ role suggests that corporate executives may act as “the agents of other stakeholders” (Hill & Jones, 1992: 134).

¹Several minority shareholders generally act in concert to jointly support a list. They do so as they have limited investment alternatives, given the small number of listed firms that account for a large share of the country's market capitalization (Belcredi et al., 2013; Melis & Zattoni, 2017). Hence, a substantial part of their investment is often, in fact, long-term (Belcredi et al., 2013).

However, similarly to the shareholder-executive agency context, when acting as agents on behalf of stakeholders, corporate executives cannot be assumed to have adequate incentives on their own to pursue the stakeholders' welfare (Hill & Jones, 1992; Mitchell, et al., 2016; Jain & Zaman, 2020; Zolotoy, et al., 2021; Bebchuk & Tallarita, 2022). Stakeholder-agency theory posits, therefore, that the use of interest alignment mechanisms, through the design of executive remuneration, into the stakeholders-manager agency relationship may mitigate this agency problem (e.g., Hill & Jones, 1992; Zolotoy, et al., 2021; Almici, 2023).

What remains unclear is whether minority shareholders – a relatively neglected stakeholder group – regard the integration of stakeholder interests into executive remuneration design as beneficial to them. On the one hand, this form of remuneration typically does not directly address their interests (including criteria such as GHG emissions, employees' health and safety, e.g., Flammer et al., 2019; Yang, 2023; Hou et al., 2025) and could be part of the principal-principal agency problem itself, wherein controlling blockholders implement such schemes to serve their own interests, even at the expense of minority shareholders. On other hand, from a stakeholder theory perspective, corporate directors are expected to protect and balance stakeholders' interests (e.g., Freeman, 1984; Hung, 2011), which may also be consistent with minority shareholders' welfare. In line with the principle of stakeholder inclusivity in organizational decision-making, they may support a substantive inclusion of the interests of other stakeholders.

The design of executive remuneration is delegated to the board of directors that should incentivize executives to improve a firm's performance (e.g., Bebchuk & Fried, 2003). In a principal-principal agency setting, boards of directors could integrate sustainability criteria into executive remuneration design as a mechanism for addressing blockholders' interests. Controlling blockholders can use their power, appoint the great majority (when not all) of directors on the board (e.g., Claessens et al., 2002; La Porta et al., 2002; Melis & Zattoni, 2017), and, eventually, influence executive remuneration design at the expense of minority shareholders (e.g., Barontini & Bozzi, 2011; Melis et al., 2012).

The integration of sustainability criteria into the executive remuneration design does not necessarily have rent-extraction purposes. This form of remuneration may help mitigate the risks associated with neglecting stakeholders that are financially material and value-enhancing to the firm in the medium-long run (e.g., Flammer et al., 2019; Derchi et al., 2021). The board of directors' decision on whether integrate sustainability criteria into the executive remuneration design is the result of the equilibrium between the controlling blockholder and minority shareholders. Controlling blockholders (e.g., families, state) may arguably have financial and reputational incentives for the company to engage in sustainability initiatives. They are generally more long-term oriented than minority shareholders, as they have committed a greater share of their wealth to a specific company (e.g., Thomsen & Pedersen, 2000; Courteau et al., 2017). Perceived as exerting control over the firm – particularly through direct representation on the board of directors – controlling blockholders may be held publicly accountable and become targets of external criticism from activists, interest groups, and the media, if the firm fails to demonstrate attention to sustainability-related issues (Goergen & Renneboog, 2016; Faller & zu Knyphausen-Aufseß, 2018). An illustrative case occurred in 2018, when the collapse of the Morandi bridge in Italy – which resulted in forty-three fatalities – led prominent financial media outlets (e.g., The New York Times, 2019) to place significant blame on the controlling blockholder of Atlantia, the firm that operated the bridge through one of its subsidiaries, even though the blockholder (the Benetton family) was not directly involved in the company's management.

Minority shareholders may directly have their voice heard in board decision-making processes to the extent that they are represented on the board of directors. Consistent with legal expectations (e.g., Belcredi & Enriques, 2015), the presence of a director on the board appointed by minority shareholders has been found to be reflected in board decision-making and serve as an effective mechanism for advancing minority shareholders' interests (e.g., Melis et al, 2015; Moscariello et al., 2019; Cappellieri et al., 2025; Fera et al., 2025), thereby mitigating the principal-principal agency problem between controlling blockholders and minority shareholders, within the assumption of shareholder value primacy (Belcredi & Enriques, 2015; Melis et al., 2015).

From this perspective, minority shareholders are unlikely to bear sustainability-related reputational risk, as their identity is less likely to be associated with the activities of a specific company. They may, consequently, not be interested in financially incentivizing executives towards activities that do not create value, at least in the short term, as their time horizon is relatively shorter than the one of the controlling blockholder. Minority shareholders could be aware that sustainability-related initiatives, when substantially adopted, entail an upfront cost in the short-term and uncertain initial positive outcomes, which may become evident only in the long term (e.g., Jia & Zhang, 2013; Faller & zu Knyphausen-Aufseß, 2018; Aresu et al., 2023). Therefore, providing substantial incentives for executives to pursue such activities may require sacrificing short-term profits in favour of long-term gains, due to investments that contribute to long-term value creation (Flammer et al., 2019; Tsang et al., 2021). Thus, if the short-termist financial concerns of minority shareholders regarding the integration of sustainability criteria into executive remuneration design are taken into account during board decision-making, the presence of a director appointed by minority shareholders may reduce the likelihood of a substantive use of this remuneration practice. Thus, we expect that:

H1a. *Firms where minority shareholders are represented on the board of directors are less likely to integrate sustainability criteria substantively into executive remuneration design.*

However, the presence of a single director appointed by minority shareholders, in compliance with external legal requirements that allow them to have one representative on the board of directors, may be largely symbolic. Firms that merely comply with the minimum regulatory requirements may not truly internalize the underlying principles of a corporate governance practice (e.g., Aguilera & Jackson, 2003; Aguilera et al., 2012). They could follow the letter of the law, engaging in ‘check-the-box compliance’, but not necessarily its spirit (e.g., Kamalnath, 2022). The presence of a single director appointed by minority shareholders could potentially lead to polarization within the board of directors, with barriers to information and lack of trust among board members (e.g., Kanter, 1977,

Kamalnath, 2022) and, in itself, may not guarantee that board decision-making actually benefits from the presence of such director (e.g., Aguilera et al., 2021; Kamalnath, 2022).

This raises questions about whether such a presence aligns with a core tenet of stakeholder-agency theory: the principle of stakeholder inclusivity in organizational decision-making (e.g., Hill & Jones 1992; Mitchell et al., 2015). This principle, in the corporate context, is conceptually grounded in the acknowledgment that firms do not exist in isolation but are embedded within a nexus of relationships involving various stakeholders (e.g., Freeman, 1984; Hill & Jones 1992; Mitchell et al., 2016). Inclusivity refers to the practice of recognizing, engaging with relevant stakeholders, and addressing their interests in the decision-making processes of a firm (Freeman, 1984; Clarkson, 1995). The principle of stakeholder inclusivity is also grounded in the idea that stakeholders are not passive recipients of organizational decisions but active participants who can influence a company's decision-making and practices (e.g., Buck & Shahrim, 2005; Freeman & McVea, 2005; Ackermann & Eden, 2011).

In this perspective, respect for the law entails conformity not only with the letter of law but also with its 'spirit' (e.g., Reed, 1999; Sison, 2009). Specifically, following the 'spirit of the law' (e.g., Reed, 1999; Sison, 2009) firms may choose to embrace a corporate governance practice that allows the integration of minority shareholders' representation on the board of directors beyond the legal requirement to more effectively include the voice of minority shareholders into the board decision-making. By doing so, controlling blockholders can signal a commitment to being inclusive of minority shareholders, thereby maintaining or enhancing their reputation within the financial community. In such cases, the presence of directors appointed by minority shareholders on the board is more likely to be embraced, as it does not stem from an external legal mandate. Such voluntary inclusion may foster meaningful engagement, reducing the risk of symbolic representation and polarization, possibly encouraging more constructive participation in board decision-making (e.g., Kamalnath, 2022). On such a board, these directors are more likely to be heard and actively involved in board decisions.

While mere compliance with legal mandates may result in symbolic representation practices (e.g., Aguilera & Jackson, 2003; Aguilera et al, 2012; Kamalnath, 2022), minority shareholders who are voluntarily granted more substantial representation on the board of directors may be better empowered to advocate for stakeholder-oriented practices and further foster the principle of inclusivity, wherein firms are not expected to serve solely shareholders' interests. Including their voices in the boardroom beyond legal requirements may contribute to the development of a more inclusive organizational environment at the top of the company, where not only shareholders' (including minority shareholders') interests are considered. Such an approach does not merely serve compliance purposes; rather, it is likely to reflect a substantive endorsement of the 'spirit of the law'—namely, the effective inclusion of minority shareholders' voices in the boardroom. We argue that those who benefit from substantial representation on the board of directors — beyond mere regulatory compliance — may be more inclined to recognize the normative value of the principle of inclusivity. They can recognize that firms must not only focus on shareholder value but also consider a multidimensional purpose, which includes the impact of their actions on stakeholders' welfare (Freeman, 1984, Edmans, 2012; Mitchell et al., 2016), such as employees' health and safety and the protection of the natural environment (e.g., Maas, 2018; Flammer et al., 2019; Hou et al., 2025). As a result, they may support a substantive inclusion of the interests of other stakeholders, thereby reinforcing stakeholder-oriented corporate objectives.

This stakeholder inclusivity is not necessarily purely normative; it may also serve an instrumental purpose (e.g., Donaldson & Preston, 1995; Jones, 1995). Sustainability-related issues have garnered increasing public attention, and minority shareholders' awareness of related risks has significantly grown (e.g., de Villiers & van Staden, 2010; Endrikat, 2016). As an illustrative case, the leading Italian luxury label Brunello Cucinelli experienced a share price decline of over 15% in a single day following sustainability-related allegations that it continued to operate stores in Russia during the ongoing war (Il Sole 24ore, 2025). Consequently, minority shareholders may expect that firms' sustainability-related decisions protect their own investment (e.g., Yao et al., 2023). In fact, they do

not necessarily promote myopic behaviour, nor are they inherently short-term oriented (e.g., Bushee, 1998; Neubaum & Zahra, 2006; Gloßner, 2019). Prior literature documented that those shareholders who actively participate in corporate governance – particularly by appointing directors – tend to exhibit a relatively long investment horizon (Gow et al., 2024). In contrast, shareholders pursuing a very short-term investment strategy are much less likely to engage actively in the governance of the firms they invest in (e.g., Aguilera et al., 2012), as this approach allows them to avoid the costs – including potential trading restrictions – and the commitment associated with obtaining board representation (Belcredi et al., 2013; Melis & Zattoni, 2017). As a result, these directors on the board are more likely to represent relatively long-term-oriented minority shareholders.

This alignment also serves the interests of directors themselves, as independent directors tend to adopt longer-term perspectives and exhibit a stronger stakeholders' orientation (e.g., Johnson & Greening, 1999; De Villiers et al., 2011; Liao et al., 2015; Shaukat et al., 2016; Aresu et al., 2023). They are generally aware of the reputational risks associated with social and environmental issues (Melis & Rombi, 2021) and tend to support sustainability-related activities (e.g., De Villiers et al., 2011; Shaukat et al., 2016; Aresu et al., 2023).

Boards of directors can, therefore, rely on the stakeholder-agency theory-based premise that incentives extrinsically motivate executives and align their actions with organisational objectives (e.g., Hill & Jones, 1992; Zolotoy et al., 2021). By acknowledging the role of agents' self-interest, the use of interest alignment mechanisms may help mitigate the stakeholder-executive agency problem (Hill & Jones, 1992; Zolotoy et al., 2021). Directors appointed by minority shareholders may, therefore, recognize that integrating sustainability criteria into the design of executive remuneration can serve this purpose, provided that such integration is substantial, i.e. it is designed to effectively incentivize executives to consider all relevant stakeholders, financially rewarding them based on how well they succeed in doing so (e.g., Flammer et al., 2019; Derchi et al., 2021; Ott & Endrikat, 2023; Yang, 2023). Therefore, we expect that:

H1b. *Firms where minority shareholders' representation on the board of directors goes beyond regulatory compliance are more likely to integrate sustainability criteria substantively into executive remuneration design.*

Stakeholder-agency relationships are not inherently independent one another; rather, they are likely to be embedded within a nexus (i.e., a corporate governance “bundle”) where they interact with each other (Aguilera et al., 2012; Rediker & Seth, 1995; Schiehl et al., 2014; Melis & Rombi, 2021; Aresu et al., 2023). Importantly, Aguilera et al. (2012) argued that key corporate governance mechanisms, such as boards of directors, should not be conceptualized in isolation, as their functioning should be understood ‘in light of contingencies related to the ownership structure of the firm’ (Desender et al., 2013: 840). Specifically, controlling blockholders are expected to play a central role within the corporate governance “bundle” (e.g., Desender et al., 2013; Aresu et al., 2023), thereby shaping the stakeholder-agency relationship under examination. However, controlling blockholders are not homogeneous. Different types of controlling blockholders (e.g., families, the state) are likely to exert diverse demands on their boards of directors and influence their activities. In other words, board’s functioning is likely to be contingent upon the type of the controlling blockholder (e.g., Desender et al., 2013).

Family ownership, in particular, is the dominant form of corporate ownership of listed firms. Many firms around the world are family-controlled, i.e. under the control of an individual shareholder and/or his or her family (e.g., La Porta et al., 1999; Faccio & Lang, 2002; Amit & Villalonga, 2006; Aminadav & Papaioannou, 2020). Families tend to exhibit a strong preference for control. In the context of family-controlled firms, ‘going public’ often implies ‘remaining private’, at least with respect to control (e.g., Becht, 1997, Villalonga & Amit, 2020). Family blockholders tend to hold a dominant role in the governance of the firm (e.g., Ali et al., 2007; Anderson & Reeb, 2004; Prencipe & Bar-Yosef, 2011; Bettinelli et al., 2024).

Boards of directors in family-controlled firms tend to have distinctive features compared to those in non-family firms; their functions and activities may differ significantly (e.g., Bettinelli et al., 2024; Sangermano, et al., 2025). Board of directors' composition could help balance the power between family and non-family shareholders (e.g., Villalonga et al., 2015), for instance, by allowing the inclusion of directors appointed by minority shareholders beyond the legal minimum requirement. Meanwhile, family blockholders generally prefer to establish boards of directors that are unlikely to effectively mitigate their discretion over decision-making (e.g., Anderson & Reeb, 2004; Chen & Jaggi, 2000; Yeh & Woidtke, 2005; Bammens et al., 2011). In family-controlled firms, the board of directors is often less engaged in substantive activities, such as decision-making and monitoring (e.g., Corbetta & Tomaselli, 1996; Aguilera et al., 2012; Prencipe & Bar-Yosef, 2011; Bianco et al., 2015). It tends to passively approve decisions made by the controlling family outside the boardroom (at the 'family table'), without exercising independent judgment or effective oversight (e.g., Anderson & Reeb, 2004; Aguilera et al., 2012; Desender et al., 2013). Hence, from a corporate governance bundle perspective, we argue that the actual role of directors appointed by minority shareholders may be undermined by the dominant influence of family control, making their presence less effective and primarily serving regulatory compliance, rather than contributing meaningfully to board decision-making. Thus, we expect that:

H2a. *The negative relationship between the substantive integration of sustainability criteria into executive remuneration design and minority shareholders' representation on the board of directors is likely to be weaker in family-controlled firms.*

H2b. *The positive relationship between the substantive integration of sustainability criteria into executive remuneration design and minority shareholders' representation on the board of directors is likely to be weaker in family-controlled firms.*

4. Data and Methodology

4.1. Sample

The initial sample comprised the complete directory of Italian firms listed on the Euronext Milan Market in either 2021, 2022, or 2023. It included 676 firm-year observations from 246 unique firms, which represent more than 98% of the total Italian market capitalization. The period of analysis started in 2021, the first year following the recommendation by the Italian Corporate Governance Code (2020, para. 1.1) for boards of directors to pursue a company's 'sustainable success' and ended in 2023, the most recent financial year available at the time of data collection. Banks, insurance firms, and other financial firms (44 unique firms, 116 firm-year observations) were excluded because of their peculiarities in terms of corporate governance and regulations. Given the aim of the study, we then focused our analysis on those listed firms in which minority shareholders were allowed to appoint at least one director on the board. Therefore, we had to exclude 14 unique firms (38 firm-year observations) that do not have to comply with the Italian law, nine newly listed firms, and 31 firm-year observations from 13 firms – of which eight were ultimately dropped from the sample – that did not renew the board of directors after the listing. Additionally, we removed two unique firms (four firm-year observations) and one year observation from another firm due to missing corporate governance data. One firm (three firm-year observations) was also excluded due to its lack of coverage in the RepRisk database.

This process led to a final sample composed of an unbalanced panel of 474 firm-year observations from 168 unique Italian non-financial listed firms in the period 2021-2023 (see Table 1, panel A). Table 1, panel B, shows the distribution of the sample across industries.

Table 1. Sample

Panel A. Sampling process				
	Number of unique firms			Total number of firm-years
	2021	2022	2023	
All firm-year observations	230	221	225	676
<i>Less</i>				
Financial firms	41	39	36	116
Firms that do not have to comply with the Italian Law	12	13	13	38
New listed firms	0	0	9	9
Firms that did not renew the Board of Directors after the listing	11	12	8	31
Firms with missing data (dependent and independent/control variables)	3	2	3	8
Final Sample	163	155	156	474
Panel B. Industry distribution				
Industry	Total			
	Freq.	(%)		
CONSUMER GOODS	90	18.99		
EXTRACTIVES & MINERALS PROCESSING	24	5.06		
FOOD & BEVERAGE	19	4.01		
HEALTH CARE	31	6.54		
INFRASTRUCTURE	93	19.62		
RESOURCE TRANSFORMATION	68	14.35		
SERVICES	67	14.14		
TECHNOLOGY & COMMUNICATIONS	55	11.60		
TRANSPORTATION	27	5.70		
Total	474	100		

4.2. Data gathering

Due to the lack a database with comprehensive information on CEO remuneration design for Italian listed firms, data regarding the integration of sustainability criteria into CEO remuneration packages were hand-collected from corporate remuneration reports available on the companies' websites or in the documents section of the Italian Stock Exchange website. We also hand-collected data on our independent variables of interest (directors appointed by minority shareholders) as well as other corporate governance data (board independence, board diversity, board size, remuneration

committee) from the corporate governance reports available on the companies' websites or in the documents section of the Italian Stock Exchange website. Data on the presence of a remuneration consultant were hand-collected from corporate remuneration reports. We relied on the Factset database for the firm's financial data (firm size, ROA, leverage). Ownership and control data were gathered from the Italian Securities and Exchange Commission (CONSOB). Data on a firm's ESG-related reputational risk were obtained from the RepRisk database. Industry-related data was gathered from the SABS Standards' website.

4.3. Variable definitions

4.3.1. Dependent Variable

Our dependent variable – *CSR contracting substantiveness* – measures the extent to which sustainability criteria are integrated into the design of short-term executive incentive plans (i.e., annual bonuses that have as beneficiary the CEO, or, in the CEO's absence, the highest-ranking executive director, e.g., executive Chairperson, managing director). It goes beyond the mere adoption of sustainability-related criteria (e.g., Aresu et al, 2023; Keddie & Magnan, 2023; Hou et al, 2025) to estimate the extent of the company's commitment to substantively integrate stakeholders' interests in the executive remuneration design. Following prior literature (e.g., Qin & Yang, 2022; Yang, 2023), *CSR contracting substantiveness* was estimated as a factor score using principal component analysis, encompassing four distinct dimensions related to the integration of sustainability criteria into executive remuneration design: i) number of stakeholders addressed (*Stakeholders*), ii) weight of sustainability criteria (*Weight*), iii) use of quantitative key performance indicators (*KPI_measurability*), iv) setting of clearly defined targets for each KPI (*Target_setting*).

Following previous studies (e.g., Bebchuk & Tallarita, 2022; Yang, 2023), *Stakeholders* is measured as the number of stakeholders integrated into the remuneration design among those identified by the Global Reporting Initiative: Environment, Employees, Suppliers, Customers/Product, Community

Engagement, and Business Ethics and Compliance. In line with prior studies (e.g., Ritz, 2022; Qin & Yang, 2022) *Weight* is measured as the proportion of the annual variable component related to the stakeholders' interests addressed², reflecting the greater (or lesser) relevance associated with a higher (lower) assigned weight relative to financial criteria (e.g., EBITDA, Revenues). Following prior literature (Qin & Yang, 2022; Yang, 2023), *KPI_measurability* equals 1 when the majority of sustainability-related KPIs are quantitative, 0.5 if the majority of sustainability-related KPIs are qualitative, and 0 if they are not disclosed. In line with prior literature (e.g., Flammer et al., 2019; Qin & Yang 2022; Ikram et al., 2023) firms integrating more stakeholders, attaching higher weights to sustainability criteria, and quantifying criteria are those who implement CSR contracting more substantively. In addition, following the public call from leading activist investors (e.g., Cevian Capital, PwC UK, 2023), sustainability advisors, nonprofit organizations (Ceres & KKS Advisors, 2018), and academics (e.g., Maas, 2018; Bebhuk & Tallarita, 2022), who emphasized the importance of external reviewability of the target levels — specifically, how easily external stakeholders can assess the difficulty of meeting sustainability-related targets — it is crucial to ensure that the criteria are predetermined and remain unchanged ('so that the goalposts can't move', PwC UK, 2023: 7). Thus, *Target_setting* equals 1 if targets levels are reviewable ex-ante (i.e. when the remuneration design is decided), 0.5 if they are reviewable ex-post (i.e., when the remuneration is paid), and 0 when target levels are not clearly defined/reviewable.

Table 2, Panel A, shows the positive and significant correlations between these variables, which also exhibit an internal consistency, with a Cronbach's alpha of 0.66. This value exceeds the minimum threshold for acceptance (Nunnally, 1967), given the number of items considered and the nature of the study, and aligns with prior related literature (e.g., Yang, 2023), suggesting a good fit for using the principal component analysis.³

² Following prior literature (e.g., Qin & Yang, 2022), for firms that do not disclose the weight of sustainability KPIs, *Weight* equals 0.

³ The internal consistency of the construct could be further increased if we included the proportion of stakeholders on the total number of KPIs included in the CEO annual bonus design (see RELATIVE_CON, Yang, 2023). However, we chose not to include this variable, as it is highly correlated with Stakeholders ($\rho = 0.94$) and therefore does not provide additional

Table 2, Panel B, reports the results of the exploratory factor analysis using principal component analysis, which highlights only one principal component with an eigenvalue greater than one (2.964). This indicates a strong underlying structure among the original variables, which is captured in one single factor score. The signs of the factor loadings for all four variables are all positive and the factor loadings indicate that each variable strongly contributes to the unobservable construct, with high values ranging from 0.707 (*Target_setting*) to 0.931 (*KPI_meurability*). The average communality indicates that, on average, 74.1% of the variance in the original variables is explained by the unobservable construct. Overall, these tests suggest that the common and comprehensive pattern in the variance generated by the different elements in the remuneration design is adequately reflected in *CSR contracting substantiveness*, whose higher values are associated with a more substantive use of this form of remuneration. For example, among firms that integrate sustainability-related criteria more substantively (with *CSR contracting substantiveness* above the 75th percentile), Salcef Group S.p.A. integrates the stakeholder group of Employees into its executive remuneration design for the financial year 2023, allocating a total weight of 15% to sustainability-related KPIs. These KPIs are quantitative, and their targets are reviewable ex-post by external stakeholders. Specifically, the firm measures the Group Injury Frequency Index and the Training Hours per Employee.

Table 2. Principal Component Factor Analysis: CSR contracting substantiveness factor score

Panel A. Correlation matrix				
	(1)	(2)	(3)	(4)
(1) Stakeholders	1.000			
(2) Weight	0.763*	1.000		
(3) KPI_meurability	0.836*	0.749*	1.000	
(4) Target setting	0.479*	0.472*	0.579*	1.000

* p<0.05

information regarding CSR contracting substantiveness. Moreover, its relative importance is already reflected in Weight ($\rho = 0.81$).

Panel B. Principal Component Factor Analysis

Factor	Eigenvalue	Proportion	Cumulative
Factor 1	2.964	0.741	0.741
Factor 2	0.614	0.154	0.895
Factor 3	0.268	0.067	0.962
Factor 4	0.153	0.038	1.000

Variables	Factor 1 loadings	Uniqueness
<i>Stakeholders</i>	0.910	0.173
<i>Weight</i>	0.878	0.229
<i>KPI_measurability</i>	0.931	0.134
<i>Target_setting</i>	0.707	0.500

4.3.2 Independent variables of interest and moderating variable

To test H1a we use *Minority Director_presence*, measured as a dichotomous variable that takes the value of 1 whether there is at least one director appointed by minority shareholders on the board, and 0 otherwise (Moscariello et al., 2019; Cappellieri et al., 2025; Fera et al., 2025).

To test H1b, we use *Minority Directors_choice*, measured as the proportion of directors appointed by minority shareholders on the board beyond the legal requirements, i.e. the total number of directors on the board appointed by minority shareholders (minus the one who is required to be appointed from the minority shareholders' list, provided that minority shareholders present a list) divided by the total number of directors on the board.

To test H2a and H2b we use, as moderating variable, *Family_firm*, measured as a dichotomous variable that takes the value of 1 whether the ultimate controlling shareholder is a family, and 0 otherwise (e.g., La Porta et al., 1999; Faccio & Lang, 2002; Masulis et al., 2011; Villalonga & Amit, 2012; Murro & Peruzzi, 2019).

4.3.3 Control variables

We control for several corporate governance characteristics, that may influence the extent to which sustainability criteria are integrated into the design of short-term executive incentive plans. Table 3 reports the variables' definitions.

A larger, more independent, and more diverse board can increase the firm's ability to balance the interests of different stakeholders, which in turn can affect its CSR behavior (e.g., De Villiers et al., 2011; Harjoto et al., 2015; Liao et al., 2015; Moscariello et al., 2019; Jain & Zaman, 2020; Aresu et al., 2023; Cappellieri et al., 2025). Hence, we control for *Board Size*, *Board Independence*, and *Board Diversity*. As previous studies documented that the composition of the remuneration committee can affect executive remuneration (e.g., Conyon & Peck, 1998; Newman & Mozes, 1999; Melis et al., 2012), we control for *RemCom Independence*. Also, the *Remuneration consultant* may affect the process of the remuneration design, as independent and expert consultants may advise the board on executive remuneration design (e.g., Conyon, 1997; Voulgaris et al., 2010; Conyon et al., 2011).

Prior literature (e.g., Aresu et al., 2023) found that the presence of a blockholder affects the likelihood of CSR Contracting when the institutional context pressures firms to pay attention to CSR activities. Thus, we control for *Blockholder Ownership*. Moreover, firms receiving significant ESG-related media attention are more exposed to stakeholders' pressure, which can influence their commitment to CSR-related activities (e.g., Fiss & Zajac, 2006; Zyglidopoulos et al., 2012). Hence, we control for *RepRisk*.

Based on prior studies (e.g., Flammer et al., 2019; Derchi et al., 2021; Ikram et al., 2023; Aresu et al., 2023), we also control for a firm's financial characteristics that may influence the choice of incentivizing executives with sustainability-related performance measures: *Firm Size*, *ROA*, and

Leverage. Larger firms, those that perform better or have lower debt, respectively, may have more resources available to allocate toward CSR activities (Campbell, 2007).⁴

We also control for industry pressures to conform, using SICs classification industry fixed effects as well as *Sensitive Industry*, which identify key sustainability topics for seventy-seven industries under the SICs classification. Firms that are more exposed to stakeholders' scrutiny may be more likely to incentivize their executives on these matters (e.g., Ikram et al., 2023; Aresu et al., 2023; Afridi et al., 2025)⁵. In addition, we control for potential year fixed effects.

Table 3. Variables' definition

Variable	Definition	Source
CSR contracting substantiveness	The first principal component from a factor analysis of four variables relative to the CEO annual bonus design: (1) <i>Stakeholders</i> , the number of stakeholders addressed; (2) <i>Weight</i> , the proportion of the annual variable component related to the stakeholders' interests addressed; (3) <i>KPI measurability</i> , equal to 1 if the majority of sustainability-related KPIs are quantitative, or 0.5 if the majority are qualitative; (4) <i>Target setting</i> , equal to 1 if targets are disclosed ex-ante, 0.5 if they are disclosed ex-post, and 0 if they are not disclosed.	Remuneration report available on the firm's websites or the documents section of Borsa Italiana
Minority Director_presence	Dichotomous variable that takes the value of 1 whether there is at least one minority shareholders' representative on the board of directors, and 0 otherwise, at the end of the previous financial year.	Corporate Governance report and slates of candidates at the shareholders' general meeting available on the firm's websites or the documents section of Borsa Italiana

⁴To mitigate the potential impact of outliers, firm financial characteristics and ownership are winsorized at the 5th and 95th percentiles (e.g., Flammer et al., 2019).

⁵ Compared to previous related studies that use a dummy on heavy industries (e.g., Aresu et al., 2023; Yang, 2023), we used a more grained estimate of industry sensitivity by constructing a continuous variable that captures the level of exposure to sustainability issues of each industry. For example, the Advertising & Marketing Sector (Industry – Services) has the following material topics: Data Privacy, Advertising Integrity, Workforce Diversity & Inclusion. The variable *Sensitive Industry* of firms operating in this sector takes a value of 3. Differently, the variable of the firms operating in the Biotechnology & Pharmaceuticals Sector (Industry – Health Care) takes a value of 10, as it includes: Safety of Clinical Trial Participants, Access to Medicines, Affordability & Pricing, Drug Safety, Counterfeit Drugs, Ethical Marketing, Employee Recruitment, Development & Retention, Supply Chain Management, Business Ethics. Following this process, the second sector is relatively more sensitive to sustainability issues than the first.

Minority Directors_choice	Proportion of directors appointed by minority shareholders on the board beyond the legal requirements, calculated as the total number of directors on the board appointed by minority shareholders (minus the one mandated by the law) divided by the total number of directors on the board, at the end of the previous financial year.	Corporate Governance report and slates of candidates at the shareholders' general meeting available on the firm's websites or the documents section of Borsa Italiana
Board Independence	Proportion of independent directors, as for Consolidated Law on Financial Intermediation and the Italian Corporate Governance Code, appointed by majority shareholders on the board, at the end of the previous financial year.	Remuneration report available on the firms' websites or the documents section of Borsa Italiana
Board Diversity	Proportion of women on the board of directors, at the end of the previous financial year.	Corporate Governance report available on the firm's websites or the documents section of Borsa Italiana
Board Size	Natural logarithm of the total number of directors on the board, at the end of the previous financial year.	Corporate Governance report available on the firm's websites or the documents section of Borsa Italiana
RemCom Independence	Proportion of independent directors, as for Consolidated Law on Financial Intermediation and the Italian Corporate Governance Code, appointed by majority shareholders on the remuneration committee, at the end of the previous financial year.	Corporate Governance report available on the firm's websites or the documents section of Borsa Italiana
Remuneration Consultant	A dummy variable that takes the value of 1 if the firm has involved an external remuneration consultant in the CEO remuneration process, and 0 otherwise, at the end of the previous financial year.	Remuneration report available on the firms' websites or the documents section of Borsa Italiana
Blockholder Ownership	Ratio of control rights held by the largest shareholder, defined as the one with the highest voting power, at the end of the previous financial year. Control rights are aggregated if shareholders are: i) bound by shareholders' agreements; ii) family members; iii) state-owned entities.	Sections of Ownership and Shareholders' Agreement extracts provided by the National Commission for Companies and the Stock Exchange – CONSOB
RepRisk	Index of the firm's exposure to reputational risks related to environmental, social, and governance risk-related topics. It ranges from 0 (low risk) to 100 (high risk). It was measured as the average of the values of the RepRisk Index of the previous financial year.	RepRisk database
Firm Size	Natural logarithm of a firm's net sales (EUR m) at the end of the previous financial year.	Factset database
ROA	A firm's return on average assets, calculated as net income divided by the two fiscal period average of total assets, at the end of the previous financial year.	Factset database

Leverage	A firm's total debt to total assets ratio, at the end of the previous financial year.	Factset database
Sensitive Industry	The number of material sustainability topics relevant to each industry sector, as defined by the SASB Standards under the SICS classification.	SABS Standards
Industry	It takes the value of 1 for each distinct industry sector based on the SICS (Standard Industry Classification System)	SABS Standards
Year	Equals 1 if the firm-observation is in the year t (t = 2021, 2022, 2023), and 0 otherwise.	Borsa Italiana website

4.4. Data analysis

To test our hypotheses H1a and H1b, we estimate the following linear regression model. We cluster standard errors at the firm level to account for autocorrelation due to the unbalanced panel structure of the data:

$$\begin{aligned}
 CSR \quad contracting \quad substantiveness = & \alpha + \beta_1 * MinorityDirector_presence_{it-1} + \\
 & \beta_2 * MinorityDirectors_choice_{it-1} + \beta_3 * BoardIndependence_{it-1} + \beta_4 * BoardDiversity_{it-1} + \beta_5 * BoardSize_{it-1} + \\
 & \beta_6 * RemCom \text{ Independence}_{it-1} + \beta_7 * Rem_Consultant_{it-1} + \beta_7 * Blockholder \text{ Ownership}_{it-1} + \beta_8 * RepRisk_{it-1} \\
 & + \beta_9 * Firm \text{ Size}_{it-1} + \beta_{10} * ROA_{it-1} + \beta_{11} * Leverage_{it-1} + \beta_{12} * Sensitive \text{ Industry}_{it-1} + \gamma_j + \delta_t + \varepsilon_{it}
 \end{aligned}$$

where i represents the specific firm, t indicates the reference year, and ε is the clustered error term⁶.

We include our dependent variable, *CSR contracting substantiveness*, the variables of interests (*Minority Director_presence* and *Minority Directors_choice*), along with control variables at the corporate governance, financial, and industry levels. Industry (γ_j) and year (δ_t) fixed effects are included to account for unobserved heterogeneity at the industry and year levels.

Additionally, in line with prior research (e.g., Martin et al., 2019; Zolotoy et al., 2021), we test each expected moderated relationship (H2a and H2b) with *Family_firm* in a distinct model.

⁶ We conducted the Hausman test to determine whether a fixed effects model or a random effects model would be more appropriate for our data. The null hypothesis was not rejected, suggesting that the fixed effects model is not the more appropriate for this analysis.

5. Empirical results

5.1. Descriptive statistics and correlation

Table 4 reports the descriptive statistics of the sample. *CSR contracting substantiveness* varies from a minimum of -0.689 to a maximum of 2.721⁷. Approx. 60% of firms has at least one minority shareholders' representative on the board of directors. The proportion of directors appointed – beyond the legal requirement – by minority shareholders on the board is, on average, 0.035⁸. The board of directors is typically composed of nine members (9.4 directors on average), of whom 41% are women. Independent directors comprise 39% of the board and two-thirds of the remuneration committees. About one-third of the firms employ an independent remuneration consultant to assist the board in the executive remuneration design. The largest shareholder possesses, on average, 55.7% of control rights, reflecting the high concentration of ownership and control typical of the Italian context (e.g., Melis & Zattoni, 2017). Firms display, on average, an ESG-related reputational risk index of 4.67, with some firms having no ESG-related media coverage exposure and others with a relatively high risk (max value 52.12). The average firm is characterised by approx. 1.27 billion in net sales, 1.7% ROA, and a leverage ratio of 0.66. The average firm exhibits a moderate exposure to sustainability issues (score of 5).

Table 5 reports the correlation matrix between the dependent and independent variables. Both the presence of at least one minority director on the board and the proportion of directors appointed by minority shareholders beyond the legal requirements are positively associated with the substantive usage of CSR contracting. It seems, *prima facie*, that firms whose board has directors appointed by minority shareholders may be more prone to a substantive integration of sustainability criteria into executive compensation. While more independent remuneration committees are negatively associated with CSR contracting substantiveness, board size and the involvement of a remuneration consultant

⁷ The CEO remuneration design comprises at least one sustainability criterion, reflecting consideration for the interests of at least one stakeholder group, in 36% of the firms in the sample.

⁸ Approx. 20% of the firms in the sample have more than one minority director on the board (37 unique firms across 94 firm-year observations).

are positively associated with it. Reputational risk, firm size, and profitability are also positively related to CSR Contracting substantiveness, while Blockholder Ownership shows a negative correlation. Industry sensitivity to sustainability matters is positively associated with the substantive use of this remuneration practice. The correlations between the independent variables are generally below 0.5, indicating low to moderate relationships. In the few cases where correlations exceed that value, multicollinearity does not seem to be a concern, as suggested by the relatively low mean variance inflation factor in the main analysis models (mean VIF values lower than 1.71, maximum individual VIF value is 2.69).

Table 4. Descriptive statistics

Variable	Obs	Mean	Std. dev.	Min	Max
CSR contracting substantiveness	474	0	1	-0.689	2.721
Minority Director_presence	474	0.591	0.492	0	1
Minority Directors_choice	474	0.035	0.079	0	0.364
Board Independence	474	0.396	0.131	0.100	0.778
Board Diversity	474	0.410	0.069	0.143	0.625
Board Size ^a	474	9.388	2.596	5	19
RemCom Independence	474	0.667	0.302	0	1
Remuneration Consultant	474	0.323	0.468	0	1
Blockholder Ownership	474	0.555	0.183	0.200	0.857
RepRisk	474	4.669	8.900	0	52.123
Firm Size ^a	474	1273.080	2193.009	6.088	8561.324
ROA	474	0.017	0.055	-0.112	0.111
Leverage	474	0.664	0.171	0.339	0.981
Sensitive Industry	474	5.586	2.347	2	12

^a The variables Board Size and Firm Size (millions EUR) are presented in their original form; their natural logarithms are used in the multivariate model. See Table 3 for variables' definition.

Table 5. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 CSR contracting substantiveness	1.000													
2 Minority Director_presence	0.281*	1.000												
3 Minority Directors_choice	0.402*	0.373*	1.000											
4 Board Independence	0.040	-0.212*	-0.172*	1.000										
5 Board Diversity	0.047	0.004	0.005	0.090	1.000									
6 Board Size	0.244*	0.432*	0.293*	-0.145*	-0.059	1.000								
7 RemCom Independence	-0.119*	-0.350*	-0.301*	0.244*	0.010	-0.147*	1.000							
8 Remuneration Consultant	0.365*	0.318*	0.318*	0.031	0.048	0.226*	-0.048*	1.000						
9 Blockholder Ownership	-0.191*	-0.149*	-0.329*	-0.044	0.034	-0.146*	0.114*	-0.192*	1.000					
10 RepRisk	0.445*	0.321*	0.468*	0.042	-0.011	0.309*	-0.209*	0.375*	-0.231*	1.000				
11 Firm Size	0.492*	0.439*	0.386*	-0.027	0.003	0.508*	-0.170*	0.460*	-0.206*	0.593*	1.000			
12 ROA	0.133*	0.148*	-0.039	-0.052	0.012	0.139*	-0.001	0.111*	0.006	0.004	0.269*	1.000		
13 Leverage	-0.017	-0.107*	0.070	0.152*	0.0940*	-0.148*	0.09*	0.084	0.016	0.170*	0.080	-0.382*	1.000	
14 Sensitive Industry	0.150*	0.064	0.058	-0.171*	0.012	0.065	-0.202*	0.147*	-0.003	0.201*	0.193*	0.102*	0.269*	1.000

* p<0.05. See Table 3 for variables' definition.

5.2. Hypothesis testing

Table 6, Model 1, presents the findings of the test for H1a. We find a positive non statistically significant association between the presence of a single director appointed by minority shareholders on the board and the substantive use of CSR contracting ($p = 0.605$). Hence, H1a is not supported. Firms where a single director is appointed by minority shareholders on the board are not less likely to integrate sustainability criteria substantively into executive remuneration design. The inclusion of a single director appointed by minority shareholders, in compliance with external legal requirements, may fail to internalize the spirit of this corporate governance practice, making the director's presence largely symbolic rather than substantive (Aguilera et al., 2012; Kamalnath, 2022).

Table 6, Model 2, presents the findings of the test for H1b. We find a positive and statistically significant association between the proportion of directors appointed by minority shareholders beyond the legal requirements on the board and the substantive use of CSR contracting ($p = 0.011$). Hence, H1b is supported. Firms where minority shareholders' representation on the board of directors extends beyond regulatory compliance are more likely to integrate sustainability criteria more substantively into executive remuneration design.

Overall, in Model 3, the findings support the argument that firms in which minority shareholders are represented on the board of directors beyond legal requirements tend to be more inclined to recognize the benefits of the principle of inclusivity. Consequently, these firms are more likely to promote inclusive board decision-making that encourages the integration of other stakeholders' interests in the executive remuneration design.

In addition, in all models, larger firms and those that involve an external remuneration consultant in the process of the design of executive remuneration, are more prone to use this form of remuneration in a substantive way.

Table 6. The relationship between the substantive integration of sustainability criteria in executive remuneration design and minority shareholders' representation on the board of directors.

			DV: CSR contracting substantiveness								
			(1)			(2)			(3)		
		Exp. sign	Coeff	SE	<i>p</i>	Coeff	SE	<i>p</i>	Coeff	SE	<i>p</i>
Minority Director_presence	H1a	-	0.061	0.118					0.020	0.118	
Minority Directors_choice	H1b	+				2.338	0.919	**	2.317	0.925	**
Board Independence			0.023	0.328		0.306	0.356		0.314	0.353	
Board Diversity			-0.069	0.641		-0.106	0.664		-0.115	0.650	
Board Size			-0.037	0.173		-0.052	0.162		-0.059	0.170	
RemCom Independence			0.156	0.144		0.187	0.144		0.194	0.143	
Remuneration Consultant			0.316	0.140	**	0.303	0.136	**	0.301	0.138	**
Blockholder Ownership			-0.538	0.322	*	-0.311	0.328		-0.312	0.329	
RepRisk			0.008	0.005		0.006	0.005		0.006	0.005	
Firm Size			0.176	0.041	***	0.158	0.041	***	0.157	0.041	***
ROA			0.229	0.909		0.387	0.911		0.393	0.913	
Leverage			-0.402	0.306		-0.448	0.289		-0.443	0.292	
Sensitive Industry			0.054	0.039		0.051	0.037		0.051	0.038	
Intercept			-0.944	0.551	*	-0.987	0.538	*	-0.985	0.118	*
Industry fixed effects			Included			Included			Included		
Year fixed effects			Included			Included			Included		
Wald χ^2			169.61			226.01			227.52		
R-squared			0.35			0.38			0.38		
Mean VIF			1.68			1.70			1.71		
N. of unique firms			168			168			168		
N. of observations			474			474			474		

Standard errors are clustered at the firm level. **p* < 0.1, ***p* < 0.05, ****p* < 0.01. See Table 3 for variables' definition.

Table 7, Model 1, reports the findings of the test for H2a, which is not supported. *Family_firm* does not significantly moderate the relationship between the presence of a single director appointed by minority shareholders on the board and the substantive use of CSR contracting. Conversely, the findings from Table 7, Model 2, provide support for H2b. The positive relationship between the proportion of directors appointed by minority shareholders beyond the minimum legal requirements and the substantive use of CSR contracting is negatively moderated by the presence of an ultimate controlling blockholder identified as a family ($p = 0.023$). Figure 1 illustrates this moderating effect by comparing family-controlled and non-family-controlled firms.

Figure 1. The moderating role of family ownership in the relationship between the substantive integration of sustainability criteria in executive remuneration design and minority shareholders' representation on the board of directors beyond legal requirements.

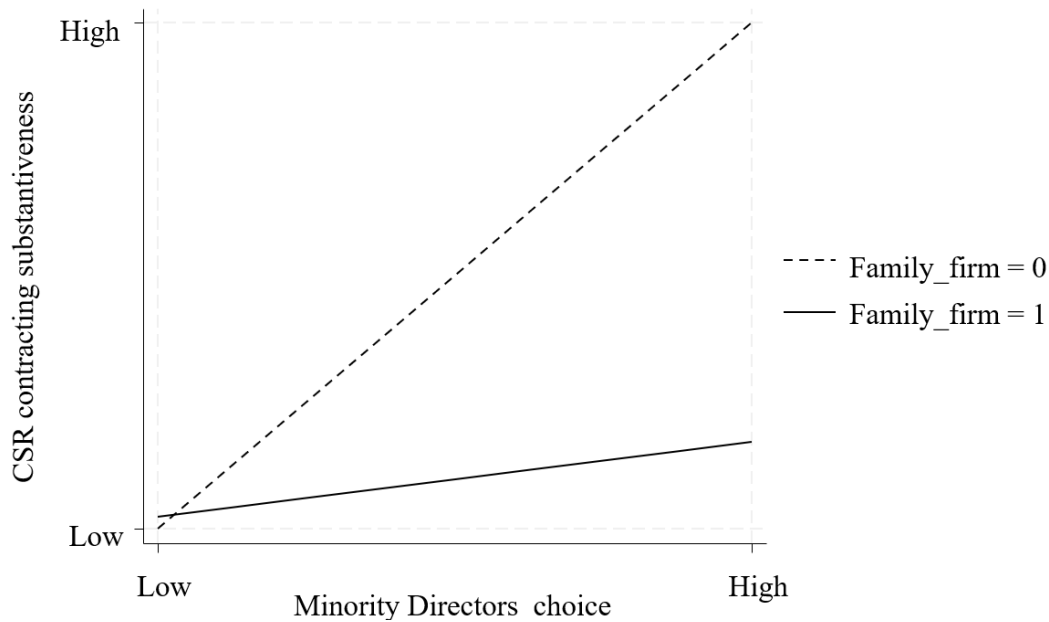


Table 7. The moderating role of family ownership in the relationship between the substantive integration of sustainability criteria in executive remuneration design and minority shareholders' representation on the board of directors

	DV: CSR contracting substantiveness					
	(H2a)			(H2b)		
	Coeff	SE	p	Coeff	SE	p
Minority Director_presence	0.388	0.360				
Minority Directors_choice				4.426	1.376	***
Family_firm	0.020	0.291		0.002	0.136	
Minority Directors_presence*Family_firm	-0.381	0.355				
Minority Directors_choice*Family_firm				-3.675	1.621	**
Board Independence	-0.016	0.326		0.194	0.352	
Board Diversity	-0.068	0.646		-0.140	0.658	
Board Size	-0.018	0.172		-0.003	0.164	
RemCom Independence	0.183	0.141		0.212	0.140	
Remuneration Consultant	0.286	0.139	**	0.256	0.137	*
Blockholder Ownership	-0.462	0.318		-0.282	0.324	
RepRisk	0.007	0.005		0.005	0.005	
Firm Size	0.163	0.042	***	0.146	0.041	***
ROA	0.224	0.905		0.342	0.912	
Leverage	-0.381	0.297		-0.406	0.282	
Sensitive Industry	0.047	0.040		0.042	0.036	
Intercept	-0.968	0.635		-0.980	0.565	*
Industry fixed effects	Included			Included		
Year fixed effects	Included			Included		
Wald χ^2	199.01			235.72		
R-squared	0.37			0.40		
N. of unique firms	168			168		
N. of observations	474			474		

Standard errors are clustered at the firm level. *p < 0.1, **p < 0.05, ***p < 0.01. See Table 3 for variables' definition.

5.3. Robustness Analyses

We conducted a series of additional analyses to assess the robustness of our main findings. The results remain consistent with those reported in the main analysis.

5.3.1 Alternative explanations

We are aware of potential other mechanism that may emerge between the presence of directors appointed by minority shareholders on the board and the substantive usage of CSR contracting. As prior literature has pointed out (e.g., Melis et al., 2012), remuneration design may serve as a rent-extraction tool for the beneficiary when the latter is the controlling blockholder. Therefore, we conducted an additional test by including a variable (beneficiary control-related), which equals 1 if the beneficiary of CSR contracting was the controlling blockholder (or a family member), and 0 otherwise (Melis et al., 2012). We found no significant evidence that this form of remuneration is indeed used for this purpose.

Prior studies suggest that state-owned firms behave differently when compared to firms owned by large private blockholders (Bresciani et al., 2017; Lazzarini & Musacchio, 2018). Specifically, the state may be interested both in safeguarding minority shareholders and in maintaining legitimacy towards stakeholders by implementing CSR contracting in a substantive way. To account for this, we conducted two additional analyses. First, we include a variable that identifies whether the largest ultimate shareholder is a state-owned entity. We do not observe any statistically significant relationship between state-ownership and the substantive use of CSR contracting. Second, we substitute family ownership as moderator with state ownership and examine whether the presence of the state as main blockholder affects the relationship between the presence of directors appointed by minority shareholders and the substantive use of CSR contracting. The interaction variable is not significant. Overall, these additional tests suggest that the role of the state is unlikely to explain the phenomenon under study.

5.3.2 Alternative estimates for dependent variable, independent variables of interest and moderating variable.

First, we challenge the estimate of our dependent variable. Specifically, we considered the possibility that directors appointed by minority shareholders may be reluctant to integrate stakeholder interests

into the CEO's remuneration design — regardless of whether the integration is substantive. To examine this, we estimated a probit model in which the dependent variable, *CSR contracting dummy*, is coded 1 if the CEO's remuneration design includes at least one sustainability-related criterion addressing the interest of at least one stakeholder, and 0 otherwise. Consistent with the rejection of H1a, we find no evidence supporting this view. To further test H1a and H1b, we check the robustness of our measure of CSR contracting substantiveness with two alternative dependent variables used by, respectively, Qin & Yang (2022) and Yang (2023). In both cases, the results are qualitatively consistent with those of the main analysis.

Second, we challenge our key independent variables of interest. We re-estimated the main models using an alternative variable – *Minority Directors_ratio* – which measures the overall proportion of minority shareholders' representatives on the board (including the legally mandated seat). As shown in Table 8, Model 1, *Minority Directors_ratio* is positively and statistically significantly associated with a more substantive use of CSR contracting ($p = 0.024$), with a coefficient of 1.582. This finding further supports the rejection of H1a. Moreover, comparing the coefficients of *Minority Directors_ratio* and *Minority Directors_choice* further substantiate our empirical support for H1b: the coefficient of *Minority Directors_choice* in the main analysis (2.338) is notably higher than that of *Minority Directors_ratio*. In line with the inclusivity principle, the absence of these directors in key board committees may indicate a subtle form of symbolic representation (e.g., Aguilera et al. 2021; Kamalnath, 2022). Accordingly, we use an alternative proxy for *Minority Directors_choice*: *RemCom Minority*, a dichotomous variable that takes the value of 1 if a firm has at least one director appointed by minority shareholders beyond the legal requirements on the remuneration committee, and 0 otherwise. Given the committee's advisory role in executive remuneration design (e.g., Conyon & Peck, 1998; Newman & Mozes, 1999; Melis et al., 2012), this variable estimates whether firms embrace minority shareholders' voice, beyond the legal requirements, in the remuneration process that led to the board's decision of a substantive integration of CSR contracting. Results presented in Table 8, Model 2, remain consistent with the main analysis.

We further assess the robustness of the moderating effect of the ultimate controlling shareholder identified as a family by employing an alternative proxy for *Family_firm*. These proxies comprise not only the identity of the ultimate controlling shareholder but also thresholds (10% and 20%), which indicate that a family hold a substantial ownership stake (e.g., Shleifer & Vishny, 1997; Franks et al, 2008). Results remain consistent with those of the main analysis.

5.3.3 Addressing endogeneity concerns

The presence of directors appointed by minority shareholders on the board beyond the legal requirements (*Minority Directors_choice*) may be not randomly assigned. Firms with specific characteristics (e.g., those with larger size) could be more likely to have directors appointed by minority shareholders beyond the legal requirements, which could affect the substantive use of CSR contracting. To mitigate potential bias arising from observable characteristics that may influence both *Minority Directors_choice* and CSR contracting substantiveness, we applied the propensity score matching (PSM) and entropy balancing (EB) techniques. We aimed to approximate a counterfactual scenario by matching firms with *Minority Directors_choice* (treated) to those without *Minority Directors_choice* (untreated) that share similar observable characteristics. This approach helped us isolate the effect of *Minority Directors_choice* on CSR contracting substantiveness and compare the extent of CSR contracting substantiveness between the two groups. Following prior literature (e.g., Shipman et al., 2017), we used a dichotomous variable for *Minority Directors_choice* coded one if the presence of directors appointed by minority shareholders on the board was beyond the legal requirements, and zero otherwise. For PSM, following prior literature (e.g., Shipman et al. 2017; Wu & Zhang, 2025), we employed a one-to-one nearest-neighbour matching within a caliper of 0.01. After matching, 57 treated firms fell within the common support, and the average treatment effect on treated was found to be positive and marginally significant ($ATT = + 0.402$, $t\text{-stat} = 1.77$). However, the limited number of treated observations in the common support and the sample size did not allow to achieve exact balance in some covariates (e.g., Board Independence, RepRisk), limiting the

reliability of results (Shipman et al., 2017). To address this issue, we applied the EB technique (Hainmueller, 2012; McMullin & Schonberger, 2022). This method re-weights each observation so that the mean, variance, and skewness of all covariates are balanced across the treatment and control groups, adjusting for random and systematic inequalities in the variable distributions between the treatment and control groups without losing observations (Hainmueller, 2012). Pre and post summary statistics show that balance across covariates has been achieved. Table 9 shows the regression on the post-entropy matched sample, which results remain consistent with the main analysis ($p = 0.027$).

Furthermore, to rule out the possibility that our findings are driven by randomness or model misspecification, we conducted a permutation test with 1,000 replications for our variable of interest *Minority Directors_choice*. In each replication, *Minority Directors_choice* was replaced with a randomly permuted version that preserved its distribution while eliminating any systematic relationship with the dependent variable. This generated a distribution of estimated coefficients under the null hypothesis of no systematic association. The observed coefficient falls in the extreme tail of this distribution ($p < 0.01$), suggesting that the estimated effect is highly unlikely to result from spurious correlations or model misspecification.

Last but not least, we control for reverse causality concerns by using lagged explanatory variables in the main analysis. This choice mitigates but not rules out these concerns. Hence, we use our substantive knowledge of the empirical setting to further mitigate this issue. Although theoretically possible, we argue that, given the characteristics of the Italian institutional setting, it is unlikely that the longstanding practice (since 2005) of allowing minority shareholders to appoint directors on boards was influenced by the relatively new and emerging practice of integrating sustainability criteria into executive remuneration design, hence reverse causality is unlikely to affect our results. To further address this potential endogeneity concern, we implement a 2SLS instrumental variable approach⁹. The Hausman test for endogeneity (Wooldridge, 1995) does not reject the null hypothesis

⁹ We identified two instrumental variables. Ideally, an optimal exogenous instrument exhibits a strong correlation with the potentially endogenous variable while remaining uncorrelated with the error term. However, in practice, identifying

that *Minority Directors_choice* is exogenous at conventional significance levels ($p = 0.1233$). We did not find any evidence of endogeneity, in line with our expectations.

Table 8. Robustness analyses: alternative variables of interest

DV: CSR contracting substantiveness								
		(1)				(2)		
		Exp. sign	Coeff	SE	<i>p</i>	Coeff	SE	<i>p</i>
Minority Directors_ratio	H1a/H1b	-/+	1.582	0.702	**			
RemCom Minority	H1b	+				0.480	0.219	**
Board Independence			0.318	0.336		0.198	0.350	
Board Diversity			-0.183	0.638		-0.068	0.664	
Board Size			-0.036	0.164		-0.058	0.163	
RemCom Independence			0.234	0.143		0.229	0.144	
Remuneration Consultant			0.290	0.140	**	0.301	0.136	**
Blockholder Ownership			-0.370	0.326		-0.354	0.314	
RepRisk			0.007	0.005		0.007	0.005	
Firm Size			0.155	0.042	***	0.160	0.041	***
ROA			0.379	0.917		0.290	0.911	
Leverage			-0.393	0.290		-0.452	0.293	
Sensitive Industry			0.055	0.039		0.053	0.350	
Intercept			-1.123	0.552	**	-0.976	0.540	*
Industry fixed effects			Included			Included		
Year fixed effects			Included			Included		
Wald χ^2			205.85			218.81		
R-squared			0.37			0.38		
Mean VIF			1.71			1.70		
N. of unique firms			168			168		
N. of observations			474			474		

Standard errors are clustered at the firm level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. See Table 3 for variables' definition.

such an instrument presents significant challenges (Maddala, 1997; Larcker & Rusticus, 2010). Using theory and our substantive knowledge of the empirical context, we identified two instruments: (i) a dichotomous variable, which equals one if a company's bylaws—prior to the first-time adoption of sustainability-related criteria in executive remuneration design—provide minority shareholders with the right to appoint more than one director, thereby exceeding the minimum legal requirement (source: company bylaws), and (ii) the number of minority shareholders with a relevant equity stake (≥ 3 percent) in the company (source: Consob). Theoretically, both instruments should be correlated with our potentially endogenous variable of interest, *Minority Directors_choice*, but cannot directly influence the dependent variable, as only appointed directors participate in the decision to integrate social and environmental criteria into executive remuneration design. Therefore, we argue that the instruments satisfy the exclusion restriction, as their effect on CSR contracting operates exclusively through their impact on minority director appointments. Both instruments are strongly correlated with *Minority Directors_choice* (partial $R^2 = 0.367$) and pass the weak instrument test ($p < 0.001$) (Stock & Yogo, 2005). The Hansen J test shows a p-value of 0.111, suggesting that the instruments seem to be valid.

Table 9. Robustness analyses: entropy balancing technique

DV: CSR contracting substantiveness			
	Coefficient	SE	<i>p</i>
Minority Directors_choice	3.074	1.377	**
Board Independence	-1.897	0.926	**
Board Diversity	2.799	1.746	
Board Size	-0.086	0.609	
RemCom Independence	0.126	0.446	
Remuneration Consultant	0.248	0.247	
Blockholder Ownership	-1.728	0.645	***
RepRisk	-0.006	0.010	
Firm Size	0.521	0.110	***
ROA	1.064	2.036	
Leverage	-1.730	0.728	**
Sensitive Industry	-0.090	0.059	
Intercept	-1.746	1.590	
Industry fixed effects	Included		
Year fixed effects	Included		
R-squared	0.63		
N. of unique firms	168		
N. of observations	474		

Standard errors are clustered at the firm level. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.
See Table 3 for variables' definition.

6. Discussion and conclusions

By using a novel hand-collected sample of Italian listed non-financial firms, this study examined whether and how firms whose boards comprise directors appointed by minority shareholders — either to meet external regulatory pressures or as internal voluntary extension beyond mere regulatory compliance — integrate sustainability criteria substantively into executive remuneration design. It also investigated how the board's role is shaped by the corporate governance “bundle” with the identity of the controlling blockholder.

Our analysis provides novel evidence that firms with boards including directors appointed by minority shareholders beyond regulatory requirements tend to support a substantive integration of

sustainability criteria into executive remuneration design. It also offers a contextualized view of this relationship documenting how the board's role varies across firms, with the positive role of these directors being weaker in family-controlled firms.

From a theoretical perspective, this study offers valuable insights into the integration of sustainability criteria into executive remuneration design, the conceptual domain of stakeholder–agency theory, and the functioning of corporate governance “bundles”.

It contributes to executive remuneration literature, which has predominantly examined the mere adoption of this form of remuneration (e.g., Hong et al., 2016; Flammer et al., 2019; Aresu et al., 2023; Cohen et al., 2023) or specific details (e.g., the weight, Afridi et al., 2025). As only a few studies – focused on the U.S. context - examined the complexity of its design (Bebchuk & Tallarita, 2022; Qin & Yang, 2022; Yang, 2023), our study enriches understanding of this emerging form of executive remuneration by providing a more nuanced view that distinguishes substantive use from symbolic, non-substantive adoption. It also provides interesting insights to the emerging literature on the antecedents of this form of executive remuneration design (e.g., Yang, 2023, Afridi et al., 2025; Hou et al., 2025) by enhancing our understanding of the role of directors appointed by minority shareholders in contexts characterised by concentrated ownership and control. Advancing existing corporate governance literature (e.g., Melis et al., 2012; Cappellieri et al., 2025; Fera et al., 2025), which emphasized the relevance of a single director appointed by minority shareholders, this study explains the importance of their broader — i.e., beyond mere compliance with legal requirements — inclusion in the board decision-making process. These results align with arguments rooted in stakeholder-agency theory (e.g., Hill & Jones, 1992; Mitchell et al., 2016; Zolotoy et al., 2021), according to which a more inclusive board of directors may foster greater attention to other corporate stakeholders and financially incentivize executives as agents to pursue those stakeholders' welfare. Meanwhile, our study extends the conceptual domain of stakeholder-agency theory by contributing to the development of theory on a traditionally overlooked stakeholder group: minority shareholders.

This study addresses outstanding questions regarding how corporate governance mechanisms interact to form and operate as “bundles” (e.g., Desender et al., 2013; Aguilera et al., 2021) by conceptualizing stakeholder–agency relationships as not inherently independent of one another. By explaining how these relationships form a corporate governance “bundle” within an organizational setting, it advances beyond universalistic approaches that assume a single configuration applies uniformly across firms and extends prior literature that largely focused on “bundles” with country-level institutional characteristics (e.g., Schiehl et al., 2014; Yoshikawa et al., 2014; Melis & Rombi, 2021; Aresu et al., 2023).

This study also offers implications for policymakers, investors, and other corporate stakeholders seeking to understand how firms may incentivize sustainability-related activities. Policymakers, such as bodies issuing corporate governance codes of best practice, could consider introducing recommendations that strengthen minority shareholders’ board representation beyond legal requirements, to better support sustainability-related practices, while accounting for the controlling blockholder’s identity. Moreover, these findings may be relevant for investors, especially those with a long-term value horizon, and other corporate stakeholders, as they help them identify board compositions that substantively embrace executives’ incentive alignment with a broad range of corporate stakeholders, while also recognizing the symbolic decisions of firms (e.g., the non-substantive integration of sustainability criteria into executive remuneration design).

Notwithstanding these contributions, this study has some limitations that may, in turn, offer avenues for future research. First, it focuses on a single institutional setting. While leveraging the unique characteristics of the Italian context enhances internal validity, it may limit the external validity of our results. Their generalizability is primarily limited to settings with concentrated ownership and control, common among listed firms outside major Anglo-American countries. Future studies in different institutional settings could investigate whether specific board compositions result in heterogeneous integrations of sustainability criteria into executive remuneration contracts.

Second, this study infers the role of directors appointed by minority shareholders regarding this form of executive remuneration based on their board representation, using hand-collected data over a period of three years. While this approach enhances internal validity, it necessarily treats the phenomenon under analysis as a relatively static concept. Although this study employed standard diagnostic procedures that found no evidence of endogeneity, our analysis may not fully eliminate endogeneity concerns, as in much of corporate governance research, where true exogenous shocks are rare and do not allow the examination of all relevant phenomena (e.g., Van Essen et al., 2013; Kavadis & Thomsen, 2023). To further address such concerns, if more longitudinal data become easily available, future research could adopt a dynamic research design to investigate how variations in executive remuneration design are associated with changes in its antecedents. Future studies could also directly examine the considerations underlying the integration of sustainability criteria into executive remuneration by conducting interview- or survey-based analyses of directors' perspectives, rather than relying on archival corporate reports.

While these considerations impose certain limitations on the interpretation of our results, they also open promising avenues for future research on the underexplored phenomenon of the integration of sustainability criteria into executive remuneration contracts.

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Chapter 2:

How Institutional Pressures Shape the Integration of Sustainability Criteria into Executive Remuneration Contracts: Evidence from Europe.

Abstract

This study investigates how social and environmental regulatory pressures influence the integration of sustainability criteria into the executive remuneration design. In addition, it examines whether this relationship is moderated by large blockholder ownership and industry-level social and environmental sensitivity. Drawing upon institutional and stakeholder-agency theory, this study conducts an empirical analysis using a dataset of European non-financial listed firms during the financial year 2023. Firms headquartered in contexts characterised by higher levels of social and environmental regulatory pressure are less, rather than more, likely to integrate sustainability-related criteria into executive remuneration intensively. This relationship varies across firms, with the substitution effect being weakened by the presence of a blockholder and less pronounced in those firms operating in more socially and environmentally sensitive industries. This study extends prior research on the integration of sustainability criteria into executive remuneration by distinguishing among varying degrees of intensity in its adoption. It contributes on the role of social and environmental regulatory pressure, and its interactions with firm-level characteristics, in shaping intense sustainability practices. Moreover, this study may provide guidance for policymakers to consider both country and firm-level mechanisms when developing best practices. It also helps firms explain to shareholders and stakeholders how the design of CSR contracting is determined.

Keywords: CSR contracting, executive remuneration, Europe.

1. Introduction

Firms have been facing increasing pressure to move beyond a narrow focus on financial performance and to account for their broader social and environmental impact (e.g., Berrone & Gomez-Mejia, 2009; Bebchuk & Tallarita, 2022; Dechow, 2023). Among different activities, a response to this pressure has been the adoption of executive remuneration practices that tie compensation to non-financial performance indicators related to sustainability metrics – a practice commonly referred to as “CSR contracting” (e.g., Aresu et al., 2023). These metrics typically include measures such as carbon emissions, workforce diversity and inclusion, and community engagement (e.g., Kolk & Perego, 2014; Maas, 2018; Flammer et al., 2019; Bebchuk & Tallarita, 2022; Aresu et al., 2023; Grabner et al., 2025).

Recent policy developments (e.g., the European Green Deal, the European Sustainability Reporting Standards, and the Corporate Sustainability Due Diligence Directive) signal growing attention on embedding sustainability into core business practices. In this context, the European Commission has warned that « executive remuneration schemes that fail to include sustainability metrics adversely affect the long-term decision-making process of corporate boards » (European Commission, 2020: 43). Reinforcing this trend, a recent KPMG (2025) report finds that the majority of large firms, particularly in Europe, are showing a growing tendency to integrate sustainability-related metrics into executive compensation packages, reflecting the consideration of sustainability practices within corporate governance mechanisms. However, as highlighted by Forbes (2025), « while the integration of ESG metrics into executive compensation is a step in the right direction, there's still a long way to go ». While the mere adoption of CSR contracting is widespread among European large firms, concerns remain about its effectiveness in aligning executive behaviour with value creation for stakeholders and ESG risk management (e.g., Kolk & Perego, 2014; Bebchuk & Tallarita, 2022; Cohen et al., 2023). Leading active investors (e.g., Cevian Capital, PwC UK, 2023), nonprofit organizations (Ceres & KKS Advisors, 2018), prominent media (e.g., Wall Street Journal, 2023;

Forbes, 2025), and academics (e.g., Ioannou et al., 2016; Maas, 2018; Bebchuk & Tallarita, 2022; Cohen et al., 2023) have emphasized that need to go beyond the mere adoption of CSR contracting to meaningfully align executive actions with stakeholders' interests. It is, therefore, important to design executive remuneration contracts incorporating a sufficiently broad set of stakeholders with substantial, relevant and objective metrics that are externally reviewable, directly linked to performance outcomes through predetermined performance targets. Such intense design is important to « prevent executives from strategically cherry-picking » (Bebchuk & Tallarita, 2022, p. 43).

Not only is this topic of considerable practical relevance, but it also holds significant importance from an academic perspective. While most of prior academic literature has investigated the consequences of CSR contracting, particularly its impact on firm performance, both in financial and sustainability terms (e.g., Flammer et al., 2019; Derchi et al., 2021; Almici, 2023; Cohen et al., 2023; Ikram et al., 2023; Liu, 2024; Hou et al., 2025), an emerging stream of studies has focused on the antecedents of the mere adoption of this remuneration practice. These studies often highlight the role of corporate governance mechanisms, specifically board composition (e.g., Hong et al., 2016; Ikram et al., 2023) and ownership structure (e.g., Hong et al., 2016; Focke, 2022), as well as the external regulatory pressures within which firms operate (Aresu et al., 2023). Few studies, however, go beyond analysing the mere presence of CSR contracting, either focusing on selected elements of its design (e.g., Ioannou et al., 2016; Flammer et al., 2019; Ikram et al., 2023; Li & Yang, 2024) or examining a more comprehensive construct of CSR contracting, albeit predominantly with an empirical focus on the United States (e.g., Qin & Yang, 2022; Yang, 2023, Grabner et al., 2025). As a result, our understanding of how institutional and firm-level mechanisms shape the extent to which sustainability criteria are intensively integrated in executive remuneration design remains limited.

This research aims to address these gaps by examining the following research questions: How does institutional social and environmental pressure affect the intensity of sustainability criteria integration into executive remuneration contracts? Might the same social and environmental pressures trigger

homogeneous organizational responses among firms, or do they prompt heterogeneous responses, within a specific institutional environment, depending on each firm's ownership structure and industry exposure?

As the diversity of institutional settings raises concerns about the external validity of CSR contracting studies conducted solely in the U.S. context (e.g., Aresu et al., 2023), this study empirically addresses these research questions using a sample of 425 unique firms headquartered across 18 European countries during the financial year 2023.

In addition to addressing an empirical gap, building on the institutional and stakeholder-agency theory, this study offers novel insights from a theoretical perspective. A key premise of the comparative perspective of CSR is that firms' behaviours strongly depend on the prevailing norms and values of the society in which they operate (Deegan, 2002; Jackson & Apostolakou, 2010; Brammer et al., 2012; Wang et al., 2016). It is, however, unlikely that institutional pressures alone drive firms' decisions (Xie et al., 2021), including those about engaging in CSR practices. Such decisions involve different actors, including shareholders and other stakeholders, who may react differently to institutional pressure due to specific preferences (e.g., Aguilera et al., 2012; Schiehl et al., 2014; Sullivan & Gouldson, 2017). Prior literature (Aresu et al., 2023) advances the understanding of this matter focusing on a worldwide sample, which is however limited by the focus on the first adoption of CSR contracting. Hence, what remains unclear is how firms engage with social and environmental regulatory pressure when incorporating CSR contracting more intensively. For instance, they may rely on an intensive use of CSR contracting to signal their conformity with societal expectations and prescriptions or to substitute for a relative lack of regulatory pressure. Also, the same regulatory pressure may evoke heterogeneous responses depending on each firm-level mechanism. As such, this study helps advance the existing comparative approach to CSR (e.g., Aguilera et al., 2012; Aguilera et al., 2007; Jackson & Apostolakou, 2010; Matten & Moon, 2008) by examining how regulatory pressures and their interaction with firm-level mechanisms, namely ownership

concentration and industry sensitivity so sustainability-related matters, might explain the intense use of sustainability criteria into executive remuneration.

The structure of the paper is as follows. The next section presents the conceptual framework. Then, we outline the development of the hypotheses, followed by the research design and the empirical findings. Concluding remarks and limitations are presented in the final section.

2. Conceptual framework

Several studies adopt institutional theory to help explain why firms engage into CSR-related practices (e.g., Bansal, 2005; Berrone & Gomez-Mejia, 2009; Ioannou & Serafeim, 2012; Brammer et al., 2012; Marano & Kostova, 2016; Aresu et al., 2023). This theory possesses the capability to help explain CSR compliance by firms (Campbell, 2007), providing a suitable lens for understanding and explaining how and why forms of CSR vary among different countries (Brammer et al., 2012). It can help explain organizational behaviours, including CSR-related activities, which are deeply embedded within the prevailing norms and values of the society in which a firm operates (Deegan, 2002; Jackson & Apostolakou, 2010; Brammer et al., 2012; Wang et al., 2016).

What remains unclear is how the institutional context affects CSR practices. On the one hand, firms may mirror what their institutional context prioritizes. Thus, in those countries that have stringent CSR regulations, firms will tend to adopt CSR practices to legitimate their activities (e.g., Midttun et al., 2006; Aguilera et al., 2007; Campbell, 2007; Favotto et al., 2016). On the other hand, firms' socially responsible behaviour may be largely defined by legal requirements, thereby limiting the scope for voluntary and explicit CSR initiatives and pointing to a substitution effect between external institutional pressure and internal CSR initiatives (e.g., Jackson & Apostolakow, 2010; Kaplan, 2015; Kinderman, 2012; Matten & Moon, 2008).

Although prior institutional literature suggests a relatively uniform organizational responses to regulatory pressure (e.g., DiMaggio & Powell, 1981; 1991), more recent contributions have

challenged this assumption by stating that regulatory pressures may exert an influence that may result in heterogeneous organizational responses (e.g., Albareda et al., 2006; Steurer, 2010; Knudsen & Moon, 2017; Xie et al., 2021). As corporate governance practices are viewed as contingent upon both organizational and institutional characteristics (Aguilera & Desender, 2012; Wang et al., 2016), institutional theory alone seems to be unable to accurately explain the diversity of corporate governance practices across different institutional contexts (e.g., Xie et al., 2021; Aresu et al, 2023).

From this perspective, stakeholder-agency theory, grounded in the combination of agency and stakeholder theory (Hill & Jones, 1992), helps to interpret the corporate governance phenomenon under analysis. It expands the focus of typical agency issue of aligning executives' interest with those of shareholders (Hill & Jones, 1992; Zolotoy, et al., 2021) and provide a broader concept of agency theory which includes implicit and explicit relationships between all stakeholders (Hill & Jones, 1992; Mitchell, et al., 2016; Zolotoy, et al., 2021). Among stakeholders, corporate executives are expected to act as 'the agents of other stakeholders' (Hill & Jones, 1992: 134). Therefore, similarly to the shareholder-executive agency context, corporate executives cannot be assumed to have adequate incentives on their own to pursue the stakeholders' welfare (Hill & Jones, 1992; Mitchell, et al., 2016; Jain & Zaman, 2020; Zolotoy, et al., 2021; Bebcuk & Tallarita, 2022). Stakeholder-agency theory posits, therefore, that the use of interest alignment mechanisms, through the design of executive remuneration, into the stakeholders-manager agency relationship may mitigate this agency problem (e.g., Hill & Jones, 1992; Zolotoy, et al., 2021; Almici, 2023). Even when institutional pressures favour specific behaviours, firms tend to respond to these mandates in idiosyncratic ways. For instance, CSR initiatives are shaped by several actors, including those internal to the company (e.g., major blockholders that have financial and reputational concerns) and those external (e.g., industry-level stakeholders that raise sustainability-related legitimacy concerns) (e.g., Aguilera et al., 2012; Schiehl et al., 2014; Sullivan & Gouldson, 2017). Drawing upon both institutional and stakeholder-agency theories, this study provides a framework to examine how institutional and firm-level mechanisms shape the integration of sustainability criteria into executive remuneration design.

3. Hypotheses development

According to Carpenter & Feroz (2001) « institutional theory is based on the premise that organisations respond to pressures from their institutional environments and adopt structures and/or procedures that are socially accepted as being the appropriate organisational choice » (p. 569). From this perspective, CSR engagement is primarily driven by the firm's willingness to preserve its legitimacy, such that it is perceived that the firm's actions are appropriate and consistent with the prevailing system of socially constructed norms, values, and beliefs (Suchman, 1995). The government is the main actor in shaping societal expectations, which can exert both direct and indirect pressures on firms (DiMaggio & Powell, 1983). For instance, when the government gives due consideration to societal and environmental issues through laws, regulations or public policies, it signals to firms the importance of these issues (Ioannou & Serafeim, 2012; Durand et al., 2019; Xie et al., 2021). In response to actions that governments perceive as legitimate, firms tend to adopt practices that society or particularly powerful stakeholder groups regard as normal (Fernando & Lawrence, 2014). In addition, firms may want to demonstrate alignment between their practices and societal standards to maintain a strong tie with critical stakeholders and their resources (Berrone & Gomez-Mejia, 2009). Another key element of the institutional theory suggests that firms operate under an implicit social contract. Failure to respond appropriately to external pressure may expose them to negative reactions from both the government and critical stakeholders, which may block their access to important resources (DiMaggio & Powell, 1983; Luo et al., 2012; Durand et al., 2019). As a result, regulatory frameworks can leave little discretion in shaping firms' strategic decisions and possibly lead to homogeneous compliance in order to increase legitimacy, resources, and survival capabilities (DiMaggio & Powell, 1983). Prior literature has shown that CSR engagement reflects the dominant expectations of the institutional context (e.g., Jackson & Apostolakou, 2010; Campbell, 2018; Kinderman & Lutter, 2018), and more in particular, that the adoption of CSR contracting could reflect firms' conformity-driven response to social and environmental regulatory pressures (Aresu et

al., 2023). Within this framework, firms that link executive remuneration with sustainability-related criteria in a more intense form could signal a strong alignment with institutional regulations and expectations, with the aim of maintain their legitimacy and preserve their license to operate, which prior research establishes as an important motive for CSR (e.g., Bansal, 2005; Tashman et al., 2019). Therefore, from a conformity perspective, we expect:

H1a: *Firms headquartered in contexts characterised by higher levels of social and environmental regulatory pressure are more likely to integrate sustainability-related criteria into executive remuneration intensively.*

Rather than reinforcing each other, social and environmental regulation and firms' voluntary adopted CSR-related practices may operate as alternative channels for promoting socially desirable behaviour, such that firms' engagement in CSR activities is less pronounced where regulatory frameworks are more developed (e.g., Jackson & Apostolakou, 2010). Prior literature suggests a distinction between less regulated economies (e.g., the United States) and more regulated ones (e.g., Europe) (e.g., Matten & Moon, 2008). While in the former case the institutional context provides firms with greater scope to adopt CSR practices proactively, in the latter case firms have less need to engage in such activities to retain in legitimacy stakeholders and society, as firms are required to comply with CSR-related regulatory standards anyway. Thus, if CSR is already highly institutionalized, the need to invest in related practices is likely to be reduced, as both the need to act and the associated benefits are substantially diminished, while the potential related costs remain (Jasinenko et al., 2024). This substitution logic is well established in the CSR literature (e.g., Jackson & Apostolakou, 2010; Kinderman, 2012; Marens, 2012; Knudsen & Brown, 2015; Knudsen, 2017), which suggests that different sources of CSR-related incentives may compensate for one another.

From this perspective, external drivers – such as social and environmental regulatory pressure – and internal drivers – such as the intense use of CSR contracting – could operate as substitutes in motivating managerial attention to CSR issues. When external regulatory pressures are low, firms

may rely more heavily on more intensive internal incentive mechanisms to encourage executives to incorporate CSR criteria into strategic decision-making. From this perspective, the intensity of CSR contracting could offset the relative absence of institutional pressure in social and environmental issues.

Conversely, firms embedded in institutional environments characterized by stringent social and environmental regulation may face less need to rely intensively on this form of remuneration. In such contexts, executives already face the pressure from CSR-related laws, regulation, and public policies. Failure to comply with these institutional standards may expose firms to formal and informal sanctions imposed by key stakeholders, including restricted access to critical resources (Berrone & Gomez-Mejia, 2009) or, in more severe cases, the withdrawal of the firm's social license to operate (DiMaggio & Powell, 1983). As a result, the need of linking executive remuneration with sustainability-related criteria in a more intense form as an internal motivational tool is likely to less when regulatory pressures are sufficiently strong. Accordingly, from a substitution perspective, we expect that:

H1b: *Firms headquartered in contexts characterised by higher levels of social and environmental regulatory pressure are less likely to integrate sustainability-related criteria into executive remuneration intensively.*

Comparative corporate governance literature traditionally assumes that national institutions determine firms' corporate governance behaviours (e.g., Aguilera & Jackson, 2003; La Porta et al., 2000). However, more recent literature shows that firms' practices may deviate from institutional pressures (e.g., Joseph et al., 2014; Bednar et al., 2015; Chizema et al., 2015; Aguilera et al., 2018). Corporate law, regulations and policies in every country face different corporate governance issue, including the tensions between shareholders and executives with other corporate stakeholders (Aguilera & Jackson, 2003). Stakeholder-agency relationships are not inherently independent one another; rather, they are likely to be embedded within a combination of corporate governance

mechanisms that interact with each other (Aguilera et al., 2012; Schiehl et al., 2014; Melis & Rombi, 2021). Specifically, Aguilera et al., (2012: 380) argued that, among governance characteristics, regulation and ownership structures « cannot be conceptualized independently, as each is contingent upon the strength and prevalence of other governance practices ». Importantly, the « effectiveness of corporate governance mechanisms must be considered in light of contingencies related to the ownership structure of the firm » (Desender et al., 2013: 840). Therefore, it is likely that the presence of a blockholder has a role in the corporate governance bundle, moderating the relationship between external social and environmental regulatory pressure and the intense adoption of CSR contracting. What remains unclear is the directional effect in the bundle, as blockholders may respond to social and environmental institutional pressure in different ways.

From an alignment perspective, the presence of a blockholder may strengthen firms' tendency to adapt to societal expectations. Specifically, if firms operate in countries characterized by stronger social and environmental institutional pressure, blockholders may want to conform to what it is expected to signal alignment with prevailing societal norms and expectations. As they have committed a large share of their wealth to a specific company, blockholders are highly exposed to reputational scrutiny and public accountability (e.g., Berrone & Gomez-Mejia, 2009; Flammer et al., 2019). They may become targets of external criticism from activists, interest groups, and the media, if the firm fails to demonstrate attention to sustainability issues (Goergen & Renneboog, 2016; Faller & zu Knyphausen-Aufseß, 2018). Their interest in aligning to institutional pressure, hence reinforcing the need to incentivizing executives through an intense CSR contracting, would be in line with their expectation of long-term benefits associated with CSR engagement (Dam & Scholtens, 2013) and the need to safeguard their legitimacy in light of the reputational risks they face (Berrone & Gomez-Mejia, 2009). For the same reasons, blockholders may have fewer incentives to motivate executives to engage in CSR-related initiatives when firms operate in countries characterised by weaker social and environmental institutional pressure. In such contexts, societal expectations regarding sustainability issues are less demanding, reducing the pressure to align. Therefore, blockholders may face a

dilemma in investing in CSR-related initiatives. They bear most of the costs, whereas the potential benefits, diffused among multiple shareholders and other stakeholders (Faller & zu Knyphausen-Aufseß, 2018), may be limited, especially in contexts where societal expectations are not high (Barnea & Rubin, 2010). This could lead blockholders to limit executives' incentive towards sustainability practices. Drawing upon these arguments, the presence of a blockholder may strengthen the firm's alignment with societal expectations, leading to more intensive CSR contracting when institutional pressure is high. As a result, their presence can amplify the conformity effect of institutional pressure on CSR contracting or reduce the impact of the substitution effect, since they may be interested in incentivizing executives towards CSR contracting under strong external pressure.

Conversely, from a counterweight perspective, the presence of a blockholder may weaken a firm's tendency to adapt to societal expectations. In contexts where social and environmental protection is highly institutionalized, firms with a blockholder may engage less in CSR-related activities because executives are already expected to comply due to strong societal norms. In this case, blockholders may be reluctant to provide additional incentives and may use their power to disincentivize executives to engage in CSR-related activities, thereby avoiding the costs associated with them, while still benefiting from baseline institutional compliance (e.g., Aresu et al., 2023). In contrast, in contexts where social and environmental protection is weakly institutionalized, blockholders may actively encourage CSR engagement despite limited institutional pressure. This behaviour may be primarily driven by the blockholders' exposure to reputational risk and their public accountability in the event of corporate failure towards sustainability-related issues (Berrone & Gomez-Mejia, 2009). Moreover, blockholders are generally long-term oriented, as they have committed a greater share of their wealth to a specific company (e.g., Thomsen & Pedersen, 2000; Courteau et al., 2017) and could be interested in the future positive effects of CSR on firms' financial performance (Dam & Scholtens, 2013). Therefore, blockholders may go beyond what the institutional environment requires, using their power to incentivize executives toward a more intense CSR contracting to protect their interests and legitimacy, even when institutional pressure is low. Drawing upon these arguments, the presence of a

blockholder may weaken the firm's alignment with societal expectations, leading to less intensive CSR contracting when institutional pressure is high. As a result, their presence can reduce the conformity effect of institutional pressure on CSR contracting or amplify the impact of the substitution effect, since they may be less interested in incentivizing executives towards CSR contracting under strong external pressure. Accordingly, we expect that:

H2: *The relationship between country-level social and environmental regulatory pressures and the intensity of the integration of sustainability-related criteria into executive remuneration is moderated by blockholder ownership.*

Prior literature suggests that the way a firm chooses to address CSR-related activities is a unique response to stakeholders' demands, which are conditioned by the industry in which the firm operates (Baird et al., 2012). This suggests that operating in a highly sensitive sector may moderate the relationship between social and environmental institutional pressures and the intensity of CSR contracting. Although the engagement of firms operating in controversial industries in CSR-related policies and activities may seem contradictory, it is often the case as « some social good is better than no social good » (Lindorff et al., 2012, p: 9). For instance, a greater commitment towards CSR activities provides a way for firms to mitigate the consequences of practices that might be perceived as unethical or unsustainable (Lindgreen et al., 2012), thereby addressing the potential perception of illegitimacy that arises when they fail to meet social and stakeholders' expectations (Campbell, 2007). This happens because, even when operating in sensitive industries, such firms contribute to social welfare by minimizing the harm that would be caused if the industry were unregulated (Lindorff et al., 2012). Accordingly, it is expected that firms operating in highly sensitive sectors meaningfully engage in corporate responsibility practices, as they seek organizational legitimacy (Reast et al., 2013; Sroka et al., 2018). Prior studies (e.g., Cai et al., 2012; Han & Ito, 2024) show that, indeed, firms in controversial sectors (i.e., alcohol, tobacco, defence, energy, biotechnology) actively engage in CSR initiatives and increase their value by embedding these activities into their broader business strategy.

Since stakeholders are more supportive of firms that have achieved such legitimacy, by being more aware of practices that could potentially harm stakeholders and by taking actions to adhere to institutional norms, this support drives firms' engagement in CSR-related activities (Du & Vieira, 2012). Nonetheless, gaining stakeholders' support and approval requires a dialogue between the management of a company and its stakeholders. The more critical corporate executives perceive stakeholders' claims to be, the more likely those demands will be addressed (Chiu & Wang, 2015), particularly when they are advanced by stakeholders who control important resources and can have a significant impact on firm value (Deegan, 2014). Indeed, Mitchell et al. (1997) suggest that managerial attention is not uniformly distributed across stakeholders but rather depends on the simultaneous presence of attributes such as power, legitimacy, and urgency, which jointly determine stakeholder salience. For instance, when stakeholders are both powerful and legitimate, their influence in the firm is assured, as this combination confers authority and significantly increases their prominence in managerial decision-making. However, when stakeholders also acquire the attribute of urgency, reflecting the need for immediate attention, they become highly salient. Consequently, corporate executives face an immediate mandate to both attend to and prioritize that specific stakeholder's claim (Mitchell et al., 1997; Chu & Wang, 2015). In highly sensitive industries, this dynamic may be translated into pressure to align managerial behaviour with stakeholder expectations. Consistent with this view, empirical studies suggest that regulatory compliance and reduction in negative externalities (i.e., pollution, environmental damage, etc.) are important determinants of CSR contracting, which varies considerably across industries (Ikram et al., 2023). As CSR is increasingly considered as relevant for firms (Maon et al., 2009), stakeholder expectations to embed social responsibility beyond core business activities is leading controversial companies to further engage in sustainability-related practices (Jansen et al., 2024). Regardless of the broader institutional environment, firms operating in highly sensitive sectors face strong incentives to align managerial behaviour with stakeholder expectations due to the salience of these industry-specific stakeholder pressure (Campbell, 2007; Reast et al., 2013). Failure to adequately address such pressure may expose

firms to substantial reputational and legitimacy risks, with potentially severe consequences for firm value (Campbell, 2007). These arguments suggest that industry sensitivity may reduce the influence of environmental and social institutional pressures on the intensity of CSR contracting, as the behaviour of firms operating in these sectors is strongly dependent on the industry-specific stakeholder demands. Consequently, both the conformity and substitution effects of social and environmental institutional pressure on CSR contracting intensity are likely to be less pronounced. Accordingly, we expect:

H3: *The relationship between country-level social and environmental regulatory pressures and the intensity of the integration of sustainability-related criteria into executive remuneration is less pronounced in firms operating in a social or environmental sensitive industry.*

4. Data and Methodology

4.1. Sample

The initial sample comprised 600 firms listed in the EuroSTOXX 600 Index at the time of the beginning of the data collection (May 2025), using the most recent available data (financial year 2023). Because of their peculiarities in terms of corporate governance and regulations, 156 firms operating in the financial sector (i.e., financial, real estate, and financial holdings) were excluded. Furthermore, seven subsidiaries were removed to avoid duplication and ensure independence from parent companies already included in the sample. Following the integration with the ISS ECA database for the construction of the dependent variable, nine firms were excluded due to lack of coverage. Finally, three firms were removed due to missing data on CEO annual bonus design or other governance-related variables. This process led to a final sample of 425 unique firms headquartered across 18 European countries. Table 1 presents the sampling process and the distribution of the sample across countries.

Table 1. Sample

Panel A. Sampling process

	Number of unique firms
All firms in the EuroStoxx 600	600
<i>Less</i>	
Financial firms	156
Subsidiaries	7
Firms not covered by ISS ECA database	9
Firms with missing data on dependent/independent variables	3
Final sample	425

Panel B. Sample distribution across countries

	N	%
Austria	5	1.18
Belgium	6	1.41
Cyprus	1	0.24
Denmark	20	4.71
Finland	17	4
France	54	12.71
Germany	50	11.76
Ireland	6	1.41
Italy	21	4.94
Luxembourg	7	1.65
Netherlands	31	7.29
Norway	10	2.35
Poland	5	1.18
Portugal	2	0.47
Spain	17	4
Sweden	43	10.12
Switzerland	42	9.88
United Kingdom	88	20.71
Total	425	100

4.2. Data gathering

Data on the integration of sustainability criteria into CEO remuneration packages were collected from the ISS ESG ECA database and complemented with manually gathered information from annual and remuneration reports available on corporate websites. Regarding country-level variables, the independent variable of interest (*Pressure*) is based on third-party developed indexes (Yale and Columbia Universities with the World Economic Forum; United Nations Development Program),

while other control variables rely on prior literature (e.g., *Common Law*, *Code Maturity*), the World Bank database (e.g., *Voice*) and codes of best practices (*Code Recommendation*). Firm-level variables were mostly collected from databases and manually integrated from corporate reports when data were missing, such as LSEG Datastream (*Board Size*, *Board Independence*, *Board Diversity*, *Industry*), FactSet (*Size*, *ROA*, *Leverage*), and RepRisk (*RepRisk*). Furthermore, SASB standards were used to collect *Sensitive Industry*, and other governance-related variables were manually collected from corporate reports (*CSR_Committee*, *Blockholder*, *Family*).

4.3. Variable definitions

4.3.1. Dependent Variable

CSR contracting intensity proxies the level of integration of external stakeholders' interests into CEO remuneration design. Drawing upon prior studies (Qin & Yang, 2022; Yang, 2023), this variable was constructed as a factor score using principal component analysis through the combination of five dimensions related to the integration of sustainability criteria into CEO short-term bonuses: 1) number of stakeholders addressed (*Stakeholders*), 2) weight of sustainability criteria (*Weight*), 3) use of quantitative key performance indicators (*KPI_measurability*), 4) setting of clearly measured targets for each KPI (*Target_setting*), 5) proportion of financially material sustainability criteria (*Materiality*).

In line with prior literature (e.g., Bebchuk & Tallarita, 2022; Yang, 2023), *Stakeholders* is estimated as the number of stakeholders integrated into the remuneration design, following the Global Reporting Initiative (2021): Environment, Employees, Suppliers, Customers/Product, Community Engagement, and Business Ethics and Compliance. Following previous studies (e.g., Ritz, 2022; Qin & Yang, 2022), *Weight* is measured as the proportion of the annual variable component related to the stakeholders' interests addressed, estimating the higher (or lower) relevance associated with a greater (lesser) assigned weight relative to financial criteria (e.g., EBITDA, Revenues). In line with prior

studies (Qin & Yang, 2022; Yang, 2023), *KPI_measurability* equals 1 when the majority of sustainability-related KPIs are quantitative, 0.5 if the majority of sustainability-related KPIs are qualitative, and 0 if they are not disclosed. Furthermore, reflecting the call from leading activist investors (e.g., Cevian Capital; PwC UK, 2023), sustainability advisors and nonprofit organizations (Ceres & KKS Advisors, 2018), as well as academics (e.g., Maas, 2018; Bebachuk & Tallarita, 2022), the external reviewability of target levels constitutes a critical element of effective incentive design. Specifically, this ensures that criteria are predetermined and remain fixed, allowing external stakeholders to assess target difficulty and limiting ex-post managerial discretion (PwC UK, 2023). Thus, *Target_setting* equals 1 if targets levels are reviewable ex-ante (i.e. when the remuneration design is decided), 0.5 if they are reviewable ex-post (i.e., when the remuneration is paid), and 0 when target levels are not clearly defined/reviewable. Finally, active investors (e.g., Vanguard; Galloway, 2022), nonprofit organizations (Ceres & KKS Advisors, 2018), and academics (e.g., Bebachuk & Tallarita, 2022) have questioned the effectiveness of sustainability-related incentives, which depends on whether the chosen metrics are financially material for the firm. It follows, then, that these metrics should be clearly linked to the firm's strategic priorities or financially material risks. Prior literature has emphasized that the investor-oriented perspective reflected in the Sustainability Accounting Standards Board (SASB) standards, and the broader multi-stakeholder perspective reflected in the GRI standards should be viewed as complements rather than substitutes (Grewal et al., 2020). *Materiality*, therefore, evaluates the strategic relevance of sustainability-related criteria. It seeks to balance the wider stakeholder view promoted by the GRI (captured in the *Stakeholders* dimension) with the degree to which the metrics address those stakeholders who are financially material. Following Antoons et al. (2025), we rely on the SASB Materiality Map¹⁰ to evaluate whether the sustainability metrics embedded in CEO remuneration plans address the interests of stakeholders in a material way. First, for each SICS industry, we identified the financially material sustainability

¹⁰ SASB identifies 26 general sustainability issues and delineates which specific issues are considered financially material for each SICS industry.

issues and categorized them according to the relevant stakeholder groups¹¹. This categorization allows us to identify the industry-specific set of stakeholders that should be addressed under the SASB standards, forming the denominator of our *Materiality* dimension. Second, we manually examined the sustainability metrics integrated into each CEO incentive plan to determine whether they aligned with the SASB-identified material issues for the firm's specific industry. If a metric addressed a stakeholder through a SASB-material issue, that stakeholder was coded as effectively addressed; the total count of these stakeholders forms the numerator of the *Materiality* dimension. Thus, the final construct captures the proportion of strategic stakeholders addressed.

As suggested by prior literature (e.g., Flammer et al., 2019; Bebchuk & Tallarita, 2022; Qin & Yang 2022; Ikram et al., 2023) firms that involve more stakeholders, particularly those most material to the business, assign higher weights to sustainability criteria, choosing quantifiable criteria and predetermined related targets, are those who implement CSR contracting more intensely.

These dimensions seem to effectively capture the intensity of CSR contracting as they are positively and significantly correlated with each other (see Table 2, Panel A) and exhibit an internal consistency in line with prior studies (e.g., Yang, 2023), with a Cronbach's alpha of 0.64. As shown in Table 2, Panel B, the principal component factor analysis reveals only one principal component with an eigenvalue greater than one (3.121), which is able to explain, on average, 62.4% of the variance in the original variables. These results, together with the high factor loadings, suggest that the unobservable factor, *CSR contracting intensity*, is able to reflect a more or less (with higher or lower values, respectively) intense integration of external stakeholders' interests into CEO remuneration contracts.

Table 2. Dependent variable: CSR contracting intensity

¹¹ Specifically, Environment (GHG Emissions, Air Quality, Energy Management, Water and Wastewater Management, Ecological Impacts, Physical Impacts of Climate Change, Product Design and Lifecycle Management); Employees (Labor Practices, Employee Health & Safety, Employee Engagement, Diversity & Inclusion); Suppliers (Supply Chain Management, Materials Sourcing & Efficiency), Community (Human Rights & Community Relations); Business, Ethics and Compliance (Business Model Resilience, Business Ethics, Competitive Behaviour, Management of the Legal & Regulatory Environment, Critical Incident Risk Management, Systemic Risk Management).

Panel A. Correlation matrix

	(1)	(2)	(3)	(4)	(5)
(1) Stakeholders	1				
(2) Weight	0.549*	1			
(3) KPI_measurability	0.601*	0.557*	1		
(4) Target_setting	0.435*	0.491*	0.579*	1	
(5) Materiality	0.735*	0.476*	0.471*	0.389*	1

* p<0.05

Panel B. Principal Component Factor Analysis

Factor	Eigenvalue	Proportion	Cumulative
Factor 1	3.121	0.624	0.624
Factor 2	0.743	0.149	0.773
Factor 3	0.488	0.098	0.871
Factor 4	0.410	0.082	0.952
Factor 5	0.238	0.048	1.000

Variables	Factor 1 loadings	Uniqueness
<i>Stakeholders</i>	0.8506	0.2764
<i>Weight</i>	0.7766	0.3969
<i>KPI_measurability</i>	0.8149	0.336
<i>Target_setting</i>	0.7201	0.4814
<i>Materiality</i>	0.7821	0.3884

4.3.2. Independent variables of interest and moderating variables

To test H1a and H1b, following prior literature (e.g, Aresu et al., 2023), we use *Pressure*, an aggregate of two externally developed indices: the Human Development Index (HDI) developed by the United Nations Development Program (UNDP) and Environmental Protection Index (EPI) developed by the Yale and Columbia University's Earth Institute in collaboration with the World Economic Forum (e.g., Hoskisson et al., 2004; Chung & Beamish, 2012; Atlason & Gerstlberger, 2017; Xiao et al., 2018; Berry et al., 2021). *Pressure* estimates the level of the social and environmental regulatory pressure within a given country. Specifically, the HDI ranges from 0 to 1, where higher values indicate greater protection of human well-being across three key dimensions: a long and healthy life, being knowledgeable, and having a decent standard of living (UNDP, 2025). The EPI ranges from 0 to 100,

with higher values reflecting better environmental performance in terms of Climate Change, Environmental Health (e.g., Air Quality, Waste Management), and Ecosystem Vitality (e.g., Biodiversity & Habitat) (Wolf et al., 2022). Since the two indexes have different scales, they were standardized to ensure comparability and subsequently summed to obtain an overall score. Higher values, thus, reflect a greater degree of social and environmental regulatory pressure (e.g., Aresu et al., 2023).

To test H2, we use *Blockholder* as moderating variable, defined as the equity stake held by the largest shareholder (e.g., Cronqvist & Fahlenbrach, 2008). Finally, to test H3 we use the moderating variable *Sensitive Industry*, that captures the varying degree of sensitivity of each industrial sector to sustainability-related matters, which is measured as the number of material sustainability topics relevant to each industry, as defined by the SASB Standards.

4.3.3. Control variables

We control for several country and firm-level characteristics that may affect the extent to which sustainability criteria are integrated into remuneration contracts. Table 3 reports the variables' definitions. At the country-level, following prior literature (e.g., Aresu et al., 2023), At the country-level we control for *Code maturity*, *Code Recommendation*, *Common law*, and *Voice*. Codes of corporate governance are issued to enhance regulatory legitimacy and become fully institutionalized when firms internalize their prescriptions (Enrione et al., 2006). *Code maturity* reflects how long a country's corporate governance code has been in place (Cuomo et al., 2016), capturing the extent to which such institutionalization has occurred (Enrione et al., 2006; Haxhi & Aguilera, 2017). In countries with more mature governance codes, firms are more likely to perceive executive compensation best practices as standard, which may increase the likelihood of incorporating CSR criteria intensively into remuneration contracts. Building on this rationale, we include *Code recommendation*, a country-level construct capturing the extent to which national corporate governance codes explicitly promote the use of sustainability-related criteria in variable executive

remuneration.¹² It takes the value of 2 when the code explicitly recommends firms to integrate one or more social and environmental criteria (e.g., French Corporate Governance Code, 2022), the value of 1 when it recommends non-financial performance criteria more broadly (e.g., German Corporate Governance Code, 2022; Spanish Good Governance Code of Listed Companies, 2020), and 0 otherwise (e.g., UK Corporate Governance Code, 2018). *Common law* is a dichotomous variable that takes the value of 1 whether a firm operates in a country whose legal rules originate in the common law tradition (La Porta et al., 1998). These countries tend to protect investors considerably more than the countries whose laws originate in the civil-law, being more shareholder-oriented rather than stakeholder-oriented. On one hand, this orientation may reduce firms' attention to the interest of other stakeholders, potentially lowering the implementation of CSR-related practices (e.g., Demirbag et al., 2017). On the other hand, they may be prone to adopt CSR initiatives to meet legitimacy expectations and because such practices are often associated with potential economic benefits (Hill et al., 2007; Demirbag et al., 2017). Thus, the country-legal origin in which a firm operates may be associated with the intense use of sustainability-related criteria into executive remuneration. *Voice* captures citizens' perception of ability to participate in government selection and exercise freedom of expression and association. On one hand, in countries characterised by higher level of this index, firms may be exposed to greater public scrutiny, making them more likely to incentivize executives toward CSR practices intensively to protect their legitimacy and reputation (Nikolaeva & Bicho, 2011). However, stronger external scrutiny and stakeholder monitoring may already influence a firm related intense behaviour towards CSR practices, reducing the need to incentivise their behaviour with related incentives (e.g., Lee, 2011; Brower & Mahajan, 2013; Jo et al., 2016). At the firm-level,

¹² Specifically, the following codes were used: Austrian Code of Corporate Governance (2021), Belgian Code on Corporate Governance (2020), Cyprus Corporate Governance Code (2019), Danish recommendations on corporate governance (2017), Finnish Code of Corporate Governance (2020), French Corporate Governance Code (2022), German Corporate Governance Code (2022), UK Corporate Governance Code (2018), Italian Corporate Governance Code (2020), The X Principles of Corporate Governance of the Luxembourg Stock Exchange (2017), Dutch Code of Corporate Governance (2022), Norwegian Code of Practice for Corporate Governance (2018), Best Practice for GPW Listed Companies (2016), Portuguese Corporate Governance Code 2018, revised in (2020), Spanish Good Governance Code of Listed Companies (2020), Swedish Corporate Governance Code (2016), Swiss code of best practice for corporate governance (2016), UK Corporate Governance Code (2018).

we first control for several corporate governance related variables. We include *Board Size*, *Board Independence*, and *Board Diversity*. For instance, the composition of the board of director plays a pivotal role in balancing different stakeholders' interest, thereby shaping the firms' engagement in CSR-related activities (e.g., De Villiers et al., 2011; Harjoto et al., 2015; Liao et al., 2015; Moscariello et al., 2019; Jain & Zaman, 2020; Aresu et al., 2023; Cappellieri et al., 2025). We also include *CSR_Committee*, a dummy variable that takes the value of 1 if the firm has established a committee within the board of directors that is responsible for sustainability matters, and 0 otherwise. Previous studies documented that the presence of a sustainability-related committee can influence a firm's CSR performance and encourage the adoption of sustainability criteria in executive compensation (Derchi et al., 2021; Radu & Smaili, 2022). We control for *Family*, measured as a dichotomous variable that takes the value of 1 whether the ultimate controlling shareholder is a family that has 5% or greater firm share (La Porta et al., 1999; Anderson et al., 2012; Afridi et al., 2025). Prior literature (e.g., Afridi et al., 2025) suggests that family firms tend to place less relevance to nonfinancial performance criteria into executive compensation and thus may be less prone to adopt CSR contracting intensively.

Second, based on prior literature (e.g., Flammer et al., 2019; Aresu et al., 2023), we include several firm-level financial characteristics: *Size*, measured as the natural logarithm of total assets, as larger firms may be more likely to implement this form of remuneration due to higher resources and public scrutiny exposure; *ROA* and *Leverage*, as prior literature suggests that financial performance and debt levels could be associated with CSR-related activities (see, e.g., Grewatsch & Kleindienst, 2017).

Third, we control for industry-specific variables, as firms operating in sectors with higher exposure to sustainability-related matters may be more inclined to link executive incentives to related metrics (e.g., Ikram et al., 2023; Aresu et al., 2023). In addition to ICB industry fixed effects, we include *Sensitive Industry*, as firms that are more exposed to sustainability issues may be more likely to incentivize their executives on these matters (e.g., Ikram et al., 2023; Aresu et al., 2023; Afridi et al., 2025). Finally, to account for a company's exposure to ESG-related media scrutiny, we include *RepRisk*, which estimates a firm's ESG-related reputational risk, measured as the average of the values

of the RepRisk Index from the previous financial year, with scores ranging from 0 (indicating low risk) to 100 (indicating high risk). Previous studies have shown that firms receiving significant media attention are more exposed to stakeholder pressure, which can lead to increased scrutiny and influence their commitment to CSR related activities (e.g., Fiss & Zajac, 2006; Zyglidopoulos et al., 2012).

Table 3. Variables' description

Variable	Definition	Source
CSR contracting intensity	The first principal component from a factor analysis of five variables relative to the CEO annual bonus design: (1) Stakeholders, the number of stakeholders addressed; (2) Weight, the proportion of the annual variable component related to the stakeholders' interests addressed; (3) KPI_measurability, equal to 1 if the majority of sustainability-related KPIs are quantitative, or 0.5 if the majority are qualitative; (4) Target_setting, equal to 1 if targets are disclosed ex-ante, 0.5 if they are disclosed ex-post, and 0 if they are not disclosed; (5), Materiality, equal to the proportion of SABS-identified relevant stakeholders addressed.	ISS ESG ECA database and firm's Remuneration and Annual reports
Pressure	Overall multidimensional measure of external social and environmental regulatory pressures at the country level, based on the Environmental Performance index (EPI) and the Human Development index (HDI).	Yale and Columbia Universities with the World Economic Forum; United Nations Development Program
Code Maturity	A country's corporate governance code maturity as proxied by the number of years since the adoption of the first corporate governance code.	Cuomo et al. (2016)
Code Recommendation	It takes the following values depending on what the code of best practices promotes in regard to the inclusion of sustainability-related criteria in the variable component of the executive compensation: (2) whether it explicitly recommends one or more social and environmental criteria; (1) when it recommends non-financial performance criteria, and (0) otherwise.	National corporate governance codes
Common Law	A country's legal origin as represented by a dummy variable that equals 1 if the country belongs to a common-law country and 0 if it belongs to a civil-law country.	La Porta et al. (1998)
Voice	Index that captures the "perceptions of the extent to which a country's citizens are able to participate in selecting their government", at the previous financial year. It ranges from -2.5 to 2.5.	World Bank
Board Size	Natural logarithm of the total number of directors on the board, at the end of the previous financial year.	Firm's Governance and Annual reports

Board Independence	Proportion of independent directors on the board, at the end of the previous financial year.	Firm's Governance and Annual reports
Board Diversity	Proportion of women on the board of directors, at the end of the previous financial year.	LSEG database
CSR_Committee	A dummy variable that takes the value of 1 if the firm has established a sustainability committee within the board of directors, and 0 otherwise, at the end of the previous financial year.	Firm's Governance and Annual reports
Family	Dichotomous variable that takes the value of 1 whether the firms' first ultimate shareholder is a family that owns at least 5% of equity.	Firm's Governance and Annual reports
Size	Natural logarithm of a firm's total assets (EUR m) at the end of the previous financial year.	Factset database
ROA	A firm's return on average assets, calculated as net income divided by the two fiscal period average of total assets, at the end of the previous financial year.	Factset database
Leverage	A firm's total debt to total assets ratio, at the end of the previous financial year.	Factset database
Industry	It takes the value of 1 for each distinct industry sector based on the ICB (Industry Classification Benchmark)	LSEG database
Sensitive Industry	The number of material sustainability topics relevant to each industry sector, as defined by the SASB Standards under the SICS classification.	SABS Standards
RepRisk	Index of the firm's exposure to reputational risks related to environmental, social, and governance risk-related topics. It ranges from 0 (low risk) to 100 (high risk). It was measured as the average of the values of the RepRisk Index of the previous financial year.	RepRisk database

4.4. Data analysis

To test H1a and H1b, we estimate the following linear regression model:

$$\begin{aligned}
 CSR \text{ contracting intensity} = & \alpha + \beta_1 * Pressure_{it-1} + \beta_2 * CodeMaturity_{it-1} \\
 & \beta_3 * CodeRecommendation_{it-1} + \beta_4 * CommonLaw_{it-1} + \beta_5 * Voice_{it-1} + \beta_6 * BoardSize_{it-1} + \\
 & \beta_7 * BoardIndependence_{it-1} + \beta_8 * BoardDiversity_{it-1} + \beta_9 * CSR_Committee_{it-1} + \beta_{10} * Family_{it-1} + \\
 & \beta_{11} * Size_{it-1} + \beta_{12} * ROA_{it-1} + \beta_{13} * Leverage_{it-1} + \beta_{14} * SensitiveIndustry + \beta_{15} * RepRisk_{it-1} + \\
 & Industry + \gamma_j + \varepsilon_{it}
 \end{aligned}$$

where i represents the specific firm, t indicates the reference year, and ε is the error term.

We include our dependent variable, *CSR contracting intensity*, the variable of interest (*Pressure*), along with control variables. Industry (γ_j) fixed effects are included to account for unobserved heterogeneity at the industry level.

Additionally, in line with prior research (e.g., Martin et al., 2019; Zolotoy et al., 2021), we test each expected moderated relationship (H2 and H3) with *Blockholder* and *Sensitive Industry* in a distinct model.

5. Empirical results

5.1. Descriptive statistics and correlation

Table 4 reports the descriptive statistics of the sample. Panel A presents country-level variables for each country included in the analysis. With respect to the two components of the variable of interest, the EPI ranges from 50.4 in Portugal to 77.9 in Denmark, while the HDI ranges from 0.833 in Portugal to 0.966 in Switzerland. The United Kingdom has the longest-established corporate governance code, which have been issued 30 years ago, whereas Luxembourg has the most recent code among the countries in the sample (16 years). France is the only country that explicitly recommends the inclusion of social and environmental criteria in executive compensation, some countries (e.g., Italy and Austria) recommend the inclusion of non-financial criteria, whereas more than half of the countries in the sample do not recommend the use of non-financial performance criteria. Most countries follow a civil-law legal tradition (15). Poland exhibits the lowest level of *Voice* (0.60), while Norway shows the highest value (1.78).

Panel B shows the descriptive statistics of the firm-level variables. The dependent variable, *CSR contracting intensity*, is a continuous factor score which varies from a minimum of -1.244 to a

maximum of 2.684, with a mean value near 0¹³. The board of directors in our sample consist of average of approx. 11 members, with an average of two thirds independent directors and 38% women representation. Remuneration committees established within the board typically display a high presence of independent directors (approx. 73%). Furthermore, more than a half of the firms in the sample (approx. 56%) have established a sustainability-related committee in their board. The average firm is characterised by approx. 29.5 billion in total assets, 5.8% ROA, and a leverage of 0.266. The average firm also shows a moderate exposure to sustainability issues (score of 6.5) and an ESG-related reputational risk index of 16.57, with some firms having no ESG-related media coverage exposure and others with a relatively high risk (max value 56.47).

Table 5 shows the correlation matrix between the dependent and independent variables. Social and environmental regulatory pressure is negatively correlated with the intensity of CSR contracting. This suggests, *prima facie*, that firms headquartered in countries characterized by higher institutional pressure tend to link executive compensation to sustainability-related criteria less intensively. Corporate governance code maturity, the presence of best-practice recommendations on the use of nonfinancial criteria and operating in a common-law country are all positively associated with CSR contracting intensity, whereas *Voice* is negatively correlated. At the firm-level, board size and board diversity show positive correlations with the intensity of CSR contracting, as does the presence of a sustainability-related committee at the board level. In contrast, family ownership is negatively correlated with the intensive use of this form of remuneration. Firms with lower profitability seem to incentive executives towards sustainability criteria intensively, as do firms operating in more environmentally or socially sensitive industries and those more exposed to reputational risks.

Correlations among the independent variables are generally below 0.5, indicating low to moderate associations. In the few cases where correlations exceed this threshold, multicollinearity does not

¹³ The CEO remuneration design comprises at least one sustainability criterion, reflecting consideration for the interests of at least one stakeholder group, in 69% of the firms in the sample.

seem to be a concern, as reflected by the relatively low mean variance inflation factor reported in the main regression models (mean VIF below 3.47).

Table 4. Descriptive statistics

Panel A. Country-level variables

Country	EPI	HDI	Code maturity	Code recommendation	Common law	Voice
Austria	66.5	0.927	20	1	0	1.41
Belgium	58.2	0.945	24	0	0	1.30
Cyprus	58.0	0.908	20	1	1	0.85
Denmark	77.9	0.959	22	0	0	1.59
Finland	76.5	0.946	19	1	0	1.61
France	62.5	0.916	27	2	0	1.11
Germany	62.4	0.955	24	1	0	1.41
Ireland	57.4	0.947	23	0	1	1.45
Italy	57.7	0.905	23	1	0	1.07
Luxembourg	72.3	0.922	16	0	0	1.54
Netherlands	62.6	0.953	25	0	0	1.55
Norway	59.3	0.967	18	0	0	1.78
Poland	50.6	0.902	20	1	0	0.60
Portugal	50.4	0.833	23	0	0	1.02
Spain	56.6	0.911	26	1	0	1.02
Sweden	72.7	0.959	21	0	0	1.62
Switzerland	65.9	0.966	20	0	0	1.62
United Kingdom	77.7	0.946	30	0	1	1.26

Panel B. Firm-level variables

Variable	Obs	Mean	SD	Min	Max
CSR contracting intensity	425	0	1	-1.244	2.684
Board Size	425	10.967	3.353	4	20
Board Independence	425	0.661	0.198	0.200	1
Board Diversity	425	0.378	0.099	0	0.667
CSR_Committee	425	0.565	0.496	0	1
Family	425	0.442	0.497	0	1
Size (in million EUR)	425	29523.74	56748.47	207.02	593842.00
ROA	425	0.058	0.072	-0.439	0.401
Leverage	425	0.266	0.141	0	0.752
Sensitive industry	425	6.581	2.517	2	12
RepRisk	425	16.572	13.942	0	56.474

Table 5. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 CSR contracting intensity	1															
2 Pressure	0.000	1														
3 Code Maturity	0.277*	-0.059	1													
4 Code Recommendation	0.211*	-0.284	0.152	1												
5 Common Law	0.124*	0.038	0.275	-0.124	1											
6 Voice	-0.291*	0.770*	-0.273	-0.514*	-0.197	1										
7 Board Size	0.215*	-0.241*	0.185*	0.361*	-0.033	-0.263*	1									
8 Board Independence	0.052	0.260*	-0.089	-0.292*	0.076	0.312*	-0.407*	1								
9 Board Diversity	0.181*	-0.085	0.294*	0.226*	0.086	-0.184*	0.091	-0.044	1							
10 CSR_Committee	0.345*	-0.317*	0.249*	0.284*	0.072	-0.355*	0.273*	-0.072	0.187*	1						
11 Family	-0.301*	-0.032	-0.255*	-0.034	-0.250*	0.156*	-0.081	-0.180*	-0.182*	-0.174*	1					
12 Size	0.217*	-0.105*	0.117*	0.167*	-0.013	-0.126*	0.384*	-0.084	0.069	0.164*	-0.102*	1				
13 ROA	-0.180*	0.072	-0.091	-0.077	0.024	0.058	-0.176*	0.031	0.021	-0.067	0.048	-0.062	1			
14 Leverage	0.206*	-0.124*	0.092	0.029	0.065	-0.150*	0.124*	-0.030	0.154*	0.188*	-0.130*	0.079	-0.221*	1		
15 Sensitive Industry	0.157*	-0.069	-0.099*	-0.009	-0.070	0.033	0.031	0.078	-0.075	0.024	-0.159*	0.125*	0.040	-0.145*	1	
16 RepRisk	0.280*	-0.137*	0.109*	0.181*	0.004	-0.138*	0.420*	-0.063	0.049	0.262*	-0.110*	0.514*	-0.079	0.054	0.204*	1

* p<0.05

5.2. Hypothesis testing

Table 6, Model 1, presents the findings of the test for H1a and H1b. We find a negative and statistically significant association between external social and environmental regulatory pressure and the intense use of CSR contracting ($p = 0.000$). Hence, we find no support for H1a, while H1b is supported. Firms headquartered in contexts characterised by higher levels of social and environmental regulatory pressure are less, rather than more, likely to integrate sustainability-related criteria into executive remuneration intensively. This finding supports the argument that external drivers – such as social and environmental regulatory pressure – and internal drivers – such as the intense use of CSR contracting – can operate as substitutes in motivating managerial attention to CSR issues. Therefore, firms operating in institutional environments characterized by stringent social and environmental regulation may face less need to rely extensively on this form of remuneration, supporting the substitution perspective. Model 2 presents the findings of the test for H2, which is supported. The findings indicate that the negative association between external social and environmental regulatory pressures and the intensive use of CSR contracting is significantly and positively moderated by blockholder ownership ($p = 0.004$). This evidence suggests that the substitution effect between external and internal drivers is weakened in firms characterised by the presence of a blockholder holding a significant equity stake. These results are in line with the argument that blockholders seem to reinforce firms' propensity to respond to societal expectations. Given their heightened exposure to reputational scrutiny and public accountability, blockholders may be particularly motivated to conform to prevailing norms and expectations and to signal alignment with them (e.g., Berrone & Gomez-Mejia, 2009; Flammer et al., 2019).

Model 3 presents the findings of the test for H3, which is supported. The negative association between external social and environmental regulatory pressures and the intensive use of CSR contracting is significantly and positively moderated by sensitive industry ($p = 0.000$). This suggests that the substitution effect between external and internal drivers is less pronounced in firms that operate in

social and environmental sensitive industries. This finding is consistent with the argument that a firm's approach to CSR-related practices is conditioned upon the industry in which it operates (Baird et al., 2012). Regardless of baseline institutional pressure, firms operating in highly sensitive sectors may engage intensively in corporate responsibility practices to secure organizational legitimacy, aligning executives' behaviours towards sustainability-related activities in response to salient stakeholders' claims (e.g., Aresu et al., 2023; Ikram et al., 2023). In addition, in all models, firms operating in countries with longer-established corporate governance codes, a common-law legal tradition, and higher levels of voice and accountability are more prone to use this form of remuneration intensively. At the firm level, more profitable firms are less likely to adopt CSR contracting intensively, whereas board independence and the presence of a sustainability-related committee are positively associated. Finally, family firms tend to adopt this practice in a less intensive way.

Table 6. The relationship between social and enviromental institutional pressure and CSR contracting intensity, and the moderating effects of Blockholder and Sensitive industry

		DV: CSR contracting intensity								
		(1)			(2)			(3)		
		Coeff	SE	p	Coeff	SE	p	Coeff	SE	p
Pressure	H1a/H1b	-0.222	0.057	***	-0.314	0.067	***	-0.443	0.089	***
Pressure*Blockholder	H2				0.367	0.143	**			
Blockholder					0.014	0.274				
Pressure*Sensitive Industry	H3							0.030	0.009	***
Sensitive Industry		0.042	0.022	*	0.039	0.021	*	0.041	0.021	*
Code Maturity		0.064	0.022	***	0.056	0.022	**	0.063	0.022	***
Code Recommendation		0.156	0.104		0.112	0.105		0.090	0.105	
Common Law		0.460	0.226	**	0.498	0.225	**	0.458	0.224	**
Voice		1.460	0.503	***	1.232	0.510	**	1.381	0.498	***
Board Size		0.018	0.181		-0.013	0.183		0.064	0.179	
Board Independence		0.385	0.248		0.353	0.254		0.425	0.245	*
Board Diversity		0.228	0.459		0.299	0.458		0.273	0.454	
CSR_Committee		0.223	0.094	**	0.219	0.093	**	0.193	0.093	**
Family		-0.253	0.091	***	-0.252	0.095	***	-0.260	0.090	***
Size		0.042	0.048		0.048	0.048		0.040	0.047	
ROA		-1.172	0.600	*	-1.148	0.599	*	-1.142	0.593	*
Leverage		0.743	0.323	**	0.740	0.322	**	0.677	0.320	**
RepRisk		0.005	0.004		0.005	0.004		0.006	0.004	
Intercept		-5.031	1.067	***	-4.420	1.088	***	-4.964	1.055	***
Industry fixed effects		Included			Included			Included		
R-squared		0.325			0.333			0.340		
Mean VIF		2.85			2.97			3.47		
N. of unique firms		425			425			425		

*p < 0.1, **p < 0.05, ***p < 0.01

5.3. Robustness analyses

We conducted a series of additional analyses to assess the robustness of our main findings. First, we challenged our model choice. By employing a hierarchical linear model (HLM), we account for the potential nested structure of firms within countries to capture potential variance in the dependent variable across variable hierarchical levels (Raudenbush & Bryk, 2002; Melis & Rombi, 2021). In

this model, groups are assumed to be independent of each other, while observations within a group are not (Raudenbush & Bryk, 2002). The results remain consistent with our main model. Moreover, the LR test comparing the multi-level and the single-level models is not statistically significant, indicating that the hierarchical specification does not provide a better fit than the OLS.

Second, we challenge the estimates of our dependent variable, independent variable of interest and moderating variables. We replace *CSR contracting intensity* with an alternative variable used by Qin & Yang (2022) and results are qualitatively consistent with those of the main analysis¹⁴.

Then, we re-estimated the model using several alternative variables of *Pressure* (see Table 7). Specifically, in Model 1, we employ the Country-level sustainability performance (*CLSP*) (Xiao et al., 2018), which is constructed as the combination of HDI and EPI. Specifically, the EPI is rescaled to range from 0 to 1, and then summed with HDI, thus resulting in a *CLSP* score ranging from 0 to 2. In Model 2, we employ an alternative for EPI, using the Planetary pressure – adjusted human development index (*PHDI*), developed by the UNDP (e.g., Comim & Hirari, 2022; Lian et al., 2023). The PHDI adjusts the standard HDI by carbon dioxide emissions per person (production-based) and material footprint per capita, measuring the level of human development when the environmental matters are taken into account (UNDP, 2025). Ideally, when a country exhibits an optimal environmental performance, such as lower emissions and material footprint, the PHDI equals the HDI, whereas it falls below the HDI as the environmental performance decreases. A lower PHDI, while still accounting for social performance, reflects poorer environmental performance, which is expected to result from weaker environmental regulations. Thus, higher values of PHDI indicate a higher social and environmental pressure. In Model 3, we use European regional Social Progress Index (*EU-SPI*) as an alternative to HDI (e.g., Aresu et al., 2023), with the latest data available from 2020. It reflects a society's capacity to meet the basic human needs of its citizens, provide the

¹⁴ We also employed the dimensions used by Yang (2023). However, the principal component factor analysis results in two distinct factors, rather than one, with an eigenvalue higher than 1, to capture the variance across dimensions. Hence, this alternative estimate is not suitable to capture CSR contracting within our sample.

foundations that enable communities to enhance and sustain quality of life, and create conditions for all individuals to reach their full potential, encompassing three broad dimensions of social progress: basic human needs, the foundations of well-being, and opportunity (Annoni & Bolsi, 2020). In all three models, the results remain consistent with our main findings.

We also assess the robustness of the moderating effects of blockholder ownership and industry sensitivity to sustainability-related issues by employing alternative estimates for *Blockholder* and *Sensitive industry*, respectively. For *Blockholder*, we create dichotomous variables at different levels of ownership stakes. Within the distribution of our sample, we include dummies at the median (0.14) and the third quartile (0.31) level of the proportion of equity owned by the first ultimate shareholder. Moreover, we use a dummy variable when the ultimate shareholder holds a majority of the shares, and zero otherwise. Results remain consistent when employing the dummies at the third quartile (see Figure 1) and control level, while they are not significant when using the median. These patterns suggest that higher levels of ownership concentration positively moderate the negative association between social and environmental regulatory pressures and the intensive use of CSR contracting, consistent with the argument that such behaviour is driven by reputational concerns, which is likely to be less salient for shareholders with relatively smaller stakes. Regarding the second moderating variable, *Sensitive Industry*, we construct an alternative dichotomous variable which equals 1 whether a firm belongs to an industry with higher exposure to sustainability-related issues (i.e., if *Sensitive Industry* ≥ 6 , the median of the distribution), and 0 otherwise (see Figure 2). Moreover, we are aware of the potential concerns arising from the fact that both *Sensitive Industry* and a dimension of our dependent variable, *Materiality*, are constructs based upon the SASB classification. Although we theoretically rule out the possibility that one measure is directly influenced by the other – as the denominator of *Materiality* does not directly count the sustainability general issues associated with a given industry, but rather the number of stakeholders connected to those issues – we acknowledge that an indirect influence might exist, as more sustainability general issues may cover more stakeholders. Importantly, this potential correlation would lead to opposite results compared to those

in our main findings: as the number of stakeholders increases the denominator of the *Materiality* dimension, belonging to a highly sensitive industry could theoretically reduce the score of the dependent variable, thus leading to lower, rather than a higher, CSR contracting intensity. To address any remaining concern, we re-estimate the model using an alternative measure industry sensitivity, as the one proposed by Brammer & Millington (2005). It equals 1 whether the firm, based on the GICS classification, operated in a high-risk industry to (e.g., alcoholic beverage, chemical, defence and pharmaceutical, resource extraction, tobacco, and utilities sectors), and 0 otherwise (e.g., Aresu et al., 2023). The results remain consistent with our main analysis.

Table 7. Robustness Analysis - Alternative independent variables of interest

	DV: CSR contracting intensity								
	(1)			(2)			(3)		
	Coeff	SE	p	Coeff	SE	p	Coeff	SE	p
CLSP	-3.046	0.864	***						
PHDI				-3.131	1.050	***			
EPI_SPI							-0.147	0.064	**
Code Maturity	0.053	0.021	**	0.069	0.023	***	0.055	0.022	**
Code Recommendation	0.172	0.105		0.130	0.104		0.198	0.110	*
Common Law	0.453	0.232	*	0.018	0.198		0.206	0.214	
Voice	0.846	0.408	**	-0.097	0.313		1.038	0.580	*
Board Size	0.005	0.182		0.138	0.184		0.059	0.183	
Board Independence	0.339	0.251		0.463	0.248	*	0.438	0.250	*
Board Diversity	0.369	0.459		0.436	0.461		0.293	0.464	
CSR_Committee	0.236	0.093	**	0.254	0.093	***	0.278	0.093	***
Family	-0.253	0.092	***	-0.210	0.092	**	-0.238	0.092	***
Size	0.038	0.048		0.023	0.049		0.040	0.048	
ROA	-1.208	0.601	**	-1.210	0.604	**	-1.204	0.607	**
Leverage	0.783	0.324	**	0.735	0.326	**	0.811	0.327	**
Sensitive Industry	0.040	0.022	*	0.051	0.022	**	0.047	0.022	**
RepRisk	0.006	0.004		0.006	0.004		0.005	0.004	
Intercept	1.049	1.375		-0.834	1.078		-4.468	1.183	***
Industry fixed effects	Included			Included			Included		
R-squared	0.321			0.315			0.309		
Mean VIF	2.63			2.41			2.93		
N. of unique firms	425			425			425		

*p < 0.1, **p < 0.05, ***p < 0.01

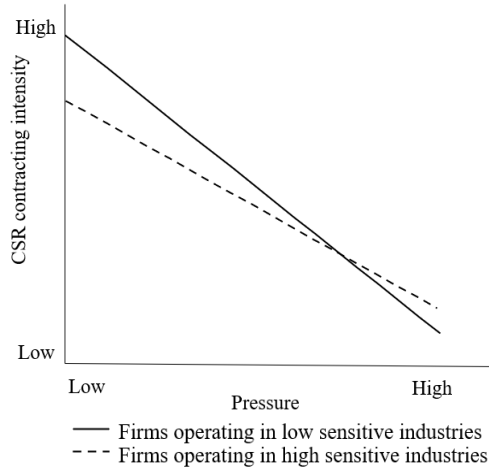


Figure 1. The relationship between CSR contracting intensity and Pressure across firms with high and low ownership concentration (third quartile split).

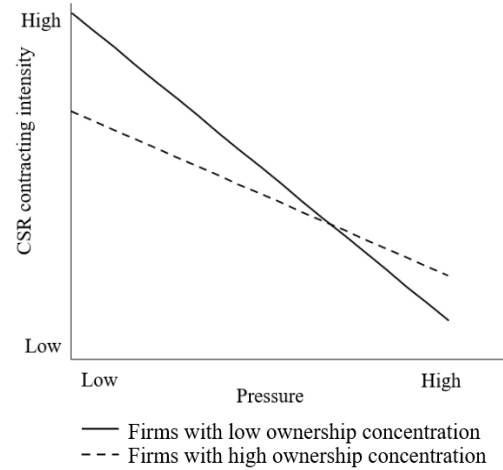


Figure 2. The relationship between CSR contracting intensity and Pressure across firms in high and low sensitive industries (median split).

Third, we tested the robustness of our results concerning the sample selection. To address the concern that our results may be influenced by firms headquartered in France – whose corporate governance code is the only one, among the countries under analysis, to explicitly recommend the integration of social and environmental criteria into executive compensation – we re-run the analysis excluding these firms. The results remain consistent. Although our sample does not appear unbalanced, firms headquartered in the UK still represent a substantial proportion of the sample (approx. 21%). To ensure that these firms do not disproportionately influence the findings, we repeat the analysis excluding them as well. Again, the results remain consistent.

Fourth, as prior literature has suggested that remuneration may serve as a rent-extraction mechanism for the beneficiary when the latter is the controlling blockholder (e.g., Bebchuk et al., 2002; Barontini & Bozzi, 2011; Melis et al., 2012). To examine this possibility, we conducted an additional test by including a variable (*Beneficiary Control*), which equals 1 if the beneficiary of CSR contracting was the controlling blockholder (or a family member), and 0 otherwise (Melis et al., 2012). The results provide no significant evidence that this form of remuneration is used for rent extraction.

To further mitigate potential bias arising from observable covariates that may influence the relationship between *Pressure* and *CSR contracting intensity*, we apply the entropy balancing

technique (Hainmueller, 2012; McMullin & Schonberger, 2022)¹⁵. Specifically, following prior literature (e.g., Hasan et al., 2021; Fafaliou et al., 2022), we split firms into treatment (*High Pressure*) and control (*Low Pressure*) groups based on the median value. The entropy balancing method then re-weights each observation so that the mean, variance, and skewness of all covariates are balanced across the treatment and control groups. This technique thus adjusts for random and systematic inequalities in the variable distributions between the treatment and control groups (Hainmueller, 2012). Pre and post summary statistics show that balance across covariates has been achieved. Table 8 shows the regression on the post-entropy matched sample, which results remain consistent with the main analysis.

Table 8. Robustness Analysis - Entropy balancing

DV: CSR contracting intensity			
	Coeff	SE	p
Pressure	-0.236	0.037	***
Code Maturity	0.027	0.028	
Code Recommendation	0.025	0.164	
Common Law	0.613	0.137	***
Voice	0.734	0.773	
Board Size	-0.277	0.189	
Board Independence	0.617	0.259	**
Board Diversity	1.201	0.472	**
CSR_Committee	0.118	0.081	
Family	-0.199	0.089	**
Size	0.057	0.047	
ROA	-1.628	0.611	***
Leverage	0.589	0.309	*
Sensitive Industry	0.043	0.021	**
RepRisk	0.013	0.004	***
Intercept	-2.932	1.822	
Industry fixed effects	Included		
R-squared	0.383		
Mean VIF	3.09		
N. of unique firms	425		

*p < 0.1, **p < 0.05, ***p < 0.01

¹⁵ When implementing propensity score matching with a caliper of 0.1, 0.05 and 0.01, only a very small number of treated observations remain within the region of common support. As a result, the ATT is not reliably estimated (Shipman et al., 2017).

Finally, we control for potential bias arising from omitted variables which may influence our results by implementing a 2SLS instrumental variable approach, identifying two instrumental variables, which ideally exhibit a strong correlation with *Pressure* while remaining uncorrelated with the error term¹⁶. Both instruments are strongly correlated with *Pressure* (partial $R^2 = 0.5471$) and pass the weak instrument test ($p < 0.001$) (Stock & Yogo, 2005). The Hansen J test shows a p-value of 0.330, suggesting that the instruments seem to be valid, and results remain significant and consistent. However, the Hausman test for endogeneity (Wooldridge, 1995) does not reject the null hypothesis that *Pressure* is exogenous at conventional significance levels ($p = 0.414$). Therefore, we did not find any significant evidence of endogeneity.

6. Discussion and conclusions

By using a sample of European non-financial listed firms, this study examined how social and environmental institutional pressure shapes the extent to which firms – either to signal conformity with societal expectations and prescriptions or to substitute for a relative lack of regulatory pressure – intensively integrate sustainability criteria in executive remuneration. It also investigated how the role of institutional pressure is shaped by firm-level mechanisms – the presence of a blockholder and belonging to socially and environmentally sensitive industry –, as firms may respond to external pressure in heterogeneous ways depending on the different actors involved.

Our analysis provides novel evidence that firms headquartered in contexts characterised by higher levels of social and environmental regulatory pressure are less, rather than more, likely to integrate

¹⁶ Considering that, in practice, identifying valid instruments presents significant challenges (Larcker & Rusticus, 2010), we employ the following two: (i) Public Service Delivery Index (PSDI), developed by World Bank, which measures the « state and progress of GovTech projects that support the design of human-centered online services which are simple, transparent, and universally accessible » (GovTech Glossary, World Bank), and (ii) a dichotomous variable that takes the value of 1 if the company operates in a country whose primary language is future oriented (Chen, 2013). PSDI is expected to be positively associated with *Pressure*, as digitally enabled public services can improve administrative efficiency and enhance access to healthcare and education. Similarly, the use of a future-oriented language may reduce the urge to act on social and environmental matters, possibly being negatively correlated with *Pressure*, which may be perceived as less immediate when policies and regulations are framed as distant rather than proximate. We argue that both instruments do not directly influence our dependent variable as it is unlikely that they have a direct effect on the board's decision to incentivize executives via an intense use of CSR contracting, except through their influence on *Pressure*.

sustainability-related criteria into executive remuneration intensively. Specifically, these firms seem to face less need to rely extensively on this form of remuneration, providing support for the substitution effect between external and internal CSR drivers (e.g., Jackson & Apostolakou, 2010; Kinderman, 2012; Marens, 2012; Knudsen & Brown, 2015; Knudsen, 2017). It also offers a contextualized view of this relationship documenting how firms' response to institutional pressure varies across firms, with the substitution effect being weakened by the presence of a blockholder and less pronounced in those firms operating in more socially and environmentally sensitive industries.

From a theoretical perspective, this study advances the literature on the integration of sustainability criteria into executive remuneration design. It contributes to the existing research on CSR contracting, which has predominantly examined the mere adoption of this form of remuneration (e.g., Hong et al., 2016; Flammer et al., 2019; Aresu et al., 2023; Cohen et al., 2023) or specific details (e.g., the weight, Afridi et al., 2025). Only a limited number of studies examined more complex features of its design, primarily focusing on the U.S. context (Bebchuk & Tallarita, 2022; Qin & Yang, 2022; Yang, 2023; Grabner et al., 2025). Our study advances the understanding of this emerging form of executive remuneration by providing a more nuanced perspective that distinguishes among varying degrees of intensity in its adoption. It also contributes to the literature on the antecedents of this form of remuneration (e.g., Aresu et al., 2023; Yang, 2023, Afridi et al., 2025; Hou et al., 2025) by enhancing our understanding of how institutional pressure operate in context characterised by relatively high attention towards sustainability-related issues. It shows that external social and environmental regulatory pressures negatively affect the intense use of CSR contracting. Specifically, such pressures reduce the need to incentivize executives to pursue higher CSR performance, because executives' discretion is already constrained by external regulation. This result aligns with the perspective that views firms' CSR initiatives as substitutes for a lack of public social responsibility and regulation (e.g., Matten & Moon, 2008; Jackson & Apostolakou, 2010), while contrasting with studies suggesting that firms positively respond to institutional pressure by adopting CSR contracting to meet social demands and expectations. Specifically, Aresu et al., (2023) document a positive relationship

social and environmental regulatory pressure and the first adoption of CSR contracting. However, their analysis focuses on a worldwide, and thus heterogeneous, institutional setting. By contrast, this study examines the role of institutional pressure in the European context – which is more homogeneous – and at a time when this form of remuneration is widely implemented. Thus, by focusing on the intensity of the design of CSR contracting rather than its first adoption, these findings advance the recent literature and provide new insights into how firms respond to institutional pressure in a more homogeneous and recent context.

This study also extends prior institutional theory literature that has traditionally assumed that firms uniformly respond to regulatory pressure (e.g., Aguilera et al., 2012; Jackson & Apostolakou, 2010; Matten & Moon, 2008). Drawing upon recent developments of institutional theory (e.g., Xie et al., 2021; Aresu et al., 2023), with its integration with stakeholder-agency theory, this provides a more nuanced theoretical lens on how social and environmental regulatory pressure may lead to heterogeneous responses by firms within a country. Specifically, the greater the degree of blockholder ownership in a firm, the less likely the substitution effect between external and internal drivers occurs. Large blockholders of firms operating in countries characterised by high social and environmental pressure may, in fact, tend to align with societal demands and expectations due to the high exposure to reputational scrutiny and public accountability to which they are exposed (e.g., Berrone & Gomez-Mejia, 2009; Flammer et al., 2019). A similar pattern emerges for firm operating in highly socially and environmentally sensitive industries, where the relationship between external regulatory pressure and the intensity of CSR contracting is less pronounced, thereby reducing the substitution effect. In this case, the pressure arising from industry-specific stakeholders' demands may prevail in constraining executives' behaviour, regardless of the baseline institutional pressure. Failure to adequately address such pressure may expose firms to substantial reputational and legitimacy risks (Campbell, 2007; Reast et al., 2013).

This study also offers practical implications for policymakers, investors and other corporate stakeholders interested in understanding how firms incentivize sustainability-related activities. First,

it provides information to policymakers by highlighting the need to consider both country-level regulatory pressures and firms' internal mechanisms when developing effective best practices. Second, our study can help firms explain and justify to shareholders and other corporate stakeholders how the design of executive compensation, and specifically the intense integration of CSR criteria into executive compensation contracts, is determined.

Despite these contributions, this study is not without limitations. First, our analysis focuses on listed firms headquartered in Europe, a context characterised by relatively advanced regulatory and societal attention to social and environmental matters. While in this setting, where firms face similar levels of institutional pressure, it emerges that external regulatory pressure is associated with the intensive use of CSR contracting – thereby strengthening the internal validity of our results – it may limit their generalizability. For instance, firms headquartered in less developed countries may not respond in the same way, and future research could extend the analysis to other institutional settings with less homogenous characteristics to assess whether similar or different dynamics emerge. Second, the *Materiality* dimension included in the construct of CSR contracting intensity is based on the SASB Standards, which help companies identify material information about sustainability-related risks and opportunities. While this measure allows us to move a step forward in the development of a construct of CSR contracting which reflects the relevance of the sustainability metrics within the firm strategy, a better measure would be based on the double materiality. This would not only allow to assess how social and environmental factors impact firm's performance, but also how the firm influences the environment and the society in which it operates. Thus, the use of the double materiality when assessing the *Materiality* dimension would capture both risks and impacts, providing additional information regarding the relevance of the metrics adopted. However, such information is currently unavailable, as accurate double materiality matrices are rarely publicly disclosed even by large, listed firms. As a result, the industry-level materiality proposed by SASB represents, to the best of our knowledge, the best available proxy, even if it may not fully capture the firm-specific sustainability priorities, which may differ across industries. As disclosure practices improve, future studies could

employ more refined method based on double materiality to better evaluate the strategic relevance of sustainability criteria into executive remuneration.

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