The Intersection of CSR,

Contextual Factors, and Executive Incentives

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Abbreviations

ARUG	Gesetz zur Umsetzung der Aktionärsrechterichtlinie
BRICS	Brazil, Russia, India, China, South Africa
CE	Correlated Effects
CEO	Chief Executive Officer
CFP	Corporate Financial Performance
CHE	Correlated and Hierarchical Effects
CHF	Schweizer Franken
CO2	Carbon Dioxide
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
ECGI	European Corporate Governance Institute
EP	Environmental Performance
ESG	Environmental, Social, and Governance
EU	European Union
G8	Canada, France, Germany, Italy, Japan, Russia, United Kingdom, and United States
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
KPI	Key Performance Indicator
LTI	Long-Term Incentive
MRA	Meta-Regression Analysis
NFRD	Non-Financial Reporting Directive
OECD	Organization for Economic Co-operation and Development
PP	Perceptual Performance
PRISMA	Identification, Screening, Eligibility, Included
ROA	Return on Assets
ROE	Return on Equity
RVE	Robust Variance Estimation
SASB	Sustainability Accounting Standards Board
SDG	Sustainable Development Goals
SEC	Securities and Exchange Commission
SEM	Structural Equation Model
SMI	Swiss Market Index
SP	Social Performance
SRD	Shareholder Rights Directive
STI	Short-Term Incentive
Swiss Code	Swiss Code of Best Practice for Corporate Governance
UK	United Kingdom
US	United States
VegüV	Verordnung gegen übermäßige Vergütungen bei börsenkotierten Aktiengesellschaften

1 Introduction

1.1 Motivation

This dissertation consists of three essays, each exploring how corporate social responsibility (CSR) is operationalized in businesses through the application of environmental, social, and governance (ESG) criteria. Across these essays, CSR and executive incentives are analyzed from multiple perspectives. Over the past decades, CSR has evolved as a widely debated concept with far-reaching implications for society, representing an integrated approach where social and environmental objectives align with business strategies to create long-term value for both companies and their stakeholders (Grewal & Serafeim, 2020).

The introduction establishes the foundation of this dissertation by first introducing the Sustainable Development Goals (SDGs) as a normative basis. It then outlines the core principles of CSR, highlighting its importance to diverse stakeholders and its connection to compensation mechanisms. More precisely, this chapter discusses the practical and theoretical backgrounds relevant to each essay: the CSR framework underpinning Essay I, its governance implications addressed through Essay II, and its practical implementation explored in Essay III. Finally, it provides an overview of the essays, highlighting shared themes and methodological approaches.

Today, the urgency of addressing global sustainability challenges is undeniable, as human activity continues to push critical ecosystems beyond safe thresholds, resulting in severe consequences for both planetary health and human well-being (Sachs, 2012). Alongside environmental crises, the eradication of poverty in all its forms remains a fundamental global challenge and an essential prerequisite for sustainable development (United Nations, 2015).

Humanity is now grappling with a complex and interconnected web of challenges—ranging from climate change, ocean acidification, and biodiversity loss to poverty, inequality, and threats to education—all of which are further exacerbated by conflicts and systemic disparities (Sachs, 2012; United Nations, 2024b).

In response to these challenges, the United Nations introduced the SDGs in 2015 as part of the Agenda 2030 framework. These goals aim to address global issues, while simultaneously promoting sustainable economic growth on a global scale (United Nations, 2015). The SDGs underscore the interconnectedness of social, environmental, and economic dimensions, emphasizing that these issues cannot be addressed in isolation but require holistic, integrated solutions (Sachs, 2012; United Nations, 2015).

Achieving the SDGs necessitates coordinated global efforts and systemic changes across all sectors, with businesses playing a central role (de Villiers et al., 2021). Given that sustainability benefits are shared globally, individual national efforts often yield limited outcomes without broader international cooperation (Nordhaus, 2018). Businesses, as engines of economic activity and innovation, are essential partners in advancing these objectives. Increasingly, companies are expected to align their strategies, operations, and governance practices with the SDGs to drive meaningful progress (Scheyvens et al., 2016). This shift also prompts a deeper question: *Can profit-motivated businesses truly make a meaningful contribution to the realization of the SDGs, or is it more likely that we will witness 'business as usual,' resulting in greater profits for a few and missed opportunities for many?* (Scheyvens et al., 2016).

1.2 SDGs as Theoretical and Practical Background

The SDGs represent a global call to action, urging governments, businesses, and civil society to prioritize sustainability and create a better future for all (United Nations, 2024a). As

a comprehensive framework of 17 interconnected goals and 169 targets, the SDGs address pressing challenges such as climate change, inequality, and economic instability, emphasizing the need for holistic and coordinated global action (United Nations, 2015). This integrated approach underscores the interdependent nature of global challenges, requiring systemic responses that bridge environmental sustainability, social inclusion, and economic development (Sachs, 2012; United Nations, 2015).

The alignment between the SDGs and CSR is evident, as CSR embodies an approach where business strategies integrate social and environmental goals to create long-term value for stakeholders (Grewal & Serafeim, 2020).

Several SDGs are particularly relevant to corporate activities. For instance, SDG 8 (*Decent Work and Economic Growth*) emphasizes fair labor practices and inclusivity to foster stable workforces and local economic development. SDG 9 (*Industry, Innovation, and Infrastructure*) advocates for sustainable industrialization and eco-friendly innovation to enhance resilience and reduce environmental impact. SDG 12 (*Responsible Consumption and Production*) emphasizes resource optimization, waste reduction, and sustainable production methods to address regulatory and consumer expectations. Additionally, SDG 13 (*Climate Action*) positions businesses at the forefront of climate solutions through reductions in greenhouse gas emissions, investment in clean energy, and adoption of sustainable technologies.

These goals emphasize the importance of long-term sustainability, urging companies to consider their responsibilities toward both current and future generations (Stafford-Smith et al., 2017). By embedding principles such as human rights, labor standards, environmental protection, and anti-corruption into their strategies, companies can establish a foundation for enduring success and resilience (UN Global Compact, 2016).

The private sector plays a critical role in achieving the SDGs, given its influence on economic productivity, innovation, and resource allocation (Sachs, 2012). While businesses are often implicated in environmental degradation and social inequalities (Bonfanti et al., 2023), many are transforming their management practices to address socio-environmental issues (Palmer & Flanagan, 2016; Schaltegger & Burritt, 2018) and support the SDGs (Rosati & Faria, 2019). This shift elevates sustainability to a strategic priority, reimagining traditional business models to create not only financial value but also social and environmental value—hallmarks of CSR (Bonfanti et al., 2023).

Since their introduction, the SDGs have provided a valuable framework for evaluating the non-financial dimensions of corporate performance (Khaled et al., 2021) and advancing sustainability reporting practices (Kücükgül et al., 2022). This has sparked a growing need to understand how CSR practices can be effectively aligned with the SDGs, particularly in relation to specific local contexts (Blagov & Petrova-Savchenko, 2021), dimensional classifications (Smith et al., 2022), and industry-specific applications (Perryman et al., 2022).

In this dissertation, the SDGs serve as a normative foundation for investigating how businesses can strategically incorporate sustainability into their operations. More precisely, the research is structured around three key issues of CSR, addressing critical and unresolved questions in the field:

1. **Measuring CSR**: This issue explores the application of ESG criteria as a framework for assessing sustainability performance across various dimensions, providing an approach for evaluating environmental, social, and governance impacts in different contexts.
2. **Managing CSR**: This issue investigates the role of executive incentives tied to ESG objectives, exploring the factors that affect their effectiveness. It further examines the temporal and contextual associations between corporate sustainability

performance and financial performance (CFP), addressing the "how," "when," and "where" of these relationships.

3. **Communicating CSR**: This issue focuses on the systems and practices of sustainability reporting, highlighting the transparency and alignment of CSR initiatives with the SDGs.

By addressing these themes, this dissertation provides a comprehensive analysis of how businesses can integrate sustainability into their core strategies, contributing to corporate success and societal advancement, while aligning with the underlying principles of the SDGs in business practice.

1.3 The Business Case for CSR and ESG

CSR and ESG are foundational frameworks in contemporary business, increasingly central to addressing societal and environmental challenges (Poddar et al., 2019). While often used interchangeably (Liang & Renneboog, 2020), these concepts differ in approach and application.

CSR traditionally reflects a company’s commitment to societal and environmental well-being. Initially viewed as voluntary, philanthropic efforts to meet ethical obligations and manage reputational risks (Dahlsrud, 2008), CSR has evolved into a strategic framework (Liang & Renneboog, 2020). It now integrates social and environmental goals with business strategies, fostering long-term value creation for both organizations and their stakeholders (Grewal & Serafeim, 2020; Liang & Renneboog, 2020). This shift aligns with the principles of the SDGs, emphasizing the incorporation of sustainability into core operations. A key construct within CSR is Corporate Social Performance (CSP), defined as a firm’s configuration of social responsibility principles, responsiveness processes, and measurable outcomes in societal

relationships (Wood, 1991). Despite its evolution, CSR's definition remains contested, and its scope lacks universal clarity (Starks, 2023).

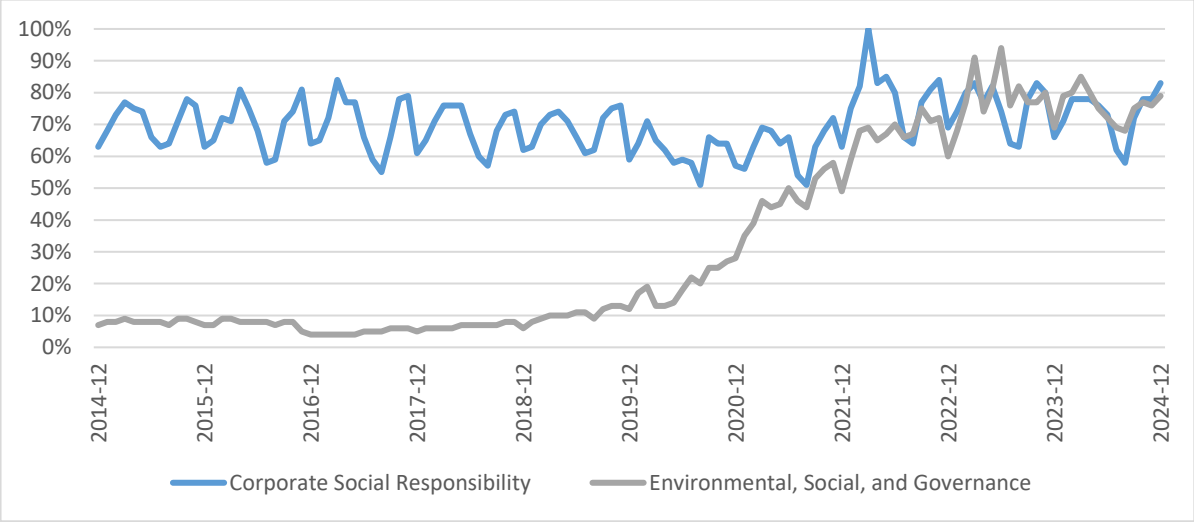
By contrast, ESG builds on CSR but focuses on measurable, structured criteria for evaluating non-financial corporate performance. ESG supports investors and managers in making data-driven decisions (Gyönyörová et al., 2023) through its specific metrics across three dimensions: Environmental (e.g., emissions reduction, resource efficiency), Social (e.g., employee well-being, community engagement), and Governance (e.g., board diversity, executive compensation) (Liang & Renneboog, 2020). Thus, ESG offers a tangible framework for assessing sustainability performance and explicitly incorporates governance, whereas CSR addresses governance indirectly through its environmental and social components (Albuquerque et al., 2019).

Over the last decade, interest in the concept of ESG has grown substantially. Figure 1.1 presents a global Google Trends analysis for the topics “Corporate Social Responsibility” and “Environmental, Social, and Corporate Governance.” The data highlights a rapid increase in interest in ESG, particularly over the past five years. In comparison, the topic of CSR has maintained steady importance throughout the decade. This growing prominence of ESG may be attributed to advancements in measuring corporate sustainability performance, enabling more robust and transparent assessments (Grewal & Serafeim, 2020). The Google Trends data also underscores the rising prominence of ESG, signaling not only a shift in stakeholder expectations but also the increasing necessity for management to implement ESG frameworks effectively, integrating them into strategies and decision-making processes to align with evolving market demands (Starks, 2023).

CSR and ESG are rooted in stakeholder theory, as articulated by Edward Freeman (1984), which emphasizes aligning business operations with the expectations of diverse stakeholders, including shareholders, employees, customers, and communities (Donaldson & Preston, 1995).

A central debate in CSR research revolves around the relationship between responsible corporate behavior and firm performance—specifically, whether CSR decisions influence firm performance and firm value or whether performance or valuations drives CSR choices (Gillan et al., 2021).

Figure 1.1. Increasing Interest in CSR and ESG according to Google Trends



Note: This figure illustrates the time-series trends for worldwide searches for the Google search topics: "corporate social responsibility" and "environmental, social, and corporate governance" from December 2014 to December 2024.

Researchers have identified multiple mechanisms through which CSR and ESG can create value for companies. Socially responsible firms may attract more customers (Cao et al., 2019) and increase employee productivity (Gillan et al., 2021), leading to higher cash flows and reduced capital costs (Albuquerque et al., 2019). ESG performance can also enhance shareholder utility by aligning corporate activities with societal values, a phenomenon known as "delegated philanthropy" (Bénabou & Tirole, 2010). These frameworks enable firms to address market failures and create shared value for stakeholders, potentially requiring a deliberate sacrifice of monetary wealth (Liang & Renneboog, 2020). Furthermore, the "win-win" perspective posits that companies achieving CSR goals simultaneously benefit financially (Rost & Ehrmann, 2017), as seen in initiatives like environmental research and development, which entail short-term costs but generate long-term value by attracting socially conscious

consumers and mitigating regulatory risks (Liang & Renneboog, 2020). This rationale also aligns with the argument that only financially well-performing firms have the capacity to invest in CSR initiatives (H. Hong et al., 2012).

However, CSR initiatives may sometimes reflect managerial agency issues, where managers engage in these activities for personal benefits rather than shareholder welfare (Bénabou & Tirole, 2010). In such cases, strong financial performance could drive CSR efforts rather than vice versa (Gillan et al., 2021). Despite these challenges, research increasingly focuses on understanding the economic value, shareholder outcomes, and broader stakeholder impacts of CSR (Liang & Renneboog, 2020).

The relationship between CSR and CFP remains an empirical question, drawing significant attention across disciplines. By the time the SDGs were introduced, over 2,000 studies had explored this link (Friede et al., 2015). Meta-analyses consistently report a predominantly positive relationship, indicating that firms committed to sustainable practices perform better financially (e.g., Busch & Friede, 2018; Friede et al., 2015; Orlitzky et al., 2003).

Yet, this research faces notable challenges. The CSP-CFP relationship is highly heterogeneous due to its multidimensional nature, divergent methodologies, and omitted variables (Endrikat et al., 2014; Hang et al., 2017; Horváthová, 2010). CSR and ESG are complex constructs with diverse definitions and measurement challenges (Gillan et al., 2021). The inconsistencies in how performance is quantified—whether through aggregate ESG scores or specific sub-measures—highlight the need for further research (Gillan et al., 2021). Variations across industries, market conditions, and geographic contexts further complicate the analysis (Endrikat, 2016; Gallardo-Vázquez et al., 2019; Gillan et al., 2021; Hang et al., 2017; López-Arceiz et al., 2018; Q. Wang et al., 2016). For example, Cai et al. (2016) and Liang & Renneboog (2017) found that factors such as economic development, legal systems, and

cultural values significantly influence CSR practices, with legal origin often being a stronger predictor of ESG adoption than financial performance.

These unresolved issues form the basis of Essay I, which provides an in-depth analysis of the CSP-CFP relationship. It considers key moderators such as geography, industry, and firm characteristics, alongside methodological variations, to clarify how sustainability practices relate to financial outcomes and inform corporate strategies.

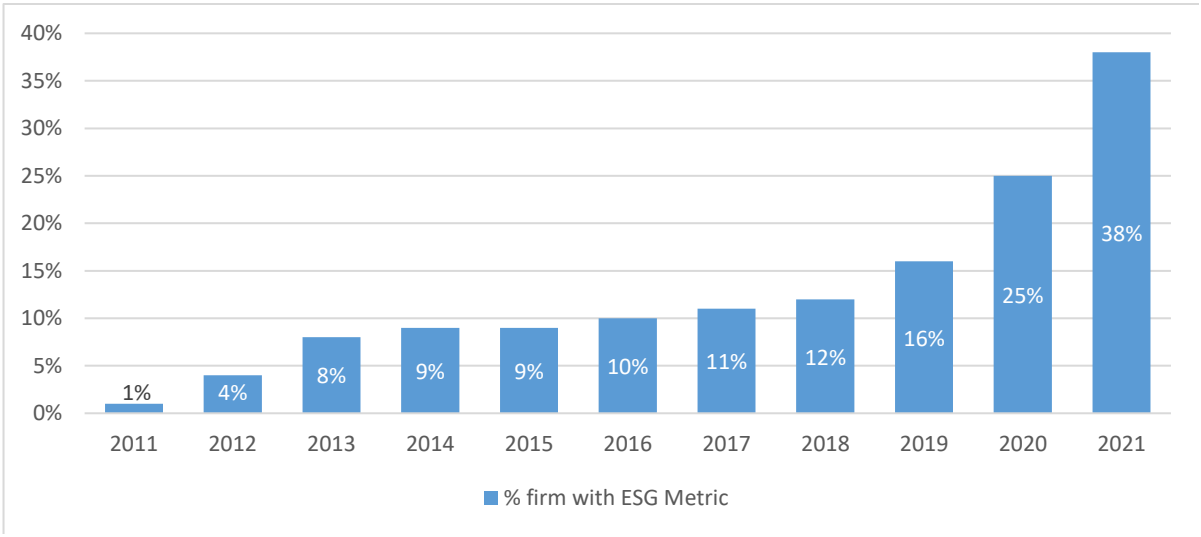
1.4 KPIs and Incentives: Aligning Governance with Sustainability

Managerial decision-making plays a pivotal role in shaping corporate outcomes, with profound implications for CSP (McGuire et al., 2019; Wood, 2010). In the transition toward sustainable corporate management, aligning executive incentives with CSR has become a cornerstone for fostering long-term value creation (Grewal & Serafeim, 2020; Ikram et al., 2023). By linking compensation structures directly to ESG objectives, companies motivate leaders to balance financial performance with environmental and social priorities, fostering a governance approach where sustainability is integral to strategic and financial objectives (Hempel et al., 2023). This shift marks a transformation from conventional profit-centric models to a holistic framework embedding sustainability at the core of corporate strategy and governance (Grewal & Serafeim, 2020; Hempel et al., 2023).

The integration of sustainability criteria into executive compensation structures, often referred to as CSR contracting, has become a significant development in corporate governance (Abdelmotaal & Abdel-Kader, 2016; Edmans, 2023a; Flammer et al., 2019). While ESG-linked pay was rarely adopted in the early 2010s, its global adoption has surged in recent year (S. Cohen et al., 2023), as illustrated in Figure 1.2. Today, three-quarters of S&P 500 companies incorporate ESG metrics into executive compensation policies, reflecting the increasing

emphasis on embedding sustainability into business practices (Harvard Law School, 2024). This trend underscores the role of CSR contracting as a powerful mechanism to drive sustainable corporate behavior.

Figure 1.2: Executive Compensation Tied to ESG Performance



Notes: Use of ESG metrics in executive compensation. This figure shows the global evolution of CSR contracting (i.e., the inclusion of ESG metrics in executive compensation contracts). The data include all firms covered by ISS Executive Compensation Analytics (ECA) from 2011 to 2021 (10,061 firms). Source: S. Cohen et al. (2023)

In developing effective CSR contracting mechanisms, Key Performance Indicators (KPIs) play a central role in measuring progress toward sustainability goals (Hristov & Chirico, 2019). Traditional KPIs, primarily focused on financial outcomes, often fail to capture the complexity of sustainable business practices (Hristov et al., 2022). Modern corporate sustainability demands KPIs that are adaptive and responsive to social, environmental, and regulatory shifts. For instance, KPIs addressing resource efficiency, waste reduction, and stakeholder engagement offer a more comprehensive perspective on a company's alignment with the SDGs, reflecting its broader societal and environmental contributions while facilitating clearer assessments of corporate sustainability impacts (Ferrero-Ferrero et al., 2023; Grewal & Serafeim, 2020).

Despite the increasing adoption of incentive provisions linked to sustainability, little is known about their antecedents and consequences (Flammer et al., 2019). In addition, evaluating overall corporate sustainability performance remains challenging, particularly in defining KPIs that adequately reflect specific SDGs (Ferrero-Ferrero et al., 2023), contributing to ongoing debates within the field (Grewal & Serafeim, 2020).

This dissertation emphasizes the importance of well-defined KPIs in CSR contracting to evaluate and drive corporate sustainability performance. The second and third essay examine CSR contracting in key areas like responsible production (SDG 12) and climate action (SDG 13), highlighting its role in aligning executive incentives with sustainability objectives. Effective CSR contracting relies on KPIs that are measurable, aligned with goals, and responsive to governance complexities, ensuring meaningful progress toward the SDGs and integrating sustainability into corporate governance.

1.5 Overview of the Three Essays and Their Contributions

This dissertation comprises three essays that explore the intersection of CSR, contextual factors, and executive incentives in driving sustainable corporate management and financial performance. Against the backdrop of a global shift toward sustainability, the essays examine how firms balance financial objectives with social and environmental responsibilities using CSR and ESG frameworks, contributing to the achievement of the SDGs. Each essay provides unique insights into operationalizing sustainability, with implications for CSP and CFP.

Essay I: "Exploring the Evidence of CSP & CFP: A Meta-Regression Analysis of Regional Differences and Institutional Circumstances" examines the relationship between CSP and CFP through across diverse regions and institutional contexts. It situates the dual objectives of profitability and social value creation within a global perspective, underscoring how companies worldwide increasingly aim to integrate CSR as a core strategy.

It investigates how firms align their CSR strategies with SDGs such as SDG 12 (*Responsible Consumption and Production*) and SDG 13 (*Climate Action*) to gain competitive advantages through resource efficiency, innovative production models, and enhanced brand reputation (Eccles et al., 2012). This essay responds to calls for deeper analysis of cultural factors, globalization measures, and industry-level characteristics to better understand regional and sector-specific conditions (e.g., Hang et al., 2017). The findings highlight the critical role of regional factors, demonstrating that firms in areas with robust educational systems and governance structures (aligned with SDG 4: *Quality Education* and SDG 16: *Peace, Justice and Strong Institutions*) are better equipped to adopt and benefit from sustainable practices.

Additionally, the essay underscores the distinct challenges and opportunities for CSR initiatives in developing and emerging markets, such as those in Africa and Asia, where socio-economic conditions significantly influence the effectiveness of CSR strategies (Poddar et al., 2019). It emphasizes the necessity of tailoring CSR approaches to specific regional and institutional contexts while maintaining alignment with the global SDG framework.

The analysis illustrates how CSR strategies serve as a vital link between profitability and societal well-being, affirming their relevance across both developed and developing economies (Sachs, 2012). Moreover, it supports the SDGs' vision of "win-win" cooperation, advocating for sustainable practices as a universal roadmap for global progress (United Nations, 2015).

Essay II: "The Determinants and Consequences of Sustainability Incentives in CEO Compensation Contracts: European Evidence" examines the integration of ESG criteria into CEO compensation among European firms. It explores the role of governance structures in aligning these incentives with sustainability goals, particularly in alignment with environmental goals such as SDG 12 (*Responsible Consumption and Production*) and SDG 13 (*Climate Action*). The analysis delves into whether CSR contracting genuinely promote sustainable corporate behavior or primarily serve as reaction to regulatory and reputational pressures.

A key contribution of this essay is the introduction of the "Incentive Life-Cycle" framework, which illustrates how the effectiveness of CSR contracting may wane over time as these metrics become routine and less impactful (Obloj & Sengul, 2012). This cyclical perspective underscores the necessity of regularly updating and refining incentive systems to sustain their effectiveness (Nyberg et al., 2019). By addressing governance factors such as board composition and oversight mechanisms, the essay provides critical insights into how contextual variables shape the prevalence and success success of CSR contracting in achieving sustainability objectives. This approach broadens prior research by incorporating a more comprehensive governance body, particularly emphasizing the role of board composition (e.g., Cavaco et al., 2020).

An unresolved issue concerns the extent to which specific pay criteria—such as those related to health and safety or customer satisfaction—represent genuine commitments to CSR performance versus responses to regulatory compliance or firm value drivers (Gillan et al., 2021). This distinction remains crucial for understanding the motivations behind ESG-linked incentives and their alignment with sustainable value creation.

Essay III: "Executive Compensation Systems of Swiss SMI Companies: A Focus on ESG Incentives" examines the design and implementation of CSR contracting across a Swiss company sample. It explores practical challenges in setting, tracking, and reporting ESG targets, with a particular focus on their alignment with SDG 5 (*Gender Equality*) and SDG 13 (*Climate Action*). The essay delves into the selection of KPIs used in these systems, addressing critical questions such as "Which KPIs are prioritized?" and "Do these KPIs address material sustainability topics?".

A key theme is the emphasis on transparency and accountability in ESG-linked compensation systems, highlighting their alignment with SDG 16 (*Peace, Justice, and Strong Institutions*). The analysis underscores the importance of clear and consistent disclosure of ESG metrics to

enhance stakeholder trust and ensure these systems effectively incentivize sustainable corporate practices. It also reflects on whether the chosen KPIs genuinely align with a company's core sustainability challenges or primarily serve reputational and compliance purposes.

The essay highlights the influence of Switzerland's regional governance standards and regulatory frameworks, demonstrating how local contexts shape the design and communication of ESG-linked compensation systems. By integrating these regional nuances, the research provides actionable recommendations to improve the precision and transparency of CSR contracting. These recommendations reinforce the strategic importance of CSR contracting as a mechanism to drive corporate sustainability and align executive decision-making with broader sustainability goals.

1.6 Methodological Approaches and Common Themes

While each essay in this dissertation examines distinct aspects of sustainable corporate management, they follow a methodical progression from a broad, global perspective to a more focused, regional and firm-specific analysis. Table 1.1 provides a comprehensive overview of the topics, methodologies, findings, and contributions of each essay. Together, they offer a multi-dimensional perspective on how companies balance financial, social, and environmental goals while aligning with sustainability standards.

Essay I adopts a global lens, employing meta-regression analysis to synthesize data from 658 empirical studies spanning diverse international research settings. This macro-level approach enables a systematic evaluation of the relationship between various dimensions of CSP—ranging from internal practices to external sustainability ratings—and CFP. While acknowledging the methodological limitations of meta-regression, such as challenges in controlling for study diversity, the essay highlights the influence of regional governance and educational infrastructures on the CSP-CFP relationship.

Essay II narrows its focus to a European context to examine the impact of ESG-linked executive compensation structures among firms listed in the STOXX Europe 600 Index. By concentrating on region-specific governance frameworks, the essay investigates how variations in governance practices shape the design, implementation, and effectiveness of sustainability incentives, ultimately enhancing corporate sustainability performance. Through logistic panel regression and structural equation modelling (SEM), the analysis underscores the necessity of aligning compensation structures with firms' sustainability goals and regional challenges. Despite limitations stemming from data granularity and constraints posed by data providers, the essay offers valuable insights into the interplay between governance frameworks, sustainability, and the strategic design of compensation systems.

Essay III further refines the focus, examining ESG-linked compensation within Swiss firms listed in the SMI. Using qualitative case analysis, this essay provides an in-depth understanding of how Swiss governance frameworks shape the alignment of executive compensation structures with sustainability. Although the detailed approach limits generalizability, the essay highlights the importance of transparency, accountability, and regional regulatory expectations in shaping effective sustainability-linked compensation practices.

Across all three essays, the relevance of internal KPIs and external sustainability ratings emerges as a central theme. Internal KPIs provide tailored, company-specific insights into performance, while external ratings facilitate benchmarking across firms, sectors, and regions. Essay I highlights how this dual approach allows researchers to uncover nuanced relationships between CSP and CFP, particularly in varying regional and institutional contexts. Essay II illustrates the interplay of these metrics within Europe's diverse governance landscape, demonstrating their role in aligning corporate practices with sustainability goals. Essay III focuses on Switzerland, showcasing how specific regulatory expectations shape the use of ESG-

linked KPIs. Collectively, these findings align with Stafford (2017), emphasizing the importance of adaptable, integrated metrics for effectively tracking and advancing sustainability progress.

The role of incentive systems as drivers of sustainable corporate behavior is another recurring theme. Essays II and III explore the integration of ESG-linked incentives in executive pay, highlighting their potential to align corporate performance with the SDGs. However, both essays identify challenges, such as inadequate design and limited implications for future sustainability performance, underscoring the need for transparent, effective, and adaptable compensation structures to ensure sustained engagement with long-term sustainability goals. Together, the essays' diverse methodologies and perspectives provide a layered understanding of sustainable corporate management, revealing how CSR, contextual factors, and executive incentives collectively shape sustainable business practices and advance progress toward the SDGs.

Table 1.1: Overview of the Three Eassys

Essay Characteristics	**Essay I (cf. Chapter 2)**	**Essay II (cf. Chapter 3)**	**Essay III (cf. Chapter 4)**
Research Question	What is the relationship between CSP and CFP, and how do regional and institutional factors affect it?	What are the determinants of sustainability-linked CEO incentives? And do these incentives enhance sustainability performance?	How do Swiss companies design, implement, and disclose ESG criteria in executive compensation systems? And how do these incentives measure up against financial performance measures?
Research Approach and Data	Quantitative: Meta-regression analysis of 658 studies across global regions using additional international and country-level data.	Quantitative: Binary logistic panel regression and structural equation modeling, examining STOXX 600 firms, governance structures, and ESG-linked compensation data.	Qualitative: Multiple case study involving all 20 firms listed in the Swiss Market Index.
Call for Research	Addresses the need for understanding cross-regional heterogeneity in the CSP-CFP relationship (Gillan et al., 2021; Hang et al., 2017; Hirsch et al., 2022).	Explores whether prior results are influenced by specific managerial factors and regional differences in governance (Cavaco et al., 2020; Edmans et al., 2017; Maas, 2018).	Examines the implementation and challenges of ESG-linked compensation within a highly regulated and region-specific context (Böcking et al., 2019).
Findings	Highlights the role of education, institutional quality, and economic development in influencing the CSP-CFP relationship.	Emphasizes the role of robust governance and environmental performance in CSR contracting, while highlighting the need for effective frameworks to counter the limited and diminishing effectiveness.	Highlights transparency and accountability issues in ESG-linked compensation and their implications for sustainability-related corporate governance.
Theoretical Contributions	Advances stakeholder and institutional theory by explaining how regional and institutional factors moderate the CSP-CFP relationship.	Connects governance mechanisms to sustainable corporate behavior, incorporating the incentive life-cycle into sustainability-focused executive decision-making.	Highlights the influence of regional governance frameworks and societal sentiment on CSR practices.
Managerial Implications	Encourages firms to adapt CSR strategies to local and institutional contexts for maximizing outcomes.	Recommends designing adaptive ESG-linked pay systems that align with governance standards and stakeholder expectations.	Encourages firms to enhance transparency and precision in reporting ESG metrics within compensation systems to build stakeholder trust.

Note: This Table summarizes the three essays of this dissertation and presents the reader with a comprehensive overview.

2 Exploring the Evidence of CSP & CFP

A Meta-Regression Analysis of Regional Differences and Institutional Circumstances

This study provides a comprehensive meta-regression analysis of the intricate relationship between corporate social performance (CSP) and corporate financial performance (CFP), utilizing data from 651 studies and 1,700 effect sizes. The findings underscore education as a pivotal factor, significantly strengthening the CSP-CFP linkage. Furthermore, the study highlights the critical roles of economic development, cultural dimensions, and methodological approaches in shaping this relationship. These results advance theoretical understanding and offer actionable insights for businesses striving to align corporate responsibility with financial success in a complex and evolving global landscape.

Keywords: Environmental, Social, corporate social performance (CSR), corporate social performance (CSP), corporate financial performance (CFP), meta-regression analysis (MRA), heterogeneity

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Status: Working Paper[1]

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2.1 Introduction

Corporate Social Responsibility (CSR) captures the multifaceted interactions between businesses and society, including environmental stewardship, fair employee practices, philanthropy, and CSR disclosure (Dahlsrud, 2008; Rowley & Berman, 2000). Together, these dimensions constitute a firm's Corporate Social Performance (CSP; Wood, 1991). Anchored in stakeholder theory, CSR posits that social and environmental initiatives foster stronger stakeholder relationships, ultimately driving improved Corporate Financial Performance (CFP; Allouche & Laroche, 2005).

Yet, the dynamic relationship between CSP and CFP presents a significant research challenge due to its inherent heterogeneity, driven by its multidimensional nature, diverse estimation methodologies, and the omission of critical confounding variables such as sample-specific attributes (Endrikat et al., 2014; Hang et al., 2017; Horváthová, 2010). Among these complexities, regional differences emerge as a key determinant in explaining the inconclusive findings of prior research (Endrikat, 2016; Gallardo-Vázquez et al., 2019; Hang et al., 2017; López-Arceiz et al., 2018; Q. Wang et al., 2016).

Meta-analyses have highlighted that the CSP-CFP relationship varies across different country contexts, shaped by factors such as country-specific samples (e.g., Gallardo-Vázquez et al., 2019), levels of economic development (e.g., Q. Wang et al., 2016), and diverse legal frameworks (Hang et al., 2017). Moreover, recent findings emphasize that these attributes often produce simultaneous effects, further complicating cross-country comparisons (Hang et al., 2017). While existing research has significantly advanced the discourse, opportunities for methodological refinement, theoretical expansion, and stronger alignment with broader academic frameworks remain underexplored.

In particular, the root causes of cross-country heterogeneity in research outcomes are insufficiently understood, as many country-specific characteristics have yet to be systematically investigated (e.g., Gillan et al., 2021). Addressing these gaps is essential not only for advancing academic knowledge but also for providing practical insights for policymakers and businesses. A deeper understanding of these factors can support the design of effective strategies and policies tailored to specific national contexts, facilitating a more nuanced and impactful approach to CSR globally.

This study employs meta-regression analysis (MRA) to investigate the moderating factors that shape the relationship between CSP and CFP. By systematically analyzing heterogeneity in this relationship, MRA uncovers patterns and trends often obscured in primary studies (Stanley, 2008). Drawing on insights from 658 scholarly contributions and testing 41 explanatory variables, the study aims to provide a nuanced understanding of the CSP-CFP interplay while accounting for concurrent effects influenced by country-specific characteristics.

The findings reveal a statistically significant yet modest positive correlation between CSP and CFP, underscoring the need for a more context-specific approach to understanding this relationship. Best-practice scenarios highlight the influence of economic development, education, economic freedom, and cultural dimensions, emphasizing that local conditions play a critical role in shaping the CSP-CFP link. These insights offer a pathway for aligning ethical values with financial performance, addressing the complexities of sustainability in diverse global contexts.

Beyond advancing theoretical understanding, this study contributes to ethical reflections on how societal values influence business practices, encouraging a more integrated and contextually informed approach to sustainable corporate management.

2.2 Related Literature

Several meta-analyses have carefully synthesized empirical findings, consistently pointing to a modest yet evident positive correlation CSP and CFP (Dixon-Fowler et al., 2013; Endrikat et al., 2014; Gallardo-Vázquez et al., 2019; Hang et al., 2017, 2018; Hirsch et al., 2022; Hou et al., 2015; Orlitzky et al., 2003; Vishwanathan et al., 2020; Q. Wang et al., 2016). While these studies have advanced understanding, many predominantly rely on subgroup analysis (e.g., Dixon-Fowler et al., 2013; Gallardo-Vázquez et al., 2019; Orlitzky et al., 2003). Although valuable, this approach presents limitations in addressing the complex heterogeneity underlying CSP-CFP relationships (Hang et al., 2017; Hirsch et al., 2022).

This study advocates for the use of MRA as a robust tool to overcome certain methodological constraints and delve deeper into the nuances of the CSP-CFP link. However, existing MRA research exhibits limitations, including insufficient exploration of cross-country differences and moderating factors (e.g., Hirsch et al., 2022; Horváthová, 2010; Hou et al., 2015), forming the motivation for the present study's objectives to refine and extend this methodological approach.

Several prior meta-analyses have investigated the CSP-CFP relationship, often constrained by limited scopes and specific inclusion criteria. For instance, Hou et al. (2015) focus on developing economies, uncovering larger effect sizes in these contexts. However, their analysis primarily emphasizes firm characteristics and methodological approaches, potentially narrowing the comprehensiveness of their conclusions. Additionally, their geographical focus on East Asia highlights the need for broader exploration.

Similarly, Dixon-Fowler et al. (2013) provide insights into cross-border variations, with findings favoring samples from U.S.-based firms. While addressing geographical influences, their study does not offer an exhaustive perspective on global differences. Hang et al. (2018) explore moderating effects using data from the U.S. and E.U., shedding light on the

multifaceted factors influencing the CSP-CFP relationship. Yet, their findings lose statistical significance when additional variables are considered, limiting the robustness of their conclusions. Horváthová (2010) investigates the role of nation-specific regulations, revealing that common law countries (e.g., the U.S., Canada, and the U.K.) exhibit a more frequently positive CSP-CFP connection compared to civil law countries. These findings underscore the importance of legal frameworks as a moderating factor but leave room for further exploration of how such differences interact with other regional and institutional characteristics.

Although these studies incorporate additional moderating factors, they predominantly emphasize the environmental dimension of CSP, limiting a more holistic understanding of the broader CSP-CFP relationship. Correspondingly, Allouche and Laroche (2005) highlight the importance of including social and societal aspects in the analysis, as their findings indicate a weaker CSP-CFP relationship for U.S.-based samples, suggesting that the specific CSR dimension under consideration significantly influences outcomes.

Addressing these gaps, critiques such as those by Guenther and Hoppe (2014) underscore the need for broader perspectives and greater inclusivity in CSR-CFP meta-analyses. For example, Hirsch et al. (2022) analyze various research design characteristics and demonstrate a notable increase in the CSP-CFP relationship for Chinese firms, particularly when moderating factors such as country development are accounted for. These findings reinforce the necessity of incorporating diverse dimensions and contexts to advance a comprehensive understanding of the CSP-CFP interplay.

Hang et al. (2017) adopt a methodology and focus that closely aligns with the present research, particularly emphasizing the environmental dimension of CSP. Their findings reveal a stronger CSP-CFP relationship in developing nations, contrasted by a weaker connection in BRICS countries. Chinese firms, notably, demonstrate a more robust CSP-CFP relationship than U.S. firms, even after accounting for country development. Expanding upon earlier

research, the authors incorporate alternative country-specific variables such as legal frameworks and macroeconomic indicators, identifying nuanced effects. For instance, they observe that higher GDP per capita and civil law systems dampen the CSP-CFP relationship. Additionally, their analysis reveals a nonlinear relationship between a country's economic development and the strength of the CSP-CFP link, echoing the environmental Kuznets curve (Hang et al., 2017, p. 739).

Despite these contributions, their study remains primarily focused on the environmental dimension, offering a constrained perspective on the holistic CSP-CFP relationship. In response, this study addresses their call for further investigation into cultural factors, globalization measures, and additional industry-level characteristics to achieve a more nuanced understanding of regional and industrial conditions (Hang et al., 2017).

The literature suggests that divergent research outcomes in CSP-CFP studies often stem from factors such as firm-specific attributes, methodological complexities, and publication characteristics (Dixon-Fowler et al., 2013; Endrikat et al., 2014; Hang et al., 2017, 2018; Horváthová, 2010). Moreover, the reliance on narrow perspectives and restrictive inclusion criteria in prior studies introduces the risk of selection bias, frequently excluding findings from unpublished work or research conducted across diverse global contexts. Despite the abundance of empirical insights, previous meta-regression analyses often fall short of fully leveraging the wealth of data (e.g., Dixon-Fowler et al., 2013; Horváthová, 2010; Hou et al., 2015).

This study addresses these limitations by employing a more comprehensive approach, integrating a broader set of explanatory variables and leveraging contemporary MRA methodologies. By synthesizing an extensive dataset that incorporates diverse CSP dimensions, global regions, and grey literature, this research aims to offer a nuanced and holistic understanding of the CSP-CFP relationship. The aggregation of effect sizes from a wide array of primary studies further enhances the precision and reliability of the meta-analytical

regression results. These efforts not only strengthen the theoretical underpinnings of CSP-CFP research but also enrich the discourse on the ethical and practical dimensions of sustainable business practices.

2.3 Theory and Hypotheses

2.3.1 OVERALL CSP – CFP RELATIONSHIP

The core of CSR research focuses on the relationship between CSP and CFP (Hou et al., 2015), a topic of extensive debate encompassing neutral, positive, and negative perspectives. Preston and O'Bannon (1997) identified three potential causal pathways: CSP influencing CFP, CFP influencing CSP, and a bidirectional relationship. These pathways are rooted in the following theoretical frameworks.

From a stakeholder theory perspective, firms that address the demands of customers, employees, and societal groups stand to gain economic advantages (Pesqueux & Damak-Ayadi, 2005). These include heightened consumer demand (Bhattacharya & Sen, 2003), stronger employee loyalty (Dutton et al., 1994), and improved access to financial resources (Barnett & Salomon, 2006). Similarly, the resource-based view argues that firms derive competitive advantages from acquiring unique, inimitable assets such as innovations, expertise, and sustainable practices (Barney et al., 2011). Responsible actions, such as pollution prevention or product stewardship (Harts, 1995), can foster distinctive capabilities that yield long-term competitive benefits (Davis, 1973).

Conversely, some theories suggest a negative relationship. Neoclassical economic theory (e.g., Q. Wang et al., 2016) posits that CSR activities often involve significant costs (Barnett & Salomon, 2006), which may detract from essential investments in innovation or operations (Friedman, 1970), thus eroding economic gains (Schaltegger & Burritt, 2018). From this viewpoint, ethical considerations could impose a competitive disadvantage (Q. Wang et al.,

2016). Additionally, principal-agent theory highlights potential misalignments between firm and managerial priorities. Managers might allocate resources to CSR initiatives that enhance their personal reputation rather than advancing the firm's strategic goals, particularly in response to poor performance (Jensen & Meckling, 1976; Preston & O'Bannon, 1997).

To reconcile these perspectives, the concept of a *"virtuous circle"* (Waddock & Graves, 1997) suggests a reciprocal relationship where strong CSP and CFP mutually reinforce each other (Orlitzky et al., 2003).

These theoretical underpinnings illustrate the complexity of interpreting empirical findings on the CSP-CFP relationship. CSP dimensions, such as environmental initiatives or employee welfare, may vary in their relevance to stakeholders. Additionally, financial circumstances and institutional or regional contexts influence the effectiveness of CSR strategies. This study seeks to incorporate these theoretical insights into an empirical framework, enabling a nuanced exploration of the CSP-CFP relationship and its contextual drivers.

2.3.2 INSTITUTIONAL AND REGIONAL DIFFERENCES

Highlighted by Fernandez-Feijoo et al. (2014), Dixon-Fowler et al. (2013), and Wang et al. (2016), external factors such as socio-economic conditions, legal frameworks, and cultural norms significantly influence a company's commitment to CSR. These factors also shape the intricate relationship between CSP and Corporate CFP, which is further nuanced by market characteristics, information disparities, and societal expectations. This section provides a structured examination of these dynamics to clarify their potential effects.

Socio-economic conditions include economic development, dominant production factors, and educational advancement. Research demonstrates that in highly developed markets with robust institutional systems, the CSP-CFP link is stronger compared to less-developed regions

(e.g., Q. Wang et al., 2016). Hang et al. (2017) extend this understanding by proposing a U-shaped relationship between economic development and CSP-CFP dynamics: the link is weaker in emerging economies than in developing ones but strengthens as these economies advance.

Market characteristics, particularly information asymmetry, play a crucial role in shaping the CSP-CFP relationship (Q. Wang et al., 2016). In markets with limited media coverage or transparency, CSR efforts may lose credibility as signals of responsible conduct (Hou et al., 2015; Reed, 2002), leading to weaker stakeholder confidence and a diluted CSP-CFP connection. Conversely, in underdeveloped markets lacking structured information systems, stakeholders might rely on qualitative indicators, such as visible CSR initiatives, to assess a company's trustworthiness and growth potential. In these settings, companies prioritizing societal welfare may experience stronger stakeholder support and a more pronounced positive CSP-CFP relationship.

Environmental and social conditions also interact with economic development to influence the CSP-CFP link. Di Vita (2009) describes how pollution levels initially remain low in economically weak countries due to limited industrial activity but rise during periods of economic transition typical of emerging economies. Over time, as these nations achieve higher per capita incomes, pollution decreases with the adoption of cleaner technologies (Di Vita, 2009). Similarly, as social pressures intensify with economic growth, governments and companies increasingly adopt regulations to improve labor conditions and social equity, enhancing the credibility of CSR practices (J. S. Harrison & Berman, 2016).

Expanding on the CSP-CFP discourse, this study incorporates the Stolper-Samuelson theorem from international trade, which posits that labor-abundant countries specializing in labor-intensive goods can boost labor demand, improving working conditions and reducing poverty (A. E. Harrison, 2007). By engaging in global trade, emerging economies access

broader markets and adapt to developed trading partners' environmental and social standards, thereby enhancing their social performance and financial outcomes (Schiller, 2018).

The study underscores the context-driven nature of CSR commitments, which vary based on socio-economic conditions. In regions with lower education levels, private CSR initiatives often compensate for institutional shortcomings. For instance, companies may implement targeted programs—such as education initiatives—to enhance their reputation, workforce capabilities, and social mission fulfillment (Chopra & Marriya, 2013). In contrast, well-educated populations recognize the broader benefits of CSR, extending beyond environmental issues to social and philanthropic impacts (Cambra-Fierro et al., 2020). While these activities may fulfill societal expectations, they do not always lead to financial benefits (Cambra-Fierro et al., 2020). In developing regions, CSR priorities may deviate from Western paradigms centered on climate change and fair trade, instead addressing localized challenges like poverty alleviation, healthcare, education, and infrastructure development (Amaeshi et al., 2006). These differences emphasize the necessity of tailoring CSR strategies to align with region-specific stakeholder expectations and socio-economic dynamics—an aspect largely unexplored in meta-analyses.

Moreover, institutional environments significantly shape the CSP-CFP relationship. Top-down influences include regulatory frameworks, norms, and policies that govern corporate decision-making (Campbell et al., 2007). For instance, common-law markets, characterized by strong legal enforcement, shareholder protection, and transparency, enhance sustainability performance by meeting investor demands for accountability (Lagasio & Cucari, 2019). Conversely, civil-law and underdeveloped markets, with weaker oversight and enforcement, diminish regulatory efficacy and its impact on sustainability.

From a bottom-up perspective, economic freedom, which includes elements like personal choice, voluntary exchange, open markets, and property rights (Gwartney, 2009), is closely tied

to market incentives, linking stakeholder goodwill to a firm's CSP (Graafland & Noorderhaven, 2020). This alignment becomes especially important when stakeholders have the ability to exert ethical pressures on governments and companies by strategically employing mechanisms such as voice and exit (Aguilera et al., 2007). The balance between stakeholders' ability to voice their concerns and expectations, as well as their ability to exit or withdraw support ("exitablity", investments, or involvement (Hall, 2018), plays a crucial role in guiding firms' CSR engagement within the contextual landscape of economic freedom.

Cultural dimensions, such as individualism and long-term orientation from Hofstede's framework (2001), further illuminate how institutional environments and stakeholder engagement interact as stakeholder-relevant norms evolve within communities and reflect their economic, social, and moral values (Donaldson & Dunfee, 1999). In collectivistic cultures, long-term relationships with stakeholders often yield sustained, though less immediately measurable, financial outcomes (Shi & Veenstra, 2021). Similarly, long-term orientation shapes the balance between short-term profitability and sustainable practices. Societies with strong long-term orientation align business strategies with enduring social and environmental goals, even at the expense of immediate financial gains (T. Wang & Bansal, 2012). Conversely, short-term-oriented societies prioritize immediate profits, potentially limiting the scope of sustainability initiatives.

H1a: The association between CSP and CFP is positively influenced in developed countries and developing countries, but negative influenced in emerging economies.

H1b: The association between CSP and CFP is positively influenced by globalization, common-law legal systems, economic freedom, exitability, and long-term orientation.

H1c: The association between CSP and CFP is negatively influenced by economic strength and growth, education, civil-law systems, and individualism.

2.3.3 DIFFERENCES IN MEASUREMENT STRATEGIES

CSR is inherently multifaceted, encompassing a range of social and environmental dimensions (Wartick & Cochran, 1985). Despite its widespread adoption, academic consensus on its precise definition and measurement remains elusive (Bellostas et al., 2016; Waddock & Graves, 1997). This ambiguity has led to varied research methodologies, complicating efforts to derive generalizable conclusions regarding the relationship between CSP and CFP (Gillan et al., 2021).

In essence, CSP refers to an organization's pricipales, actions, and outcomes that address stakeholder expectations by creating social value beyond financial concerns (Godfrey & Hatch, 2007; López-Arceiz et al., 2018; Wood, 1991). Given the diversity of stakeholder priorities, CSP activities are often tailored to specific social and environmental objectives (Hou et al., 2015). However, inconsistent definitions and operationalizations of CSR further exacerbate variations in research findings on the CSP-CFP link (Hirsch et al., 2022; Q. Wang et al., 2016). Gautier and Pache (2015) highlight that only a minority of scholars offer precise definitions of the aspects that contribute to CSR. To address these inconsistencies, this study integrates existing measurement frameworks, drawing on prior research to ensure methodological robustness and general applicability, focusing on both general social and environmental aspects (e.g., Endrikat et al., 2014; Hang et al., 2017; Hirsch et al., 2022; Hou et al., 2015; Orlitzky et al., 2003).

Endrikat et al. (2014) propose a spectrum ranging from reactive to proactive CSR approaches. Reactive activities focus on meeting minimum compliance requirements, whereas proactive efforts aim to exceed such standards, integrating sustainability into core processes and engaging stakeholders extensively (Endrikat et al., 2014). Kind and Lenox (2002) find that proactive actions, such as pollution prevention and stakeholder collaboration, are associated with stronger financial performance.

Moreover, "informative" activities may introduce variations in the observed CSP-CFP relationship. Given that disclosure is often voluntary, many firms may primarily highlight favorable aspects of a firm's operations, potentially obscuring critical weaknesses (Schultze & Trommer, 2012). This selective reporting often correlates weakly with financial outcomes (Busch & Friede, 2018), highlighting concerns about reliability and validity.

Scholars have also classified corporate sustainability activities as either "process-based" or "outcome-based" (Hang et al., 2017). Process-based measures evaluate internal efforts, such as environmental strategies or managerial practices, while outcome-based measures assess tangible impacts, such as emissions or resource consumption (Misani & Pogutz, 2015). Research suggests that process-based measures often exhibit a stronger link to financial performance than outcome-based measures, emphasizing the importance of internal systems and innovation (Delmas et al., 2013).

In addition to social and environmental aspects, the present study also considers research that explores managerial perceptions, gathered through surveys or self-reported data (see: Dixon-Fowler et al., 2013). For example, insights into non-objectively observable aspects of CSP in firms can be gained through forced-choice surveys (Aupperle et al., 1985). However, these measures may suffer from biases, such as overreporting favorable behaviors or limited data scalability (Q. Wang et al., 2016).

> *H2a: The association between CSP and CFP is positively influenced by proactive and process-based sustainability activities and activities assessed through managerial perceptions.*
>
> *H2b: The association between CSP and CFP is negatively influenced by reactive, informative, and outcome-based sustainability activities.*

The operationalization of CFP also introduces variability in empirical findings due to the stakeholder mismatch problem (Wood & Jones, 1995). In the literature, two dominant

frameworks are “accounting-based” and “market-based” measures (e.g., Allouche & Laroche, 2005; Orlitzky et al., 2003; Q. Wang et al., 2016).

Accounting-based performance measures, such as a firm's return on assets (ROA) and return on equity (ROE), are frequently used to evaluate a firm's relative efficiency in asset utilization (Cochran & Wood, 1984). They also convey insights into a firm's internal decision-making capabilities (Orlitzky et al., 2003). While accounting-based metrics recognize consumers as legitimate stakeholders (Payne et al., 2000), they can be influenced by external events, such as acquisitions, potentially skewing results (Busch & Friede, 2018).

Instead, market-based measures, like Tobin’s Q and market-to-book ratio reflect shareholder expectations and external valuation (Orlitzky et al., 2003). This approach assumes that shareholders are the primary stakeholder group influenced by and responsive to a firm's activities (Cochran & Wood, 1984). Moreover, these measures require stable market conditions to isolate the financial impact of business activities and are often less responsive to short-term changes compared to accounting-based metrics (López-Arceiz et al., 2018). Studies suggest that accounting-based measures generally reveal stronger CSP-CFP correlations than market-based ones (e.g., Allouche & Laroche, 2005; Gallardo-Vázquez et al., 2019).

As mentioned earlier, an alternative approach involves reporting a firm's financial performance based on managerial perceptions. While managerial self-reports on financial performance provide valuable qualitative insights but may be subject to overreporting or misinterpretation, limiting their reliability (Q. Wang et al., 2016).

H3a: The association between CSP and CFP is positively influenced by managerial perceptions of financial performance aspects.

H3b: The association between CSP and CFP is negatively influenced by market-based financial measures.

2.4 Methodology and Data

2.4.1 DATA SEARCH AND PREPARATION

The study follows established reporting guidelines for MRA, as proposed by Stanley et al. (2013) and Havránek et al. (2020), ensuring methodological rigor and transparency. The entire coding process for the study's full sample was conducted solely by the author, with supplementary materials providing additional details.

The initial phase involved the formulation of rigorous sample selection criteria for inclusion within the meta-analysis, adhering to the methodology of Lagasio and Cucari (2019). Six search criteria were developed to encompass a wide range of CSP and CFP dimensions, ensuring comprehensiveness without imposing unnecessary limitations. These criteria included synonyms for CSP, such as "corporate social performance" and "corporate social responsibility," combined with synonyms for CFP, such as "financial performance" and "organizational effectiveness." This approach mirrored the inclusivity-focused methodology employed in the seminal meta-study by Orlitzky et al. (2003).

The systematic search was conducted using the Google Scholar database, following methodologies similar to those of Busch & Friede (2018) and Hou et al. (2015). Google Scholar was selected due to its ability to include studies from underrepresented academic regions and works not published in widely recognized journals, enhancing the diversity and scope of the data set. The search period was confined to studies published between 2016 and 2020, ensuring a recent and relevant perspective while maintaining data collection feasibility (see: Geng et al., 2017; Mazzi et al., 2016; Plewnia & Guenther, 2017; Van der Stede, 2014).[2]

[2] The database research was carried out in June 2020 for the period spanning 2016 to 2019, and again in January 2021 specifically for the year 2020.

2.4.2 DATABASE PROCESSING

The sample refinement process followed an approach similar to Busch & Friede (2018), beginning with the retrieval of the first 1,000 search results per year for each query, sorted by relevance.[3] This generated a pool of 6,000 studies annually, which was systematically filtered to eliminate overlapping results. This initial screening reduced the dataset to approximately 2,500 studies per year, culminating in a starting sample of 12,500 studies.

However, many studies were deemed inappropriate due to divergent study subjects and heterogeneous study designs. Consequently, stringent inclusion and exclusion criteria were implemented to ensure the relevance and coherence of the dataset while each study was evaluated based on its title, abstract, or full paper content. The criteria for inclusion encompassed the following aspects: (1) The study must explicitly examine the relationship between CSP and CFP, either as a central theme or a significant secondary aspect; (2) studies limited to specific events or isolated case studies were omitted to maintain generalizability; (3) only firm-level studies were included; studies focusing on non-profit organizations or broader economic phenomena were excluded; (4) meta-analyses, books, and dissertations were excluded, ensuring consistency with empirical research practices; (5) only empirical studies published in English were considered; (6) studies lacking sufficient data or clear methodology were excluded.[4]

It is noteworthy that a peer-reviewed journal criterion was not employed, to provide a comprehensive overview, as recommended by Vishwanathan et al. (2020). Moreover, grey literature was considered to ensure a comprehensive overview of available studies, similar to

[3] Please consult Appendix 6.1.3 for the PRISMA chart.

[4] While recognizing the possibility of introducing selection bias and information loss by excluding case and event studies, it is essential to avoid significant distortions when comparing findings from studies conducted in a limited timeframe with those using panel data. The exclusion of books and dissertations aimed to improve the coding precision and reliability, resulting in the exclusion of 216 books and 49 dissertations. Furthermore, portfolio studies were omitted from the sample as most studies focus on firm-level data, following the approach taken by Hang et al. (2017).

Hang et al. (2017). Unlike some prior meta-analyses (e.g., Hang et al., 2017), this study also incorporated studies using disclosure data as a proxy for CSP and those relying on perceptual measures of CSP or CFP, ensuring diverse methodological coverage. Following this rigorous selection process, the final sample consisted of 651 relevant studies with an average publication year of 2018. The dataset included 4 conference papers and 15 working papers, offering a robust and inclusive foundation for the meta-analysis.[5]

2.4.3 DATA EXTRACTION PROCESS AND VARIABLES

To ensure consistency and minimize potential coding errors during the data extraction process, a detailed and structured coding protocol was established and meticulously followed. This protocol enabled a standardized approach to categorizing and analyzing studies, ensuring reliability across the dataset. Studies with ambiguous or overlapping measurement definitions were excluded to maintain clarity and uniformity in the dataset. This deliberate exclusion aimed to eliminate potential biases and inconsistencies, thereby enhancing the robustness of the analysis.[6]

In addition to the primary variables essential for testing the hypotheses, a comprehensive set of control variables was coded systematically. These control variables were incorporated to account for factors that potentially influence the relationship under investigation, thereby ensuring a more nuanced and accurate analysis. For a full overview of the explanatory and

[5] The inclusion of studies in the dataset is not limited by the publication timeframe used during the search process. Consequently, the dataset encompasses studies from as early as 2014. For a detailed temporal distribution of the primary studies, please consult Appendix 6.1.4

[6] Deviating measurements are exemplified by cases where CSR is assessed through the aggregation of all expenditures and donations directed toward fulfilling social responsibilities, as seen in studies like Gatsi et al. (2016). Another example includes evaluating firms' environmental performance using content analysis of their annual reports, as employed by Boakye et al. (2020). Such approaches often rely on individualized scaling or unique variable constructions, rendering them incompatible with the broader dataset used in this analysis. These inconsistencies compromise comparability with the majority of primary studies and were therefore excluded from consideration.

In addition, 398 studies characterized by ambiguous or unclear research designs were omitted to ensure the methodological rigor and coherence of the dataset. After these exclusions, the sample comprised 664 studies, reflecting a robust and consistent foundation for the subsequent meta-analysis.

control variables, including their operational definitions and statistical information, please refer to Table 2.1.

Table 2.1: Variables Description I / III

Construct	*Construct Definition*	*Mean*	*Std. dev.*	*N. of Studies*
Regional differences (H1)				
DVLP	= 1 if the study focuses solely on developing countries; 0 otherwise. [a]	0.36	0.48	605
BRICS	= 1 if the study focuses solely on BRICS countries; 0 otherwise.	0.14	0.34	233
G8	= 1 if the study focuses solely on members of the Group of Eight (G8); 0 otherwise. [b]	0.25	0.48	602
AFRICA	= 1 if the study focuses solely on countries from Africa and Middle East; 0 otherwise.	0.03	0.17	50
LATIN	= 1 if the study focuses solely on countries from Latin America; 0 otherwise.	0.01	0.11	19
ASIA	= 1 if the study focuses solely on countries from Asia; 0 otherwise.	0.33	0.47	565
EU	= 1 if the study focuses solely on countries from the EU; 0 otherwise.	0.16	0.36	265
US	= 1 if the study focuses solely on countries from the USA; 0 otherwise.	0.26	0.44	447
GDP	Natural logarithm of country's average real GDP per capita over the observation period. [c]	22,575	17,882	1,700
GDPGROW	Geometric average of the growth of country's real GDP over the observation period. [c]	2.60	2.50	1,700
GLOBAL	Mean of imports and exports as shares of GDP over the observation period. [c]	54.00	29.00	1,700
EDUCATION	Average years of schooling (ages 15–65) as the decade mean matching the firm data's period. [c]	9.20	2.6	1,700
COMMON	= 1 if a country's law system is classified as common law; 0 otherwise [e]	0.39	0.49	667
CIVIL	= 1 if a country's law system is classified as civil law; 0 otherwise [e]	0.33	0.47	555
FREEDOM	Degree to which a country's policies and institutions support economic freedom, ranging from 0 to 10. [f]	7.20	0.47	1,700
EXIT	Sum of a country's land boundaries and coastline divided by a country's total area. [e]	0.011	0.021	1,700
INDIVIDUALISM	Extent of individualism vs. interdependence, ranging from 0 to 100. [g]	52.00	29.00	1,700
LONG-TERM	Extent to which people are long-term oriented; ranging from 0 to 100. [g]	50.00	23.00	1,700

(Continued)

Table 2.2: Variables Description II / III

Construct	*Construct Definition*	*Mean*	*Std. dev.*	*N. of Studies*
Differences in variable operationalization (H2)				
EP	= 1 if the study focuses solely on environmental performance.	0.24	0.42	400
SP	= 1 if the study focuses solely on social performance.	0.10	0.30	170
PP	= 1 if the study focuses solely on perceptual social and environmental performance.	0.08	0.27	139
PROACTIVE	= 1 if the study focuses solely on proactive corporate activities; 0 otherwise.	0.26	0.44	444
REACTIVE	= 1 if the study focuses solely on reactive corporate activities; 0 otherwise.	0.12	0.32	179
INFORMATIVE	= 1 if the study focuses solely on informative corporate activities; 0 otherwise.	0.27	0.45	466
PROCESS	= 1 if the study focuses solely on process-focused corporate activities; 0 otherwise.	0.03	0.17	53
OUTCOME	= 1 if the study focuses solely on outcome-focused corporate activities; 0 otherwise.	0.02	0.14	33
MARKET	= 1 if the study focuses solely on market-based performance measure.	0.29	0.46	501
PERCEPTUAL	= 1 if the study focuses solely on perceptual-based performance measure.	0.07	0.25	118
CAUSAL	Lagged years between CSP and CFP measurements, calculated by subtracting the CSP time period from the CFP time period.	0.01	0.42	1,700
Industrial differences				
SME	= 1 if the study focuses solely on small firms; 0 otherwise	0.01	0.11	20
MANUF	= 1 if the study focuses solely on the manufacturing industry; 0 otherwise	0.09	0.29	152
SERV	= 1 if the study focuses solely on the service industry; 0 otherwise	0.03	0.17	50

(Continued)

Table 2.3: Variables Description III / III

Construct	*Construct Definition*	*Mean*	*Std. dev.*	*N. of Studies*
Data				
PANEL	= 1 if the study uses panel data; 0 otherwise.	0.84	0.37	1,424
DATERANGE	Measures the date range of primary data (in years).	7.70	5.30	1,700
NOFIRMS	Mean number of firms covered in a primary study.	505	672	1,700
2010s	= 1 if the study focuses solely on firm data between 2010 and 2019; 0 otherwise.	0.60	0.49	1,019
MEANYEAR	Mean observation year of firm data in a primary study.	2010	4.00	1,700
MLTNAT	= 1 if the study focuses solely on data from more than one nation; 0 otherwise.	0.29	0.45	487
MLTSECT	= 1 if the study focuses solely on data from more than one industry sector; 0 otherwise.	0.81	0.39	1,381
Publication characteristics				
NOAUTHORS	Counts the number of authors	2.00	0.97	1,700
RANK	Quartile of the journal ranking of a primary study compared to the total study sample. [h]	2.80	1.30	1,700

Note: This table presents the explanatory variables used in the meta-regression analysis. Beside the abbreviation of the variable name, a short description is given in the second column. The last two columns show the sample mean, the sample standard deviation (Std. dev.) and the number of primary studies for the particular variable (N. of Studies).

[a] The classification is based on the „World Economic Situation and Prospects“, by the United Nations, 2020, https://www.un.org/development/ desa/dpad/wp-content/uploads/sites/45/WESP2020_Annex.pdf.

[b] The G8 include Canada, France, Germany, Italy, Japan, Russia, United Kingdom, and United States.

[c] Data on GDP per capita, GDP growth, imports, and exports were obtained from the World Bank database: http://databank.worldbank.org (January, 01, 2023).

[d] Data on education were obtained from the International Educational Attainment Database (January, 01, 2023): https://www.parisschoolofeconomics.eu/en/cohen-daniel/international-educational-attainment-database/

[e] Data for the classification into common and civil law countries as well as on countries' total area, land boundaries and coastline were obtained from the World Factbook of the Central Intelligence Agency (January, 01, 2023): https://www.cia.gov/the-world-factbook/ (January, 01, 2023).

[f] Data for freedom were obtained from the „Economic Freedom of the World: 2022 Annual Report", Fraser Institute, 2022, (January, 01, 2023): https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2022-annual-report).

[g] The data on cultural dimensions are drawn from the Website of Geert Hofstede (January, 01, 2023): https://geerthofstede.com/research-and-vsm/dimension-data-matrix/

[h] The classification is based on the Scimago Journal Rank (January, 01, 2023): https://www.scimagojr.com/

The final dataset includes 1,700 effect sizes derived from 651 unique studies, analyzing over 2.7 million individual observations. Firm sample sizes within this dataset vary

significantly, ranging from 24 to 45,375 observations, with an average sample size of 4,515 firm observations. Notably, the dataset represents an average sample year of 2010.

2.4.4 STATISTICAL ANALYSIS AND ROBUST VARIANCE ESTIMATION

Meta-analysis is a robust statistical methodology for synthesizing findings from diverse empirical sources (Hunter & Schmidt, 2004; Rosenthal, 1991). While traditional approaches, such as Hedges and Olkin-type meta-analysis, have been commonly used for combining reported effect estimates (e.g., Hou et al., 2015), they exhibit limitations in addressing heterogeneity and dependency within datasets (Steel et al., 2021).

To overcome these constraints, this study employs MRA, which allows for the simultaneous integration of multiple determinants, uncovering nuanced findings and their variations (Stanley & Jarrell, 2005). In line with Hang et al. (2017), it adopts recent advancements in robust variance estimation (RVE) introduced by Pustejovsky and Tipton (2022), which enhance analytical precision over conventional methods (Hedges et al., 2010).

The rationale for adopting the Correlated and Hierarchical Effects (CHE) model by Pustejovsky and Tipton (2022) is rooted in the limitations of traditional meta-analysis models, which assume independent effect sizes (Tipton, 2015). To overcome the challenges associated with within-study effect size dependencies, Hedges et al. (2010) introduced RVE, a robust methodology that leverages heteroskedasticity-robust and clustered standard errors within the general linear model and yields valid estimates even in the presence of non-normality and within-study effect size dependencies (Fisher & Tipton, 2015). Its three-level meta-analytic framework effectively accommodates hierarchical effects, reflecting shared characteristics within study clusters (Harrer et al., 2019). Additional details on the RVE methodology are provided in the supplementary material.

To evaluate the CSP-CFP relationship, the study employs the Pearson correlation coefficient (r) as the effect size index, ensuring metric consistency.[7] Figure 2.1 illustrates the frequency distribution of Pearson correlation coefficients, which range from -0.500 to 0.865, with a notable positive skew.[8] Across the 1,700 observations, the calculated mean correlation $\hat{\beta}_{CSP}$ alone stands at 0.045 ($p < 0.001$), suggesting a small yet positive association between CSP and CFP. By dimension, the environmental and social dimensions demonstrate lower mean correlations of approximately 0.017 ($p < 0.001$) and 0.031 ($p = 0.001$). Remarkably, the perceptual dimension stands out with a significantly higher mean correlation value of 0.353 ($p < 0.001$), highlighting a stronger relationship.[9]

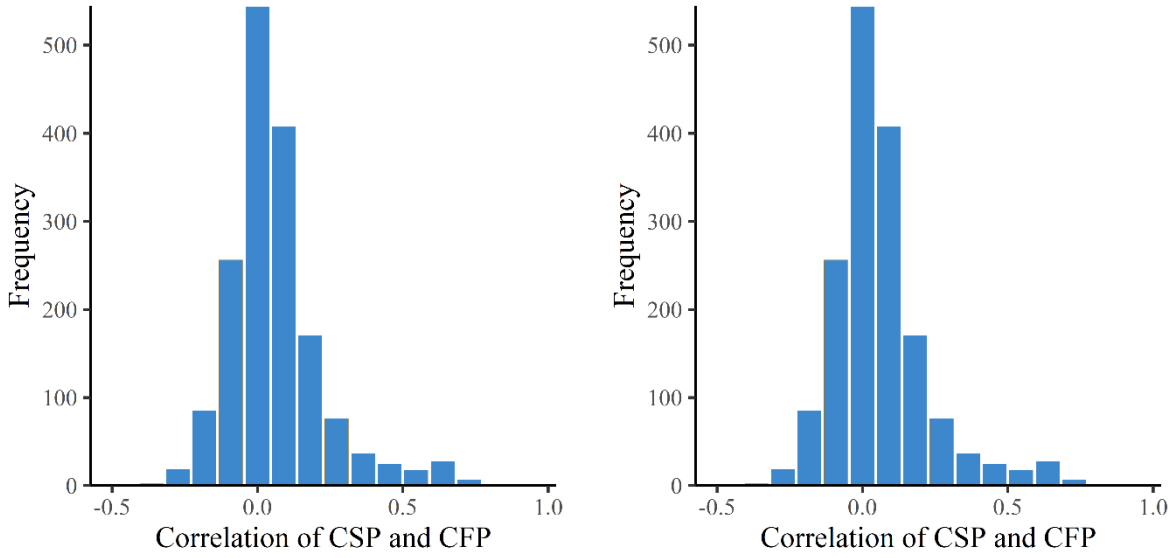
[7] While the Pearson correlation coefficient provides a simple and effective measure of the linear association between two variables, it does not account for the potential influence of third variables or control for confounding factors. Partial correlations, in contrast, offer a more nuanced perspective by isolating the relationships between variables while controlling for additional influences. However, this approach requires more extensive data and relies on assumptions about the interrelationships among variables.

In this study, the Pearson correlation coefficient was chosen as the primary metric due to its availability across the dataset and its capacity to provide an initial, comprehensive measure of the CSP-CFP relationship. This decision aligns with the study's aim to ensure consistency in the analysis of a diverse range of empirical sources. Nevertheless, the study acknowledges the advantages of partial correlations, particularly in their ability to refine analyses by addressing confounding factors.

[8] The D'Agostino test for skewness reveals a significant, positive skewness at the 1%-level. For histograms illustrating the subgroups of CSP, please consult Figure A.1 in the Appendix.

[9] For details on the Wilcoxon rank sum tests please consult Appendix 6.1.7.

Figure 2.1: Frequency Distribution for the Pearson Correlation Coefficient



Notes: Pearson correlation coefficient intervals on the x-axis; the y-axis represents the frequency within the respective interval. The left graph represents the full sample of effect sizes (model 1, n = 1,700), whereas the right graph the reduced sample without perceptual measures of CSP and CFP (model 2, n = 1,566).

To conduct the MRA, the study employs a model similar to Hang et al. (2017):

$$r_{ij} = \beta_0 + \beta_1 SE(r_{ij}) + \sum_{(k=1)}^{K} \beta_k Z_{ijk} + \varepsilon_{ij}\,, \quad \varepsilon_{ij} \sim N(0; SE(r_{ij})^2) \tag{1}$$

where $SE(r_{ij})$ is the standard error of the correlation r_{ij} of the ith estimate taken from the jth study, Z_{ijk} denotes the set of k explanatory variables as defined in Table 1, and ε_{ij} is the error term. In this model, β_0 represents the mean effect size estimate for the CSP-CFP relationship. In conjunction with a funnel plot, β_1 is used to detect publication bias through the Egger's regression test (Egger et al., 1997).[10] The study explores explanations for variations in primary study results using Z-vectors, which can arise from factors like omitted variables and distinct study characteristics.

The study employs a range of model specifications to address methodological challenges and enhance the robustness of its findings: (1) Following the approaches of Hang et al. (2017) and Hou et al. (2015), the study uses WLS regression to account for variations in study

[10] For the funnel plots, please refer to Figure A.2 in the Appendix.

precision. By weighting observations with the inverse of squared standard errors, this method mitigates heteroskedasticity and ensures more reliable estimates (Hou et al., 2015; Hunter & Schmidt, 2004). (2) To address potential within-study dependencies, additional CE models are estimated. These models assume independence between studies while accounting for correlated observations within each study, reducing the risk of model misspecification. (3) Consistent with Hedges and Olkin (1985) and Fisher (1921), the study also applies a z-transformation to normalize the distribution of sample correlations. This step ensures comparability across studies with varying sample characteristics and improves statistical reliability. (4) Given the absence of a strong theoretical foundation for selecting explanatory variables, the study adopts a general-to-specific approach. This iterative process eliminates less significant variables until all remaining variables have t-statistics greater than one, refining the model to include only the most relevant predictors (Hang et al., 2017; Valickova et al., 2013). (5) To ensure the validity of its findings, the study identifies influential observations using Cook's distance (Cook & Wiesberg, 1982). This diagnostic step leads to the exclusion of 19 effect sizes and 13 studies that significantly deviate from the dataset, as documented in the sample description.

2.5 Empirical Results

2.5.1 UNIVARIATE META-ANALYSIS AND PUBLICATION SELECTION BIAS

To initially assess the overall relationship between CSP and CFP, a univariate three-level meta-analysis was conducted (Table 2.4). This analysis is based on equation (1), excluding the estimation of Z-vectors. The results reveal a statistically significant mean correlation of 0.08 ($p < 0.001$), as indicated by models (1). Excluding perceptual measurements reduced the mean correlation to 0.04 ($p < 0.001$), as shown in models (2). These results consistently demonstrate a small but positive relationship between CSP and CFP. The effect size obtained, while smaller than the overall mean effect of 0.14 reported by Allouche and Laroche (2005), aligns closely with Hirsch et al.'s (2022) recent finding of a 0.02 correlation.

To evaluate the influence of heterogeneity on the analysis, the study uses the inconsistency index I^2 (Higgins & Thompson, 2002). I^2 represents the percentage of variation in the effect sizes that cannot be attributed to sampling error (Harrer et al., 2019). The calculated I^2 indicates a high level of heterogeneity at 99%, underscoring substantial variability that necessitates further exploration.[11]

The study further analyzes heterogeneity at each meta-analytical level using a multilevel I^2 approach (Cheung, 2014). This indicates that $I^2_{Level\ 3} = 45.92\%$ of the total variation can be attributed to between-study heterogeneity, while $I^2_{Level\ 2} = 53{,}92\%$ stems from within-study heterogeneity. These findings highlight significant between-study variation at the third level, reflecting differences in study contexts, methodologies, or regional factors, and considerable within-study differences at the second level, indicating variability in effect sizes across subgroups or measurements within individual studies. This emphasizes the complex nature of

[11] Following the guideline set by Higgins et al. (2003), an I^2 value is considered high when it surpasses the threshold of 75%.

the CSP-CFP relationship and the need for nuanced analysis (Harrer et al., 2019). These findings highlight significant between-study variation at the third level and considerable within-study differences at the second level, emphasizing the complex nature of the CSP-CFP relationship and the need for nuanced analysis (Harrer et al., 2019).

Table 2.4: Univariate Meta-Analytical Findings and Publication Bias Results

	Correlated and Hierarchical Effects (CHE)				*Correlated Effects (CE)*			
Explanatory variable	*(1) Full Sample*	*(2) Reduced Sample*	*(3) Full Sample*	*(4) Reduced Sample*	*(5) Full Sample*	*(6) Reduced Sample*	*(7) Full Sample*	*(8) Reduced Sample*
INTERCEPT	0.08***	0.04***	0.06***	0.03***	0.08***	0.04***	0.03***	0.02**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
SE(ES)	—	—	0.55**	0.03	—	—	1.28***	0.70***
	—	—	(0.22)	(0.19)	—	—	(0.19)	(0.20)
I^2	99.29%	99.03%	99.28%	99.02%	98.27%	98.72%	98.23%	98.73%
τ^2	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.02
AIC	-1,806	-1,850	-1,810	-1,849	—	—	—	—
Adj. R^2	0.66	0.40	0.65	0.39	—	—	—	—
Observations	1,700	1,566	1,700	1,566	1,700	1,566	1,700	1,566
No. of Studies	651	574	651	574	651	574	651	574

Notes: This table presents the results on the univariate regression model and the Egger's regression test. The dependent variable in model (1) through model (8) is the intensity of the CSP-CFP relation measured by the Pearson correlation coefficient *r* as effect size. As a robustness test, column (5) through (8) uses the Correlated Effects model. In Column (2), (4), (6) and (8) effect sizes quantifying CSP and CFP through perceptual measures are excluded.
Study-cluster robust standard errors are reported in parentheses.
***$p < .01$, **$p < .05$, *$p < .1$.

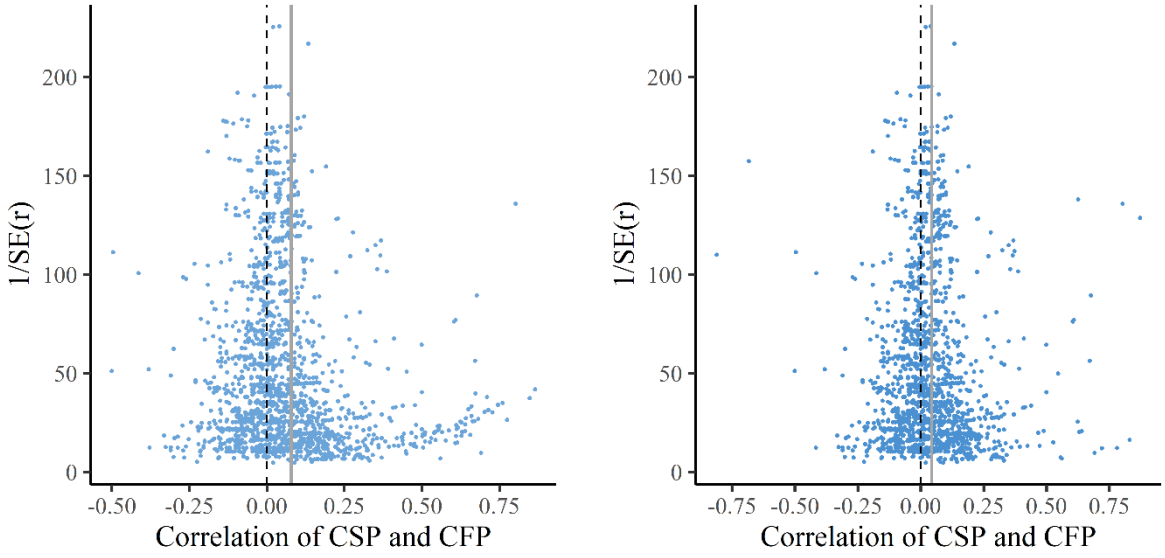
The study examines the presence of publication bias using funnel plots and Egger's test. Figure 2.2 illustrates the distribution of correlations for the full sample (model 1) and a reduced sample excluding perceptual CSP and CFP measures (model 2). In model 1, the funnel plot reveals a notable rightward skew and wide estimate dispersion, indicating potential positive-

directional publication bias. In contrast, model 2 shows reduced asymmetry and narrower dispersion, suggesting a more balanced distribution in the absence of perceptual measures.[12]

Egger's test supports these observations. In model 3, the test identifies significant influences from the standard errors of effect sizes SE(ES), affirming the presence of publication bias in the full sample. Conversely, in model 4, Egger's test finds no significant influence from standard errors, indicating a more balanced publication pattern within the reduced subset.

Overall, the results highlight a tendency in CSP-CFP literature to favor the publication of positive results, particularly when perceptual measurement methods are employed. This bias is accounted for in subsequent meta-regression analyses.

Figure 2.2: Funnel Plot of the CSP-CFP Relation



Notes: The funnel plots show the effect sizes (correlation coefficients *r*) against their precision 1/SE(*r*). The dashed vertical line reflects a correlation of zero. The left graph represents the full sample of effect sizes (model 1), whereas the right graph the reduced sample without perceptual measures of CSP and CFP (model 2). The bold line reflects the mean correlation coefficient measured with the full effect size sample (at 0.08, left graph) and with the reduced sample (0.04, right graph).

[12] Similar patterns emerge from the funnel plots for the CSP dimension subgroups, as shown in Appendix Figure A.2.

As a robustness check, models (5) to (8) exclusively consider correlated effects. These models confirm the reliability of the findings, as they consistently demonstrate similar effect sizes, directionality, and statistical significance. This reinforces the robustness of the study's conclusions despite potential dependencies within the data.

2.5.2 MULTIPLE META-REGRESSION RESULTS

The full MRA model results, based on equation (1), are presented in Table 2.5, where the dependent variable is the Pearson correlation coefficient, indicating the strength of the CSP-CFP relationship. The baseline model estimates the relationship between CSP and CFP within a global sample of firms from mixed-developed countries, using an objective CSP measure that captures both social and environmental dimensions alongside an accounting-based CFP measure. Both variables are evaluated concurrently using cross-sectional data.[13]

In addition to the baseline models (1) and (2), Table 2.5 to Table 2.7 includes alternative specifications for robustness. Model (3) focuses exclusively on studies using objective measures for both CSP and CFP. Models (4) and (5) apply correlated effects models (CE), addressing potential within-study dependencies while preserving the baseline equation. Model (6) combines these robustness techniques. To ensure consistency, all six models are also re-estimated using Fisher's z-transformed values for effect sizes, detailed in Appendix Table A.4 to A.6.

The findings in model (1) confirm the presence of publication bias, while the INTERCEPT captures the “true” effect beyond such bias when study characteristics are set to zero (or continuous variables are at their mean). The results indicate that study design characteristics, such as the choice of firm data, regional settings, and CSP and CFP measurement methods, significantly drive heterogeneity in reported effect sizes. These factors,

[13] For the complete model, as opposed to the parsimonious model, please consult Table A.1 to A.3 in the Appendix.

along with their practical relevance, will be explored in greater detail in the subsequent sections, providing insights into their implications for the CSP-CFP relationship.

Table 2.5: Results of the Meta-Regression Analysis I / III

Explanatory variable	*Hyp. Sign*	*(1) CHE (model 1)* β	SE_β	*(2) CHE (model 2)* β	SE_β	*(3) CHE (model 2, reduced)* β	SE_β	*(4) CE (model 1)* β	SE_β	*(5) CE (model 2)* β	SE_β	*(6) CE (model 2, reduced)* β	SE_β
INTERCEPT	?	- 13.00***	4.88	- 15.20***	4.75	- 7.73	5.01	- 12.19***	4.63	- 13.72***	4.62	- 5.11	4.61
SE(ES)	0	- 1.33***	0.35	- 1.32***	0.35	- 1.04**	0.43	- 0.72***	0.27	- 0.65***	0.27	—	—
DVLP	+	0.06***	0.02	—	—	—	—	0.07***	0.02	—	—	—	—
BRICS	+	- 0.06***	0.02	—	—	—	—	- 0.05***	0.02	—	—	—	—
G8	-	- 0.03	0.03	—	—	—	—	—	—	—	—	—	—
AFRICA	+	—	—	—	—	—	—	—	—	—	—	—	—
LATIN	+	—	—	—	—	—	—	—	—	—	—	—	—
ASIA	-	—	—	—	—	—	—	—	—	—	—	—	—
EU	+	—	—	—	—	—	—	—	—	—	—	—	—
US	+	0.04**	0.02	—	—	—	—	0.03**	0.02	—	—	—	—
GDP^2	-	—	—	- 0.00***	0.00	- 0.00**	0.00	—	—	- 0.00***	0.00	- 0.00	0.09
GDPGROW	-	—	—	—	—	—	—	—	—	—	—	—	—
GLOBAL	+	—	—	—	—	0.00*	0.00	—	—	—	—	0.00**	0.00
EDUCATION	-	—	—	0.02**	0.01	0.01	0.01	—	—	0.02***	0.01	—	—
COMMON	+	—	—	- 0.03	0.03	- 0.04	0.03	—	—	—	—	- 0.03	0.05
CIVIL	-	—	—	—	—	—	—	—	—	—	—	- 0.04	0.02
FREEDOM	+	—	—	0.03*	0.02	0.05*	0.03	—	—	0.03	0.02	0.04**	0.02
EXIT	+	—	—	- 0.31	0.28	—	—	—	—	- 0.37	0.30	—	—
INDIVI-DUALISM	-	—	—	- 0.00***	0.00	- 0.00**	0.00	—	—	- 0.00***	0.00	- 0.00	0.00
LONG-TERM	+	—	—	- 0.00**	0.00	- 0.00***	0.00	—	—	- 0.00	0.00	- 0.00	0.00

(Continued)

Table 2.6: Results of the Meta-Regression Analysis II / III

		(1) CHE (model 1)		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
Explanatory variable	*Hyp. Sign*	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β
EP	?	- 0.01*	0.01	- 0.02**	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.04***	0.01	- 0.04***	0.01
SP	?	—	—	- 0.01	0.01	- 0.01	0.01	—	—	- 0.02	0.02	- 0.02	0.02
PP	+	0.08***	0.03	0.07**	0.03	—	—	0.07**	0.03	0.06	0.04	—	—
PROACTIVE	+	- 0.02	0.01	- 0.02*	0.01	- 0.02**	0.01	- 0.01	0.01	- 0.02	0.01	- 0.02	0.01
REACTIVE	-	- 0.05***	0.01	- 0.06***	0.01	- 0.06***	0.01	- 0.02**	0.02	- 0.03***	0.01	- 0.03**	0.02
INFOR-MATIVE	-	0.02*	0.01	0.02*	0.01	0.02	0.01	0.02	0.02	0.02	0.01	0.02	0.02
PROCESS	+	0.02	0.02	0.03*	0.02	0.04**	0.02	0.03	0.02	0.04**	0.02	0.06**	0.03
OUTCOME	-	—	—	—	—	—	—	—	—	—	—	—	—
MARKET	-	- 0.03***	0.01	- 0.03***	0.01	- 0.02***	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.02**	0.01
SUBJECTIVE	+	0.17***	0.04	0.15***	0.04	—	—	0.19***	0.04	0.18***	0.04	—	—
CAUSAL	0	—	—	—	—	—	—	—	—	—	—	—	—
SME	?	—	—	—	—	0.27	0.14	—	—	—	—	0.22	0.13
MANU	?	—	—	—	—	—	—	—	—	—	—	—	—
SERV	?	0.07*	0.03	0.07*	0.04	0.07*	0.04	0.07***	0.04	0.07**	0.04	0.06*	0.03
PANEL	?	- 0.06***	0.02	- 0.06**	0.02	- 0.06**	0.02	- 0.04***	0.02	- 0.05***	0.02	- 0.03	0.02
DATERANGE	?	—	—	—	—	—	—	—	—	—	—	—	—
NOFIRMS	?	- 0.00***	0.00	- 0.00***	0.00	- 0.00**	0.00	- 0.00***	0.00	- 0.00***	0.00	- 0.00	0.00
2010s	?	- 0.04**	0.02	- 0.06***	0.02	- 0.04*	0.02	- 0.03***	0.02	- 0.05***	0.02	- 0.02	0.02
MEANYEAR	?	0.01***	0.00	0.01***	0.00	0.00	0.00	0.01***	0.00	0.01***	0.00	0.00	0.00
MLTNAT	?	- 0.05**	0.02	- 0.07***	0.02	- 0.09***	0.02	- 0.03**	0.02	- 0.04***	0.02	- 0.09***	0.03
MLTSECT	?	—	—	—	—	—	—	—	—	—	—	—	—

(Continued)

Table 2.7: Results of the Meta-Regression Analysis III / III

	(1) CHE (model 1)	*(2) CHE (model 2)*	*(3) CHE (model 2, reduced)*	*(4) CE (model 1)*	*(5) CE (model 2)*	*(6) CE (model 2, reduced)*
NOAUTHORS	— —	— —	0.01* 0.01	— —	— —	0.01* 0.01
RANK	— —	— —	— —	— —	— —	— —
I^2	98.78%	98.76%	98.92%	97.74%	97.76%	98.57%
τ^2	0.01	0.01	0.01	0.01	0.01	0.16
AIC	-2,197	-2,205	-1,919	—	—	—
Adj. R^2	0.44	0.44	0.39	—	—	—
Observations	1,700	1,700	1,566	1,700	1,700	1,566
No. of Studies	651	651	574	651	651	574

Notes: This table presents the final results of the meta-regression model stated in equation (1). The dependent variable in model (1) through model (8) is the intensity of the CSP-CFP relation measured by the Pearson correlation coefficient r as effect size. As a robustness test, column (4) through (6) uses the Correlated Effects model. In Column (2), (4), and (6) effect sizes quantifying CSP and CFP through perceptual measures are excluded. Study-cluster robust standard errors are reported in parentheses. All models report parsimonious models based on general-to-specific modeling. Therein, after each re-estimation, the most insignificant variable is dropped from the model until the remaining test statistics are consistently larger than 1. Baseline: mixed CSP measure, accounting-based CFP, mixed geographic regions.
***$p < .01$, **$p < .05$, *$p < .1$.

2.5.2.1 Institutional and regional differences

In terms of economic development and geographical regions, model (1) provides insightful perspectives. Among the eight regression coefficients analyzed, three exhibit statistical significance: DVLP and BRICS at the 1% level, and US at the 5% level.

The positive coefficient for DVLP suggests a stronger CSP-CFP relationship in developing countries. This finding aligns with Hou et al. (2015), who argue that in developing regions, CSR initiatives serve as valuable signals of a firm's good reputation, exerting a more substantial influence on enhancing business performance. Conversely, the variable BRICS shows a negative estimate, indicating a weaker CSP-CFP relationship in emerging economies. This finding reflects the lower societal awareness and reduced pressure to hold companies accountable in these regions (Garcia & Orsato, 2020). Additionally, the variable US demonstrates a positive coefficient, indicating that studies focusing on US-based firms report stronger CSP-CFP associations. This aligns with the findings of Hang et al. (2017) and is consistent with expectations for developed economies like the United States, where market transparency and CSR awareness are generally higher (Plewnia & Guenther, 2017).

Beyond these observations, the study did not identify significant distinctions among other geographical regions apart from the US. This suggests that regional variations in study outcomes may primarily stem from economic idiosyncrasies, warranting further exploration. Consequently, models (2) and (3) incorporate additional country-specific variables to explore theoretical considerations further. These variables include alternative metrics of economic development and factors related to institutional characteristics and regulatory environments. The variables GDP, GLOBAL, EDUCATION, FREEDOM, INDIVIDUALISM, and LONG-TERM all exhibit statistical significance at varying levels, ranging from 1% to 10%.

The negative sign of the squared GDP variable supports the earlier observation that the CSP-CFP relationship tends to be stronger in both underdeveloped and highly developed countries, as opposed to those with intermediate levels of development.[14] Regarding the variable GLOBAL, the findings provide limited yet noteworthy evidence that firms predominantly operating in global markets exhibit a positive CSP-CFP relationship. This aligns with the argument by Oeyono et al. (2011), suggesting that participation in global markets compels firms to adopt responsible business practices to gain acceptance in Western markets. Consequently, international trade can simultaneously drive social and financial progress, as envisioned by the Stolper-Samuelson theorem.

The variable EDUCATION reveals a positive influence on the CSP-CFP relationship, tied to the availability and quality of educational resources provided by governmental institutions. As a country's overall educational level improves, stakeholders such as employees and customers become more likely to respond favorably to CSP efforts due to their heightened awareness of sustainability concepts (Warburton, 2003). This heightened awareness encourages stakeholders to view CSR activities, such as promoting social equity, as integral to a firm's fiduciary responsibility (Xiao et al., 2018).

The analysis of economic freedom also yields insightful results. The coefficient for FREEDOM suggests that as a nation's economic freedom increases, it creates an environment conducive to CSR practices. Reduced government intervention allows managers to make value-maximizing investments, facilitating a shift toward addressing stakeholder demands over merely adhering to regulatory directives (El Ghoul et al., 2017).

[14] Due to the substantial collinearity between GDP and GDP^2, this study incorporates only the latter in the estimation models. Model estimates for the non-squared variable GDP can be found in Table A.7 and Table A.8 in the appendix. The observed high collinearity aligns with the findings of Hang et al. (2017).

In this context, INDIVIDUALISM and LONG-TERM emerge as negative moderators of the CSP-CFP relationship. In collectivist cultures, where communal values are prioritized, customers often prefer businesses that emphasize corporate social investments, resulting in enhanced financial gains for these companies (Shi & Veenstra, 2021). Conversely, in individualistic cultures, personal goals and self-interest tend to overshadow collective well-being, diminishing the financial benefits for socially responsible companies (Cho et al., 2013).

LONG-TERM orientation reflects the extent to which societies prioritize enduring benefits over short-term profits. In such cultures, companies are generally expected to invest in sustainable practices that may not yield immediate financial returns but contribute to future prosperity (T. Wang & Bansal, 2012). Consequently, this long-term perspective can lead to a delayed positive influence of CSP on CFP, and in some instances, financial benefits may not become evident in the short term. The results confirm this observation, likely due to the fact that CSP and CFP are often measured concurrently or within close temporal proximity.

2.5.2.2 Measurement strategies

Examining variable operationalization reveals that multiple factors influence the CSP-CFP relationship. Eight of the twelve regression coefficients demonstrate statistical significance, with PP, REACTIVE, MARKET, and SUBJECTIVE significant at the 1% level, and EP, PROACTIVE, INFORMATIVE, and PROCESS significant at the 10% level.

The negative coefficient for EP suggests that studies focusing on environmental issues tend to report systematically lower results compared to those using mixed CSP measurements. This finding is consistent with Busch and Friede (2018) and may be attributed to the lack of standardization in environmental performance metrics and the long-term nature of environmental initiatives, which delay observable financial impacts. Conversely, studies using subjective measures, such as surveys, report notably higher correlation estimates, reflected in

the positive PP coefficient. This aligns with H2a but may also be influenced by social desirability response bias, where respondents overstate the importance of socially desirable characteristics (Arnold & Feldman, 1981).

The negative coefficient for PROACTIVE suggests that innovative and costly sustainability investments may create a competitive disadvantage, as they require significant resources and time before yielding financial benefits (Wagner et al., 2002). Similarly, the negative estimate for REACTIVE highlights differing stakeholder responses to CSR activities aimed at mitigating negative impacts rather than fostering social progress (Arvidsson, 2010). Both approaches—whether focusing on implementing new processes and technologies or end-of-pipe solutions—may involve higher costs compared to diversified and integrative sustainability efforts (M. A. Cohen et al., 1997).

In contrast, the positive coefficient for INFORMATIVE underscores the benefits of reducing market information asymmetry. Firms that transparently communicate their sustainability efforts can enhance their reputation and stakeholder trust without incurring significant additional investment costs (Clarkson et al., 2013; Q. Wang et al., 2016). Similarly, the positive estimate for PROCESS indicates that emphasizing sustainability at the management or process level, such as adopting eco-friendly production techniques or sustainable supply chain practices, can positively influence stakeholder perceptions, bolster legitimacy, and contribute to financial performance, particularly when reputation is at risk (Misani & Pogutz, 2015).

The negative coefficient for MARKET suggests that studies using market-based CFP measures report smaller effect sizes than those relying on accounting-based measures. This finding aligns with Lee et al. (2009), who argue that the economic value of CSR is often already embedded in share prices of leading CSP firms, reducing the potential for further financial

returns. However, firms transitioning from lagging in CSR efforts to becoming leaders may exhibit positive differences in market-based performance (Lee et al., 2009)

The positive coefficient for SUBJECTIVE reflects that studies assessing firms' financial performance through subjective data sources consistently report stronger relationships, supporting H3a. However, these findings may be subject to biases stemming from the self-reported nature of the data.

The insignificant coefficients for CAUSAL suggest that the CSP-CFP relationship often occurs simultaneously rather than sequentially, reinforcing the view that this interplay is dynamic and context-dependent. This finding aligns with Hang et al. (2018), who argue that causality might vary across different CSP measures and corporate environments. These results highlight the need for nuanced approaches in evaluating CSP-CFP dynamics.

2.5.2.3 Study Design and Robustness

Study design factors also significantly influence the reported effect sizes in the CSP-CFP relationship. For instance, the positive SERV coefficient indicates that studies focused on service industries report stronger CSP-CFP correlations. This can be attributed to the alignment between service firms and customer expectations, where socially responsible practices are often more visible and directly impact customer perceptions (Lev et al., 2010).

Conversely, variables such as PANEL, NOFIRMS, and MLTNAT indicate weaker relationships. Studies utilizing panel data, larger sample sizes, or multinational firms reflect greater temporal and inter-firm variations and cultural differences, which tend to weaken the observed CSP-CFP link, while these variables often being indicative of more robust data (Garcia & Orsato, 2020).

The temporal variables 2010s and MEANYEAR reveal nuanced time-related trends. Studies based on data from the 2010s indicate a weaker CSP-CFP relationship compared to

earlier periods, possibly reflecting the impact of evolving statistical methods and stricter methodological rigor. By contrast, studies with more recent mean observation years exhibit stronger relationships, which may result from shifting societal expectations and the increasing emphasis on sustainability in corporate strategies.

According to Murtaugh (2002), weaker results are less likely to appear in high-ranking journals. However, the lack of significance for RANK in this analysis suggests that Egger's test effectively mitigates concerns about publication bias, particularly given the comprehensive selection of primary studies in the dataset.

To further validate the findings, robustness checks using Correlated Effects (CE) models were performed for models (4) through (6). These tests confirm the relationships observed in the primary models for most variables, affirming the overall robustness of the analysis. However, variables such as LONG-TERM, PROACTIVE, and INFORMATIVE become statistically insignificant in the CE models. This may arise from the CE model's assumption of independence at the between-study level, which can diminish the significance of shared characteristics across studies.

The differences in results between the Correlated Effects (CE) and Correlated and Hierarchical Effects (CHE) models illustrate the trade-offs inherent in meta-regression modeling. While the CE model downplays shared study characteristics, the CHE model captures these shared effects, offering complementary perspectives.

2.5.2.4 Best Practice Implications

To derive practical implications from the MRA results, Table 2.8 provides *"best practice"* scenarios for different regional samples and varying country characteristics, using the baseline category as a reference point. The predicted effect sizes, ranging from 0.06 to 0.17, align with

Cohen's (1988, 1992) criteria for small to medium effect sizes, indicating their practical economic relevance.

The best practice results confirm hypothesis 1a, demonstrating a convex impact of economic development on the CSP-CFP relationship, consistent with Hang et al. (2017). The relationship is strongest in developing countries, with an effect size of 0.17, decreases significantly in emerging economies to 0.06, and strengthens again in developed regions, particularly the U.S., where the predicted effect size is 0.13. These findings highlight the critical role of regional and economic context in shaping CSP-CFP dynamics.

Hypothetical country scenarios illustrate the variability of the CSP-CFP relationship based on key national attributes. In an average fictitious country, the estimated CSP-CFP relationship stands at 0.14, with variations influenced by GDP, education levels, economic freedom, and cultural dimensions. These findings support Hypothesis 1b, confirming the positive impact of economic freedom, and Hypothesis 1c, which highlights the adverse effects of economic strength and individualism, despite the positive influence of education.

Table 2.8: Best Practice Estimates

Setting	*Country Sample*	*Estimate for CSP–CFP relation*	*95% confidence interval*	*Standard error*
Best practice baseline	Developing	0.17***	0.14 – 0.21	0.02
Best practice baseline	BRICS	0.06**	0.01 – 0.11	0.03
Best practice baseline	US	0.13***	0.09 – 0.17	0.02
Average characteristics	–	0.14***	0.10 – 0.17	0.02
Average characteristics	Bottom-10% GPD	0.22***	0.16 – 0.28	0.03
Average characteristics	Top-90% GPD	0.07***	0.03 – 0.12	0.02
Average characteristics	Bottom-10% Education	0.09***	0.09 – 0.10	0.02
Average characteristics	Top-90% Education	0.19***	0.15 – 0.23	0.02
Average characteristics	Bottom-10% Economic Freedom	0.10***	0.05 – 0.15	0.02
Average characteristics	Top-90% Economic Freedom	0.18***	0.12 – 0.24	0.03
Average characteristics	Bottom-10% Individualism	0.19***	0.19 – 0.19	0.02
Average characteristics	Top-90% Individualism	0.07***	0.07 – 0.08	0.02
Average characteristics	Bottom-10% Long-term orientation	0.17***	0.17 – 0.17	0.02
Average characteristics	Top-90% Long-term orientation	0.09***	0.05 – 0.13	0.02
Average characteristics, EP measurement of CSP	–	0.12***	0.08 – 0.15	0.02
Average characteristics, proactive measurement of CSP	–	0.12***	0.08 – 0.16	0.02
Average characteristics, reactive measurement of CSP	–	0.08***	0.04 – 0.12	0.02
Average characteristics, informative measurement of CSP	–	0.16***	0.12 – 0.20	0.02
Average characteristics, market-based measurement of CFP	–	0.11***	0.08 – 0.14	0.17

Notes: This table presents the estimated CSP-CFP relation for several variable combinations. The country and CSP operationalization variables are varied. Best practice baseline: mixed CSP measure, accounting-based CFP, non-service industries, panel data, mean number of firm observation (504), above average sample year (2015), single country sample. The hypothetical average country also represents the mean values of the country characteristics and is not classified as a common law jurisdiction. The Top-90% and Bottom-10% samples represent the *90th* percentile value and the *10th* percentile value of the sample, respectively.
CSP = corporate social performance; CFP = corporate financial performance.

In economically advanced nations with a per-capita GDP of $47,975, the CSP-CFP relationship is weaker at 0.07, whereas in underdeveloped countries with a GDP of $2,688, it rises significantly to 0.22.[15] In contrast, education duration plays a supportive role: countries with an average education duration of 6.8 years exhibit a CSP-CFP relationship of 0.09, which increases to 0.19 in countries with 12.2 years of education.[16] Economic freedom further amplifies the relationship, moving from 0.10 in nations with lower scores (6.07) to 0.18 in those with higher scores (8.45).[17]

The best practice estimates also shed light on how a country's level of individualism and long-term orientation influences the CSP-CFP relationship. As individualism increases from 20 to 91, the CSP-CFP relationship declines from 0.19 to 0.07. Similarly, a rise in long-term orientation from 26 to 87 reduces the relationship from 0.17 to 0.09.[18] These findings emphasize the importance of considering economic, educational, and cultural factors when analyzing the CSP-CFP relationship, as they profoundly shape its strength across different contexts.

Lastly, measurement strategies also significantly influence the CSP-CFP relationship. Hypothesis 2b is supported for reactive measures, but hypothesis 2a does not hold, as proactive measures show a negative influence. The CSP-CFP relationship weakens when focusing solely on environmental activities (0.12) or employing proactive (0.12) and reactive (0.08) measures.

[15] The estimate for a substantial per-capita GDP ($47,975) is comparable to the per-capita GDP of the United Kingdom, while the estimate for a modest per-capita GDP ($2,688) is similar to Bangladesh's per-capita GDP in the year 2020.

[16] The estimate for a moderate duration of school education (6.8) corresponds to the duration of school education in Ghana, whereas the estimate for a sophisticated duration of education (12.3) mirrors France's education duration in 2020.

[17] The estimate for a moderate economic freedom level (6.1) resembles that of Papua New Guinea, while the estimate for a high level of economic freedom (8.5) mirrors Switzerland's economic freedom in 2020.

[18] The estimate for a moderate level of individualism (20) is similar to that of several Asian countries like Bangladesh, China, Thailand, and Vietnam, while the estimate for a high level of individualism (91) corresponds to the United States. Furthermore, the estimates for moderate long-term orientation (25.7) align with the United States, and a high long-term orientation (87.4) mirrors China's orientation.

In contrast, informative activities strengthen the relationship to 0.16. Market-based CFP measures slightly weaken the relationship to 0.11, confirming hypothesis 3b.

In summary, the best practice estimates highlight the significant role of contextual factors, such as institutional and regional distinctions, in determining the CSP-CFP relationship's economic relevance. These factors exert a more substantial influence than variations in measurement strategies, collectively shifting the relationship from small to moderate or vice versa, underscoring the complex interplay between regional, institutional, and methodological considerations in CSP-CFP dynamics.

2.6 Discussion

The discussion section presents a nuanced understanding of the relationship between CSP and CFP, leveraging a novel set of explanatory variables and a comprehensive MRA approach. This investigation reveals a statistically significant yet modest positive correlation between CSP and CFP, underscoring the importance of adopting a sophisticated and context-specific approach to better understand this relationship.

One of the study’s significant contributions is its exploration of best practice scenarios across various regional contexts. These scenarios demonstrate the non-uniform nature of the CSP-CFP relationship, offering practical insights for businesses, policymakers, and researchers.

Economic development emerges as a critical determinant. In developing countries, CSP has a more pronounced impact on CFP, serving as a signal of good reputation. Conversely, this relationship weakens in emerging economies due to lower societal accountability pressures. Developed countries, particularly the United States, show a stronger CSP-CFP link, likely attributable to higher market transparency and CSR awareness.

Education and economic freedom emerge as significant amplifiers of the CSP-CFP relationship. Societies with higher levels of education are better equipped to recognize and reward CSR efforts, reflecting a heightened awareness of sustainability, social justice, and ethical business practices (Cambra-Fierro et al., 2020). Consequently, they are more inclined to support and engage with companies that actively demonstrate their commitment to these principles through CSP initiatives. Conversely, educational deficits exacerbate the disparity in understanding and valuing CSR efforts, underscoring the ethical and practical necessity of fostering access to quality education. Similarly, economic freedom supports CSR by creating a permissive environment for firms to adopt sustainability practices with minimal regulatory constraints, allowing businesses to focus on stakeholder demands rather than compliance (Gwartney, 2009). Together, these findings highlight the ethical imperatives of education and economic freedom in aligning CSP with CFP and promoting sustainability-driven business strategies.

Cultural factors, particularly individualism and long-term orientation, also play a pivotal role in shaping the CSP-CFP relationship. In highly individualistic cultures, a focus on personal goals and self-interest can dilute stakeholder engagement with CSR initiatives, potentially weakening their financial impact. This calls for an ethical reevaluation of societal values to prioritize collective benefits and strengthen the CSP-CFP link while companies primarily consider investors' interests (Khlif et al., 2015). In long-term-oriented cultures, the emphasis on future benefits may result in delayed financial returns from sustainable practices (Liang & Renneboog, 2020). Stakeholders in these contexts must recognize the long-term value of CSR and incentivize businesses accordingly to sustain their commitment to sustainability goals (Grewal & Serafeim, 2020). These insights emphasize the importance of aligning cultural values with corporate and stakeholder priorities to drive ethical and financial success through CSR initiatives.

The theoretical contributions of this study are multifaceted. First, it underscores the nuanced relationship between CSP and CFP across diverse global contexts. By demonstrating how this relationship varies with factors such as economic development, education levels, economic freedom, and cultural dimensions, the study highlights the critical importance of considering local circumstances when analyzing the CSP-CFP linkage. Furthermore, it builds upon and expands the theoretical framework established by Hang et al. (2017), particularly concerning the impact of a country's economic development on the CSP-CFP relationship. Second, the research reveals that the strength of the CSP-CFP association is significantly influenced by measurement strategies. The dimensions of CSP, the methods employed for measurement, and the type of CFP indicators used all markedly affect the reported effect sizes, adding a crucial layer to the understanding of this interplay. Together, the findings emphasize the importance of contextual factors, challenging the traditional *"one-size-fits-all"* approach to CSR and instead advocating for more tailored and region-specific strategies.

Despite its contributions, the study is not without limitations. A notable constraint is the risk of endogeneity arising from omitted variables such as advertising intensity or research and development efforts. These factors are particularly relevant for small and medium enterprises, which are underrepresented in existing literature despite their significant potential for competitive advantage through CSR practices and relevance in underdeveloped economies (Torugsa et al., 2012). Similarly, unaccounted country-specific variables, such as national sustainability performance (Xiao et al., 2018), stress the importance of a more comprehensive analysis of institutional environments. Further, including variables in the MRA without a robust theoretical foundation risks model misspecification and introduces econometric challenges (Hirsch et al., 2022).

In conclusion, this research broadens the understanding of the CSP-CFP relationship by emphasizing its dependence on contextual factors. It encourages ethical introspection and calls

for a deliberate examination of societal values, cultural norms, and economic structures that underpin corporate social responsibility. The best practice scenarios illustrated in the study highlight the necessity for corporations to adapt their ethical practices to the unique economic and societal landscapes within each region. These findings guide businesses in navigating the intricate balance between ethical commitments and financial outcomes, acknowledging the role of local factors, such as economic development, in shaping optimal CSR strategies. Ultimately, the study enriches the theoretical and ethical discourse surrounding the CSP-CFP interplay, offering a more comprehensive perspective on this complex relationship.

3 Determinants and Consequences of Sustainability Incentives

in CEO Compensation Contracts: European Evidence

This study contributes to the governance and sustainability literature by investigating the determinants of corporate social responsibility criteria in executive compensation contracts (CSR contracting). It also ascertains whether CSR contracting stimulates corporate social performance (CSP). Using European data from 2015 to 2022, the findings are twofold. First, the findings reveal that key governance attributes, including board independence and sustainability committees influence the probability of CSR contracting. Interestingly, prior environmental performance is positively associated with CSR contracting, while no significant link is found with prior social or controversy performance. Second, the study does not unequivocally support the notion that CSR contracting consistently improves CSP. Instead, results indicate an incentive life-cycle, where an initial positive effect is followed by subsequent adaptation dynamics, highlighting the importance of ongoing monitoring and adjustment of incentive structures.

Keywords: CEO compensation, corporate social responsibility, CSR contracting, corporate governance

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3.1 Introduction

Over the past few decades, corporations have faced increasing pressure to harmonize financial success with broader societal and environmental responsibilities (Maas, 2018). This evolution is driven by an evolving regulatory landscape and a growing awareness of sustainability (Berrone & Gomez-Mejia, 2009a), often encapsulated in the "triple bottom line" approach, which seeks to balance economic, social, and environmental objectives (Eccles et al., 2014). Consequently, corporates social responsibility (CSR) has emerged as a strategic framework, enabling companies to embed sustainability into governance structures, align business objectives with societal needs, and meet stakeholder expectations (Deckop et al., 2006). One prominent approach to operationalizing CSR is the integration of sustainability indicators into executive compensation, often referred to as CSR contracting (Abdelmotaal & Abdel-Kader, 2016; Flammer et al., 2019).

CSR contracting links executive incentives to sustainability metrics, including environmental impact, employee welfare, and ethical standards, thereby driving leaders to integrate these dimensions into their decision-making processes and embed them within overarching business strategies (Eccles et al., 2014; Sarhan & Al-Najjar, 2023). Notable corporations, like Siemens AG, have adopted such practices, embedding goals such as carbon emission reduction and enhanced employee training into compensation structures (Siemens AG, 2021). This trend highlights the growing role of governance mechanisms in achieving multi-dimensional performance objectives.

The adoption of CSR-contingent compensation contracts by firms can be understood through several theoretical frameworks (Ikram et al., 2023). Central to this rationale is the recognition that managerial decision-making, as highlighted by McGuire et al. (2019) and

Wood (2010), has profound implications for outcomes that shape corporate social performance (CSP).

Agency theory provides a foundational explanation for CSR contracting. It posits that aligning executive incentives with long-term organizational goals mitigates principal-agent conflicts, which arise from the divergence of interests between managers and shareholders (Hill & Jones, 1992). However, the outcomes of managerial decisions often remain obscured due to significant information asymmetry and high monitoring costs, becoming apparent only over extended periods (Deckop et al., 2006). CSR contracting addresses these limitations of traditional financial incentives by incorporating non-financial performance metrics that account for broader managerial efforts and focus on long-term value creation (Ikram et al., 2023; Ittner et al., 1997).

Stakeholder theory offers an additional lens to understand the motivation behind CSR contracting (Freeman, 1984; Ikram et al., 2023). This theory views executives not only as agents of shareholders but also as representatives of a broader range of stakeholders, including employees, customers, and society at large (Donaldson & Preston, 1995). CSR contracting operationalizes this stakeholder-oriented approach by tying executive incentives to sustainability metrics, aligning managerial efforts with diverse stakeholder interests (Maas, 2018).

Moreover, CSR contracting aligns with the instrumental perspective of stakeholder theory, which emphasizes the strategic benefits of addressing stakeholder concerns. These benefits include reducing transaction costs, enhancing corporate legitimacy, and fostering trust through visible efforts to advance stakeholders' goals (Sarhan & Al-Najjar, 2023). By doing so, CSR contracting supports the dual objectives of achieving sustainability and maintaining competitive advantage, reinforcing its appeal as a governance mechanism (Kolk & Perego, 2014).

Despite its theoretical appeal, CSR contracting faces raises critical questions about its implementation and overall efficacy. While it might enhance corporate social performance (CSP) and align managerial decisions with sustainability objectives (McGuire et al., 2003), firms may adopt such mechanisms primarily to enhance reputational capital rather than drive substantive change (Berrone & Gomez-Mejia, 2009b). The design of these contracts often relies on multi-tasking principal-agent models, which tend to simplify complex objectives into single, observable metrics (Holmstrom & Milgrom, 1991; Nyberg et al., 2019). However, sustainability performance is inherently multi-dimensional, reflecting the execution of numerous interrelated tasks that cannot be easily reduced to a single denominator, with individual contributions often difficult to measure (Ethiraj & Levinthal, 2009; Nyberg et al., 2019). In an attempt to overcome these challenges, firms frequently design sustainability incentive schemes based on 'objective' criteria, which promote easily visible behaviors. This focus on measurable outcomes can distort incentives, unintentionally rewarding behaviors that do not align with comprehensive sustainability objectives (Kerr, 1975).

Although the popular press and practitioners have strongly advocated for the broader adoption of CSR contracting (Ikram et al., 2023), empirical research on the efficacy of CSR contracting remains inconclusive (Efing et al., 2024). While some studies (e.g., Cordeiro & Sarkis, 2008; Flammer et al., 2019; Maas, 2018; Russo & Harrison, 2005) find positive effects on CSP, others highlight inconsistent outcomes, particularly in multi-tasking environments where sustainability objectives are diverse and conflicting (Efing et al., 2024). These gaps underscore the need for a nuanced understanding of how CSR contracting influences firms' sustainability performance across various dimensions.

While research on CSR contracting outcomes, particularly its impact on sustainability performance, advances management theory and informs policy, exploring its determinants offers also insights into adoption and design, enabling more effective implementation across

diverse corporate and institutional settings. Literature suggests that corporate governance structures play a critical role in shaping executive compensation policies (Davila & Penalva, 2006), tasked with evaluating management effectiveness and ensuring performance (Ozkan, 2007). Effective governance mechanisms—such as independent boards and balanced ownership structures—can mitigate agency conflicts and ensure alignment between executive actions and shareholder interests (Ozkan, 2007). However, governance structures that allow CEOs to exert disproportionate influence may result in suboptimal contract designs, reflecting agency costs (Core et al., 1999).

Empirical studies have explored the interplay between governance and sustainability factors in CSR contracting (e.g., Abdelmotaal & Abdel-Kader, 2016; Al-Shaer & Zaman, 2019; Eccles et al., 2014; B. Hong et al., 2016; Maas, 2018). However, limited attention has been paid to the dynamic interactions between governance structures, institutional environments, and CSR activities, particularly across diverse national contexts (e.g., Cavaco et al., 2020). For instance, sustainability activities offer governance capabilities critical for effective incentives while being influenced by managerial decision-making alignment (Mallin et al., 2013). These dynamics drive the adoption and design of CSR contracting mechanisms, highlighting the need for more in-depth analysis.

This study investigates the determinants and consequences of CSR contracting by examining firm-level and national-contextual factors. Using a longitudinal dataset of STOXX Europe 600 firms from 2015 to 2022, it explores how governance structures and institutional environments influence the adoption of CSR-focused compensation structures and assesses their effectiveness in enhancing sustainability performance, providing a nuanced understanding of CSR contracting in an often-overseen European context.

Key findings reveal that strong environmental performance and robust governance structures are significant predictors of CSR contracting. Firms with these attributes demonstrate

a greater capacity to align executive incentives with sustainability objectives, reflecting organizational proficiency in driving change. The study also identifies an "incentive life-cycle" phenomenon (Obloj & Sengul, 2012), wherein the effectiveness of CSR contracting diminishes over time. Hence, it does not unequivocally support the notion that CSR contracting consistently enhances corporate social performance across different dimensions.

This research makes several contributions to the literature. Theoretically, it integrates agency theory, stakeholder theory, and the incentive life-cycle concept to provide a comprehensive understanding of CSR contracting. It emphasizes the importance of aligning managerial decision-making with sustainability objectives while recognizing the challenges of balancing multi-dimensional performance goals within complex organizational settings. As such, the study contributes to the theoretical understanding of sustainability incentives by implementing a learning mechanism into executive decision-making.

Practically, the study offers actionable insights into the design and implementation of CSR contracting. By extending prior research (e.g, Cavaco et al., 2020) it emphasizes the role of robust governance mechanisms in fostering effective incentive structures and the importance of adaptability to diverse aspects of CSP for sustaining long-term performance. The analysis highlights the interdependence between governance mechanisms and CSR activities, offering valuable guidance for designing effective and sustainable incentive schemes.

This research advances the literature by integrating agency theory, stakeholder theory, and the incentive life-cycle concept to provide a comprehensive framework for understanding CSR contracting. It highlights the alignment of managerial decision-making with sustainability objectives and addresses the challenges of balancing multi-dimensional performance goals. By emphasizing robust governance mechanisms and adaptability, the study offers actionable guidance for designing effective, long-term incentive structures. Focusing on the European context with its diverse governance frameworks and stringent sustainability regulations (e.g.,

Cavaco et al., 2020), it addresses gaps in US-centric research, incorporating national governance codes and institutional factors (Knoth, 2023). This holistic approach bridges key gaps in understanding the determinants and outcomes of CSR contracting, delivering valuable insights for policymakers, practitioners, and scholars, and advancing the discourse on corporate governance and sustainability.

3.2 Literature Review

Some studies have investigated factors influencing CSR contracting within executive compensation plans, providing insights into both the antecedents and consequences of these arrangements. For instance, Hong et al. (2016) suggest that companies with robust governance characteristics and sustainable performance are more likely to adopt CSR-linked executive compensation. Similarly, Abdelmotaal & Abdel-Kader (2016) and Al-Shaer (2019) examined UK companies, highlighting positive associations between CSR contracting and the presence of sustainability committees, voluntary sustainability assurance, and independent boards. However, the literature is not without contradictions. Maas (2018) found no significant impact of CSP on the adoption of CSR contracting among American firms, contrasting with the findings of Hong et al. (2016) and Eccles et al. (2014), who reported a positive correlation for similar samples. Overall, empirical evidence suggests that robust governance structures increase the likelihood of CSR contracting, although the role of firms' sustainability competencies remains debated, underlining the need for comprehensive analyses across different contexts,

In addressing the complexities of CSR contracting, the challenges posed by multi-task principal-agent models (Holmstrom & Milgrom, 1991) emerge as a critical consideration. While extensive research has examined general compensation incentives and CSR activities, empirical studies explicitly linking sustainability incentives to CSP are relatively scarce. This

gap is striking given that overall sustainability performance results from numerous interdependent tasks that are difficult to measure individually or reduce to a single denominator (Ethiraj & Levinthal, 2009; Nyberg et al., 2019). For example, Cordeiro and Sarkis (2008) analyzed an industry-specific sample of S&P 500 firms, examining environmental compliance, spill indices, and emissions. Their findings indicate that boards often included environmental components in compensation contracts primarily to mitigate legal risks and penalties arising from environmental violations. This suggests that sustainability performance might not be inherently linked to executive compensation, even when firms explicitly claim such connections (Cordeiro & Sarkis, 2008, p. 314). Similarly, Russo and Harrison (2005) provided limited evidence that tying plant managers' compensation to environmental performance reduced toxic emissions at the plant level. Maas (2018) also found no significant effect of CSR contracting on CSP for a sample of US firms.

By contrast, Flammer et al. (2019) offered a more optimistic view, examining CSR contracting in a dataset of S&P 500 firms over the decade from 2004 to 2013. Their findings indicated that CSR contracting was more prevalent in emission-intensive industries and associated with positive outcomes, including reductions in short-termism, enhanced firm value, improved social and environmental performance, lower emissions, and increased green innovations. Similarly, Cavaco et al. (2020) analyzed data from OECD firms between 2004 and 2018, demonstrating that CSR-inclusive executive compensation positively impacted various environmental and social performance indicators. They also emphasized the influence of corporate governance models, noting that firms with shareholder-focused governance bodies were less likely to benefit from managerial incentives oriented toward sustainability issues.

In summary, the empirical literature increasingly supports a positive effect of CSR contracting on CSP. Nevertheless, significant gaps remain. Many studies adopt a one-directional approach, overlooking the complex, bidirectional dynamics between CSR

contracting and CSP. These analyses often control for only a limited set of factors that could simultaneously affect both variables. Furthermore, much of the research focuses on US-listed firms due to the high level of transparency required by the Securities and Exchange Commission (SEC) (Edmans et al., 2017; Maas, 2018). While this emphasis provides valuable insights, it limits the generalizability of findings. The European Union, with its diverse and interconnected economic environment, offers a unique opportunity to study executive compensation across varying governance frameworks, addressing contextual influences more effectively (Cavaco et al., 2020; Knoth, 2023).

3.3 Regulatory Context in the EU and the US

Over the past three decades, global efforts to address climate change and poverty have intensified (e.g., Brooks & Schopohl, 2020), culminating in the United Nations' 17 Sustainable Development Goals (SDGs), which aim for realization by 2030 (Adu et al., 2022; United Nations, 2015). While these global initiatives emphasize collective action, their success depends on specific institutional conditions within nations to incentivize implementation and enforce compliance (Biermann et al., 2017; Reverte, 2022). However, these institutional contexts vary significantly between regions, reflecting differing societal attitudes and governance priorities.

In the United States, public opinion often emphasizes individual autonomy and skepticism toward institutional authority, resulting in a preference for personal responsibility in addressing sustainability issues (Lorenzoni & Pidgeon, 2006). In contrast, European attitudes tend to favor governance-driven sustainability approaches, supporting regulatory frameworks and collective accountability (Lorenzoni & Pidgeon, 2006). These divergent perspectives influence how sustainability initiatives are implemented and regulated in these regions.

Global frameworks such as the SDGs and reporting guidelines like the Global Reporting Initiative (GRI) provide a foundational structure for integrating sustainability into corporate strategies (Grewal & Serafeim, 2020). The GRI emphasizes the need for compensation policies to *"describe how the remuneration policies for members of the highest governance body* [...] *relate to their objectives and performance in relation to managing the organization's impacts on the economy, environment, and people"* (Global Sustainability Standards Board, 2021, p. 30). These frameworks, while non-binding, have paved the way for more stringent regulatory measures at regional levels, with the European Union taking a leading role by mandating corporate accountability for sustainability through directives like the Non-Financial Reporting Directive (NFRD).

The NFRD requires large, publicly listed companies to disclose their environmental, social, and governance (ESG) activities, aiming to increase transparency and comparability across corporations while driving tangible sustainability impacts (European Parliament and the Council, 2014). It further emphasizes that non-financial information is crucial for managing change toward a sustainable global economy, highlighting its role in measuring, monitoring, and managing corporate performance and its impact on society (European Parliament and the Council, 2014). Similarly, Directive 2017/828 introduced shareholder engagement mandates that align executive compensation policies with long-term objectives and sustainability goals. It explicitly calls for the inclusion of sustainability factors in performance assessments, signaling a significant shift toward integrating sustainability into corporate governance (European Parliament and the Council, 2017).

The European Green Deal, launched in 2019, reflects the EU's comprehensive commitment to achieving climate neutrality by 2050 and implementing the United Nations' SDGs (European Commission, 2019). It prioritizes climate change mitigation, clean energy, biodiversity preservation, and sustainable economic growth, identifying businesses as pivotal

actors in this transition (European Commission, 2019). The Green Deal is operationalized through measures like the Corporate Sustainability Reporting Directive (CSRD), adopted in 2022, which extends the scope of the NFRD and establishes detailed sustainability reporting standards. Recital 50 of this directive underscores that stakeholder *"need information about governance factors,"* which *"should cover* […] *whether the company has a policy in terms of incentives which are offered to* [executives] […] *and which are linked to sustainability matters"* (European Parliament and the Council, 2022, p. 31). Furthermore, Article 19a specifies the requirement for disclosing such practices, stating that sustainability reporting shall contain *"information about the existence of incentive schemes linked to sustainability matters which are offered to members of the administrative, management, and supervisory bodies"* (European Parliament and the Council, 2022, p. 43).

In contrast, the regulatory context in the United States demonstrates a more conservative approach. While the SEC adopted new rules in 2024 requiring climate-related risk disclosures, it refrains from mandating explicit requirements linking executive remuneration to sustainability objectives (Grewal & Serafeim, 2020; U.S. Securities and Exchange Commission, 2024, p. 181). This hesitation is attributed to the entrenched shareholder primacy model, which prioritizes financial metrics, and skepticism toward public regulation (Hansmann & Kraakman, 2017; Ho, 2020).

The EU's regulatory framework illustrates a robust and evolving approach to integrating sustainability into corporate governance, increasingly mandating transparency and aligning executive incentives with long-term sustainability goals. Enhanced transparency increases the credibility of CSR contracting, making it more likely that firms with limited prior focus on non-financial metrics will consider adopting such compensation structures (Knoth, 2023). By contrast, the United States remains more reserved, reflecting cultural and regulatory differences rooted in shareholder primacy and individual autonomy. These variations highlight the

importance of contextualizing CSR contracting within the legal, professional, and competitive environments of respective regions (Mahoney & Thorn, 2006; Sarhan & Al-Najjar, 2023).

3.4 Theory and Hypotheses Development

3.4.1 DETERMINANTS OF SUSTAINABILITY INCENTIVE CONTRACTING

Highlighted by literature (Callan & Thomas, 2014; Jian & Lee, 2015; Karim et al., 2018) an interplay of corporate factors, including sustainability competencies, stakeholder orientation, and board efficiency, shapes a company's commitment to integrate sustainability criteria into their compensation policies. The practical implementation and design of CSR contracts are also nuanced by executives' personal characteristics and civil regulations (Jackson, 2010; Kang, 2017). This section discusses the dynamics of these factors, aiming to provide a structured analysis of their potential effects.

Stakeholders significantly influence organizational strategies, shaping their trajectory positively or negatively (Murray & Vogel, 1997; O'Riordan & Fairbrass, 2008). Rooted in stakeholder theory, firms responsive to legitimate stakeholder demands are more likely managing corporate social performance (Donaldson & Preston, 1995). However, balancing these diverse demands often requires navigating trade-offs and complexities, particularly in aligning conflicting priorities within organizational contexts (Ethiraj & Levinthal, 2009).

Successfully managing these challenges relies on developing distinctive capabilities that enable firms to address environmental and social demands effectively and simultaneously (Buysse & Verbeke, 2003). According to the resource-based view, these capabilities are rooted in unique, hard-to-replicate assets, such as expertise, innovations, and sustainable practices developed through consistent engagement with CSR initiatives (Barney et al., 2011). CSR contracting emerges as a strategic governance tool, aligning executive decision-making with sustainability goals and embedding them into broader business strategies (Eccles et al., 2014).

Companies with strong sustainability competencies are more likely to integrate such objectives into executive compensation as a means of formalizing and advancing their commitment (Maas, 2018). Conversely, firms lacking these competencies might resort to short-term measures aimed at addressing immediate sustainability challenges without integrating them into long-term strategies.

Legitimacy theory further underscores the importance of aligning corporate behavior with societal norms to maintain success (Wilmshurst & Frost, 2000). Public controversies related to sustainability issues, amplified by traditional and social media (Kotzian, 2024), pose a significant threat to corporate reputation, which is an essential intangible asset (Kotzian, 2024; Schwaiger et al., 2011). Effective reputation management, therefore, provides a competitive edge (Eccles et al., 2014; Schwaiger et al., 2011), prompting firms to prioritize mitigating reputational risks over proactive engagement in broader sustainability efforts (McGuire et al., 2019), especially since public controversies are more visible to external stakeholders (Berrone & Gomez-Mejia, 2009a). This often leads organizations to implement stringent compliance policies, focusing on risk avoidance and ensuring operational stability under public and regulatory scrutiny (Jackson, 2008, 2010).

Hypothesis 1a: The probability of CSR contracting is positively influenced by firm's environmental performance.

Hypothesis 1b: The probability of CSR contracting is positively influenced by firm's social performance.

Hypothesis 1c: The probability of CSR contracting is positively influenced by firm's controversy performance.

Navigating stakeholder orientation presents a critical challenge for firms, particularly in determining the scope of their responsibilities and identifying which stakeholder groups to prioritize (O'Riordan & Fairbrass, 2008). This complexity is further intensified by conflicting

expectations among diverse stakeholder groups, varying contextual factors, and the inherent difficulties in operationalizing effective engagement practices (O'Riordan & Fairbrass, 2008). Thus, effective stakeholder dialogue not only helps delineate the firm's obligations but also facilitates the integration of stakeholder priorities into sustainable business strategies, ensuring a balance between accountability and practical feasibility (Murray & Vogel, 1997)

Beyond stakeholder dialogue, robust governance practices play a vital role in predicting CSR contracting, addressing agency conflicts and facilitating more effective incentive implementation and monitoring (Parsa et al., 2007). A sustainability committee strengthens the board's ability to formulate and oversee sustainability strategies, systematically evaluating the firm's performance and integrating public sentiment and regulatory requirements—elements often missed in direct stakeholder interactions (Eccles et al., 2014).

Complementing the sustainability committee, a compensation committee ensures that sustainability considerations are explicitly reflected in executive compensation contracts (Abdelmotaal & Abdel-Kader, 2016; Maas, 2018). By incorporating stakeholder demands into remuneration policies, the board addresses information asymmetries and enhances oversight of sustainable decision-making processes (Berrone & Gomez-Mejia, 2009a). These committees collectively bolster the firm's capacity to align executive incentives with long-term sustainability goals, driving accountability and transparency in corporate governance.

Hypothesis 2a: The probability of CSR contracting is positively influenced by firm's stakeholder dialogue.

Hypothesis 2b: The probability of CSR contracting is positively influenced by the existence of a sustainability committee.

Hypothesis 2c: The probability of CSR contracting is positively influenced by the existence of a compensation committee.

Berrone and Gomez-Mejia (2009a) highlight that stakeholder interests advocated through pay policies may not guarantee the alignment between a CEO's decisions and the firm's sustainability objectives. To address this limitation, additional information is necessary to evaluate and guide CEO decision-making, which may not be entirely provided by a committee. This places an increased burden on the board of directors, facing enhanced advising and monitoring requirements, thereby reinforcing its position as a cornerstone of corporate governance (Eccles et al., 2014). This study posits that a board's efficacy is influenced by factors such as its independence, diversity, and meeting frequency.

The composition of the board, particularly its level of independence, determines the distribution of members based on their primary allegiance – either to external stakeholders (independent members) or to management (dependent members, Schiehll & Bellavance, 2009). Independent board members, whose primary allegiance lies with external stakeholders rather than management, are better positioned to advocate for value creation strategies that extend beyond immediate financial gains (Joseph et al., 2014; Schiehll & Bellavance, 2009). These members often require access to comprehensive and detailed information about the firm's operations and strategies, enabling them to implement and oversee optimal compensation contracts more effectively (Joseph et al., 2014; Schiehll & Bellavance, 2009). As a result, independent boards enhance the firm's capacity to integrate sustainability metrics into executive remuneration, aligning managerial incentives with long-term corporate social performance goals (Ikram et al., 2023)

Grounded in upper echelons theory, gender diversity within the boardroom introduces varied experiences, perspectives, and values, which collectively strengthen the board's capability to address complex issues like CSR contracting (Wu et al., 2022). Research demonstrates that gender-diverse boards exhibit heightened ethical sensitivity, relational ethics, and broader stakeholder consideration (Dawson, 1997; Jain & Zaman, 2020). Further, diversity

broadens the board's expertise, experience, interests, and perspectives (Cumming et al., 2015). This diversity fosters a more activist board dynamic, challenging conventional norms and enhancing the firm's ability to engage with diverse stakeholder groups (Carter et al., 2003). Moreover, the enhanced networks of demographically diverse directors improve the firm's communication and engagement with its stakeholders, further aligning board decisions with societal expectations (Zhang, 2012).

The intensity of board activity, as indicated by meeting frequency, serves as a proxy for board diligence and the effectiveness of governance practices (Vafeas, 1999). Boards with higher meeting frequencies dedicate more time to oversight and advisory roles, enabling them to address complex strategic issues like CSR integration more thoroughly (Giannarakis, 2014; Laksmana, 2008). Outsider participation, delegation of tasks to committees, and the increasing demand for board involvement in sustainability matters further necessitate frequent meetings to coordinate efforts effectively (Vafeas, 1999).

Hypothesis 3a: The probability of CSR contracting is positively influenced by the board's independence.

Hypothesis 3b: The probability of CSR contracting is positively influenced by the board's gender diversity.

Hypothesis 3c: The probability of CSR contracting is positively influenced by the board's meeting frequency.

In addition to firm-level attributes shaping how firms address stakeholder demands, the CEO, as the top decision-maker, determines whether and how a firm responds to stakeholder demands, directly influencing CSP (Fu et al., 2020; Zhong et al., 2022). Effective CSP, as highlighted by Orlitzky et al. (2003), enhances managerial capabilities while building reputational capital for both the firm and its executives. CEOs closely aligned with stakeholders

are more likely to adopt CSR contracting, perceiving it as a strategic tool to improve goodwill and customer favorability (Sarhan & Al-Najjar, 2023).

Agency theory further suggests that aligning CEO incentives with long-term organizational goals—through mechanisms like equity compensation—helps mitigate conflicts between executives and shareholders (Ittner et al., 1997). Higher CEO equity ownership not only fosters alignment with the firm's objectives but also grants the CEO greater influence over corporate strategies related to social and environmental practices (McGuire et al., 2003; Sarhan & Al-Najjar, 2023).

However, excessive managerial power can distort these benefits. Managerial power enables executives to influence compensation structures, potentially leading to overcompensation through opaque or hard-to-evaluate performance targets (B. Hong et al., 2016). This may result in the inclusion of sustainability incentives that are ambiguous or overvalued (Bebchuk & Fried, 2004; B. Hong et al., 2016). Similarly, managerial entrenchment, where executives retain their positions beyond the point of benefiting shareholders, impacts internal control mechanisms (Gomez-Mejia et al., 2001). Walsh and Seward (1990) argue that managers may deflect accountability by emphasizing environmental determinism or less tangible metrics, such as community or employee well-being, to obscure unfavorable shareholder returns. This study incorporates these dynamics by using CEO equity compensation as a proxy for CEO power and alignment, while CEO tenure accounts for entrenchment factors.

Moreover, gender socialization theory suggests that men and women bring distinct ethical perspectives to leadership roles, shaped by societal norms and values (Dawson, 1992, 1997; Harris et al., 2019). Female leaders are often associated with greater ethical sensitivity, relational ethics, and universal concern, whereas male leaders may prioritize competitive, power-driven decision-making (Adams & Funk, 2012; Cronqvist & Yu, 2017; European Parliament and the Council, 2022). Consequently, male CEOs might exhibit a higher propensity

for adopting explicit incentive schemes, aligning with their leadership style focused on measurable performance outcomes, including CSP (Harris et al., 2019).

Hypothesis 4a: The probability of CSR contracting is positively influenced by the proportion of CEO's equity compensation.

Hypothesis 4b: The probability of CSR contracting is positively influenced by the CEO's tenure.

Hypothesis 4c: The probability of CSR contracting is positively influenced if the CEO's gender is male.

Adhering to standards of "good" governance, as outlined in codes of best practice (Stiglbauer & Velte, 2014), is a widely recommended approach for addressing critical governance challenges, including board composition, stakeholder engagement, transparency, and executive compensation policies (Aguilera & Cuervo-Cazurra, 2004). Within the European Union, these governance codes often complement supranational regulations like the CSRD, which mandates sustainability-focused frameworks across member states(European Parliament and the Council, 2022).

Although non-binding, governance codes frequently anticipate regulatory developments, offering guidance on sustainability metrics, social responsibility, and value-driven decision-making (Wymeersch, 2006). These codes shape organizational norms by embedding ethical and sustainable conduct as a strategic priority (Aguilera & Cuervo-Cazurra, 2004) and serve as signals of high governance quality, instilling confidence among investors, analysts, and stakeholders in a firm's commitment to responsible (Stiglbauer & Velte, 2014).

Firms often adopt CSR contracting as a preemptive strategy to align with anticipated regulations, maintaining their competitive legitimacy while signaling proactive governance practices (Cavaco et al., 2020). This alignment with governance standards underscores the strategic importance of meeting stakeholder expectations, where compliance with legal

mandates and adherence to governance codes is not only a regulatory necessity but also a reputational asset (S. Cohen et al., 2023).

However, governance approaches across EU member states vary (Aguilera & Cuervo-Cazurra, 2004). While some codes prioritize stakeholder value creation and ecological objectives, others focus more narrowly on shareholder interests, reflecting the diverse traditions and frameworks that define national governance landscapes within the EU (Aguilera & Cuervo-Cazurra, 2004).

Hypothesis 5a: The probability of CSR contracting is positively influenced if the code of corporate governance emphasizes the long-term value of the firm.

Hypothesis 5b: The probability of CSR contracting is positively influenced if the code of corporate governance emphasizes the sustainable value of the firm.

Hypothesis 5c: The probability of CSR contracting is positively influenced if the code of corporate governance emphasizes ecological and social objectives in strategy formulation.

3.4.2 CSP AS A CONSEQUENCE OF CSR CONTRACTING

Grounded in agency theory, implementing pay-for-performance systems represents a practical approach to aligning the self-interested behavior of CEOs with the broader interests of principals (Deckop et al., 2006). CSR contracting, as a targeted component of such systems, incentivizes executives to prioritize sustainability initiatives, thereby enhancing CSP. This alignment not only addresses stakeholder demands but also mitigates the risks of reputation-damaging incidents often associated with executives' risk-affine decision-making (B. Hong et al., 2016). By embedding CSR metrics into executive compensation, firms can drive improvements across multiple dimensions of CSP. Specifically, CSR contracting is expected to positively influence environmental performance, social outcomes, and a firm's ability to effectively manage controversies.

Hypothesis 6a: Firm's environmental performance is positively influenced by CSR contracting.

Hypothesis 6b: Firm's social performance is positively influenced by CSR contracting.

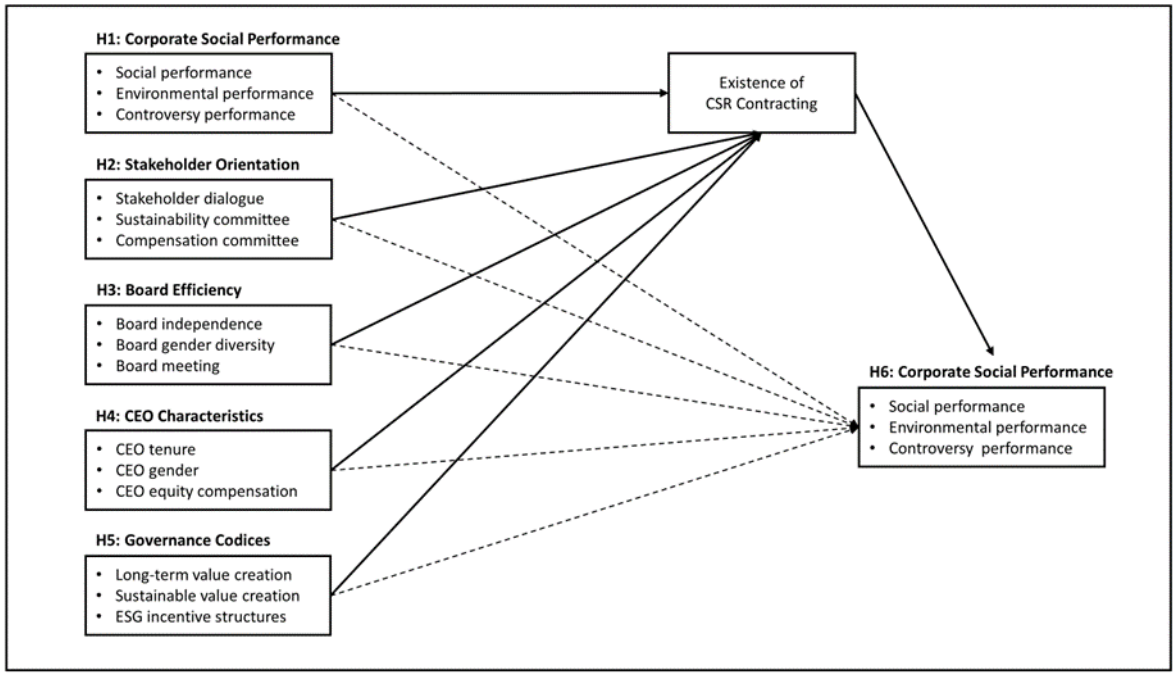
Hypothesis 6c: Firm's controversy performance is positively influenced by CSR contracting.

The efficacy of CSR contracting, however, hinges on the development of clear, measurable performance targets that align with organizational priorities (Jensen & Murphy, 2004). Equally important are substantial rewards that resonate with CEOs and reinforce commitment to these goals (Deckop et al., 2006). In this context, robust corporate governance practices play a critical role by mitigating information asymmetries, enhancing executive monitoring, and ensuring a focus on diverse stakeholder needs.

This study explores the multifaceted relationship between CSR contracting and its determinants, as illustrated in Figure 3.1. Hypotheses 1 to 5 examine the factors influencing the adoption of CSR contracting, encompassing firm-level attributes and institutional frameworks. Hypothesis 6 evaluates the impact of these incentive mechanisms on CSP outcomes.

Moreover, firm-level factors may serve as both determinants of CSR contracting and drivers of its associated sustainability outcomes. For instance, significant variables influencing adoption could simultaneously shape CSP dimensions (Cavaco et al., 2020). Consequently, this analysis extends beyond the indirect effects of CSR contracting to consider direct linkages between determinants and CSP outcomes, providing a comprehensive perspective on the interplay of governance mechanisms, executive incentives, and sustainable performance.

Figure 3.1: Research Model



3.5 Methodology

3.5.1 DATA & VARIABLES

This study analyzes the relationship between CSP and executive compensation using a dataset of STOXX Europe 600 firms, covering 90% of European market capitalization from 2014 to 2022. This European focus bridges and contextualizes insights predominantly derived from American research (e.g., B. Hong et al., 2016; Samet & Jarboui, 2017), acknowledging regional institutional and governance differences.

Data for the analysis is sourced from three primary databases. The DataStream database, provided by LSEG (Refinitiv), delivers firm-specific data on sustainability and general performance metrics. The Execucomp database from S&P Capital IQ supplies CEO-level data, while national Corporate Governance Codices are obtained through the European Corporate Governance Institute (ECGI). The study's key independent variable, "CSR CONTRACTING," is a binary indicator of whether a CEO's compensation package explicitly links incentives to

CSP outcomes, following definitions from prior literature (Flammer et al., 2019; B. Hong et al., 2016)

Variable definitions and descriptive statistics are shown in Table 3.1. Following previous studies (Cavaco et al., 2020; Surroca et al., 2010; Tosi et al., 2000; Waddock & Graves, 1997), control variables include firm performance measures such as return on assets (ROA), firm size (REVENUE), revenue growth (REVENUE GROWTH), risk profile ("LEVERAGE"), and growth opportunities (MARKET-TO-BOOK). Autoregressive dynamics are accounted for using lagged dependent variables (Maas, 2018), supplemented by controls for industry, country (headquarter country), year, and firm- and year-specific fixed effects to mitigate bias.

Table 3.1: Variables Description I / II

Construct	*Construct Definition*	*Mean*	*Std. dev.*	*N.*
CSR CONTRACTING	= 1 if the CEO compensation contract contains incentives tied to CSP.	0.44	0.55	4,068
Corporate social responsibility (H1)				
ENVIRONMENTAL PERFORMANCE	Rates a firm's impact on natural systems (air, land, water, ecosystems) on a scale from 0 to 100.	0.65	0.24	4,068
SOCIAL PERFORMANCE	Rates a firm's ability to build trust and loyalty with stakeholders through best practices on a scale from 0 to 100.	0.69	0.20	4,068
CONTROVERSY PERFORMANCE	Rates a firm's ability to avoid sustainability-related controversies and minimize negative media exposure on a scale from 0 to 100.	0.87	0.49	4,068
Stakeholder-orientation (H2)				
STAKEHOLDER DIALOGUE	Rates a firm's stakeholder engagement and involvement in decision-making on a scale from 0 to 100.	0.69	0.07	3,174
SUSTAINABILITY COMMITTEE	= 1 if the firm has a sustainability committee, 0 otherwise.	0.89	0.32	3,174
COMPENSATION COMMITTEE	= 1 if the study has a compensation committee, 0 otherwise.	0.87	0.33	3,174
Governance effectivity (H3)				
BOARD INDEPENDENCE	Percentage of independent directors at the end of the fiscal year.	0.64	0.23	3,749
BOARD GENDER DIVERSITY	Percentage of female board members at the end of the fiscal year.	0.31	0.12	3,749
BOARD MEETING	Total number of board meetings during the fiscal year.	9.46	3.96	3,749
CEO characteristics (H4)				
CEO TENURE	Total number of years a manager has been CEO.	1.59	0.89	3,320
CEO GENDER	= 1 if a CEO is female, 0 otherwise.	0.05	0.21	3,320
CEO EQUITY COMPENSATION	Percentage of non-cash compensation relative to the total compensation.	0.25	0.23	3,320

(Continued)

Table 3.2: Variables Description II / II

Construct	*Construct Definition*	*Mean*	*Std. dev.*	*N.*
Corporate governance codices (H5)				
CGC_LONG_TERM	= 1 if the corporate governance code in the firm's headquarters country recommends linking compensation criteria to long-term	0.48	0.50	4,056
CGC_SUSTAINABLE	= 1 if the corporate governance code in the firm's headquarters country recommends linking compensation criteria to sustainable value; 0 otherwise.	0.24	0.43	4,056
CGC_ESG	= 1 if the corporate governance code in the firm's headquarters cour recommends linking compensation criteria to environmental, social, and governance (ESG) factors; 0 otherwise.	0.15	0.35	4,056
Firm controls				
ROA	Return on Assets, calculated as income after taxes divided by average total assets, expressed as a percentage.	7.10	6.94	4,068
REVENUE	Total gross sales and other operating revenue.	17.80	1,54	4,068
REVENUE GROWTH	Revenue growth, calculated as the percentage increase in sales compared to the preceding period.	0.06	0.18	4,068
LEVERAGE	Calculated as the ratio of debt to equity, measured in percent.	2.54	1.34	4,068
MARKET-TO-BOOK	Market-to-Book ratio, calculated as the ratio of market capitalization of the company by its book value.	0.90	0.89	4,068

Notes: This table presents the explanatory variables used in the analyses. Beside the abbreviation of the variable name, a short description is given in the second column. The last three columns show the sample mean, the sample standard deviation (*Std. dev.*) and the number of observations (*N.)*

3.5.2 STATISTICAL METHOD

The study employs a two-fold statistical methodology to explore the factors influencing CSR contracting and its subsequent impact on CSP. A panel data binary logistic regression model is utilized to analyze determinants of CSR contracting (Al-Shaer & Zaman, 2019; Schiehll & Bellavance, 2009),

The general regression model is specified as:

$$CSR\ contracting_{it} = \beta_0 + \beta_1 X_{it-1} + \beta_2 CSR\ contracting_{it-1} + \beta_3 Firm\ controls_{it-1}$$

$$+\beta_4 Country_i + \beta_5 Industry_i + \beta_6 Firm_i + \beta_7 Year_{ti} + e_{(it)}$$

The model incorporates a one-year lag to reflect the timing of compensation decisions, aligning with the annual cycle of performance assessments and their influence on strategic

priorities for subsequent years (Berrone & Gomez-Mejia, 2009a; McGuire et al., 2019). This approach ensures the model captures causal effects of past performance and decisions on current CSR contracting practices, distinguishing these influences from contemporaneous variables often included in prior research (e.g., B. Hong et al., 2016).[20]

To mitigate heteroscedasticity and enhance the stability of results, variables such as CEO tenure, firm revenue, leverage, and market-to-book ratio are log-transformed. These transformations reduce variance disparities across observations, thereby improving the model's reliability. Additionally, variables prone to extreme values, including board meetings, return on assets, revenue growth, market-to-book ratio, and leverage, are winsorized at the 1% or 2% level. This approach minimizes the influence of outliers, following methodologies used in similar studies (e.g., McGuire et al., 2019).

To evaluate the effectiveness and implications of CSR contracting, the study applies a two-level structural equation model (SEM). SEM addresses dynamic interrelations and potential endogeneity concerns, particularly the simultaneous and bidirectional nature of interactions between different dimensions of CSP—environmental, social, and controversy performance. CSP inherently involves balancing conflicting demands and managing interdependent activities, making it critical for firms to demonstrate the capacity to execute these activities concurrently (Hahn et al., 2016).

SEM is particularly robust for handling indirect, multiple, and reverse relationships (Ramlall, 2016), making it well-suited for exploring the multifaceted effects of sustainability incentives on firm performance. Within this framework, a path analysis approach examines how CSR contracting influences sustainability outcomes over time (Thakkar, 2020). This

[20] While Hong et al. (2016) acknowledge that compensation contracts are typically determined at the start of the year or the end of the preceding year, reflecting an ex-ante decision-making process, is evaluated continuously over the course of the year, capturing ex-post performance outcomes (B. Hong et al., 2016, p. 16), their methodology measures CSR contracting and CSP concurrently. This simultaneous measurement raises questions about whether the observed associations genuinely reflect the intended influence of CSR contracting on CSP or if they are partially driven by reverse causality or contemporaneous confounding factors.

methodology ensures a nuanced understanding of the dynamic and reciprocal impacts of CSR contracting on firm sustainability performance. The multivariate models are specified as:

$$CSP\ dimension_{it} = \beta_0 + \beta_1 CSR\ contracting_{it} + \beta_2 CSP\ contracting_{it-1}$$
$$+\beta_3 X_{it} + \beta_4 CSP\ dimension_{it-1} + \beta_5 CSP\ dimension_{-1t}$$
$$+\beta_6 Firm\ controls_{it} + \beta_7 Country_i + \beta_8 Industry_i + \beta_9 Firm_i$$
$$+\beta_{10} Year_{it} + e_{(it)}$$

To account for the within-firm persistence highlighted by Maas (2018) and Russo & Harrison (2005), this study assumes that CEO decisions have a more pronounced impact on future CSP than on concurrent CSP. Accordingly, the SEM framework captures both contemporaneous (β_1) and lagged effects (β_2) of CSR contracting. As shown in Figure 1.1, factors influencing CSR contracting are modeled to exert both direct and indirect effects on a firm's subsequent sustainability performance, with CSR contracting functioning as a mediating variable. This dual-layered approach enables a nuanced understanding of how CSR contracting pathways influence CSP outcomes over time. The analysis integrates the logit model for CSR contracting rather than treating it as a simple dummy variable, allowing for a more sophisticated examination of indirect effects. This design facilitates the evaluation of the various mechanisms through which independent variables impact CSP. Additionally, to capture the complex interrelations among CSP's three dimensions—environmental performance, social performance, and controversy exposure—each model includes controls for the mutual influences of the other two dimensions (β_5).

Statistical analyses were conducted using"R" (R Core Team, 2018) employing the "lavaan" package (Rosseel, 2012). For CSR contracting models, the "WLSMV" (robust weighted least squares) estimator was used (Brown, 2015) , while CSP models were analyzed with the "MLR" (maximum likelihood estimation with Huber-White standard errors) estimator

(McGuire et al., 2019). These methods ensure robustness against potential endogeneity and heteroscedasticity while capturing the simultaneous relationships between CSR contracting and CSP outcomes.

3.5.3 DESCRIPTIVE STATISTICS

The data highlights key trends and patterns in the adoption of CSR contracting across countries and industries, reflecting its increasing prevalence and the nuanced factors influencing its implementation. Table 3.3 reveals that the sample comprises 594 firms headquartered across 22 countries, with the United Kingdom (140 firms), France (72 firms), and Germany (67 firms) making up the largest national cohorts. CSR contracting has been adopted by 489 firms (82%), indicating widespread usage. Notable country-level variations exist: the Republic of Ireland and Portugal exhibit a 100% adoption rate, followed by Spain (91%), France (90%), Austria (89%), and the United Kingdom (86%).[21] In contrast, Poland (50%), Luxembourg (60%), and Sweden (72%) have the lowest adoption rates, suggesting that country-specific institutional factors, potentially related to corporate governance codes, may influence these discrepancies.

Industry-wise, the sample spans 11 sectors, with Industrials (124 firms), Financials (93 firms), and Consumer Discretionary (89 firms) accounting for the majority. CSR contracting is particularly prominent in Utilities (97%) and Telecommunications (95%), while Technology (74%) and Consumer Discretionary (75%) industries report the lowest adoption rates. This indicates that industry-level characteristics, though less impactful than country-level factors, might also play a role in shaping the adoption of CSR contracting practices.

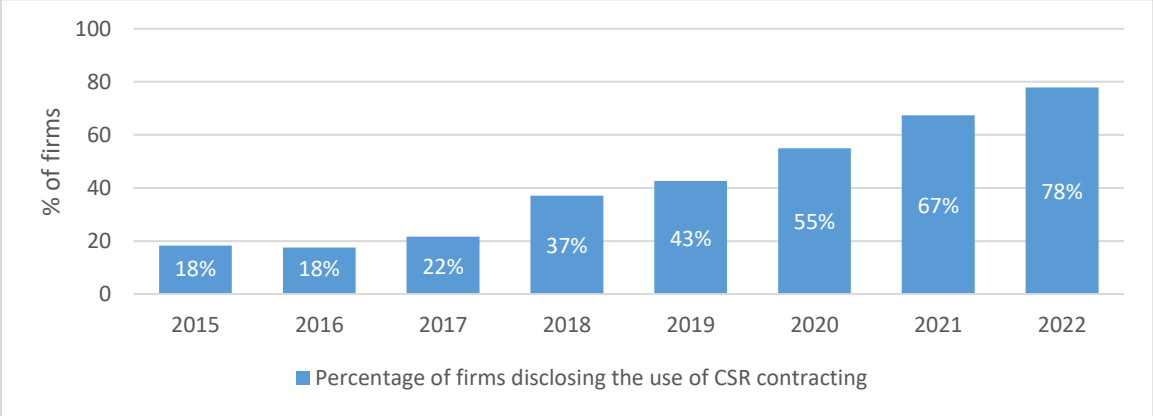
[21] While the prevalence of CSR contracting in Cyprus, Isle of Man, and Malta appears to be 100%, the dataset contains only one firm in each of these countries. As such, the relative prevalence may not be fully representative of the broader context. The same holds for Bermuda and the Faroe Islands, where both firms do not indicate the use of CSR contracting.

Table 3.3: Sample Composition

	Total		*Treatment Group (CSR Contracting)*		
	Number of Firms	*Percentage within Group*	*Number of Firms*	*Percentage within Group*	*Percentage of Country / Industry*
Sample Distribution across Countries					
Austria	9	1.5	8	1.6	88.9
Belgium	16	2.7	12	2.5	75.0
Bermuda	1	0.2	0	0.0	0.0
Cyprus	1	0.2	1	0.2	100.0
Denmark	21	3.5	17	3.5	81.0
Faroe Islands	1	0.2	0	0.0	0.0
Finland	18	3.0	14	2.9	77.8
France	72	12.1	65	13.3	90.3
Germany	67	11.3	54	11.0	80.6
Ireland; Republic of	11	1.9	11	2.2	100.0
Isle of Man	1	0.2	1	0.2	100.0
Italy	27	4.5	23	4.7	85.2
Luxembourg	10	1.7	6	1.2	60.0
Malta	1	0.2	1	0.2	100.0
Netherlands	36	6.1	29	5.9	80.6
Norway	16	2.7	12	2.5	75.0
Poland	8	1.3	4	0.8	50.0
Portugal	3	0.5	3	0.6	100.0
Spain	24	4.0	22	4.5	91.7
Sweden	60	10.1	43	8.8	71.7
Switzerland	51	8.6	43	8.8	84.3
United Kingdom	140	23.6	120	24.5	85.7
Total	594	100.0	489	100	82.3
Sample Distribution across Industries					
Basic Materials	40	6.7	32	6.5	80.0
Consumer,	89	15.0	67	13.7	75.3
Consumer, Staples	49	8.2	38	7.8	77.6
Energy	18	3.0	15	3.1	83.3
Financials	93	15.7	80	16.4	86.0
Health Care	56	9.4	46	9.4	82.1
Industrials	124	20.9	106	21.7	85.5
Real Estate	38	6.4	30	6.1	78.9
Technology	38	6.4	28	5.7	73.7
Telecommunication	20	3.4	19	3.9	95.0
Utilities	29	4.9	28	5.7	96.6
Total	594	100.0	489	100	82.3

Figure 3.2 illustrates a significant upward trend in the disclosure of sustainability-related incentives, with adoption rising to nearly 80% by 2022—a fourfold increase since 2015. This trend underscores a growing institutionalization of CSR contracting, surpassing earlier patterns observed in U.S. and global data (Cavaco et al., 2020; Flammer et al., 2019). The rapid adoption rate suggests increasing confidence in CSR contracting as an effective tool for aligning executive incentives with sustainability goals, or as a mechanism for enhancing reputational standing.

Figure 3.2: Proportion of Firms that Disclose the Use of CSR Contracting



Note: This figure shows the proportion of firms that disclose the use of CSR contracting, indicating how usage evolves over time.

Table 3.4 provides insights into the correlations between CSR contracting and key variables. CSR contracting is positively associated with firms demonstrating strong environmental and social responsibility performance, independent and diverse boards with frequent meetings, and the presence of sustainability and compensation committees. Larger firms, those providing CEO equity compensation, and those headquartered in countries with explicit sustainable corporate governance codes are also more likely to adopt CSR contracting. Conversely, CSR contracting shows a negative association with firms benefiting from positive media exposure, engaging in extensive stakeholder dialogue, or operating under implicit

governance frameworks. Similarly, profitability and favorable market evaluations exhibit a negative correlation with CSR contracting, indicating potential trade-offs in prioritizing sustainability objectives over short-term financial metrics. Notably, firms with lower controversy performance are more inclined toward CSR contracting, reinforcing the importance of mitigating reputational risks alongside addressing traditional sustainability indicators (e.g., McGuire et al., 2003).

While these descriptive correlations reveal important patterns, they do not account for potential endogeneity or the influence of other control variables. Multivariate analyses are conducted in subsequent sections to address these complexities and provide a more robust understanding of the determinants and consequences of CSR contracting.

Table 3.4: Correlations Table

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*
1. CSR contracting	1.00																				
2. Environmental perf. $_{t-1}$	.12*	1.00																			
3. Social perf. $_{t-1}$	.12*	.54*	1.00																		
4. Controversy perf. $_{t-1}$	-.12*	-.24*	-.27*	1.00																	
5. Stakeholder dialogue $_{t-1}$	-.14*	-.05	-.07*	-.02	1.00																
6. Sustainability committee $_{t-1}$	.10*	.34*	.30*	-.11*	.00	1.00															
7. Compensation committee $_{t-1}$	.07*	-.04	-.09*	.09*	.07*	-.02	1.00														
8. Board independence $_{t-1}$	.07*	.02	.12*	-.08*	.01	.02	.07*	1.00													
9. Board gender $_{t-1}$	.23*	.10*	.09*	-.05	-.25*	.04	.07*	-.02	1.00												
10. Board meeting $_{t-1}$ [a]	.08*	.05	.03	-.08*	-.13*	.00	.14*	.07*	.19*	1.00											
11. CEO tenure $_{t-1}$ [b]	.02	.02	.01	.07*	-.06*	-.04	.01	.00	.02	-.12*	1.00										
12. CEO gender $_{t-1}$	.03	-.06*	-.04	.03	.02	.01	.05	-.04	.13*	.08*	-.09*	1.00									
13. CEO equity compensation $_{t-1}$	.09*	.00	.08*	.01	.10*	.08*	-.03	.10*	-.02	-.15*	.13*	-.06*	1.00								
CGC_long_term $_{t-1}$	-.04	-.14*	-.17*	.01	.12*	-.09*	.25*	.04	.08*	.09*	-.10*	.09*	-.01	1.00							
CGC_sustainable $_{t-1}$	-.06*	.02	.07*	-.06*	.09*	.04	-.49*	.04	-.26*	-.22*	.01	-.11*	.07*	-.55*	1.00						
CGC_esg $_{t-1}$	.22*	.07*	.12*	.01	-.15*	.02	.15*	.01	.25*	.06*	.12*	-.01	.06*	-.43*	-.25*	1.00					
Return on assets $_{t-1}$ [a]	-.06*	-.14*	-.08*	.19*	.09*	-.16*	.02	-.02	-.04	-.18*	.06*	-.03	.12*	.11*	-.02	-.05	1.00				
Revenue $_{t-1}$ [b]	.14*	.43*	.42*	-.48*	.02	.25*	-.13*	.08*	.06*	.01	-.06*	-.07*	.05	-.16*	.09*	.06*	-.28*	1.00			
Revenue growth $_{t-1}$ [a]	.05	-.12*	-.08*	.08*	-.02	-.08*	-.01	-.00	-.02	-.04	.08*	-.05	.08*	-.02	.04	.01	.24*	-.09*	1.00		
Leverage $_{t-1}$ [b]	.04	.04	.09*	-.02	.00	.11*	.01	.09*	.02	.05	.00	.05	-.02	.00	-.04	.06*	-.16*	-.06*	-.05	1.00	
Market-to-book $_{t-1}$ [a]	-.07*	-.27*	-.07*	.25*	.10*	-.09*	-.01	-.04	-.04	-.15*	.08*	-.04	.19*	.07*	.04	-.05	.59*	-.30*	.13*	.05	1.00

Notes: All independent variables are lagged by one year. Correlation coefficients above .06 or below -.06 are statistically significant at $p < .05$ (one-tailed test), denoted by an asterisk.

[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.

[b] Natural logarithmic transformation to correct for adverse skew and kurtosis.

3.6 Results

3.6.1 THE DETERMINANTS OF CSR CONTRACTING

The results summarized in Table 3.5 shed light on the determinants of CSR contracting utilization. The analysis begins with Model 1.0, which includes only control variables, and incrementally incorporates hypothesized independent variables in Models 1.1 through 1.5, culminating in Model 1.6, which integrates all variables.

The baseline model (1.0) identifies significant autocorrelation, reflecting a stable, trend-oriented governance process. Firms already utilizing CSR contracting exhibit a 375% higher likelihood of continuing this practice in subsequent years, emphasizing the continuity of such governance strategies.[22] Profitability and firm size also emerge as critical determinants, aligning with existing literature (Ikram et al., 2023). Larger, globally active firms face heightened public and regulatory scrutiny, which may incentivize CSR contracting as a reputational safeguard.

In Model 1.1, sustainability performance is introduced, revealing a significant positive association ($p < 0.05$) between prior environmental performance and CSR contracting. A 10-point improvement in environmental performance corresponds to a 390% increase in the likelihood of adopting CSR-linked incentives, providing robust support for Hypothesis 1a. This finding refines earlier research (B. Hong et al., 2016) by emphasizing the dominant role of environmental initiatives in fostering CSR contracting. Such performance may serve as a foundation for addressing the complexities of multi-tasking governance frameworks, where aligning managerial incentives with diverse sustainability goals remains challenging.

[22] The percentage of 375% is calculated as exp(1.56)−1, where exp(1.56) where represents the exponential function $e^{1.56}$, and subtracting 1 converts the result into a percentage increase relative to the baseline.

Table 3.5: Logistic Regression Results for the Adoption of CSR Contracting

Variables	*(1.0)*	*(1.1)*	*(1.2)*	*(1.3)*	*(1.4)*	*(1.5)*	*(1.6)*
Environmental perf. $_{t-1}$		.33** (0.17)					.53** (.23)
Social perf. $_{t-1}$		.13 (.19)					–.27 (.28)
Controversy perf. $_{t-1}$		.01 (.11)					.07 (.15)
Stakeholder dialogue $_{t-1}$			.21 (.58)				–.34 (.69)
Sustainability committee $_{t-1}$			.11 (.10)				.09 (.12)
Compensation committee $_{t-1}$			.24* (.13)				.22 (.16)
Board independence $_{t-1}$				.41*** (.13)			.45** (.18)
Board gender $_{t-1}$				.07 (.29)			–.11 (.43)
Board meeting $_{t-1}$ [a]				.01 (.01)			.00 (.01)
CEO tenure $_{t-1}$ [b]					–.04 (.03)		–.04 (.04)
CEO gender $_{t-1}$					.08 (.13)		–.16 (.15)
CEO equity compensation $_{t-1}$					.16 (.13)		.13 (.16)
CGC_long_term $_{t-1}$						.10 (.16)	.29 (.22)
CGC_sustainable $_{t-1}$						-.24 (.22)	-.27 (.41)
CGC_esg $_{t-1}$						.02 (.15)	.19 (.21)
CSR Contracting $_{t-1}$	1.56*** (.06)	1.55*** (.06)	1.53*** (.06)	1.54*** (.06)	1.54*** (.06)	1.55*** (.06)	1.50*** (.07)
Return on assets $_{t-1}$ [a]	.01** (.00)	.01* (.00)	.01** (.01)	.01* (.01)	.01** (.01)	0.1** (0.0)	.01 (.01)
Revenue $_{t-1}$ [b]	.11*** (.14)	.07** (0.03)	.14*** (.03)	.09*** (.02)	.11*** (.03)	.11*** (.02)	.01*** (.04)
Revenue growth $_{t-1}$ [a]	.01 (.14)	.07 (.14)	.35** (.17)	.08 (.15)	.12 (.15)	-.01 (.14)	.55*** (.19)
Leverage $_{t-1}$ [a, b]	.01 (.03)	.01 (.03)	0.01 (.03)	–.01 (.03)	–.01 (.03)	.01 (.03)	–.01 (.04)
Market-to-book $_{t-1}$ [a]	–.05 (.04)	–.06 (.04)	–.05 (.05)	–.05 (.05)	–.07 (.05)	-.06 (0.04)	–.05 (.06)
Obs.	4,068	4,067	3,174	3,749	3,320	4,056	2,455
R^2	.57	.58	.59	.58	.58	0.57	.60

Notes: The dependent variable is *CSR Contracting*. All independent variables are lagged by one year. Industry, country, and year controls as well as the intercept are included but collapsed. Cluster-robust standard errors are reported in parentheses.

[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.

[b] Natural logarithmic transformation used to correct for adverse skew and kurtosis.

Asterisks denote statistically significance at *$p < .10$, **$p < .05$, and ***$p < .01$.

Models 1.2 through 1.5 explore governance mechanisms and structural factors. Notably, the presence of a compensation committee ($p < 0.10$) and a higher proportion of independent board members ($p < 0.01$) significantly increase the likelihood of CSR contracting, confirming Hypotheses 2c and 3a. Specifically, firms with compensation committees are 27% more likely to employ CSR incentives, while each percentage-point increase in board independence corresponds to a 51% rise in the odds of adoption. These results underscore the critical role of independent governance structures in aligning executive incentives with broader stakeholder priorities, as emphasized by prior research (e.g., Russo & Harrison, 2005).

Model 1.6 incorporates the full set of independent variables, with results largely consistent across specifications. However, the significance of the compensation committee variable diminishes, suggesting potential overlaps in explanatory power among governance-related predictors. Despite the inclusion of all relevant variables, some unexplained heterogeneity persists, reflected in the modest improvement of R^2 to approximately 0.60.

Across all models, the stability of regression coefficients indicates minimal multicollinearity among predictors, reinforcing the robustness of the findings (Russo & Harrison, 2005). The results highlight the predictive strength of environmental performance and board independence, suggesting these factors are instrumental in shaping CSR contracting practices. Additionally, the findings encourage further exploration of potential inverted relationships, such as how CSR contracting itself might enhance environmental performance over time.

3.6.2 THE CONSEQUENCES OF CSR CONTRACTING ON CSP

This section evaluates the direct impact of CSR contracting on CSP, incorporating stakeholder orientation, board efficiency, CEO characteristics, and institutional governance guidelines as potential direct factors influencing CSP, rather than mediating this relationship.

Table 3.6 presents results from the SEM analysis, with environmental performance as the dependent variable. Model 2.0 includes only control variables, while Model 2.6 incorporates the full set of independent variables.

Across Models 2.1 to 2.6, mixed evidence supports the association between CSR contracting and environmental performance. Contemporary CSR contracting demonstrates a positive association with environmental performance in two out of six models ($p < 0.01$). However, a robust negative relationship emerges with preceding CSR contracting (significant in five out of six models, $p < 0.05$). These findings suggest that while CSR incentives may initially drive improved environmental outcomes, their influence may wane or even reverse over time, potentially due to diminishing marginal returns or the misalignment of sustained environmental efforts with short-term incentive structures.

Environmental performance shows strong positive associations with prior environmental performance and concurrent social performance ($p < 0.01$), indicating a temporal consistency in firms' sustainability efforts. This reflects the interconnected nature of environmental and social dimensions within CSP, where improvements in one domain often reinforce progress in the other.

Regarding stakeholder orientation determinants, the presence of a sustainability committee demonstrates a positive effect on environmental performance ($p < 0.01$) in Models 2.2 and 2.6, emphasizing the role of specialized governance structures in driving sustainability outcomes. Furthermore, board diversity, as represented by gender composition, positively impacts environmental performance ($p < 0.05$) in Model 2.3, underscoring the value of diverse perspectives and decision-making capabilities in promoting sustainability initiatives.

Table 3.6: SEM Results regarding Firm's Environmental Performance

Variables	*(2.0)*	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*
CSR Contracting $_{t0}$		.00	.00***	.00	.00	.00	.00***
		(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
CSR Contracting $_{t-1}$		–.00**	–.01***	–.00	–.00**	–.00**	–.01***
		(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Stakeholder dialogue			–.01				.03
			(.05)				(.07)
Sustainability committee			.04***				.03***
			(.01)				(.01)
Compensation committee			.01				.00
			(.02)				(.03)
Board independence				.01			–.02
				(.02)			(.03)
Board gender				.05**			.03
				(.02)			(.03)
Board meeting [a]				.00			.00
				(.00)			(.00)
CEO tenure [b]					–.00		.00
					(.00)		(.00)
CEO gender					–.01		–.01
					(.01)		(.02)
CEO equity compensation					–.00		.00
					(.01)		(.00)
CGC_long_term						–.01	–.00
						(.01)	(.02)
CGC_sustainable						.01	–.02
						(.01)	(.02)
CGC_esg						–.01	–.02
						(.01)	(.02)
Environmental perf. $_{t-1}$	.84***	.84***	.84***	.83***	.83***	.84***	.80***
	(.01)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Social perf.	.08***	.12***	.09***	.11***	.01***	.11***	.01***
	(.01)	(.02)	(.02)	(.02)	(.02)	(.02)	(.03)
Controversy perf.	.00	–.00	–.01	–.00	.00	–.00	–.01
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Return on assets [a]	.00	.00	.00	.00	.00**	.00	.00
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Revenue	.00*	.02**	.02*	.02*	.02**	.02**	.02
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.02)
Revenue growth [a]	.02***	–.01	–.00	–.00	–.02	–.00	–.02
	(.01)	(.02)	(.02)	(.01)	(.02)	(.01)	(.02)
Leverage [a]	–.00	.00	.00	–.00	.00**	.00	.01**
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Market-to-book [a]	–.00	.00	.00	.00	–.00	.00	.00
	(.00)	(.01)	(.00)	(.00)	(.01)	(.00)	(.01)
Obs.	3,958	3,678	2,684	3,172	2,647	3,668	1,715
R^2	0.90	0.92	0.89	0.914	0.92	0.91	0.89

Notes: The dependent variable is *environmental performance*. Industry, country, and year controls as well as the intercept are included but collapsed. Cluster-robust standard errors are reported in parentheses.
Asterisks denote statistically significance at *p < .10, **p < .05, and ***p < .01.
[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.
[b] Natural logarithmic transformation used to correct for adverse skew and kurtosis.

Table 3.7 summarizes the SEM regression results for social performance. Unlike environmental performance, the evidence for a concurrent positive association and a negative relationship with preceding CSR contracting is limited. Significant effects are observed only in Model 3.2 ($p < 0.10$) and Model 3.6 ($p < 0.05$), suggesting that CSR contracting has more pronounced implications for less salient stakeholders (the natural environment) compared to salient stakeholders such as employees (Flammer et al., 2019, p. 28).

Consistent with trends in environmental performance, social performance exhibits a stable association with both past social and environmental performance (p<0.01), indicating persistence over time. Furthermore, the existence of a sustainability committee positively influences social performance (Model 3.2, $p < 0.01$), while board independence shows a strong positive relationship in Models 3.3 and 3.6 ($p < 0.01$). These results highlight the importance of governance structures in enhancing social outcomes.

Table 3.8 outlines the regression results for controversy performance, revealing no significant relationship between CSR contracting and controversy performance across all models, irrespective of the timing of CSR contracting. Similarly, no meaningful association is observed between a firm's earlier environmental or social performance and its controversy performance. The autocorrelation for controversy performance, while present, is notably weaker ($p < 0.01$).

Model 4.3 identifies a negative association between board meeting frequency and controversy performance ($p < 0.05$), suggesting that boards convene more often during periods of heightened controversy, possibly as a reactive measure, while adopting a more passive approach during stable periods. Additionally, Model 4.6 highlights a positive association between CEO ownership and controversy exposure ($p < 0.05$), implying that greater CEO equity stakes may drive stronger efforts to mitigate reputational risks and prevent irresponsible incidents.

Table 3.7: SEM Results regarding Firm's Social Performance

Variables	*(3.0)*	*(3.1)*	*(3.2)*	*(3.3)*	*(3.4)*	*(3.5)*	*(3.6)*
CSR Contracting $_{t0}$		.00	.00**	.00	–.00	.00	.00**
		(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
CSR Contracting $_{t-1}$		–.00	–.00*	–.00	–.00	–.00	–.00**
		(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Stakeholder dialogue			–.00				.05
			(.04)				(.06)
Sustainability committee			.03***				.00
			(.01)				(.01)
Compensation committee			–.01				–.02
			(.02)				(.02)
Board independence				.04***			.05***
				(.01)			(.02)
Board gender				–.02			–.01
				(.02)			(.03)
Board meeting [a]				.00			.00
				(.00)			(.00)
CEO tenure [b]					–.00		-.00
					(.00)		(.00)
CEO gender					.00		–.01
					(.01)		(.02)
CEO equity compensation					.01		.00
					(.01)		(.01)
CGC_long_term						.01	.01
						(.01)	(.02)
CGC_sustainable						.01	–.00
						(.01)	(.02)
CGC_esg						–.00	–.00
						(.01)	(.02)
Environmental perf.	.06***	.10***	.08***	.09***	.10***	.10***	.09***
	(.01)	(.01)	(.02)	(.02)	(.02)	(.01)	(.02)
Social perf. $_{t-1}$	.80***	.77***	.74***	.77***	.75***	.76***	.72***
	(.01)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Controversy perf.	.01	.01	.01	.01	.00	.01	.00
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Return on assets $_{a}$	–.00**	–.00	–.00	–.00	–.00	–.00	–.00
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Revenue	.00***	–.02	–.01	–.02	–.02	–.02	–.01
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.02)
Revenue growth $_{a}$	.00	.03*	.03	.02	.03	.03*	–.01
	(.01)	(.02)	(.02)	(.02)	(.02)	(.02)	(.02)
Leverage a	.00*	.00	.00	.00	.00**	.00	.01*
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Market-to-book $_{a}$	.00*	.00	.00	.00	.01	.00	.00
	(.00)	(.00)	(.00)	(.00)	(.01)	(.00)	(.01)
Obs.	3,958	3,678	2,684	3,172	2,647	3,668	1,715
R^2	0.88	0.86	0.82	0.86	0.86	0.86	0.81

Notes: The dependent variable is *social performance*. Industry, country, and year controls as well as the intercept are included but collapsed. Cluster-robust standard errors are reported in parentheses. Asterisks denote statistically significance at *p < .10, **p < .05, and ***p < .01.

[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.

[b] Natural logarithmic transformation used to correct for adverse skew and kurtosis.

Reviewing Tables 3.6 to 3.8 collectively, the findings reveal a nuanced relationship between CSR contracting and CSP. CSR contracting demonstrates a positive association with concurrent environmental performance but exerts a negative impact on future performance. The relationship between CSR contracting and social performance is inconsistent, lacking robustness across models. Furthermore, no significant association is identified between CSR contracting and controversy performance.

Stakeholder-oriented and governance factors, such as the existence of sustainability committees and board independence, are positively linked to firms' environmental and social performance. Notably, controversy performance is negatively associated with board meeting frequency, indicating a reactive governance approach during periods of heightened controversy.

The explanatory power of models varies significantly across CSP dimensions. Models for environmental and social performance exhibit high explanatory power (R^2 between 0.8 and 0.9), largely driven by the autoregressive term, underscoring the stability of these performance metrics over time. In contrast, models for controversy performance show much lower explanatory power (R^2 around 0.30), suggesting that controversy exposure is more influenced by unobserved variables and contemporary events than by historical factors.

Table 3.8: SEM Results regarding Firm's Controversy Performance

Variables	*(4.0)*	*(4.1)*	*(4.2)*	*(4.3)*	*(4.4)*	*(4.5)*	*(4.6)*
CSR Contracting $_{t0}$		–.00	–.00	–.00	–.01	–.00	.00
		(.00)	(.01)	(.01)	(.01)	(.00)	(.01)
CSR Contracting $_{t-1}$		–.00	–.00	.00	.01	.00	.00
		(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Stakeholder dialogue			.05				.04
			(.17)				(.23)
Sustainability committee			.04				.06
			(.04)				(.04)
Compensation committee			–.07				–.04
			(.08)				(.11)
Board independence				.01			.03
				(.06)			(.09)
Board gender				–.001			–.03
				(.08)			(.05)
Board meeting [a]				–.00**			–.00
				(.00)			(.00)
CEO tenure [b]					.00		.01
					(.01)		(.01)
CEO gender					.01		–.03
					(.04)		(.05)
CEO equity compensation					.02		.08**
					(.03)		(.04)
CGC_long_term						.01	.01
						(.03)	(.05)
CGC_sustainable						–.05*	–.10
						(.03)	(.07)
CGC_esg						–.01	–.06
						(.03)	(.06)
Environmental perf.	–.00	.02	.05	.03	.04	.01	.06
	(.02)	(.07)	(.10)	(.08)	(.09)	(.07)	(.14)
Social perf.	–.01	–.02	–.11	–.08	–.01	–.01	–.13
	(.03)	(.08)	(.12)	(.09)	(.10)	(.07)	(.15)
Controversy perf. $_{t-1}$	.38***	.30***	.26***	.30***	.30***	.30***	.27***
	(.02)	(.01)	(.02)	(.02)	(.02)	(.01)	(.02)
Return on assetsa	.00	.00***	.00*	.00*	.00	.00***	–.00
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
Revenue	–.06***	.05	.07*	.05	.02	.05	.03
	(.00)	(.04)	(.04)	(.04)	(.06)	(.04)	(.07)
Revenue growth [a]	–.01	–.15***	–.17***	–.15***	–.10	–.15***	–.14
	(.01)	(.05)	(.05)	(.05)	(.07)	(.05)	(.09)
Leveragea	.00	–.01	–.01	–.00	–.01	–.01	–.01
	(.00)	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Market-to-book [a]	.01*	.02	.02	.01	.01	.02	.00
	(.01)	(.01)	(.02)	(.01)	(.02)	(.02)	(.02)
Obs.	3,958	3,678	2,684	3,172	2,647	3,668	1,715
R^2	0.43	0.23	0.27	0.24	0.24	0.28	0.29

Notes: The dependent variable is *controversy performance*. Industry, country, and year controls as well as the intercept are included but collapsed. Cluster-robust standard errors are reported in parentheses.
Asterisks denote statistically significance at *p < .10, **p < .05, and ***p < .01.
[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.
[b] Natural logarithmic transformation used to correct for adverse skew and kurtosis

3.7 Robustness Checks

To examine the time-dependent effects of CSR contracting on CSP, the study includes additional robustness checks, utilizing CSP-incentive dummies with three- and four-year lags. Table 3.9 presents the results of these structural equation models, capturing the lagged relationships.

The findings confirm the initial results, with CSR contracting showing a negative effect on environmental and social performance in the year following implementation. However, this negative effect diminishes over time, becoming insignificant at three- and four-year lags. These trends suggest that while CSR contracting may initially disrupt long-term sustainability efforts, its influence tapers off as time progresses.

For controversy performance, the lagged models reveal a distinct pattern. The 1-year lagged CSP incentive dummy is significantly positive ($p < 0.05$), while the 2-year lagged estimate turns significantly negative ($p < 0.05$). By the third year, this effect again becomes insignificant. This pattern echoes the findings for environmental and social performance: an immediate positive impact from CSR contracting is followed by a reversal and a gradual diminishment of effects over time.

These results highlight the dynamic and transient nature of CSR contracting's influence on CSP. The initial positive impact may reflect short-term improvements or symbolic compliance, while the subsequent reversal could indicate challenges in sustaining these gains. Over time, the diminishing significance suggests that CSR contracting's long-term effects are less robust. These findings emphasize the need for firms to continuously adapt their sustainability strategies, ensuring that initial improvements are translated into enduring outcomes. The dynamic nature of CSR contracting impacts has critical implications for corporate decision-making and the design of sustainability initiatives, which are discussed further in the subsequent section.

Table 3.9. SEM Results regarding Different Time Lags

Variables	*Environ. Performance*		*Social Performance*		*Controversy Performance*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
CSR Contracting $_{t0}$	.00***	.01***	.00***	.00**	–.01	–.01
	(.00)	(.00)	(.00)	(.00)	(.01)	(.01)
CSR Contracting $_{t-1}$	–.01***	–.01***	–.01***	–.01***	.02**	.02**
	(.00)	(.00)	(.00)	(.00)	(.01)	(.01)
CSR Contracting $_{t-2}$	–.00	–.01	.01	.01	–.04**	–.04**
	(.01)	(.01)	(.00)*	(.00)	(.02)	(.02)
CSR Contracting $_{t-3}$		.00		.00		–.00
		(.01)		(.00)		(.00)
Stakeholder dialogue	.03	.04	.05	.04	.04	.03
	(.07)	(.07)	(.06)	(.06)	(.23)	(.23)
Sustainability committee	.03***	.03***	.00	.00	.06	.05
	(.01)	(.01)	(.01)	(.01)	(.04)	(.04)
Compensation committee	.00	–.00	–.02	–.02	–.04	–.04
	(.03)	(.03)	(.03)	(.03)	(.11)	(.11)
Board independence	–.02	–.01	.05***	.03	.03	.07
	(.03)	(.03)	(.02)	(.02)	(.09)	(.10)
Board gender	.03	.03	–.01	–.02	–.13	–.12
	(.03)	(.03)	(.03)	(.03)	(.11)	(.11)
Board meeting [a]	.00	.00	.00	.00	–.00	–.00
	(.00)	(.00)	(.00)	(.00)	(.00)	(.00)
CEO tenure [b]	.00	.00	–.00	.00	.01	.01
	(.00)	(.00)	(.00)	(.00)	(.01)	(.01)
CEO gender	–.01	–.01	–.01	–.01	–.03	–.03
	(.02)	(.02)	(.02)	(.02)	(.05)	(.05)
CEO equity compensation	.00	.01	.00	.00	.08**	.09**
	(.01)	(.01)	(.01)	(.01)	(.04)	(.04)
CGC_long_term	–.00	–.01	.01	.01	.01	.01
	(.02)	(.02)	(.01)	(.01)	(.05)	(.06)
CGC_sustainable	–.02	–.03	–.00	.00	–.10	–.10
	(.02)	(.02)	(.02)	(.02)	(.07)	(.07)
CGC_esg	–.02	–.02	–.00	–.00	–.06	–.05
	(.02)	(.02)	(.02)	(.02)	(.06)	(.06)
Environmental perf.			.08***	.09***	.07	.07
			(.02)	(.02)	(.14)	(.14)
Environmental perf. $_{t-1}$	.80***	.80***				
	(.02)	(.03)				
Social perf.	.10***	.09***			–.13	–.13
	(.03)	(.03)			(.16)	(.16)
Social perf. $_{t-1}$			.72***	.72***		
			(.02)	(.02)		
Controversy perf.	–.00	–.00	.00	.00		
	(.01)	(.01)	(.01)	(.01)		
Controversy perf. $_{t-1}$					.27***	.27***
					(.02)	(.02)
Obs.	1,715	1,681	1,715	1,681	1,715	1,681
R^2	0.89	0.89	0.82	0.81	0.23	0.30

Notes: The dependent variable is *environmental performance (Model 1 & 2), social performance (Model 2 & 3), and controversy performance (Model 4 & 5)*. Most explanatory and control variables for t0, t-1, t-2 and t-3 are collapsed. Industry, country, and year controls as well as the intercept are included but collapsed. Cluster-robust standard errors are reported in parentheses.

Asterisks denote statistically significance at *p < .10, **p < .05, and ***p < .01.

[a] Winsorized to smooth large outliers at the 1% (99%) or 2% (98%) level.

[b] Natural logarithmic transformation used to correct for adverse skew and kurtosis.

3.8 Discussion

This study delves into the determinants and outcomes of integrating sustainability metrics into CEO compensation contracts, expanding the scope of research to encompass STOXX 600 firms across Europe from 2015 to 2022. Unlike prior studies focusing on American contexts (e.g., Flammer et al., 2019), it emphasizes the European regulatory landscape and governance frameworks, investigating how CSR contracting aligns executive incentives with CSP. By utilizing structural equation modeling, the analysis overcomes limitations in previous studies (e.g, Berrone & Gomez-Mejia, 2009a), capturing dynamic relationships between governance structures, stakeholder demands, and sustainability outcomes.

The findings reveal a significant relationship between CSR contracting and firm-specific characteristics such as size, profitability, and governance quality. The influence of firm size and profitability underscores the role of CEO compensation policies in reflecting changes in shareholder wealth (Sanosra et al., 2022; Tosi et al., 2000). Board independence and sustainability committees emerge as key governance factors supporting the adoption of CSR contracting, consistent with agency theory. Independent boards and formalized sustainability committees mitigate information asymmetries, ensuring that CSR objectives are effectively integrated into executive decision-making (Ikram et al., 2023). The positive association between prior environmental performance and CSR contracting highlights the role of these incentives in reinforcing strategic alignment, particularly in environmental sustainability, rather than addressing deficiencies in social or controversy performance (Maas, 2018).

However, the analysis reveals nuanced dynamics in CSP outcomes. While CSR contracting positively influences concurrent environmental performance, its impact diminishes over time, with adverse effects on future performance. Social performance shows limited and inconsistent association, and no significant relationship is observed for controversy performance. These findings suggest that CSR contracting's immediate benefits are

counterbalanced by challenges in sustaining long-term improvements, reflecting the complexities of aligning multifaceted CSP objectives within incentive structures.

The study also highlights the role of governance and stakeholder-oriented factors in shaping CSP. Larger firms, sustainability committees, and diverse, independent boards positively impact environmental and social outcomes. Stakeholder theory supports this observation, as larger firms face greater scrutiny (Waddock & Graves, 1997) and are more responsive to social and environmental demands (Orlitzky, 2001). Sustainability committees formalizes priorities and integration into daily business operations, positively impacting firm goals (J. J. Burke et al., 2019). External directors mitigate information asymmetry in compensation plans and sustainability outcomes (Fuente et al., 2017), while female directors contribute diverse perspectives and enhance board decision-making on sustainability matters (S. Cohen et al., 2023; Wu et al., 2022).

Conversely, the findings indicate a negative relationship between firm growth, board meeting frequency, and controversy performance. Prominent and visible firms, often correlated with market dynamics and growth, are more prone to CSR controversies (Kotzian, 2024; Orlitzky, 2001). In response to such incidents, increased board meeting frequency may serve to enhance transparency and disclosure (Issa, 2023), though this level of oversight appears less critical when controversy performance is stable.

Consistent with agency theory, CSR incentives aim to align CEO decision-making with firm interests, enhancing overall performance (Deckop et al., 2006). Despite prior research suggesting consistent performance improvements from CSR contracting (e.g., Flammer et al., 2019; B. Hong et al., 2016), this study highlights a more dynamic pattern of incentive effectiveness, introducing the concept of an incentive life-cycle (Obloj & Sengul, 2012). Initially, incentives may drive productivity and improve CSP through productive learning

mechanisms, as executives focus on sustainability issues, gain expertise, and bolster environmental and social performance (Frank & Obloj, 2014; Nyberg et al., 2019).

Over time, however, adverse learning may emerge, as executives adapt to exploit incentive structures to their benefit (Nyberg et al., 2019). This results in narrowed decision-making, emphasizing specific, incentivized metrics—such as CO_2 reduction targets—at the expense of broader sustainability objectives (Nyberg et al., 2019). Consequently, a turning point occurs where social and environmental performance stagnates or declines, despite higher bonuses tied to narrowly defined achievements. Adjusting incentive schemes periodically to restart the productive cycle is thus crucial to maintain alignment between executive actions and firm sustainability goals (Nyberg et al., 2019).

Practically, these findings highlight the need for companies to carefully design and implement sustainability incentives in executive compensation contracts. While CSR contracting may initially motivate executives to pursue sustainability goals, maintaining its effectiveness requires continuous monitoring and periodic adjustments. The study suggests a shift away from seeking an "optimal" incentive system toward dynamically managing performance through adaptable incentives. This approach acknowledges the inherent difficulty in reducing complex, multi-tasking objectives to single metrics (Ethiraj & Levinthal, 2009) and frames incentive structures as temporary and iterative rather than fixed solutions (Nyberg et al., 2019).

Ethically, the prioritization of narrow, incentivized metrics in compensation contracts raises concerns. Firms must evaluate whether incentivizing specific sustainability targets genuinely aligns with their broader CSR objectives, as the overall impact on sustainability performance appears limited. This underscores the importance of aligning CSR contracting with ethical principles that encourage long-term, responsible decision-making benefiting stakeholders and the environment holistically.

The efficiency of CSR contracting may also be hindered by inconsistent or insufficient bonus payments tied to sustainability outcomes (Sliwka, 2002). This could explain why environmentally proactive firms are more inclined to adopt CSR contracting, as they possess the capabilities to design and execute these mechanisms effectively. Conversely, firms with limited CSP may recognize the potential of CSR contracting but struggle to implement it due to the tacit or complex knowledge required (Eccles et al., 2014; Winter, 1988).

Normatively, it could be argued that social initiatives should derive from intrinsic motivation rather than financial incentives. Monetary rewards tied to specific sustainability goals might not enhance—and could even undermine—intrinsic motives of executives (Berrone & Gomez-Mejia, 2009b). Such unintended consequences reinforce the need for CSR contracting frameworks that go beyond financial incentives to foster genuine, long-term commitment to sustainability (Berrone & Gomez-Mejia, 2009b).

While this study addresses several limitations of prior research, such as utilizing a large sample of firms across multiple years (e.g., Abdelmotaal & Abdel-Kader, 2016; Francoeur et al., 2017), analyzing distinct dimensions of CSP (e.g., Francoeur et al., 2017; McGuire et al., 2019), and applying advanced methods like structural equation models (e.g., Flammer et al., 2019; Ikram et al., 2023), some challenges remain.

Firstly, the reliance on a dummy variable for CSR contracting limits the ability to assess variations in how sustainability targets are weighted within compensation structures (Schiehll & Bellavance, 2009). Firms may strategically report CSR contracting to signal sustainability while assigning insufficient material weight to these targets or setting them at unambitious levels (Berrone & Gomez-Mejia, 2009a; Efing et al., 2024). Furthermore, the dependent variable's lack of granularity prevents dimension-specific analysis, particularly given the heterogeneous nature of CSR activities (Khenissi et al., 2022).

Secondly, the use of sustainability data from LSEG, although widely adopted in governance and sustainability research (e.g., Abdelmotaal & Abdel-Kader, 2016; Al-Shaer & Zaman, 2019), raises concerns due to its dependence on self-reported corporate disclosures, which may be biased or self-serving (Billio et al., 2021). Additionally, inconsistencies across sustainability databases exacerbate the challenge of standardizing performance measurements (Berg et al., 2021). Thus, observed variations in firms' sustainability performance post-CSR contracting adoption might reflect improved disclosure practices rather than genuine performance improvements, particularly given the modest practical implications of the study's significant results.

Thirdly, the lack of detailed information on firms' sustainability committees limits the depth of analysis. Beyond binary indicators, committee characteristics such as focus, expertise, and operational effectiveness could significantly influence outcomes (Schiehll & Bellavance, 2009). For instance, Burke et al. (2019) highlight that while sustainability committees can amplify strengths, they may not adequately mitigate concerns.

Finally, national laws and regulations play a pivotal role in shaping firms' sustainability efforts, often driving the adoption of mechanisms like CSR contracting (Francoeur et al., 2017). This regulatory influence extends beyond firms' headquarters' locations or countries' corporate governance codes. For example, the 2022 adoption of the CSRD, which mandates disclosure of sustainability-linked compensation mechanisms, imposes greater pressure on firms to align with industry leaders already employing CSR contracting. The absence of such mechanisms has become increasingly visible to stakeholders, potentially jeopardizing a firm's reputation and competitive standing.

Future research should address these limitations by closely examining the actual mechanisms of CSR contracting within executive compensation agreements, specifically analyzing how sustainability criteria are explicitly incorporated (McGuire et al., 2003). Such

investigations could provide valuable insights into firms' motivations for adopting these practices and their impact on sustainability performance, evaluated using alternative, robust measures (e.g., Sautner et al., 2023). Additionally, the CSRD's implementation offers a valuable opportunity for longitudinal, cross-country studies. Researchers could examine how firms adjust compensation structures pre- and post-CSRD, using methods like difference-in-differences to assess the causal impact of mandated transparency on CSR contracting and sustainability outcomes. Such analyses could reveal whether CSR contracting emerges as a compliance-driven or value-driven practice under regulatory pressure.

The study deepens the understanding of CSR contracting adoption in organizations, underscoring the importance of robust governance structures to embed sustainability within CEO decision-making. Given the dynamic nature of incentive cycles, firms must carefully balance executive responsibilities while addressing the evolving effects of incentive mechanisms (Nyberg et al., 2019). Although many firms profess commitment to the triple bottom line via CSR contracting, these incentives often lack clarity, and empirical evidence points to their limited effectiveness. This highlights an urgent need for greater transparency in designing and deploying sustainability-related compensation mechanisms. While relying on a static approach may yield suboptimal configurations (Nyberg et al., 2019), CSR contracting represents a critical step forward in advancing the complex objectives of sustainable corporate performance.

4 Executive Compensation Systems of Swiss SMI Companies

A Focus on ESG Incentives

Growing societal and regulatory pressures have made the integration of ESG (Environmental, Social, Governance) criteria into executive compensation systems a key driver of sustainable business practices. This study examines the compensation structures of the 20 largest Swiss companies (SMI), analysing the incorporation of ESG Key Performance Indicators (KPIs) in short-term and long-term incentives structures. While the adoption of such KPIs is increasing, they still represent a small portion of total compensation, with notable gaps in transparency and strategic design. Some companies align ESG incentives with long-term business goals, while others lack ambition, raising concerns about the credibility of their sustainability efforts. The findings highlight the need for clear, measurable ESG targets and transparent reporting to build stakeholder trust and ensure meaningful progress. This study provides actionable insights for policymakers, investors, and leaders to strengthen ESG-linked incentives and enhance their effectiveness in driving sustainable business outcomes.

Keywords: Environmental, Social, and Governance (ESG), Incentives, Executive Compensation, Sustainable Corporate Governance

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4.1 Introduction

Executive compensation is a central instrument of corporate governance, serving not only as a tool to incentivize top executives but also as a key driver for achieving long-term corporate objectives (S. Cohen et al., 2023). The growing emphasis on environmental, social, and corporate responsibility has increasingly led to the alignment of compensation systems with sustainability goals. Recent regulatory changes, such as the implementation of the EU's Second Shareholder Rights Directive (SRD II) in Germany (ARUG II) and revisions to the German Corporate Governance Code in 2020 and 2022, have systematically strengthened the integration of ESG (Environmental, Social, Governance) criteria into remuneration structures. These developments reflect the growing necessity for strategically designed compensation systems that meet sustainability targets while ensuring transparency in reporting. German companies face the dual challenge of developing remuneration systems that comply with regulatory requirements and align with stakeholder expectations.

In Switzerland, a significant milestone was reached in 2014 with the introduction of the "Ordinance Against Excessive Compensation in Listed Companies" (VegüV). VegüV reinforces shareholder rights through "say-on-pay" provisions, mandating annual binding votes on executive remuneration.[23] As Böcking et al. (2019) highlight, the VegüV represents a globally stringent regulations globally, granting shareholders significant influence over remuneration systems. These measures protect shareholders by ensuring that the compensation of governing bodies remains aligned with their interests.

A turning point in the international discourse on remuneration systems was the integration of ESG criteria, which build on the principles of sustainability while offering measurable,

[23] Verordnung gegen übermässige Vergütungen bei börsenkotierten Aktiengesellschaften (VegüV), Section 7-8

structured approaches to evaluate non-financial corporate performance (Liang & Renneboog, 2020). This development is particularly significant against the backdrop of increasing stakeholder expectations for companies to demonstrate not only economic success but also environmental and social responsibility (Maas, 2018). With the 2023 revision of the Swiss Code of Best Practice for Corporate Governance (Swiss Code), which for the first time explicitly calls for sustainable remuneration systems, Swiss companies are now under greater scrutiny regarding the effectiveness of their implementation.[24]

Consequently, this study aims to analyze corporate reporting, evaluate the implementation of ESG criteria in remuneration systems, and identify existing gaps in practice. The focus lies on the design, ambition and transparency of ESG incentives compared to traditional financial performance measures, as well as their strategic relevance to corporate governance.

Sustainable corporate governance seeks to secure long-term corporate success by balancing the interests of shareholders and other stakeholders (Arora & Alam, 2005). Within this context, companies listed on the Swiss Market Index (SMI) face the challenge of adapting their remuneration systems to meet new regulatory requirements while developing transparent and sustainable solutions. The integration of ESG-based remuneration systems necessitates a transformative shift in governance models: from a financial orientation to a balanced consideration of both financial and ESG-related objectives.

Compensation systems incorporating ESG criteria offer several advantages. They promote long-term goals beyond traditional financial metrics, improving environmental performance, reducing investor risk, and fostering stakeholder trust (Flammer et al., 2019). Additionally, such systems reflect a company's strategic priorities by underscoring its

[24] Swiss Code of Best Practice for Corporate Governance 2023, Principle 39

commitment to sustainability (S. Cohen et al., 2023). This enhances corporate reputation and attractiveness to both investors and talent (Schwaiger et al., 2011). Furthermore, ESG-based remuneration systems provide valuable insights into corporate governance practices, with transparency and accountability serving as fundamental pillars of effective governance (Aguilera & Cuervo-Cazurra, 2004).

Swiss corporate law, which incorporated VegüV in 2020, mandates detailed reporting on the application and impact of remuneration systems within the fiscal year. [25] Companies must disclose the remuneration granted to the board of directors, executive management, and the highest-paid individual. Additionally, the Swiss Code requires explanations for year-over-year changes in remuneration, as well as the disclosure of criteria and methodologies used to measure variable compensation.[26] Remuneration systems must also establish maximum compensation levels, which shareholders can approve independently of the overall system. [27] To prevent misuse, the code recommends mechanisms such as malus and clawback clauses, allowing for the recovery of previously paid remuneration under certain conditions. [28]

Despite clear statutory reporting requirements, analyzing remuneration systems in Switzerland remains challenging due to specific disclosure practices, which form a central theme of this investigation. For long-term incentives (LTIs), companies typically disclose only the "grant value"—the intended value of compensation—while actual payouts are often omitted. This contrasts with countries like Germany, where the focus lies on realized payouts (Beck et al., 2020). This practice results in shareholder votes on future compensation that may diverge significantly from the actual payouts. Since compensation reports primarily serve as accountability tools for say-on-pay, subsequent disclosures of realized values are generally not

[25] Obligationenrecht (2020), Artikel 734 ff

[26] Swiss Code of Best Practice for Corporate Governance 2023, Principle 42

[27] Swiss Code of Best Practice for Corporate Governance 2023, Principle 36

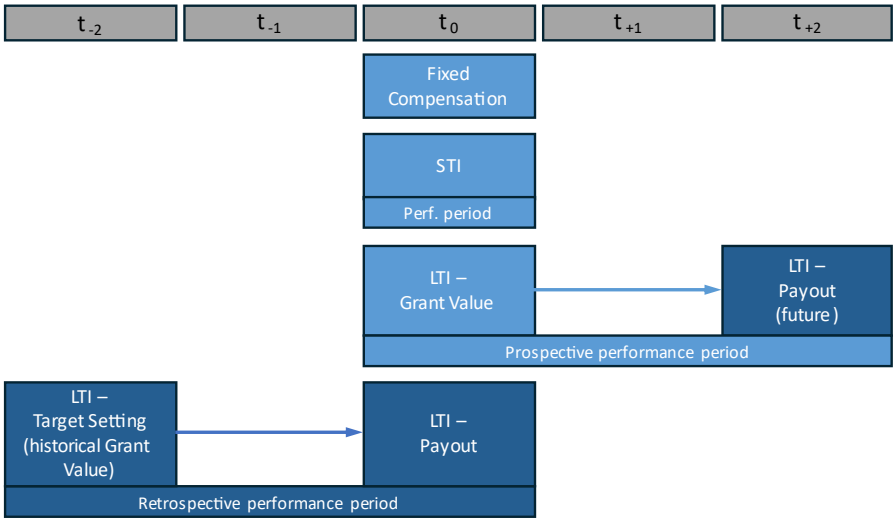
[28] Swiss Code of Best Practice for Corporate Governance 2023, Principle 40

required under prevailing practices (PwC, n.d.). Some companies, particularly those reporting under IFRS, provide additional disclosures on realized payouts for prior LTIs. However, these disclosures are not subject to shareholder approval. While Swiss compensation reports emphasize the allocation of remuneration amounts, international financial reporting under IFRS focuses on the accrual-based recognition of associated expenses (PwC, n.d.).

The compensation report of Logitech International S.A. for the fiscal year 2021 illustrates this discrepancy. The grant value for the CEO's total compensation was estimated at CHF 11.26 million and approved via say-on-pay. However, due to a significant increase in the company's stock price, the actual payout amounted to CHF 46.13 million — over four times the initially approved amount. Such deviations highlight the need for a thorough analysis of remuneration structures, considering both grant values and realized payouts.

Another critical aspect of long-term variable compensation, alongside the grant value, is target compensation. Target compensation typically spans a three-year period for LTIs and is reported as the grant value in historical compensation reports. Figure 1 illustrates the different reporting timelines and shows how grant values evolve over the years. In contrast, for annual bonuses (short-term incentives, STIs), actual payout amounts are disclosed since target-setting and achievement occur within the same fiscal year. This reporting structure emphasizes awarded compensation while de-emphasizing realized payouts.

Figure 4.1: Comparison of Reporting Systems



Note: This figure shows the different reporting timeslines, indicating how grant values evolve over time.

Compensation elements may be presented differently across various reports, complicating comparisons and leading to potential misunderstandings. An isolated examination of individual methods, such as target compensation, provides only a partial view. Comprehensive and precise insights require a systematic analysis integrating grant value, target compensation, and realized remuneration.

This study examines all three reporting methods to uncover transparency gaps and evaluate the effectiveness of remuneration systems in Swiss companies. It is important to emphasize that all reported values — whether grant value, target, or realized remuneration — are compliant with the respective regulations and duly certified by auditing firms (PwC, n.d.).

4.2 Subject of the Investigation

Swiss SMI companies, representing the largest and most liquid publicly traded entities in the country, exert significant influence on both the national and global economy (Herberger et al., 2011). They often lead the way in implementing innovative governance structures and are a focal point for new regulatory requirements (Kunz, 2010). Given their importance, the design

of their compensation systems, particularly the integration of ESG (Environmental, Social, Governance) criteria, is of considerable interest.

Executive compensation systems in SMI companies typically consist of three main components: fixed remuneration, STIs, and LTIs. Fixed remuneration serves as a base salary, determined by job requirements and benchmarking data (Conyon, 2006). It is often supplemented by additional benefits such as pension plans and company cars.[29] STIs are tied to annual performance targets, providing short-term incentives. However, they carry the risk of overshadowing long-term corporate objectives (Dechow & Sloan, 1991). LTIs, often structured as stock plans or options, aim to align management's interests with those of shareholders over a longer horizon (Finkelstein & Hambrick, 1988). These incentives rely on multi-year performance criteria and help mitigate potential conflicts of interest (Frydman & Jenter, 2010).

Variable compensation is determined through either additive or multiplicative methods. In the additive approach, each key performance indicator (KPI) is assigned a fixed weight within the variable compensation framework. If a target is not met, the corresponding portion of the compensation is forfeited. The multiplicative method scales compensation in proportion to target achievement, allowing for increases or decreases based on the degree of target fulfillment.

Given their role as the highest-paid members of the executive board, CEOs are at the center of compensation analyses. Specific disclosure obligations for CEOs enable this study to focus on their remuneration systems, providing a detailed understanding of the mechanisms at play and facilitating targeted comparisons across companies. The study also assesses how consistently companies have implemented new regulatory requirements for variable compensation.

[29] As these additional benefits are often granted as a fixed remuneration component dependent on the basic salary, they are defined as part of the fixed remuneration in the context of this paper.

The analysis of compensation systems follows a structured, multi-step approach to systematically evaluate the various reporting methods and provide a comprehensive understanding of their interaction. The first step involves a quantitative analysis of variable compensation components. This includes a detailed examination of grant value, target compensation, and realized compensation to determine their respective weightings and their impact on total remuneration. This quantitative evaluation serves as a foundation for comparing the variable compensation components both within and across SMI companies.

The second step focuses on a qualitative assessment of performance criteria, aiming to analyze how Swiss companies integrate ESG metrics into their compensation systems. The study investigates the extent to which ESG incentives are combined with traditional financial incentive structures. This qualitative analysis examines whether, and how, companies use ESG metrics to align executive interests with long-term sustainability goals. To complement this, a materiality analysis is conducted to determine whether the ESG metrics employed align with industry-specific priorities.

The third step centers on the transparency of reporting. The study evaluates how clearly and comprehensively companies present their variable compensation components and the associated performance criteria. Particular attention is given to the articulation and ambition of target objectives, the mechanisms used for measuring target achievement, and the reported outcomes. This comprehensive analysis aims to identify transparency deficits, assess reporting practices, and highlight gaps in the implementation of compensation systems.

The data underpinning this investigation includes the compensation reports of the 20 SMI companies for the fiscal year 2023, supplemented by historical reports. Both absolute and relative metrics are analyzed, with a default reference to the typical company represented by the SMI median unless otherwise specified. Table A1 in the appendix provides an overview of

the 20 SMI companies, their respective industries, and the extent to which ESG metrics are incorporated into their compensation components.

The findings reveal that most SMI companies have incorporated sustainability objectives into their compensation systems. However, these objectives are often vaguely defined and lack ambition. While the integration of ESG metrics has a noticeable impact on compensation levels, companies frequently fail to fully leverage the opportunity to embed sustainability as a core component of their governance frameworks. Furthermore, the disclosure of specific target objectives and their achievement is often inadequate and opaque, undermining the traceability of the actual effectiveness of implemented ESG goals.

4.3 Evaluation

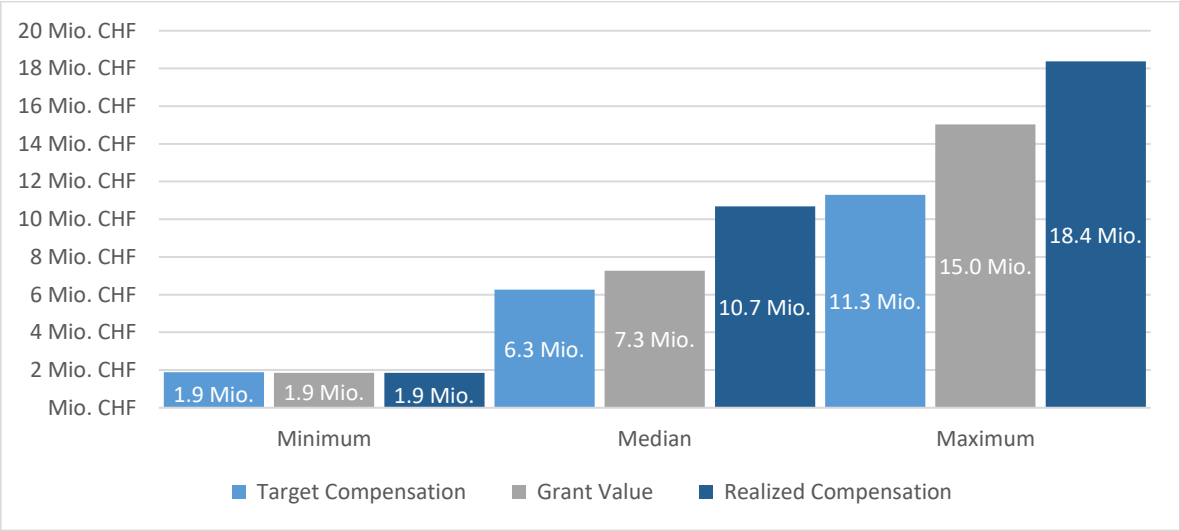
4.3.1 STRUCTURAL DESIGN OF COMPENSATION SYSTEMS

An initial review of the compensation reports reveals that most SMI companies adhere closely to the recommendations of the Swiss Code. They define maximum compensation levels for executives, implement balanced malus and clawback provisions that allow the recovery of previously paid compensation under certain conditions, and require executives to invest a substantial portion of their compensation in company shares. This investment, specifically for the CEO, typically equals five times the annual base salary, closely tying company performance to the personal wealth of the executive team (Efing et al., 2024).

The analysis of total compensation for executive board members in the 20 largest SMI companies reveals significant heterogeneity, as illustrated in Figure 2. Grant Value-based compensation varies widely, ranging from CHF 1.9 million at Swisscom AG to CHF 15.0 million at UBS AG, with a median of CHF 7.3 million — roughly consistent with the historical

average since 2007. [30] A noteworthy observation is the disparity between CEO compensation and the average employee salary: at Swisscom AG, the ratio is 15:1, whereas at UBS AG, it reaches 81:1. This disparity reflects differences in company size and profitability but also highlights potential tensions in internal compensation policies and the possible influence of public ownership.

Figure 4.2: Comparison of Total Executive Compensation



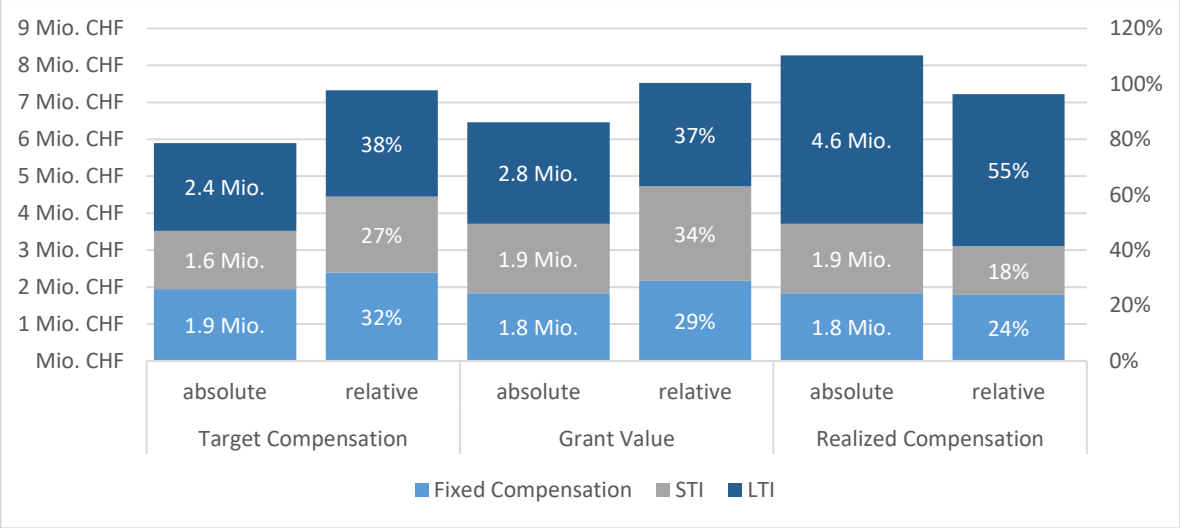
Note: This figure shows the minimum, median and maximum total executive compensation, in comparison between Target Compensation (left), Grant Value (middle) and Realized Compensation (right).

A comparison of the three common reporting systems shows that compensation based on the grant value is typically situated between target compensation and realized compensation. While fixed compensation remains constant, STIs, based on grant value and realized compensation, tend to exceed target compensation through goal overachievement. The grant values of LTIs generally correspond to the target compensation but can be significantly exceeded due to overachievement, leading to significant discrepancies between reported and realized compensation.

[30] See: https://www.pwc.ch/de/insights/disclose/23/vergutungsbericht-transparenz-aus-unterschiedlichen-perspektiven.html

The distribution of total compensation across individual components reveals a pronounced pay-for-performance orientation among SMI companies. Figure 3 shows that 29% of total compensation is allocated to the fixed component, 34% to the short-term variable component, and 37% to the long-term variable component.[31] Thus, the median pay-for-performance quotient is 71%, meaning that nearly three-quarters of total compensation is dependent on performance metrics. Notably, there is a significant increase in the amount actually leading to payouts from LTIs: this rises from CHF 2.8 million to CHF 4.6 million, indicating that long-term variable compensations often exceed grant value.

Figure 4.3: Typical Compensation Structure by Component



Notes: This figure shows the absolute and relative compensation structure by components (Fixed Compensation, STI and LTI), in comparison between Target Compensation (left), Grant Value (middle) and Realized Compensation (right).

Given the high proportion of variable compensation in the total compensation of CEOs, KPIs play a central role in incentive design. These metrics provide companies with significant flexibility to motivate their executives through clearly defined goals. The integration of ESG criteria into compensation systems particularly offers an opportunity to align corporate

[31] The displayed values represent the respective median values or proportions. Since these values were calculated independently, their sum does not exactly equal the total compensation or account for 100% of the total compensation. This applies particularly to the combined amounts of fixed salary (base salary and other compensation) as well as to all further representations.

governance more closely with long-term ecological and social goals. This not only strengthens management's accountability but also its commitment to the company's sustainability strategy. In the following sections, attention will be focused on the KPIs used in STIs.

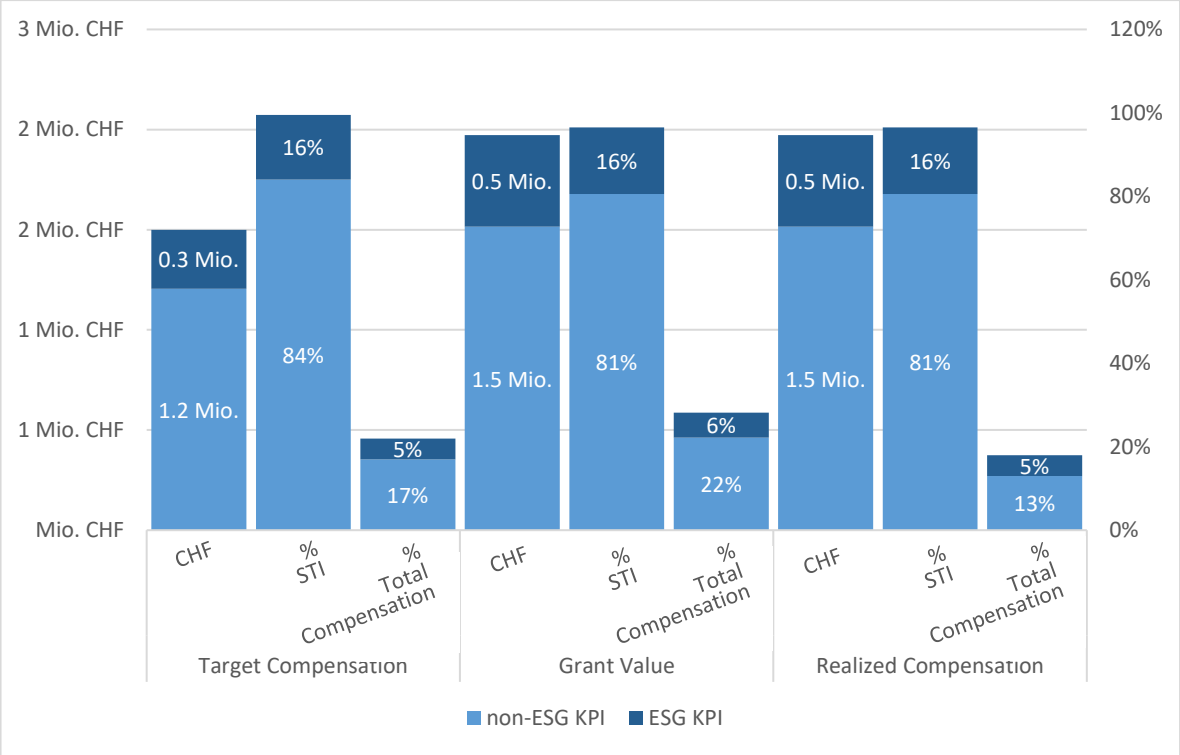
4.3.2 STRUCTURE OF SHORT-TERM INCENTIVES

Of the 20 SMI companies analyzed, 19 employ STIs for their CEOs, typically defined as a percentage of base salary. Target STI values range from 50% to 150%, with a median of 100%. Notably, 85% of the companies incorporate ESG KPIs in determining STI payouts, indicating widespread acceptance of sustainability metrics in short-term incentive schemes. Four companies apply a multiplicative model, though only two include ESG KPIs. The majority opt for an additive model, enabling the individual weighting of KPIs to ensure a direct link between performance and compensation without diluting the incentive effect through the attainment of other targets.

Figure 4 presents the absolute and relative STI components as a proportion of both total STI payouts and overall compensation, distinguishing between business-related and sustainability-oriented KPIs. KPIs that could not be clearly categorized were excluded from the analysis.

Since STIs are evaluated and disbursed annually, their Grant Value generally aligns with realized compensation. Typically, 81% of STI payouts (CHF 1.5 million) are tied to business-related KPIs, while 16% (CHF 0.5 million) stem from ESG KPIs. These represent 22% and 6%, respectively, of total compensation based on Grant Value. Given that realized LTI payouts frequently exceed their Grant Values, the STI share of total compensation decreases to 13% for business-related KPIs and 5% for ESG KPIs. A comparison with target compensation reveals that granted and realized payouts, despite being higher in absolute terms, maintain a similar proportional distribution, suggesting consistent overachievement of targets.

Figure 4.4: Analysis of Short-Term Incentives



Note: This figure shows the absolute and relative compensation structure (to STI and Total Compensation) by KPI category (non-ESG, ESG), in comparison between Target Compensation (left), Grant Value (middle) and Realized Compensation (right).

The analysis underscores the critical importance of transparency in compensation systems. Apart from Partners Group Holding AG, all SMI companies have implemented STIs and disclose them in their compensation reports. [32] Many companies exceed regulatory requirements by reporting both target and realized STI amounts in absolute and percentage terms. Additionally, all companies outline the structure of their STI systems and disclose target STI as a percentage of base salary, facilitating the calculation of absolute target amounts.

Despite these advancements, reporting on individual compensation components remains inadequate. While nearly all companies specify the weighting of business-related KPIs for target compensation, only 8 out of 17 firms using ESG KPIs disclose the exact proportion allocated to these metrics. Transparency diminishes further when it comes to realized

[32] Partners Group Holding AG follows a deviating compensation system where the annual target achievement determines the LTI compensation amount, which is subsequently dependent on the long-term target achievement. This approach is considered only in the analysis of ESG topics.

compensation or Grant Value: only 11 of 19 companies provide detailed information on business-related KPIs, and just 6 of 17 on ESG KPIs. In most cases, disclosure is limited to percentage-based performance attainment levels. Only Lonza Group AG and Logitech International SA offer comprehensive transparency regarding the integration of ESG KPIs in their STI systems.

Thus, Figure 4 provides limited insights into the actual weighting of individual KPIs, particularly ESG KPIs, primarily illustrating which companies ensure transparency in their compensation communication. Some firms argue that detailed KPI disclosures constitute competitively sensitive information, justifying their limited transparency. This reticence applies to both STIs and LTIs, complicating external stakeholders' assessments of the effectiveness of incentive practices.

4.3.3 STRUCTURE OF LONG-TERM INCENTIVES

LTIs are implemented by all SMI companies except Swisscom AG. Compared to STIs' percentage of the base salary, LTIs exhibit a broader range, from 50% to 575% of base salary, with a higher median target value of 150%. However, only 8 out of 20 companies incorporate ESG KPIs into their LTIs, indicating a relatively low integration of sustainability criteria — significantly less than in STIs.

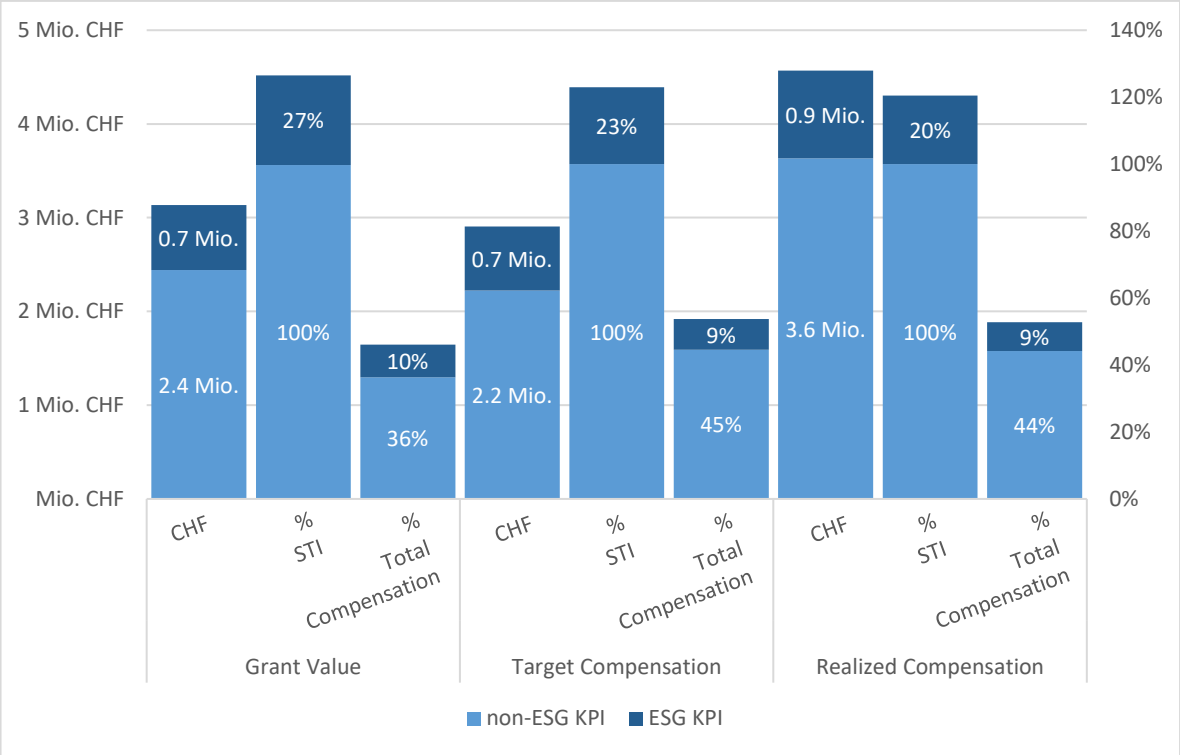
Only one company employs a multiplicative model for LTIs, while the majority, including those with ESG KPIs, adopt an additive model. Given the long-term nature of LTIs, a clear link between incentives and specific performance outcomes is crucial for accountability and transparency.

Figure 5 presents the absolute and relative distribution of LTI components, distinguishing between financial and ESG KPIs. The median Grant Value is CHF 2.4 million for financial KPIs and CHF 0.7 million for ESG KPIs. LTIs are predominantly driven by financial

objectives, with 27% allocated to sustainability goals among companies using ESG KPIs. Financial KPIs account for 36% of total compensation, while sustainability-related goals contribute 10%.

Despite the lower prevalence of ESG KPIs in LTIs, the absolute and relative amounts tied to sustainability goals are higher within LTIs compared to STIs, underscoring the strategic importance of long-term sustainability objectives.

Figure 4.5: Analysis of Long-Term Incentives



Note: This figure shows the absolute and relative compensation structure (to LTI and Total Compensation) by KPI category (non-ESG, ESG), in comparison between Target Compensation (left), Grant Value (middle) and Realized Compensation (right).

Actual payouts often diverge significantly from target compensation. Realized amounts of CHF 3.6 million (financial KPIs) and CHF 0.9 million (ESG KPIs) frequently exceed targets, reflecting consistent overachievement. This variability highlights the dynamic nature of incentive systems, where realized payouts often surpass initially granted amounts.

Transparency in LTI reporting is generally lower than for STIs. While 17 of 19 companies provide detailed Grant Value data and percentage-based target compensation information, disclosures on actual target and realized amounts are often lacking. Four companies omit these figures entirely, and three others provide no comparable data due to changes in compensation structures. In two cases, CEO transitions resulted in no LTI payouts. As a result, target and realized values are only available for 10 of 19 companies, often reconstructed from percentage disclosures.

Most companies limit their reporting to KPI weightings associated with Grant Values, without providing detailed insights into target achievement or realized payouts. Holcim Limited stands out by consistently reporting over the full three-year LTI period, offering comprehensive transparency on ESG KPI performance.

The analysis reveals sufficient data on Grant Values but significant gaps in information regarding realized payouts and precise target metrics. These shortcomings hinder a thorough evaluation of LTI effectiveness and highlight the need for greater transparency to enhance the credibility and impact of long-term incentive systems.

4.4 Qualitative Assessment of KPIs in Management Incentive Systems

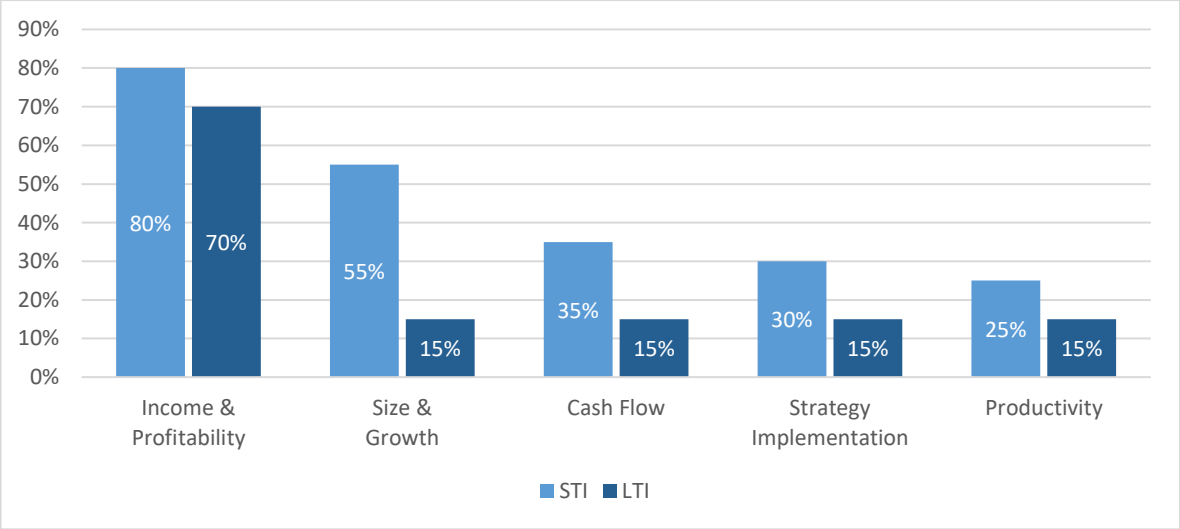
The qualitative assessment of KPIs is crucial for evaluating the effectiveness of executive compensation systems. Beyond compensation levels, the key question is which specific performance metrics are incentivized. An analysis of KPIs used in both short-term and long-term incentive systems reveals distinct patterns.

Financial KPIs such as profitability and income metrics dominate SMI companies' compensation systems. Figure 6 illustrates that profitability is incentivized in 80% of STIs and 70% of LTIs, typically measured through shareholder return or profit margins. Other

performance dimensions, such as revenue or corporate growth, are considered in 55% of STIs but only 15% of LTIs. Cash flow strategic variables, and productivity measures are even less common. This strong emphasis on financial metrics highlights the ongoing focus on shareholder value, especially within LTIs.

Notably, 40% of companies define their short-term, and 50% their long-term KPIs, relative to competitors, evaluating CEO performance against a peer group. This approach reinforces the pay-for-performance philosophy by minimizing the impact of external factors on goal achievement.

Figure 4.6: Frequency Distribution of Economic KPIs



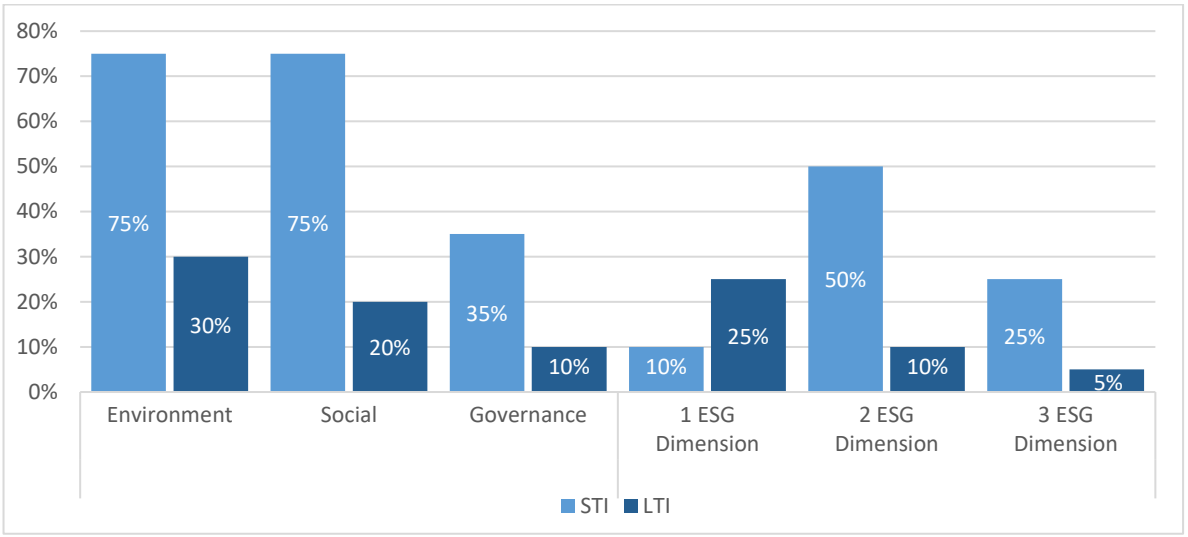
Note: This figure shows the frequency distribution of the ecenomic KPIs from the dimensions Income & Profitablity, Size & Growth, Cash Flow, Strategy Implemtation, and Productivity in comparision between STI (left) and LTI (right).

Figure 7 shows a nuanced picture regarding ESG KPIs. Environmental and social KPIs are widely used in STIs, with 75% adoption each, while governance KPIs are less prevalent at 35%. In LTIs, their presence drops significantly: 30% for environmental KPIs, 20% for social KPIs, and just 10% for governance KPIs. None of the analyzed companies use relative benchmarks for ESG KPIs; the targets are predominantly internally defined. Only two companies partially compare ESG targets in their STIs against a peer group, but without clearly defined criteria. The absence of relative benchmarks potentially attributes to a lack of external

validation or performance calibration, which could undermine the credibility and ambition of ESG achievements.

While the use of ESG KPIs is established, 50% of the companies include two ESG dimensions in their STIs, 10% consider only one, and 25% cover all three ESG dimensions. The scope is even narrower in LTIs: only 10% of companies address one or two ESG areas, and a mere 5% incorporate all three. This indicates that ESG KPIs in LTIs are still underutilized, with comprehensive coverage of all ESG dimensions remaining rare.

Figure 4.7: Frequency Distribution of ESG KPIs by Dimension and Number



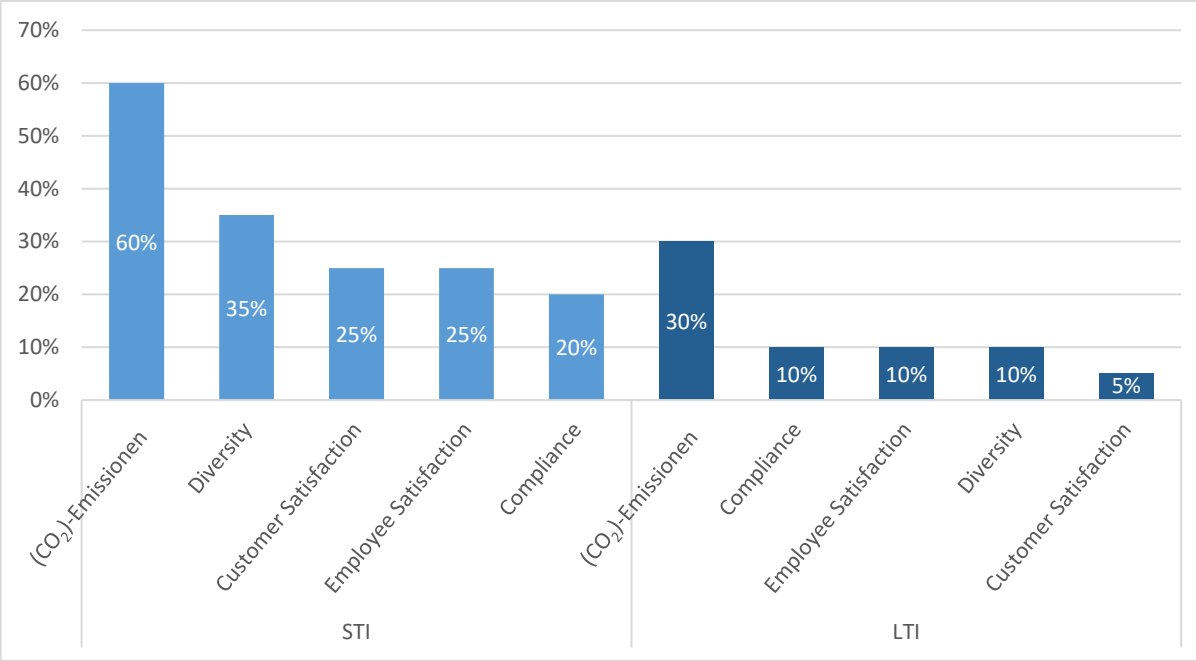
Note: This figure shows the frequency distribution of the ESG KPIs from the dimensions Environment, Social, and Governance (right side) and the number of dimensions considerd (left side).

A detailed examination of ESG KPIs reveals that most SMI companies choose to reduce their greenhouse gas emissions as an incentive criterion. Figure 8 shows that 60% of the 20 companies offer short-term incentives and 30% offer long-term incentives for emission reductions, with a predominant focus on the CO_2 balance. Besides emission values, employee diversity is also a focus of short-term incentives at 35%. Customer satisfaction is considered by 30% of companies, while employee satisfaction is less frequently addressed at 25%, and compliance indicators are only taken into account by 20% of companies. Long-term

considerations further include compliance, employee satisfaction, diversity, and water usage, each addressed at 10%.

This indicates that SMI companies focus on socially relevant issues such as the CO_2 balance and diversity in the short term, while compliance is considered more long-term. The long-term view of compliance may be due to structural adjustments that only yield measurable results over time.

Figure 4.8: Frequency Distribution of ESG KPIs by Top 5 Topics



Note: This figure shows the frequency distribution of the most frequently used sustainability KPIs (Top 5). The left-hand side of the chart shows the frequencies in the short-term variable compensation, the right-hand side in the long-term variable compensation.

Given these findings, a critical question arises: do SMI companies select their ESG KPIs primarily in response to current public sustainability debates, thereby risking accusations of window-dressing? Or do they focus on performance metrics genuinely relevant to their business operations? In the ESG context, window-dressing refers to practices aimed at superficially enhancing the company's sustainability performance through selective metrics or misleading disclosures (Gan & Ye, 2024).

To address this, a materiality analysis was conducted, examining whether the ESG KPIs align with the industry-specific materiality standards outlined by the Sustainability Accounting Standards Board (SASB).[33]

The findings reveal that 8 of the 18 companies using ESG KPIs cover at least one material sustainability area in their STIs, but only four address two or three areas. This contrasts with the SASB's recommendations, which identify an average of seven relevant areas per industry. Moreover, only two companies, Sika AG and Swiss Re AG, employ the recommended metrics for transparent performance evaluation.

For LTIs, the inclusion of material sustainability areas is more widespread, although only eight companies adopting ESG KPIs. Three companies cover one area, with Zurich Insurance Group AG using recommended metrics. Two others, Holcim Ltd and Givaudan SA, address two or three areas, also adhering to SASB metrics.

The analysis indicates that while the frequent use of CO_2 reduction and diversity KPIs raises concerns of window-dressing, their inclusion remains a positive step. Only two companies align these aspects with SASB-defined materiality in both STIs and LTIs. Nonetheless, most SMI companies have established incentive systems targeting material sustainability areas for their industry. However, the selection of target areas often reflects company-specific priorities, which may not align with broader industry materiality.

The final section of this study evaluates the clarity of KPI target definitions, how their achievement is assessed, and the ambition level of these targets.

[33] https://www.sasb.org/

4.5 Target Setting and Goal Achievement Measurement

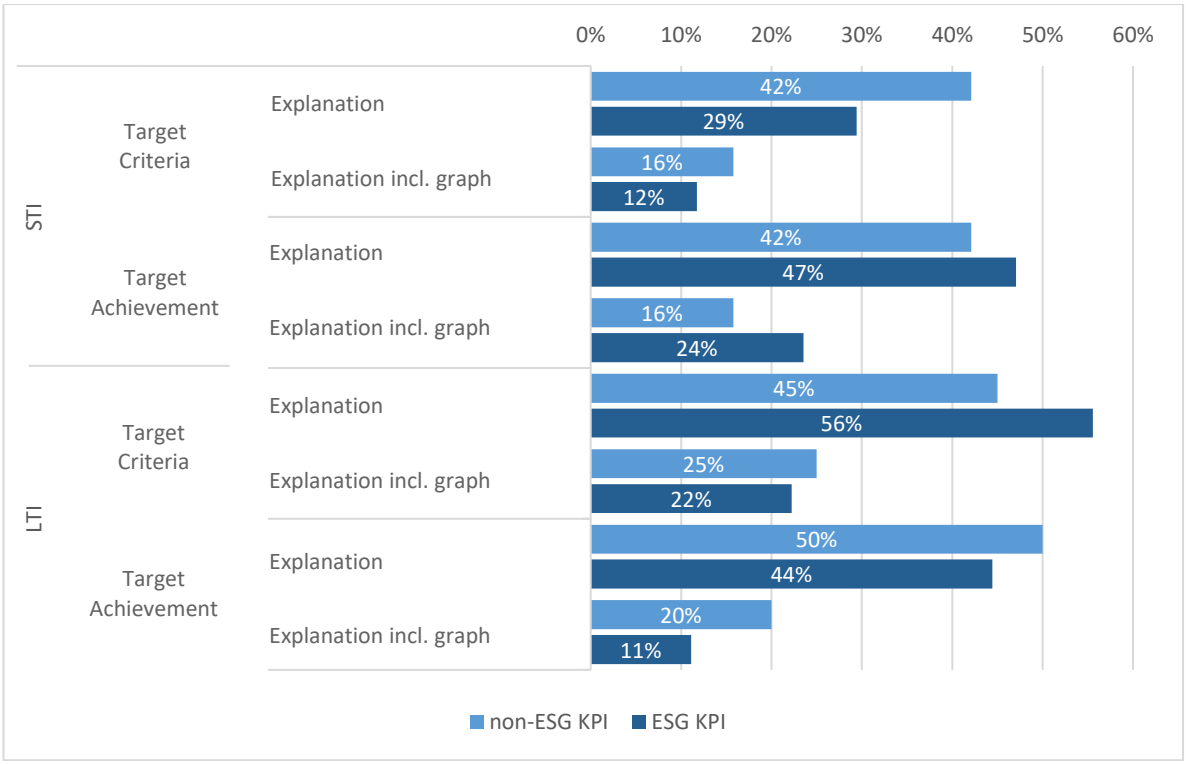
The reporting of KPIs is a well-established practice among SMI companies. However, the systematic definition and communication of specific targets often remain underdeveloped. A robust analysis of sustainability goals in compensation systems requires more than identifying relevant areas and setting compensation levels. Good governance hinges on clear target definitions and transparent KPIs.

Incorporating ESG KPIs into executive compensation systems demands precise target-setting and transparent evaluation of goal achievement. The Swiss Code emphasizes that compensation reports should detail the key criteria for measuring variable compensation elements.[34] Best practices advocate for transparent communication of both KPIs and their metrics, enabling stakeholders to assess the effectiveness of these incentives.

Figure 9 illustrates the transparency of KPI communication concerning target criteria and goal achievement. While 42% of companies define explicit targets for 100% payout within their STIs, only 16% visually represent these targets. For ESG KPIs, 29% provide target definitions, yet merely 12% offer graphical visualization.

[34] Swiss Code of Best Practice for Corporate Governance 2023, Principle 42

Figure 4.9: Frequency Distribution of Disclosure of Target Criteria and Achievement



Note: This figure shows the frequency distribution of the disclosure of target criteria (top section; explanation or grahphical explanation) and target achievment (bottom section; explanation or grahphical explanation), in comparision by non-ESG KPIs (top) and ESG KPIs (bottom).

This gap between target definition and graphical representation extends to the reporting of goal achievement. While 42% of companies report on the attainment of financial KPIs, 47% do so for ESG KPIs. Interestingly, 24% visually display ESG KPI achievement, compared to only 16% for financial KPIs. This practice indicates that companies are generally reluctant to transparently communicate their explicit target specifications and achievement. It also suggests a relatively higher willingness to disclose ESG performance, even though the specific targets often remain opaque, highlighting inconsistencies in transparency across both KPI categories.

The reporting patterns for long-term goals differ. The proportion of companies publishing target specifications for business KPIs in LTIs stands at 45%, similar to the level observed for STIs. However, 56% of companies provide target specifications for ESG KPIs in LTIs — nearly double the rate for ESG KPIs in STIs and significantly higher than the proportion reporting on business KPIs in STIs. Additionally, 25% of companies visualize target specifications for

business KPIs in LTIs, compared to 22% for ESG KPIs. A similar reversal trend is evident in transparency regarding goal achievement. 50% of the companies report on the achievement of their business KPIs in LTIs, while 44% do so for ESG KPIs. Graphical representations of achievement further highlight this disparity: 20% of companies visualize business KPI achievements, compared to only 11% for ESG KPIs.

The comparison reveals a notable observation: while STI reporting emphasizes ESG goal achievement, specific targets are often underdefined. Conversely, in LTIs, target-setting for ESG metrics is more transparent, whereas the achievement of these targets is less frequently disclosed. This suggests that short-term incentives focus on immediate results in socially relevant areas such as CO_2 reduction and diversity, while long-term goals emphasize target formulation in areas like net-zero strategies and compliance. This indicates that strategic decisions significantly influence the scope and structure of reporting. Instead of transparently communicating both target specifications and achievement, many SMI companies tend toward selective representations.

An industry breakdown reinforces these findings. While most companies have integrated sustainability goals into their compensation systems, only three out of six sectors align these goals with material sustainability areas. Interestingly, firms in the financial and materials sectors are most likely to adopt sustainability-focused compensation systems, reflecting the significant sustainability risks or opportunities inherent in their operations. Despite this focus, these sectors rank only mid-tier in ESG ratings according to LSEG (formerly Refinitiv). In contrast, companies in healthcare, technology, and consumer goods sectors tend to align more closely with societal sentiment.

Notably, there is no clear correlation between the adoption of ESG KPIs and high ESG ratings. Kuehne + Nagel International AG, the only SMI company without sustainability incentives in executive compensation, ranks last in LSEG's ESG rating. This indicates that

companies with lower ESG ratings could potentially improve their performance by strengthening sustainability incentives for management.

In addition, compensation reports offer supplementary insights into sustainability performance, revealing not only the structure and magnitude of compensation but also the strategic importance of ESG criteria. They can serve as a valuable resource alongside established sustainability ratings, providing a more nuanced understanding of a company's commitment to sustainability goals.

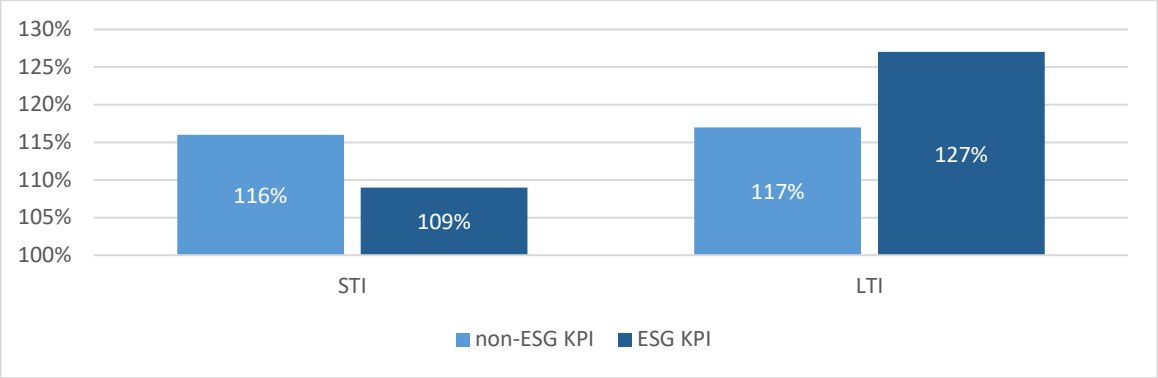
To investigate whether ESG KPIs are used to justify excessive executive compensation by setting easily attainable targets, as suggested by Bebchuk & Tallarita (2022), the study compared the target achievement rates of ESG KPIs with traditional financial KPIs.

In STI structures, approximately 50% of companies disclose the percentage of ESG KPI target achievement. While the target is typically set at 100%, the median achievement rate is 109%. In 2023, these rates ranged from 13% at Logitech International SA to 185% at Sika AG. Remarkably, Logitech's CEO declined the modest payout, redirecting it to other executives whom he credited for the achievement.[35]

For financial KPIs, median STI target achievement stands at 116%, with a range from 0% to 184%. Figure 10 highlights these comparisons, showing similar ambition levels for STI targets, irrespective of KPI type.

[35] Logitech, Annual General Meeting Invitation, Proxy Statement and Annual Report 2023, p. 78: https://s1.q4cdn.com/104539020/files/doc_financials/2023/ar/2023-annual-general-meeting-invitation-proxy-statement-and-annual-report.pdf

Figure 4.10: Target Achievement Rate for non-ESG and ESG KPIs



Note: This figure shows the target achievment rates for non- ESG and ESG KPIs in the short-term variable compensation (left side) and in the long-term variable compensation (right side).

LTI results reflect a similar pattern. Financial KPI targets were typically exceeded by 117%, with a range of 0% to 200%. ESG KPI achievement rates had a median of 127%, within the same spectrum. Despite the potential for exceeding LTI targets by up to 200%, ex-post data reveals no significantly higher fulfillment rates for ESG KPIs.

These findings suggest that compensation committees do not substantially differentiate between KPI categories when setting targets. However, they may also indicate a lack of ambition in sustainability goals. Instead of establishing challenging benchmarks, targets tend to align with expected performance levels, potentially undermining the transformative potential of ESG KPIs.

Due to data limitations, comprehensive conclusions are challenging. Only 2 of the 8 companies utilizing ESG KPIs in LTIs provided complete data. Changes in incentive systems at four companies hindered comparative analysis, while three others did not report goal achievement.

4.6 Conclusion, Key Findings, and Practical Implications

4.6.1 CONCLUSION

This study examines the executive compensation systems of Swiss SMI companies, with a particular emphasis on the integration of ESG incentives. The sample includes the 20 largest publicly traded companies in Switzerland, representing a diverse array of industries—from financial services and pharmaceuticals to industrials and consumer goods—providing a broad cross-section of key sustainability issues. The investigation is driven by the 2023 revision of the Swiss Code, which explicitly calls for sustainable compensation systems for the first time. However, the extent and effectiveness of the implementation of these new provisions remain unclear.

The analysis reveals that the majority of SMI companies have incorporated ESG KPIs into their compensation frameworks. Nevertheless, significant deficiencies persist in the transparency and design of these KPIs. Core sustainability aspects are often insufficiently addressed, limiting the effectiveness of incentives in promoting sustainable corporate governance. Despite these challenges, the growing prominence of ESG KPIs signals a positive shift toward more sustainable business practices.

4.6.2 KEY FINDINGS

A typical SMI company sets a target compensation of CHF 6.3 million, comprising a fixed base salary (CHF 1.9 million), short-term incentives (CHF 1.6 million), and long-term incentives (CHF 2.4 million). ESG KPIs account for an average of 16% of STI and 23% of LTI, translating to 16% of total compensation.[36]

[36] This share is slightly above the 11% average share of ESG KPIs in the total target compensation of the 30 DAX companies in 2021 (Bannier und Reinschmidt, 2022).

The Swiss approach of reporting the Grant Value — representing realized STI and projected LTI—shows overachievement of short-term financial targets, with total compensation reaching CHF 7.3 million, of which ESG KPIs contribute just 11%. However, realized compensation amounts to CHF 10.7 million, indicating substantial overachievement of long-term goals. Notably, the ESG share in realized compensation rises to approximately 19%, reflecting the overachievement of sustainability-related LTI targets. These findings highlight the increasing importance of ESG incentives in executive compensation while also revealing potential for a greater emphasis to further embed sustainability goals in the long term.

The Grant Value system provides a balanced temporal view of executive compensation structures. Target compensation, set at the beginning of the reporting year, is supplemented with performance data on short-term goals and relevant KPIs, offering a fact-based perspective on anticipated future earnings while placing less emphasis on realized compensation from the reporting year.

Typically, ESG KPIs cover environmental and social areas, with a focus on reducing CO_2 emissions. STI often complement these with diversity initiatives, while LTI increasingly incorporate compliance aspects. However, this analysis relies on a limited number of SMI companies that report transparently and comprehensively on the design and implementation of their sustainability KPIs. Only four of the twenty companies — Holcim AG, Sika AG, Logitech SA, and ABB Ltd — provide detailed insights into the extent of their ESG KPI integration and achievement.

Concurrently, the study shows that financial objectives, particularly those related to profitability and shareholder value, continue to dominate compensation systems. These objectives are clearly defined, and their achievement is comparatively well-communicated, underscoring the continued high priority placed on financial performance and shareholder

returns. Despite the introduction of ESG KPIs, variable compensation remains heavily weighted toward short-term and long-term financial outcomes.

The integration of ESG KPIs into compensation systems is often undermined by a lack of transparency and insufficient consideration of key sustainability aspects. There is a risk that ESG KPIs, in some cases, may serve as symbolic gestures rather than delivering genuine contributions to sustainable development, potentially being used for window-dressing purposes. In fact, linking executive compensation to ESG performance does not inherently lead to improved ESG outcomes (Bebchuk & Tallarita, 2022).

Drawing on Edmans (2023a) and the multitasking theory by Holmstrom and Milgrom (1991), there is a risk that CEOs, when incentivized on specific ESG targets, may focus on a few easily measurable goals while neglecting other critical areas. This selective focus can create an imbalance, where the pursuit of short-term goals overshadows broader sustainability objectives, ultimately undermining the long-term alignment of corporate strategies with sustainable development.

4.6.3 PRACTICAL IMPLICATIONS

To address these challenges, targeted measures are required from companies, investors, and regulators. The following recommendations are based on identified weaknesses in current practices and aim to enhance the effectiveness and transparency of ESG KPIs in compensation systems.

Companies should establish more robust target-setting practices and improve the transparency of ESG KPI reporting. Beyond the Grant Value system prevalent in Switzerland, detailed target definitions and transparent measurement methods are necessary. Standardized reporting templates should clearly present targets, weightings, and ex-post achievements. These reports can be supplemented with graphical representations and case studies to enhance clarity.

ESG KPIs should be more closely aligned with the material sustainability objectives of the respective industry and set more ambitiously. Companies must ensure that ESG KPIs serve as integral elements of their corporate strategy. Regular reviews and adjustments are required to maintain their relevance and effectiveness. Internal audits can help continuously monitor and refine these targets.

Investors should demand detailed ESG reports and incorporate ESG performance into their investment decisions. Companies should be required to set clear, measurable ESG goals, with progress transparently documented. Shareholder meetings provide a platform to hold companies accountable for unambitious ESG targets, fostering enhanced corporate accountability as emphasized in the Swiss Code.

Regulators should establish binding standards for ESG KPI disclosure, including minimum requirements for target setting and evaluation. A unified framework that defines industry-specific ESG criteria and documents their implementation could significantly improve reporting. Existing standards, such as those from the Sustainability Accounting Standards Board, already voluntarily adopted by some SMI companies, should be more widely implemented.

The integration of ESG KPIs in the compensation systems of Swiss SMI companies marks an essential advancement toward sustainable corporate governance. However, further efforts are needed to ensure these incentives go beyond formal compliance and contribute meaningfully to the long-term development of the companies. As Carina Smith Ihenacho, member of the SASB Standards Investor Advisory Group, aptly states: "*We urge standardized, concrete, and relevant sustainability data, and we ask companies to go from words to numbers — because what gets measured gets managed.*"[37]

[37] The quote often attributed to management theorist Peter Drucker, “What gets measured gets managed” (e.g.; Harvard Business Review, 2010), is, according to the Drucker Institute, not something he actually said (Zak, 2013). Drucker’s perspective on measurement was more nuanced. As Paul Zak from the Drucker Institute points

out, Drucker viewed management as inherently personal, emphasizing the importance of relationships, mutual trust, and community. While acknowledging the value of metrics, Drucker warned against relying solely on them. Zak succinctly captures this sentiment: “Measurement, yes. Only measurement, no.” In the context of ESG, this highlights the dual necessity of quantifiable KPIs to track progress and accountability, alongside genuine, lived commitment. Effective ESG management requires embedding these principles into the fabric of daily business operations, ensuring they are not merely checked off as compliance measures but actively shape organizational culture and strategy.

5 Conclusion

5.1 Overall Summary

This dissertation advances the field of CSR and ESG criteria by offering both theoretical insights and practical applications for sustainable corporate management. As CSR has evolved from a peripheral concern to a fundamental element of competitive strategy (Grewal & Serafeim, 2020; Hempel et al., 2023), it has garnered significant attention in academia and industry alike. Early discussions focused on the rationale for CSR—whether businesses should engage in socially responsible practices based on social issues (Wood, 1991) or stakeholder management (Freeman, 1984). More recently, the emphasis has shifted to implementation—how these practices influence corporate performance, investor behavior, and financial markets while addressing broader societal and economic challenges (Liang & Renneboog, 2020).

A pivotal development in this shift is the integration of executive incentives tied to ESG objectives, which embed sustainability into governance structures and align leadership with long-term corporate and societal goals (Ikram et al., 2023). However, despite progress in operationalizing CSR, ambiguities persist regarding its precise objectives, impacts, and the metrics used to stimulate and measure these impacts across financial and non-financial dimensions (Larcker et al., 2022). These challenges are exacerbated by inconsistencies in study methodologies, data sources, and geographic focus, raising questions about which CSR practices genuinely relate to positive corporate outcomes (Gillan et al., 2021).

Against this backdrop, this dissertation bridges critical knowledge gaps by systematically examining the intersection of CSR, contextual factors, and executive incentives, with a focus on advancing the UN's SDGs. Structured around three interrelated essays, the

research provides a comprehensive perspective on embedding sustainability into corporate governance and incentive systems. These studies offer nuanced insights into how different practices align corporate performance with societal goals and illuminate the role of governance frameworks—particularly executive incentives—as key drivers for achieving SDG-aligned outcomes.

From a theoretical standpoint, this dissertation confirms that well-designed sustainable business practices can simultaneously create corporate value and foster societal benefits. It responds to calls for further research into the operationalization of CSR (e.g., Cavaco et al., 2020; Edmans et al., 2017; Gillan et al., 2021; Hirsch et al., 2022; Maas, 2018) by providing new theoretical insights on the effectiveness of sustainability-linked activities and incentives. The findings deepen understanding of how CSR contributes to long-term corporate goals and societal progress while underscoring the importance of contextually relevant approaches. By advocating for strategies tailored to the unique challenges and opportunities of different organizations, this research enriches theoretical frameworks on CSR and ESG integration.

Practically, the dissertation offers actionable insights for corporate leaders integrating sustainability into core management practices. It emphasizes that while CSR initiatives can enhance corporate performance, they must be rigorously designed and transparently managed to yield meaningful results. Businesses are encouraged to adopt measurable ESG targets and align executive incentives with these objectives, fostering accountability and ensuring that sustainability drives value rather than serving as a superficial addition. Additionally, the research highlights that while CSR contracting is gaining traction globally, its implementation often remains inconsistent. Scaling sustainable practices requires strategic commitment, innovative approaches, and alignment across industries and regions.

5.2 Key Findings and Theoretical Contributions

Essay I examines the relationship between CSP and CFP across diverse global contexts, emphasizing the critical role of local conditions in shaping this dynamic. By identifying moderators such as economic development, education, freedom, and cultural dimensions, the essay challenges the applicability of universal models in CSR-CFP analysis and advances CSR theory by underscoring the need for context-specific frameworks.

The essay highlights education as a pivotal factor, both ethically and strategically, in aligning CSP and CFP. While education, a cornerstone of sustainable development, faces significant challenges globally—including declining student competencies in critical areas such as math and reading (United Nations, 2024b)—the study underscores the dual imperative of investing in education. Beyond its ethical significance, fostering access and quality in education emerges as a strategic lever for promoting ethical and sustainable business practices. Additionally, the essay reveals that measurement approaches for CSP dimensions and CFP indicators significantly influence reported outcomes. This finding highlights how methodological differences impact the robustness of CSP-CFP correlations and underscores the necessity for precision in research design.

Rather than promoting a one-size-fits-all approach, the study champions adaptable management frameworks that allow companies to prioritize different aspects of social responsibility based on their unique contexts. This adaptability is crucial for balancing competing sustainability goals while aligning corporate strategies with regional and global sustainability priorities.

Essay II explores CSR contracting within European STOXX 600 firms, addressing the traditionally American-centric focus of CSR research. Prior studies have linked CSR activities to various firm characteristics, including market dynamics, organizational structure, risk, and performance (e.g., Gillan et al., 2021). This essay extends this body of work by examining firm

and governance factors—such as board independence, profitability, and firm size—that influence CSR contracting, illustrating how these elements align executive incentives with sustainability objectives.

Grounded in agency theory, the study highlights the importance of robust governance structures in mitigating information asymmetry and fostering strategic alignment, particularly in enhancing environmental performance. It introduces the concept of an "incentive lifecycle", demonstrating that while CSR contracting can initially drive a sustainability focus, its effectiveness may diminish over time due to adverse learning effects. This dynamic perspective challenges static incentive models, advocating for adaptive CSR contracting frameworks that evolve to sustain alignment with environmental and social performance goals.

The findings emphasize that single-metric incentives are often inadequate for capturing the complexity of corporate responsibility. Instead, effective CSR contracting requires multi-faceted approaches that address both environmental and social dimensions. This research advances understanding by linking tailored, dynamic incentive designs with sustainability performance, reinforcing the need for governance frameworks that adapt over time to meet evolving stakeholder and environmental expectations.

The essay underscores the necessity for management research to move beyond static models of corporate sustainability and adopt dynamic frameworks that reflect the shifting nature of ESG factors. By doing so, it contributes to the broader discourse on corporate governance and CSR, offering actionable insights for aligning incentive systems with long-term sustainability goals.

Essay III examines the integration of ESG criteria into executive compensation systems within Swiss SMI companies, emphasizing the implications of the Swiss Code 2023, which explicitly advocates for sustainable compensation structures for the first time. The study uncovers significant shortcomings in transparency and ambition regarding how companies

implement and disclose ESG targets, suggesting that symbolic adherence to ESG measures risks overshadowing meaningful progress toward sustainable governance.

The research identifies a continued dominance of financial goals in compensation structures, reflecting an enduring prioritization of shareholder value over comprehensive sustainability objectives. Grounded in multitasking theory, the study argues that a narrow emphasis on specific ESG metrics can hinder broader sustainability ambitions, underscoring the necessity of balanced incentive frameworks that harmonize financial and ESG goals.

Theoretically, this essay highlights how the prioritization of financial metrics in compensation design can constrain the transformative potential of ESG initiatives. By demonstrating that insufficient transparency and ambition in ESG reporting can render sustainability integration a formal requirement rather than a genuine driver of change, the study broadens corporate governance literature. It calls for more transparent and ambitious approaches to ESG integration, ensuring these measures actively promote sustainable corporate behavior rather than serving as mere compliance tools.

5.3 The Future of Sustainable Business Practices: Implications and Recommendations

As the global emphasis on sustainability intensifies, companies are under growing pressure from regulatory bodies, stakeholders, and societal expectations to adopt transparent, accountable, and impactful business practices (Maas, 2018). To meet these demands, businesses must address several key priorities:

First, a defining trend in the future of sustainable business is the shift toward more stringent regulatory requirements and enhanced ESG metrics (Berrone & Gomez-Mejia, 2009a; Ferrero-Ferrero et al., 2023; Grewal & Serafeim, 2020). Companies will need to rigorously measure their impacts, moving beyond superficial commitments to metrics that reflect

meaningful contributions to sustainability goals (S. Cohen et al., 2023; Hazarika et al., 2023). This requires performance indicators that not only prevent harm but actively demonstrate societal and environmental benefits (Edmans, 2023b). Metrics must align with a company's operations and context, focusing on driving genuine progress rather than merely fulfilling reporting obligations (Edmans, 2023b).

Second, transparent and standardized reporting frameworks are essential to mitigate "goodwashing," where companies focus on easy-to-implement commitments, such as setting policies, without delivering tangible outcomes, like measurable reductions in emissions or workforce diversity (Grewal & Serafeim, 2020). Regulatory bodies can play a pivotal role by establishing consistent standards akin to the SASB, fostering comparability and credibility in ESG reporting.

Third, aligning executive incentives with sustainability goals remains a significant challenge. Traditional financial metrics often overshadow ESG objectives in incentive structures (Edmans, 2023a), leaving corporate leaders with insufficient motivation to address sustainability issues (Bebchuk & Tallarita, 2020). Integrating industry-specific ESG KPIs into compensation systems is crucial for embedding sustainability into corporate governance (Global Sustainability Standards Board, 2021). However, these KPIs must be underpinned by transparent reporting mechanisms to provide stakeholders with clear insights into how commitments translate into action. Avoiding box-checking approaches, ESG incentives must emphasize long-term accountability, holding executives responsible for sustainable outcomes even beyond their tenure (Edmans, 2023b, 2023a).

Forth, while research supports a positive relationship between CSR initiatives and financial performance, not all sustainability projects are financially beneficial (Moser & Martin, 2012). Companies must balance shareholder value with broader ESG impacts, adopting nuanced approaches to CSR investments that consider both financial and societal benefits

(Chakraborty et al., 2019). By embedding sustainability into decisions such as capital budgeting and operational planning, firms can link sustainability goals with tangible financial and operational outcomes (Eccles et al., 2012).

Fifth, sustainable business practices require adaptability and resilience, particularly as external pressures such as geopolitical uncertainties and technological advancements intensify existing challenges (Bain & Co, 2024). Leading companies are setting new standards by integrating sustainability metrics into valuation processes, establishing clear targets, and aligning these objectives with financial and operational outcomes (Eccles et al., 2012). Given the persistent challenges in accurately measuring sustainability, *"practitioners shouldn't rush to do something special for ESG factors that they wouldn't for other intangibles"* (Edmans, 2023b). Instead, many forward-thinking firms are experimenting with innovative, industry-specific metrics to drive sustainable practices, even in the absence of perfect measurement tools (Eccles et al., 2012). This approach reflects a commitment to advancing sustainable business practices, ensuring competitiveness while contributing to societal well-being, despite the complexities and uncertainties involved.

5.4 The SDGs in Business Practice

Integrating CSR objectives and ESG criteria into corporate strategies highlights the significant contributions of businesses to the UN's SDGs. The findings underscore their contributions to SDG 12 (*Responsible Consumption and Production*) and SDG 13 (*Climate Action*), showcasing how companies adopt sustainable practices to optimize resources, reduce environmental impacts, and strengthen the link between CSP and CFP.

Essays I explores regional variations in the CSP-CFP relationship, demonstrating that this link is strongest in developing countries, where CSR serves as a crucial signal of reputation and trust among stakeholders. By fostering social embeddedness and financial performance, these

practices align with SDG 8 (*Decent Work and Economic Growth*) and SDG 12 (*Responsible Consumption and Production*). However, the study also highlights variability in progress toward the SDGs, reflecting differing capacities and priorities across regions (Sachs, 2012).

In emerging economies, such as the BRICS nations, the CSP-CFP relationship is weaker, likely due to limited societal expectations and nascent sustainability frameworks (Garcia & Orsato, 2020). To address this gap, the study advocates for policies that raise societal awareness of CSR, supporting SDG 10 (*Reduced Inequalities*) by enhancing the alignment of social responsibility with financial performance.

In developed economies, particularly the United States, the relationship is bolstered by high CSR awareness and transparency standards (Plewnia & Guenther, 2017). This supports SDG 9 (*Industry, Innovation, and Infrastructure*) and SDG 17 (*Partnerships for the Goals*), as high CSR performance generates positive spillover effects within supply chains, encouraging stakeholders to adopt higher sustainability standards (Cao et al., 2019; Dai et al., 2021; Hazarika et al., 2023; Liang & Renneboog, 2020). Additionally, higher education levels (SDG 4, *Quality Education*) and economic freedom (SDG 8, *Decent Work and Economic Growth*) strengthen CSP-CFP links by fostering societal awareness (Cambra-Fierro et al., 2020) and enabling efficient implementation of sustainable practices (Gwartney, 2009). Cultural dimensions also moderate the CSP-CFP link, with individualistic societies prioritizing shareholder value (Khlif et al., 2015), necessitating transparent CSR practices to align with SDG 16 (*Peace, Justice, and Strong Institutions*). Conversely, long-term-oriented cultures, despite limited immediate gains, can leverage sustainability investments to support SDG 13 (*Climate Action*).

Essay II delves into CSR contracting among European firms, revealing that environmental performance is a key driver for embedding sustainability metrics in executive compensation. This alignment enhances SDG 13 (*Climate Action*) and SDG 12 (*Responsible Consumption and Production*) by encouraging climate action and resource efficiency.

However, the study identifies a gap in addressing broader social dimensions, such as SDG 5 (*Gender Equality*) and SDG 10 (*Reduced Inequalities*), within incentive frameworks. The findings emphasize that comprehensive CSR contracting requires balanced incentives across environmental, social, and governance dimensions to align fully with the SDGs.

Essay III examines how Swiss SMI companies integrate ESG KPIs into executive compensation to promote sustainable governance. The study highlights substantial progress in supporting SDG 13 (*Climate Action*), SDG 7 (*Affordable and Clean Energy*), and SDG 9 (*Industry, Innovation, and Infrastructure*) through CO_2 reduction targets and investments in clean energy and sustainable technologies. Some companies address water usage, directly supporting SDG 6 (*Clean Water and Sanitation*) and SDG 12 (*Responsible Consumption and Production*) by emphasizing sustainable water resource management. Social KPIs, such as diversity and employee well-being, also advance SDG 3 (*Good Health and Well-being*), SDG 4 (*Quality Education*), SDG 5 (*Gender Equality*), and SDG 8 (*Decent Work and Economic Growth*).

However, the study notes that ESG-linked incentives in Swiss firms are often weighted towards financial results, reflecting an ongoing prioritization of profitability. To strengthen SDG 12 (*Responsible Consumption and Production*), the study recommends increasing the proportion of sustainability-focused KPIs in compensation packages and improving the transparency and standardization of ESG reporting, aligning with SDG 17 (*Partnerships for the Goals*).

Across all three essays, this dissertation highlights the transformative potential of well-designed CSR and ESG initiatives in advancing the SDGs. It emphasizes the need for clear, precise KPI formulations and transparent reporting standards to avoid symbolic compliance and ensure meaningful progress. By aligning executive incentives and governance structures with

sustainability objectives, companies can enhance their contributions to global goals, setting ambitious benchmarks for responsible corporate behavior.

5.5 Limitations and Future Research Directions

This dissertation examines the complexities and challenges inherent in measuring and managing corporate sustainability through CSR initiatives and ESG criteria, while identifying critical areas for future research. Although substantial progress has been made in aligning corporate practices with sustainability goals, several limitations persist, particularly in ESG metrics' consistency, voluntary disclosure frameworks, interpretational biases, and the untapped potential of emerging technologies.

One major challenge lies in the inconsistencies across ESG ratings, driven by varied methodologies, factor selections, and weighting systems among rating agencies (Christensen et al., 2019; Grewal & Serafeim, 2020; Kotsantonis & Serafeim, 2020). These inconsistencies complicate efforts to draw uniform conclusions about ESG impacts (Liang & Renneboog, 2020), as illustrated by Gibson et al. (2021), who found only moderate correlations in ESG scores among major providers. Furthermore, ESG ratings often focus on inputs rather than measurable outcomes, and are shaped by data availability, industry adjustments, company size, geography, and regulatory factors (Dimson et al., 2020; Grewal & Serafeim, 2020; Liang & Renneboog, 2020).

In academic research, data providers like MSCI (formerly KLD) and LSEG (formerly Refinitiv) have historically dominated, with MSCI leading at a 40% usage rate and LSEG following at 26% (Hendratama et al., 2023). This reliance on a few data sources underscores the substantial influence these ratings have in shaping academic discussions on sustainability (Hendratama et al., 2023).

Essay I addresses these challenges by aggregating findings from a diverse range of measurement methods, including data from prominent providers such as MSCI and LSEG, as well as alternative third-party sources like the World Bank[38], the Paris School of Economics[39], the Central Intelligence Agency (CIA)[40], and the Fraser Institute[41]. Furthermore, it incorporates the varied measurement methodologies utilized by the aggregated studies within the meta-analysis. This comprehensive approach helps mitigate discrepancies in variable operationalization by integrating and adapting previous methodologies (e.g., Endrikat et al., 2014; Hang et al., 2017; Hirsch et al., 2022; Hou et al., 2015; Orlitzky et al., 2003), ensuring a more robust understanding of CSR and CSP dynamics. It covers both broad social and environmental aspects and nuanced CSR dimensions, such as proactive versus reactive approaches and process-based versus outcome-based measures.

In contrast, Essay II utilizes ESG ratings provided by LSEG, the second most commonly used ESG data provider (Hendratama et al., 2023). Although MSCI has been a dominant player in ESG research, its data collection ceased in 2010 (Eccles et al., 2020), making LSEG a practical choice for contemporary analyses. However, LSEG's ESG scores are industry-relative (Refinitiv, 2023) and subject to periodic historical revisions (Berg et al., 2021), which can affect consistency over time. These features highlight the ongoing need to enhance the measurement of corporate sustainability performance, both in academic research and in practical applications. As Edmans (Edmans, 2023b) aptly notes, *"it's no surprise that ESG ratings aren't perfectly correlated, because it's legitimate to have different views on the quality of a company's intangibles,"* underscoring the inherent subjectivity and variability in ESG evaluations.

[38] http://databank.worldbank.org

[39] As the responsible individual, Daniel Cohen, has passed away, the database is no longer actively available and can only be accessed as an archive, for example, via the following link: https://web.archive.org/web/20240421032821/https://www.parisschoolofeconomics.eu/en/cohen-daniel/international-educational-attainment-database/

[40] https://www.cia.gov/the-world-factbook/

[41] https://www.fraserinstitute.org/studies/economic-freedom-of-the-world-2022-annual-report

The reliance on voluntary ESG disclosures presents another significant limitation, as self-reported data often reflect a firm's intent to showcase its achievements rather than provide an accurate representation of its practices (Yang, 2022). This voluntary nature introduces biases, as firms that choose to disclose ESG information may systematically differ from those that do not (Clarkson et al., 2013). Essay III addresses this challenge by emphasizing the lack of standardization and transparency in ESG-linked incentive reporting among Swiss companies. Future research should explore the impact of mandatory CSR reporting, particularly in light of new EU taxonomy requirements, which link the SDGs to the Union policy framework and aim to enhance consistency and comparability (European Parliament and the Council, 2020).

A prevalent bias in CSR research is the tendency to focus on studies showing positive links between ESG practices and financial performance, while underreporting neutral or negative outcomes (Edmans, 2024). This skews academic discourse, fostering an overly optimistic narrative. Essay I addresses this by identifying and controlling for publication bias, considering research precision and quality. Future research should adopt a balanced approach, exploring the trade-offs between long-term societal benefits and short-term financial returns to provide a nuanced understanding of ESG's multifaceted value.

Assessing ESG initiatives is further complicated by the challenge of distinguishing authentic sustainability efforts from conventional business strategies aimed at enhancing shareholder value and corporate governance (Larcker et al., 2022). For instance, risk mitigation practices may align with ESG principles but are often embedded in traditional corporate strategies (Larcker et al., 2022). Future research should prioritize identifying specific, measurable sustainability initiatives that go beyond risk mitigation and directly align with firm-specific sustainability goals, rather than treating all ESG activities as inherently beneficial. Such an approach could also foster a more nuanced understanding of context-specific sustainability

efforts, addressing the limitations of broad metrics—such as demographic diversity—in accurately evaluating diversity, equity, and inclusion (Edmans, 2024).

Emerging technologies, such as artificial intelligence and blockchain, present significant opportunities to address current limitations in ESG reporting. AI can analyze vast amounts of unstructured data, improving ESG metrics' accuracy and presents significant opportunities for identifying or mitigating greenwashing (Moodaley & Telukdarie, 2023). Blockchain, meanwhile, can enhance transparency and accountability in ESG reporting by enabling secure, verifiable tracking of sustainability KPIs across supply chains (Saberi et al., 2019). Future research should explore how these technologies can transform ESG measurement frameworks, facilitating more robust and reliable contributions to the SDGs (de Villiers et al., 2021).

5.6 Final Remarks

This dissertation underscores the transformation of CSR from a niche initiative into a cornerstone of long-term value creation and sustainable governance. The ascent of CSR and ESG principles reflects a dual recognition that profit-motivated businesses can indeed make a meaningful contribution to the SDGs: first, sustainable practices are essential for a company’s long-term financial success (Edmans, 2023b); and second, that sustainable businesses play an indispensable role in in addressing pressing global challenges and advancing the SDGs on both individual and collective levels (Ferrero-Ferrero et al., 2023).

Far from a peripheral trend, ESG has become integral to corporate strategy, placing sustainability on par with productivity, innovation, and culture as key drivers of success (Edmans, 2023b). While ESG efforts are sometimes criticized for narrow or symbolic focus, their integration into corporate strategies demonstrates the potential to generate value not only for shareholders but also for society at large (Edmans, 2023b). This dissertation positions CSR as a critical enabler of this transition, helping companies evolve from reactive compliance to

proactive sustainability leadership, making "business as usual" increasingly unlikely in the face of growing global demands for accountability and impact.

The SDGs provide a unifying framework for addressing global challenges like climate change, requiring holistic, multi-level, and globally coordinated action that must transcend national policies, integrating efforts at local, national, and global levels to create sustainable and impactful solutions (Nordhaus, 2018). Achieving these goals demands robust networks of public and private investment, regulatory innovation, and collaboration across governments, private enterprises, academia, and civil society (Sachs, 2012). This systemic approach encompasses transitioning to a low-carbon economy, fostering social equity, and tackling interconnected issues such as energy, urbanization, food security, and climate resilience (Sachs, 2012).

However, the path to sustainable governance is not without challenges. Many companies develop ESG strategies reactively, responding to internal and external pressures (Larcker et al., 2022). For example, ambitious commitments to “net zero” targets are often made without fully understanding their implications (Edmans, 2024). The complexities of “net” and “zero” extend beyond carbon accounting, encompassing indirect effects such as the environmental trade-offs in electric vehicle production or semiconductor usage in solar technologies (Edmans, 2024). To avoid falling into a herd mentality, companies should adopt nuanced strategies like aiming for “net benefit,” which considers broader impacts rather than narrowly focusing on certain metrics (Edmans, 2024).

Effective sustainable governance requires companies to align CSR strategies with their unique circumstances and stakeholder interests, grounded in comprehensive risk and opportunity assessments (Larcker et al., 2022). Without clear boundaries and structured evaluations, CSR initiatives risk becoming vague or misaligned with long-term goals. Defining

well-structured ESG agendas is therefore critical to ensure their effectiveness and to guide deliberate, impactful decision-making.

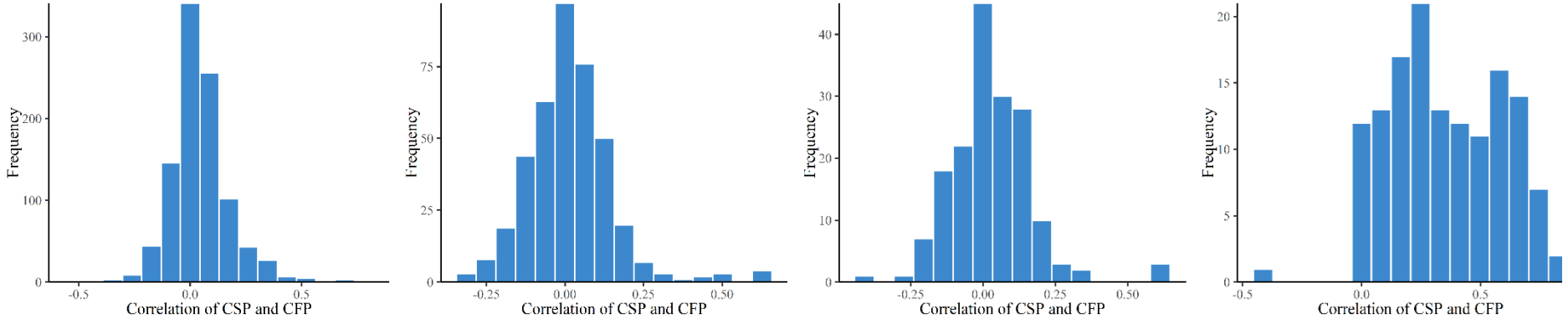
This dissertation reinforces that sustainability is not just beneficial for society but also essential for organizational resilience. Sustainable practices enhance companies' ability to adapt, thrive, and generate long-term value (Edmans, 2024). CSR activities improve reputation among customers, attract and motivate employees, and foster favorable regulatory treatment (Dhaliwal et al., 2012). These drivers highlight CSR's role as a strategic lever for competitive advantage and societal impact.

Ultimately, this work provides a comprehensive perspective on CSR and sustainable governance, inspiring further research and action. The boundaries of CSR strategies need not be overly broad or restrictive; what matters most is their clarity and alignment with corporate governance to support effective decision-making (Larcker et al., 2022). Rather than viewing ESG as a compliance requirement, companies should treat it as a strategic asset, integrating metrics that reflect their unique impact, such as customer satisfaction, innovation rates, and environmental performance (Edmans, 2023b). By illustrating the profound importance of CSR and sustainable governance, this dissertation encourages a strategic, thoughtful approach to fostering a more sustainable and prosperous future.

6 Appendix

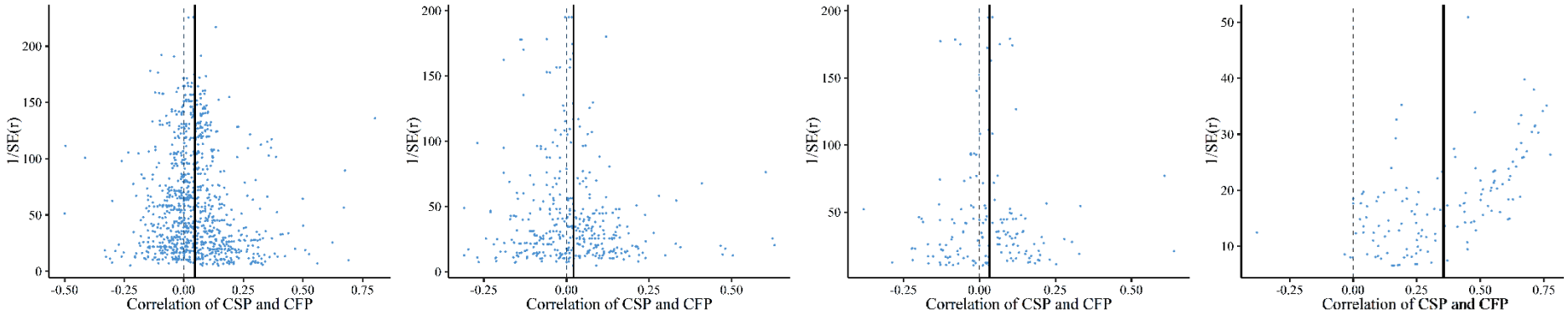
Appendix to Essay I

Figure A.1: Frequency Distribution of the Pearson Correlation Coefficient: Subgroups of CSP



Notes: Effect size on the x-axis; the y-axis represents the frequency within the respective interval. From left to right: full sample (1566); multiple CSP dimensions considered (n = 991); only environmental CSP dimension considered (n = 400); only social CSP dimension considered (n = 170); only perceptual CSP dimension considered (n = 139).

Figure A.2: Funnel Plot of the CSP-CFP Relation: Subgroups of CSP



Notes: The funnel plots show the effect sizes (correlation coefficients r) against their precision 1/SE(r). The dashed vertical line reflects a correlation of zero. The bold line reflects the mean correlation coefficient. From left to right: full sample (1566); multiple CSP dimensions considered (n = 991); only environmental CSP dimension considered (n = 400); only social CSP dimension considered (n = 170); only perceptual CSP dimension considered (n = 139)

Table A.1: Results of the Meta-Regression Analysis, Full Model I / III

Explanatory variable	*Hyp. Sign*	*(1) CHE (model 1)*		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
		β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β
INTERCEPT	?	- 11.60**	5.38	- 14.19***	5.19	- 4.33	5.49	- 13.07**	5.33	- 15.11***	5.36	- 5.73	5.97
SE(ES)	0	- 1.37***	0.41	- 1.35***	0.41	- 1.21**	0.53	- 0.65**	0.31	- 0.61*	0.31	- 0.24	0.32
DVLP	+	0.05*	0.03	—	—	—	—	0.04	0.03	—	—	—	—
BRICS	+	- 0.06***	0.02	—	—	—	—	- 0.05**	0.02	—	—	—	—
G8	-	- 0.03	0.03	—	—	—	—	- 0.01	0.03	—	—	—	—
AFRICA	+	0.02	0.04	—	—	—	—	0.03	0.05	—	—	—	—
LATIN	+	0.010	0.04	—	—	—	—	0.00	0.05	—	—	—	—
ASIA	-	0.00	0.03	—	—	—	—	0.01	0.03	—	—	—	—
EU	+	- 0.01	0.03	—	—	—	—	- 0.01	0.03	—	—	—	—
US	+	0.04	0.03	—	—	—	—	0.03	0.03	—	—	—	—
GDP^2	-	—	—	- 0.00***	0.00	- 0.00*	0.00	—	—	- 0.00***	0.00	0.00	0.00
GDPGROW	-	—	—	0.00	0.01	0.00	0.01	—	—	0.00	0.00	- 0.00	0.01
GLOBAL	+	—	—	0.00	0.00	0.00	0.00	—	—	0.00	0.00	- 0.00*	0.00
EDUCATION	-	—	—	0.02**	0.01	0.01	0.01	—	—	0.02**	0.01	0.00	0.01
COMMON	+	—	—	- 0.02	0.03	- 0.03	0.04	—	—	- 0.01	0.03	- 0.02	0.04
CIVIL	-	—	—	0.02	0.02	0.00	0.03	—	—	0.00	0.02	-0.03	0.00
FREEDOM	+	—	—	0.04**	0.02	0.05*	0.03	—	—	0.03	0.02	0.03	0.02
EXIT	+	—	—	- 0.41	0.33	- 0.34	0.38	—	—	- 0.43	0.35	-0.12	0.41
INDIVI-DUALISM	-	—	—	- 0.00***	0.00	- 0.00**	0.00	—	—	- 0.00**	0.00	- 0.00	0.00
LONGTERM	+	—	—	- 0.00**	0.00	- 0.00**	0.00	—	—	- 0.00	0.00	- 0.00	0.00

(Continued)

Table A.2: Results of the Meta-Regression Analysis, Full Model II / III

		(1) CHE (model 1)		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
Explanatory variable	*Hyp. Sign*	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β
EP	?	- 0.02*	0.01	- 0.02**	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.04***	0.01	- 0.04***	0.01
SP	?	- 0.01	0.01	- 0.01	0.01	- 0.01	0.01	- 0.01	0.02	- 0.02	0.02	- 0.02	0.02
PP	+	0.07**	0.03	0.07**	0.03		—		—	0.07*	0.04	0.06	0.04
PROACTIVE	+	- 0.02	0.01	- 0.02*	0.01	- 0.02*	0.01	- 0.01	0.01	- 0.02	0.01	- 0.02	0.01
REACTIVE	-	- 0.06***	0.01	- 0.06***	0.01	- 0.06***	0.01	- 0.03*	0.02	- 0.03*	0.02	- 0.03**	0.02
INFOR-MATIVE	-	0.02	0.01	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
PROCESS	+	0.02	0.02	0.03	0.02	0.04*	0.02	0.03	0.02	0.04*	0.02	0.06**	0.03
OUTCOME	-	- 0.02	0.04	- 0.01	0.04	- 0.02	0.04	0.01	0.03	0.02	0.04	0.01	0.03
MARKET	-	- 0.03***	0.01	- 0.03***	0.01	- 0.02***	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.02**	0.01
SUBJECTIVE	+	0.18***	0.04	0.15***	0.04		—		—	0.2***	0.04	0.18***	0.04
CAUSAL	0	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.00	0.01
SME	?	- 0.02	0.06	- 0.06	0.06	0.27	0.14	- 0.01	0.07	- 0.04	0.07	0.22	0.14
MANU	?	0.01	0.03	0.01	0.04	- 0.01	0.04	0.00	0.03	- 0.00	0.03	0.00	0.03
SERV	?	0.07	0.04	0.07	0.04	0.06	0.04	0.08*	0.04	0.08*	0.04	0.06	0.04
PANEL	?	- 0.06**	0.02	- 0.05**	0.02	- 0.05**	0.02	- 0.05**	0.02	- 0.04**	0.02	- 0.054	0.02
DATERANGE	?	- 0.00	0.00	- 0.00	0.00	- 0.00	0.00	- 0.00	0.00	- 0.00	0.00	- 0.00	0.00
NOFIRMS	?	- 0.00***	0.00	- 0.00***	0.00	- 0.00**	0.00	- 0.00***	0.00	- 0.00***	0.00	- 0.00	0.00
2010s	?	- 0.04**	0.02	- 0.06***	0.02	- 0.03	0.02	- 0.03**	0.02	- 0.05***	0.02	- 0.02	0.02
MEANYEAR	?	0.01**	0.00	0.01***	0.00	0.00	0.00	0.01**	0.00	0.01***	0.00	0.00	0.00
MLTNAT	?	- 0.05*	0.03	- 0.06**	0.02	- 0.10***	0.03	- 0.04	0.03	- 0.05*	0.03	- 0.09**	0.04
MLTSECT	?	0.00	0.03	0.00	0.03	- 0.02	0.04	0.02	0.03	0.02	0.03	0.00	0.03

(Continued)

Table A.3: Results of the Meta-Regression Analysis, Full Model III / III

	(1) CHE (model 1)		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
NOAUTHORS	0.01	0.01	0.00	0.01	0.01*	0.01	0.00	0.01	0.00	0.01	0.01*	0.01
RANK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
I^2	98.79%		98.76%		98.92%		97.73%		97.74%		98.58%	
τ^2	0.01		0.01		0.01		0.01		0.01		0.02	
AIC	-2,154		-2,169		-1,897		—		—		—	
Adj. R^2	0.44		0.44		0.39		—		—		—	
Observations	1,700		1,700		1,566		1,700		1,700		1,566	
No. of Studies	651		651		574		651		651		574	

Note: This table presents the final results of the meta-regression model stated in equation (1). The dependent variable in model (1) through model (6) is the intensity of the CSP-CFP relation measured by the Pearson correlation coefficient r as effect size. As a robustness test, column (4) through (6) uses the Correlated Effects model. In Column (2), (4), and (6) effect sizes quantifying CSP and CFP through perceptual measures are excluded. Study-cluster robust standard errors are reported in parentheses. Base group: mixed CSP measure, accounting-based CFP, mixed geographic regions.
***p < .01, **p < .05, *p < .1.

Table A.4: Results of the Meta-Regression Analysis, z-transformed Effect Sizes I / III

Explanatory variable	*Hyp. Sign*	*(1) CHE (model 1)*		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
		β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β
INTERCEPT	?	- 14.90***	4.96	- 17.45***	4.91		—		—	- 13.64***	4.905	- 15.13***	4.89
SE(ES)	0	- 1.74***	0.43	- 1.71***	0.42	- 1.61***	0.59	- 0.88***	0.302	- 0.83***	0.31	- 0.34	0.37
DVLP	+	0.06***	0.02		—		—		—		—	0.07***	0.017
BRICS	+	- 0.06***	0.02		—		—		—		—	- 0.05**	0.020
G8	-	- 0.03	0.03		—		—		—		—		—
AFRICA	+		—		—		—		—		—		—
LATIN	+		—		—		—		—		—		—
ASIA	-		—		—		—		—		—		—
EU	+		—		—		—		—		—		—
US	+	0.04**	0.02		—		—		—		—	0.03*	0.019
GDP^2	-		—		—	- 0.00***	0.00	- 0.00**	0.00		—		—
GDPGROW	-		—		—		—		—	- 0.01*	0.00		—
GLOBAL	+		—		—		—		—	0.00**	0.00		—
EDUCATION	-		—		—	0.02**	0.01		—		—		—
COMMON	+		—		—		—		—		—		—
CIVIL	-		—		—	0.02	0.02		—		—		—
FREEDOM	+		—		—	0.04*	0.02	0.06***	0.02		—		—
EXIT	+		—		—	- 0.39	0.29		—		—		—
INDIVI-DUALISM	-		—		—	- 0.00***	0.00	- 0.00**	0.00		—		—
LONGTERM	+		—		—	- 0.00**	0.00	- 0.00**	0.00		—		—

(Continued)

Table A.5: Results of the Meta-Regression Analysis, z-transformed Effect Sizes II / III

		(1) CHE (model 1)		*(2) CHE (model 2)*		*(3) CHE (model 2, reduced)*		*(4) CE (model 1)*		*(5) CE (model 2)*		*(6) CE (model 2, reduced)*	
Explanatory variable	*Hyp. Sign*	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β	β	SE_β
EP	?	- 0.02**	0.01	- 0.02**	0.01	- 0.03***	0.01	- 0.03***	0.01	- 0.04***	0.01	- 0.04***	0.01
SP	?	- 0.01	0.01	- 0.01	0.01	- 0.02	0.01		—		—	- 0.02	0.02
PP	+	0.08***	0.03	0.08**	0.03		—		—	0.08*	0.04	0.07	0.04
PROACTIVE	+	- 0.02	0.01	- 0.02*	0.01	- 0.02**	0.01	- 0.01	0.01	- 0.02	0.02	- 0.02	0.01
REACTIVE	-	- 0.05****	0.01	- 0.06***	0.01	- 0.06***	0.01	- 0.03*	0.02	- 0.02**	0.01	- 0.03**	0.02
INFOR-MATIVE	-	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.02
PROCESS	+	0.02	0.02	0.03*	0.02	0.04**	0.02	0.03	0.02	0.04*	0.02	0.06**	0.03
OUTCOME	-		—		—		—		—		—		—
MARKET	-	- 0.03***	0.01	- 0.03***	0.01	- 0.02***	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.02*	0.01
SUBJECTIVE	+	0.19***	0.01	- 0.16***	0.04		—		—	0.21***	0.04	0.19***	0.05
CAUSAL	0		—		—		—		—		—		—
SME	?		—		—		—		—	0.30	0.15		—
MANU	?		—		—		—		—		—		—
SERV	?	0.08*	0.04	0.07*	0.04	0.08*	0.04	0.08*	0.04	0.07*	0.04	0.07*	0.04
PANEL	?	- 0.07***	0.02	- 0.07***	0.02	- 0.07***	0.02	- 0.05**	0.02	- 0.04*	0.02	- 0.05**	0.02
DATERANGE	?		—		—		—		—	- 0.00	0.00		—
NOFIRMS	?	- 0.00***	0.00	- 0.00***	0.00	- 0.00**	0.00	- 0.00***	0.00	- 0.00***	0.00	- 0.00	0.00
2010s	?	- 0.04**	0.02	- 0.06***	0.02		—		—	- 0.03**	0.02	- 0.05***	0.02
MEANYEAR	?	0.01***	0.00	0.01***	0.00	0.00	0.00	0.01***	0.00	0.01***	0.00	0.00	0.00
MLTNAT	?	- 0.05**	0.02	- 0.05**	0.02	- 0.09***	0.02	- 0.03**	0.02	- 0.04**	0.02	- 0.10***	0.03
MLTSECT	?		—		—		—		—		—		—

(Continued)

Table A.6: Results of the Meta-Regression Analysis, z-transformed Effect Sizes III / III

	(1) CHE (model 1)	*(2) CHE (model 2)*	*(3) CHE (model 2, reduced)*	*(4) CE (model 1)*	*(5) CE (model 2)*	*(6) CE (model 2, reduced)*
NOAUTHORS	—	—	—	—	0.01* 0.01	—
RANK	—	—	—	—	0.00 0.00	—
I^2	98.86%	98.85%	98.99%	97.45%	97.51%	98.04%
τ^2	0.01	0.01	0.01	0.01	0.01	0.01
AIC	-1,947	-1,958	-1,681	—	—	—
Adj. R^2	0.42	0.41	0.36	—	—	—
Observations	1,700	1,700	1,566	1,700	1,700	1,566
No. of Studies	651	651	574	651	651	574

Note: This table presents the final results of the meta-regression model stated in equation (1). The dependent variable in model (1) through model (8) is the intensity of the CSP-CFP relation measured by the z-transformed Pearson correlation coefficient r as effect size. As a robustness test, column (4) through (6) uses the Correlated Effects model. In Column (2), (4), and (6) effect sizes quantifying CSP and CFP through perceptual measures are excluded. Study-cluster robust standard errors are reported in parentheses. All models report parsimonious models based on general-to-specific modeling. Therein, after each re-estimation, the most insignificant variable is dropped from the model until the remaining test statistics are consistently larger than 1. Base group: mixed CSP measure, accounting-based CFP, mixed geographic regions. ***p < .01, **p < .05, *p < .1.

Table A.7: Results of the Meta-Regression Analysis, Alternative GDP Estimate I / II

		(1) CHE (model 2)		*(2) CHE (model 2, reduced)*		*(3) CE (model 2)*		*(4) CE (model 2, reduced)*	
Explanatory variable	*Hyp. Sign*	β	SE_β	β	SE_β	β	SE_β	β	SE_β
INTERCEPT	?	- 14.78***	4.69	—	—	- 13.17***	4.56	—	—
SE(ES)	0	- 1.28***	0.35	- 1.10**	0.45	- 0.65**	0.27	—	—
DVLP	+	—	—	—	—	—	—	—	—
BRICS	+	—	—	—	—	—	—	—	—
G8	-	—	—	—	—	—	—	—	—
AFRICA	+	—	—	—	—	—	—	—	—
LATIN	+	—	—	—	—	—	—	—	—
ASIA	-	—	—	—	—	—	—	—	—
EU	+	—	—	—	—	—	—	—	—
US	+	—	—	—	—	—	—	—	—
GDP	-	- 0.05***	0.02	- 0.04**	0.02	- 0.04***	0.01	- 0.03**	0.01
GDPGROW	-	—	—	- 0.01*	0.01	—	—	- 0.01	0.00
GLOBAL	+	—	—	0.00**	0.00	—	—	0.00**	0.00
EDUCATION	-	0.02**	0.01	—	—	0.02**	0.01	—	—
COMMON	+	—	—	—	—	—	—	—	—
CIVIL	-	0.02	0.02	—	—	—	—	- 0.03*	0.02
FREEDOM	+	0.03*	0.02	0.06***	0.02	0.03	0.02	0.03*	0.02
EXIT	+	- 0.41	0.27	- 0.49	0.38	- 0.40	0.30	—	—
INDIVI DUALISM	-	- 0.00***	0.00	- 0.00**	0.00	- 0.00***	0.00	- 0.00	0.00
LONG-TERM	+	- 0.00**	0.00	- 0.00**	0.00	- 0.00	0.00	—	—
EP	?	- 0.02**	0.01	- 0.03***	0.01	- 0.04***	0.01	- 0.05***	0.01
SP	?	- 0.01	0.01	- 0.01	0.01	- 0.02	0.02	- 0.02	0.02
PP	+	0.08**	0.03	—	—	0.06	0.04	- 0.02	0.01
PROACTIVE	+	- 0.02*	0.01	- 0.02**	0.01	- 0.02	0.01	- 0.03**	0.01
REACTIVE	-	- 0.06***	0.01	- 0.06***	0.01	- 0.03**	0.01	0.02	0.01
INFORMATIVE	-	0.02*	0.01	0.02	0.01	0.02	0.01	0.06**	0.03
PROCESS	+	0.03*	0.02	0.04**	0.02	0.04*	0.02	- 0.05***	0.01
OUTCOME	-	—	—	—	—	—	—	—	—
MARKET	-	- 0.03***	0.01	- 0.02***	0.01	- 0.03***	0.01	- 0.02**	0.01
SUBJECTIVE	+	0.15***	0.04	—	—	0.18***	0.04	—	—
CAUSAL	0	—	—	—	—	0.01	0.01	—	—

(Continued)

Table A.8: Results of the Meta-Regression Analysis, Alternative GDP Estimate II / II

		(1) CHE (model 2)		*(2) CHE (model 2, reduced)*		*(3) CE (model 2)*		*(4) CE (model 2, reduced)*	
Explanatory variable	*Hyp. Sign*	β	SE_β	β	SE_β	β	SE_β	β	SE_β
SME	?	—	—	0.28	0.14	—	—	0.22	0.14
MANU	+	—	—	—	—	—	—	—	—
SERV	-	0.07*	0.03	0.07*	0.04	0.07*	0.04	0.06*	0.03
PANEL	?	- 0.05**	0.02	- 0.05**	0.02	- 0.04*	0.02	0.02	0.02
DATE-RANGE	?	—	—	0.00	0.00	—	—	—	—
NOFIRMS	?	- 0.00***	0.00	- 0.00**	0.00	- 0.00***	0.00	- 0.00	0.00
2010s	?	- 0.06***	0.02	- 0.01*	0.01	- 0.05***	0.02	—	—
MEANYEAR	?	0.01***	0.00	0.00	0.00	0.01***	0.00	0.00	0.00
MLTNAT	?	- 0.04**	0.02	- 0.09***	0.02	- 0.04**	0.02	- 0.08***	0.02
MLTSECT	?	—	—	—	—	—	—	—	—
NO-AUTHORS		—	—	0.01*	0.01	—	—	0.01*	0.01
RANK		—	—	0.00	0.00	—	—	—	—
I^2		98%		99%		98%		99%	
τ^2		0.01		0.01		0.01		0.02	
AIC		-2,204.53		-1,914.95		—		—	
Adj. R^2		0.43		0.39		—		—	
Observations		651		574		651		574	
No. of Studies		1,700		1,566		1,700		1,566	

Note: This table presents the results of the meta-regression model stated in equation (1) with the alternative GDP variable. The dependent variable in model (1) through model (4) is the intensity of the CSP-CFP relation measured by the Pearson correlation coefficient r as effect size. As a robustness test, column (3) and (4) uses the Correlated Effects model. In Column (2), (4) effect sizes quantifying CSP and CFP through perceptual measures are excluded. Study-cluster robust standard errors are reported in parentheses. All models report parsimonious models based on general-to-specific modeling. Therein, after each re-estimation, the most insignificant variable is dropped from the model until the remaining test statistics are consistently larger than 1. Base group: mixed CSP measure, accounting-based CFP, mixed geographic regions.
***$p < .01$, **$p < .05$, *$p < .1$.

Supplementary Material to Essay I

6.1.1 REPORTING GUIDELINE FOR THE META-REGRESSION ANALYSIS

Table A.9: Reporting Guideline for the Meta-Regression Analysis

	Guidelines by Stanley et al. (2013)	*Execution in the present study*
Research question and effect size		
1	Clear statement of the specific economic theories, hypotheses or effects studied	Section 3 presents the theoretical foundation for the relationship between CSP and CFP, as well as the development of hypotheses.
2	Precise definition of how effects are measured (the 'effect size') and explicit description about how measured effects are comparable	Section 4.4 discusses and explains the partial correlation coefficients used as effect sizes in this study. Additionally, in Section 3.3, differences in variable definitions are explicitly addressed and captured as explanatory variables to enhance comparability of the effect sizes.
Research Literature Searching, Compilation and Coding		
3	Full report of how the research literature was searched	Section 4.1 and 4.2 provide details on the database search, including the specific databases and sources used, search terms employed, and the date of the search. Appendix S3 presents the PRISMA (Identification, Screening, Eligibility, Included) chart.
4	Full disclosure of the rules for study (or effect size) inclusion/exclusion	Section 4.2 and 4.3 discuss the full set of inclusion criteria, including the study selection process and data extraction. An overview of the sample characteristics of the included studies is provided in Appendix S4, and the reference list for the included studies can be found in Appendix S7.
5	Statement addressing who searched, read and coded the research literature	Section 4.1 discusses the data coding procedure.
6	Complete list of the information coded for each study or estimate	Table 1 provides an overview of all coded explanatory variables.
MRA modeling issues		
7	Descriptive statistics of the variables that are coded (means and standard deviations) and graph(s) displaying the effect sizes	Table 1 presents the means and standard deviations of the explanatory variables, while Section 5.1 and Table 2 provide univariate analysis of the effect sizes and heterogeneity. Figure 1 shows the frequency distribution of the sample, while Figure 2 represents two funnel plots of the effect size estimates. Additional graphs can be found in Appendix as Figure A1 and Figure A2.
8	Fully reported multiple MRA, along with the exact strategy used to simplify it (e.g., general-to-specific)	Section 5.2 to 5.5 and Table 3 describe the process of general-to-specific modeling used to simplify the model. The results table presents all relevant estimation models with descriptions of the model specifications, degrees of inconsistency, and sample sizes.
9	Investigation of publication, selection, and misspecification biases	Section 5.1 presents a funnel plot and Egger's test analysis to detect publication bias, and the multiple regression models control for potential publication bias and other sources of misspecification bias.
10	Methods to accommodate heteroscedasticity and within-study dependence	The models in Table 3 all use weighted least squares (WLS) and employ standard errors that are clustered at the study level.
11	Results from MRA model specification tests, robustness checks or sensitivity analyses	Table 3, Table A1, Table A2, and Table A3 present various robustness tests conducted for different model specifications, estimation methods, and sub-samples.

6.1.2 OPERATIONALIZATION OF THE EXPLANATORY VARIABLES

The coding procedure for certain moderating variables is presented in the following section.

6.1.2.1 Regional differences

The study organizes its data based on economic classifications and geographic locations, utilizing explanatory variables to group observations. Economic groupings include developing countries, identified using the United Nations' World Economic Situation and Prospects data[42], emerging economies categorized under the BRICS nations (Brazil, Russia, India, China, and South Africa), and leading industrialized nations represented by the G8 countries (Canada, France, Germany, Italy, Japan, Russia, the UK, and the USA). Geographic clustering is based on continental divisions, grouping countries into Africa, South America, Asia, Europe, and the United States. These variables are used solely to denote studies that specifically investigate the corresponding economic groups or geographic regions.

To enhance its analysis, the study incorporates regional characteristics using additional variables. Gross domestic product (GDP) data, drawn from the World Bank, serve as a measure of development, while GDP growth (GDP GROWTH) is employed to indicate economic growth. Both variables are calculated as average per capita values over the observation period. The study also assesses country-specific trade policies and global market integration by calculating the sum of a country's exports and imports as a percentage of its GDP. Higher values of the "GLOBAL" variable indicate a stronger orientation toward international trade policies.[43] Additionally, the "EDU" variable captures the quality of a country's educational system,

[42] The classification is based on the publication from the United Nations for 2020 (January, 01, 2023): https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2020_Annex.pdf

[43] The data of GDP and international trade is drawn from the World Bank (January, 01, 2023): https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?view=chart and ttps://data.worldbank.org/indicator/NE.IMP.GNFS.ZS?view=chart

measured by the average years of schooling among the population aged 15 to 65 years in the decade corresponding to the mean observation year.[44] For studies that analyze regional data from multiple countries, the values are approximated using the regional averages provided by the World Bank.[45]

To account for regulatory differences, the study includes dummy variables "COMMON" and "CIVIL," which reflect countries with common law and civil law systems, respectively. Countries with mixed legal systems, as well as studies covering multi-country samples, are included in the control group for these dummy variables.[46]

The variable "FREEDOM" measures the degree to which a country's policies and institutions promote economic freedom, with scores ranging from 0 to 10. This metric is derived from the "Economic Freedom of the World" index, which evaluates freedom across five domains: government size, legal and property rights, monetary stability, freedom to trade internationally, and regulatory policies. Similarly, the "EXIT" variable captures the ease with which citizens can leave a country in response to unfavorable or stagnant policies (Hall, 2018). This is calculated as the sum of land borders and coastline divided by the country's total geographic area (Hall, 2018).[47]

In addition to these economic and regulatory factors, the study considers cultural and social influences on ethical behavior and decision-making. The "INDIVIDUALISM" variable measures the extent to which individuals perceive themselves as independent rather than

[44] The data is drawn from the World Bank (January, 01, 2023): https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?most_recent_value_desc=true&view=chart

[45] The World Bank classifies countries as follows. East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & North Africa, North America, South Asia, Sub-Saharan Africa

[46] The classification is based on the "world factbook" from the US-American Central Intelligence Agency (CIA) for 2022 (January, 01, 2023): https://www.cia.gov/the-world-factbook/field/legal-system/

[47] Data on countries' total area, land boundaries and coastline were obtained from the World Factbook of the Central Intelligence Agency (January, 01, 2023): www.cia.gov/library/publications/the-world-factbook/fields/2100.html.

interdependent members of larger groups, on a scale from 0 to 100. Conversely, "LONG-TERM" evaluates the degree of long-term orientation in societal behavior, also on a scale from 0 to 100.[48]

6.1.2.2 Differences in variable operationalization

The operationalization of variables (PROACTIVE, REACTIVE, PROCESS-BASED, OUTCOME-BASED, INFORMATIVE) builds on prior research, combining existing variable definitions from studies such as Endrikat et al. (2014), Hou et al. (2015), Orlitzky et al. (2003), and Hang et al. (2017) to create a generalized approach for social and environmental dimensions.

Corporate sustainability efforts are categorized into "proactive" and "reactive" initiatives. Reactive efforts involve addressing social and environmental issues as they emerge, meeting only the minimum demands of stakeholders. These include actions like providing basic information about a company's social and environmental performance or taking minimal steps to reduce waste and resource use. In this study, the "Reactive" variable encompasses measures such as the "Concern Rating" by KLD Research & Analytics Inc. (2015), voluntary CSR disclosures related to specific environmental and social issues, or measures addressing general corporate practices. [49]

In contrast, proactive efforts focus on preventing negative social and environmental externalities, aiming to go beyond compliance by addressing sustainability challenges in a comprehensive manner. These activities also include providing high-quality disclosures or resolving CSR-related controversies preemptively. The "Proactive" variable reflects measures

[48] The data on cultural dimensions are drawn from the Website of Geert Hofstede (January, 01, 2023): https://geerthofstede.com/research-and-vsm/dimension-data-matrix/

[49] It shall be noted that the commonly utilized rating of KLD Research & Analytics Inc. measures three dimensions: social, environmental and corporate governance aspects. Some researches exclude and some include the corporate governance dimension within their study. For further information about the rating construction refer to MSCI ESG Research Inc. (2015).

such as the "Strength Rating" by KLD Research & Analytics Inc. (2015), evaluations of CSR disclosure quality, and active responses to or resolutions of CSR controversies.

In addition, "process-based" measures focus on corporate sustainability practices at the management or operational level. These include management systems, environmental strategies, and innovation in environmental technologies. Such measures evaluate how companies integrate sustainability into their core processes and decision-making frameworks.

"Outcome-based" measures aim to assess the tangible results of sustainability efforts by quantifying their actual impacts. Examples include the scaled measurement of CO_2 and other emissions or tracking energy consumption. These measures provide concrete data on the effectiveness of a firm's sustainability initiatives.[50]

"Informative" measures relate to activities that primarily involve providing CSR-related information. These include the disclosure of CSR reports, participation in CSR indices, or the acquisition of ISO certifications. Such measures do not necessarily reflect operational or outcome-based efforts but instead focus on the firm's communication and transparency regarding sustainability.

In some cases, the methodology employed in studies does not allow for a clear distinction among these categories. Consequently, these studies may contribute to multiple variable operationalizations. For instance, research assessing corporate sustainability performance through voluntary disclosure of CSR activities might be assigned to both the reactive and informative categories. Similarly, studies using measures with multiple key values that cannot be exclusively assigned to the social or environmental dimension—or those encompassing general sustainability aspects—are included in the control group of the dummy variables.

[50] Similar to the meta-analysis of Hang et al. (2017), the sign of certain effect sizes (e.g., emissions measures) were unified across the sample, so that higher values are associated with higher social or environmental performance.

The coding for CFP measurement follows established literature, including the methodology outlined by Salaiz (2016). The financial performance is coded as either "accounting-based" or "market-based". The "accounting-based" measures include return on assets, return on equity, return on investment, return on sales, free cash flow, as well as measures with multiple key values. On the other hand, "market-based" measures include Tobin's Q and market-to-book ratio.

Two dummy variables, PP and SUBJECTIVE, are used to indicate whether a perceptual measure is based on sustainability (CSP) or financial (CFP) corporate activities. This distinction allows for the categorization of studies that rely on subjective evaluations, such as surveys or perceptual data, versus those using objective data sources.

To mitigate the challenge of causality in the CSP-CFP relationship, researchers often incorporate a time lag between the measurement of these variables. A time-lagged approach enables the statistical correlation to be interpreted as the effect of the earlier-measured variable on the later-measured variable (Plewnia & Guenther, 2017). In contrast, simultaneous measurement of CSP and CFP does not permit conclusions about causality, leaving causal relationships as theoretical assumptions (Allouche & Laroche, 2005; Van der Stede, 2014). To account for these temporal dynamics, two dummy variables are introduced: PRIORCSP, which indicates studies where CSP is measured before CFP, and PRIORCFP, which indicates studies where CFP is measured before CSP. Primary studies with concurrent measurements of CSP and CFP are included in the control group of these dummy variables. This categorization aligns with earlier meta-analyse (e.g., Orlitzky et al., 2003; Plewnia & Guenther, 2017) and provides a structured approach to analyzing the temporal sequence of CSP and CFP, enabling more robust interpretations of their causal interplay.

6.1.2.3 Industrial differences

To account for industrial differences, the variable SMALL identifies studies focusing exclusively on small firms, while MANUF and SERV represent effect sizes estimated specifically for manufacturing or service firms, respectively. Studies that include data from both small and large firms or span multiple industries are incorporated into the control group of these dummy variables.

6.1.2.4 Data

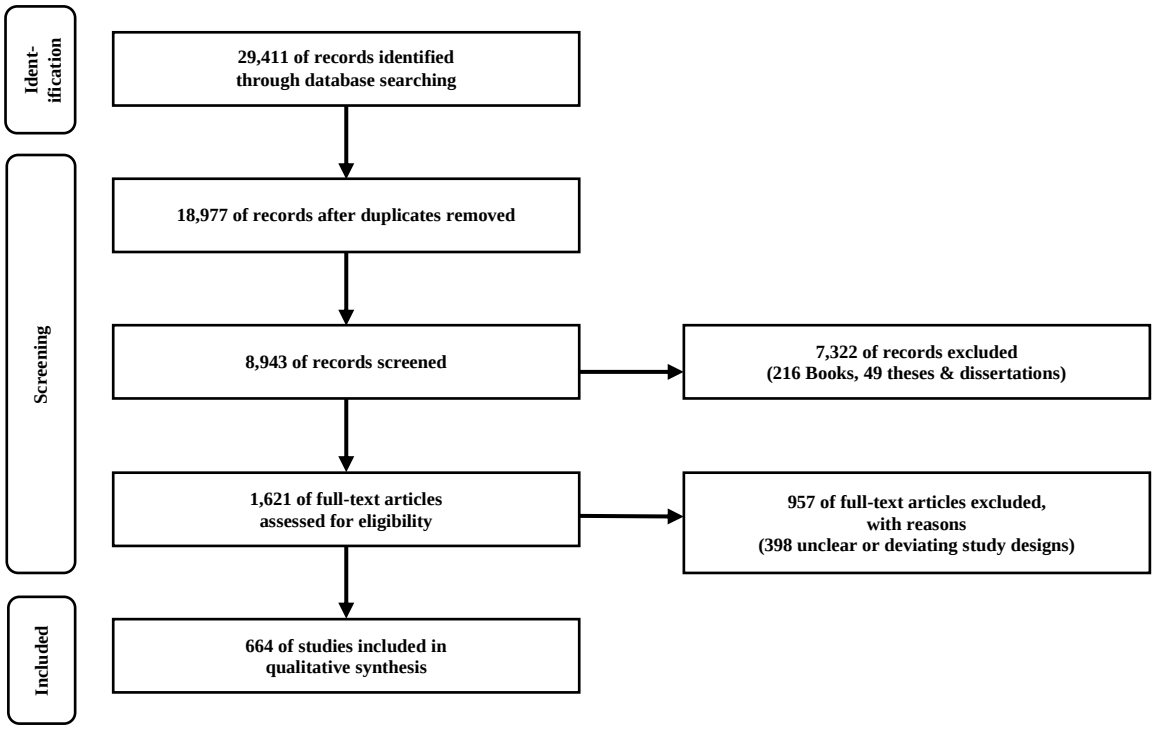
In terms of data characteristics, MEANYEAR captures the average observation year of firm data in a primary study, while DATERANGE reflects the length of the observation period. The variable 2010 categorizes studies based on whether they were conducted before or after 2010. NOFIRMS counts the number of individual firms included in each study, and MLTSECT and LMTNAT indicate whether the study samples encompass multiple industries or multiple countries, respectively.

6.1.2.5 Publication characteristics

For publication characteristics, NOAUTORS captures the number of authors contributing to each primary study, while RANK indicates the quartile position of the journal in which the study was published, relative to the total sample of studies.

6.1.3 PRISMA CHART

Figure A.3: PRISMA Chart



Note: PRISMA 2020 flow diagram for the systematic literature review as proposed by Page et al. (2021).

6.1.4 TEMPORAL DISTRIBUTION OF PRIMARY STUDIES AND EFFECT SIZES

Table A.10: Temporal Distribution of Primary Studies and Effect Sizes

Study year	*Number of Studies*	*Number of Effect Sizes*
2014	11	37
2015	36	85
2016	109	277
2017	111	306
2018	113	270
2019	150	382
2020	121	343

Note: The mean publication year is 2018.

6.1.5 ROBUST VARIANCE ESTIMATION

In line with previous meta-studies (e.g., López-Arceiz et al., 2018; Plewnia & Guenther, 2017), this study codes multiple effect sizes individually for each included study, allowing for a more granular analysis of the data. Notably, many of the effect sizes used in this study are not independent. For instance, the study by Attig, Boubakri et al. (2016) contributes six interdependent effect sizes. Further information on the RVE approach can be found in the supplementary material.

To address a previous limitation of RVE, the study integrates small-sample adjustment procedures provided by Tipton (2015).

Because estimation of approximately efficient weights requires an estimate of both the between-study variance τ^2 and a specific within-study correlation coefficient ρ, the value of ρ is set to the suggested value of 0.8 (Fisher & Tipton, 2015). However, a sensitivity analysis shows robust effect sizes for different values of ρ.

6.1.6 FORMULAS FOR THE CALCULATION OF EFFECT SIZES

Table A.11: Formulas for the Calculation of Effect Sizes

	Effect Sizes (ES)	*Standard deviation SE(ES)*
Pearson correlation	r_{xy}	$SE_{r_{xy}} = \frac{1 - r_{xy}^2}{\sqrt{n-1}}$
Fisher's z-transformed correlations	$z = \frac{1}{2}\ln\left(\frac{1+r}{1-r}\right)$	$SE_z = \frac{1}{\sqrt{n-3}}$

Notes: This table provides the equations for the effect sizes and their corresponding standard errors (SE). Besides the effect sizes (Pearson correlation r as reported in the primary studies and Fisher's z), n represents the sample size of the respective samples utilized in the primary research.

6.1.7 TESTS FOR SAMPLE MEAN DIFFERENCES

Table A.12: Tests for Sample Mean Differences

Wilcoxon rank sum test (Mann-Whitney) with continuity correction	*Statistics*
Test for differences between CSP and EP	
Mean of CSP	0.045
Mean of EP	0.017
W- test statistic	224,693***
p-value for the test	0.00009349
Test for differences between CSP and SP	
Mean of CSP	0.045
Mean of SP	0.031
W-test statistic	88,636
p-value for the test	0.276
Test for differences between CSP and PP	
Mean of CSP	0.045
Mean of PP	0.353
W-test statistic	16,477***
p-value for the test	0.00000001

6.1.8 OVERVIEW OF STUDIES INCLUDED IN META-ANALYSIS

Table A.13: Overview of Studies Included in Meta-Analysis

Study	*Journal*	*N. of effect sizes*
Abdelfattah et al. (2020)	Journal of International Accounting, Auditing & Taxation	2
Abdelzaher et al. (2016)	Journal of Global Responsibility	1
Abd-Mutalib et al. (2017)	Advanced Journal of Technical & Vocational Education	2
Abeysekera et al. (2016)	Journal of Business Ethics	2
Aboud et al. (2019)	Sustainability Accounting Management and Policy Journal	3
Abugre et al. (2019)	Business Strategy & Development	2
Adinehzadeh et al. (2018)	Asian Academy of Management Journal of Accounting & Finance	1
Ağan et al. (2014)	Journal of Cleaner Production	6
Aguilera-Caracuel et al. (2017)	European Journal of Management & Business Economics	4
Aguilera-Caracuel et al. (2017)	Corporate Social Responsibility and Environmental Management	1
Agyabeng-Mensah et al. (2020)	Journal of Manufacturing Technology Management	1
Agyei-Mensah et al. (2018)	Social Responsibility Journal	2
Ahmadi et al. (2017)	Management of Environmental Quality	2
Ahmed et al. (2017)	Journal of Developing Areas	4
Ahmed et al. (2020)	Operations Management Research	4
Aigbedo (2019)	Journal of Environmental Management	1
Aigbedo (2020)	Journal of Cleaner Production	1
Ajina et al. (2019)	Gestiòn Internacional	1
Akben-Selcuk (2019)	Sustainability	6
Akdoğan et al. (2017)	Journal of Modern Accounting & Auditing	2
Akisik et al. (2020)	Sustainability Accounting, Management & Policy Journal	4
Aksoy et al. (2020)	Journal of Cleaner Production	4
Al-ahdal et al. (2020)	Research in International Business and Finance	1
Alam et al. (2018)	Energy Economics	2
Alamgir et al. (2017)	International Journal of Business & Development Studies	8
Alazzani et al. (2017)	Corporate Governance (Bingley)	1
Al-Hajri et al. (2019)	Investment Management & Financial Innovations	2
Almahrog et al. (2018)	Journal of Financial Reporting & Accounting	1
Alonso-Almeida et al. (2015)	Current Issues in Tourism	5
Alotaibi et al. (2016)	International Journal of Disclosure & Governance	2
Alrazi et al. (2016)	Accounting and Business Research	2

Study	Journal	N. of effect sizes
Alsaadi (2020)	Journal of Financial Reporting & Accounting	4
Alsaadi et al. (2016)	Journal of Financial Services Research	2
Alsaifi et al. (2019)	Business Strategy and the Environment	2
Alsamawi et al. (2019)	Journal of Advanced Research in Business & Management Studies	1
Al-Shaer (2018)	Journal of Financial Reporting & Accounting	1
Al-Shammari et al. (2019)	Journal of Business Research	1
Amorelli et al. (2019)	Corporate Social Responsibility and Environmental Management	1
Aouadi et al. (2016)	Journal of Business Ethics	3
Apaydin et al. (2020)	British Journal of Management	6
Arayssi et al. (2016)	Sustainability Accounting Management and Policy Journal	1
Arminen et al. (2017)	Journal of Cleaner Production	1
Arora et al. (2020)	Supply Chain Management	2
Attig et al. (2014)	Journal of Business Ethics	6
Attig et al. (2015)	Journal of Business Ethics	4
Awaysheh et al. (2020)	Strategic Management Journal	1
Axjonow et al. (2016)	Journal of Business Ethics	1
Baah et al. (2019)	Journal of Cleaner Production	4
Baalouch et al. (2019)	Journal of Management & Governance	4
Baba (2017)	SHS Web of Conferences	2
Bae et al. (2018)	Sustainability	3
Bae et al. (2019)	Journal of Banking & Finance	3
Baker et al. (2015)	Journal of Business Ethics	1
Baraibar-Diez et al. (2019)	Corporate Social Responsibility and Environmental Management	1
Bastič et al. (2020)	Naše gospodarstvo/Our Economy	1
Beji et al. (2020)	Journal of Business Ethics	12
Ben Amar et al. (2018)	Journal of Financial Reporting & Accounting	6
Benlemlih (2015)	Journal of Business Ethics	3
Benlemlih (2018)	Research in International Business and Finance	3
Benlemlih et al. (2016)	Journal of Business Ethics	2
Benlemlih et al. (2017)	Economics & Business Review	1
Bergmann et al. (2017)	Journal of Cleaner Production	1
Bernal-Conesa et al. (2017)	Corporate Social Responsibility and Environmental Management	2
Bernard et al. (2016)	Journal of Business Ethics	1
Birindelli et al. (2019)	Corporate Social Responsibility and Environmental Management	1
Birkey et al. (2016)	Accounting Forum	1
Biswas et al. (2018)	Pacific Accounting Review	2

Study	*Journal*	*N. of effect sizes*
Bose et al. (2017)	Journal of Contemporary Accounting & Economics	1
Boubaker et al. (2019)	Quarterly Review of Economics & Finance	2
Boubaker et al. (2020)	Economic Modelling	6
Boubakri et al. (2016)	Journal of Corporate Finance	1
Braam et al. (2016)	Journal of Cleaner Production	4
Braam et al. (2017)	Corporate Social Responsibility and Environmental Management	2
Branzei et al. (2016)	Journal of Business Ethics	2
Breuer et al. (2018)	Journal of Banking & Finance	4
Briones Peñalver et al. (2018)	Corporate Social Responsibility and Environmental Management	1
Brooks et al. (2019)	International Journal of Auditing	2
Brower et al. (2017)	Journal of Business Research	2
Brulhart et al. (2017)	Journal of Business Ethics	1
Buallay (2019)	Management of Environmental Quality	1
Buallay et al. (2020)	Competitiveness Review	1
Busch et al. (2020)	Organization & Environment	3
Cabeza-Garcíaa et al. (2017)	Journal of Family Business Strategy	2
Cahan et al. (2015)	Journal of Business Ethics	2
Cai et al. (2017)	International Journal of Accounting	2
Cai et al. (2019)	Journal of International Accounting, Auditing & Taxation	3
Calza et al. (2014)	Business Strategy and the Environment	1
Campa et al. (2019)	European Management Journal	2
Çankaya et al. (2018)	Journal of Manufacturing Technology Management	6
Carey et al. (2017)	Journal of Contemporary Accounting & Economics	2
Cegarra-Navarro et al. (2016)	European Management Journal	1
Chakraborty et al. (2018)	Journal of Economics & Business	3
Chakroun et al. (2020)	Management Research Review	2
Chang et al. (2015)	Journal of Business Ethics	2
Chang et al. (2017)	Emerging Markets Finance and Trade	1
Chen (2018)	n.a.	6
Chen et al. (2014)	Journal of Business Ethics	2
Chen et al. (2016)	Applied Economics	2
Chen et al. (2017)	n.a.	2
Chen et al. (2018)	Journal of Business Research	4
Chen et al. (2018)	Journal of Business Research	2
Chen et al. (2019)	Corporate Social Responsibility and Environmental Management	1
Chen et al. (2019)	Journal of Business Research	1

Study	Journal	N. of effect sizes
Chen et al. (2020)	Economic Research-Ekonomska Istrazivanja	2
Cheng et al. (2016)	Journal of Management and Governance	1
Cheng et al. (2016)	Review of Accounting & Finance	4
Cherian et al. (2019)	Sustainability	2
Cheung (2016)	Journal of Corporate Finance	1
Cheung et al. (2019)	Journal of Contemporary Accounting & Economics	2
Chiang et al. (2017)	Advances in Accounting	2
Chkir et al. (2020)	Emerging Markets Review	3
Cho et al. (2015)	Asia-Pacific Journal of Accounting & Economics	1
Cho et al. (2017)	Journal of Business Ethics	1
Cho et al. (2019)	Sustainability	1
Cho et al. (2020)	Asia-Pacific Journal of Financial Studies	2
Choi et al. (2016)	Journal of Applied Business Research	1
Choi et al. (2018)	Journal of Business Ethics	2
Choi et al. (2018)	International Journal of Contemporary Hospitality Management	1
Choi et al. (2019)	Sustainability	3
Choi et al. (2020)	Sustainability	1
Chollet et al. (2018)	Global Finance Journal	1
Chowdhury et al. (2018)	Canadian Journal of Administrative Sciences	1
Chung et al. (2019)	Asian Business & Management	2
Col et al. (2016)	Journal of Business Ethics	2
Connon et al. (2019)	European Accounting Review	1
Cook et al. (2017)	Human Relations	2
Cooper et al. (2018)	Journal of Accounting and Public Policy	3
Cordeiro et al. (2020)	Business Strategy and the Environment	1
Crilly et al. (2017)	Available at SSRN	1
Cruz et al. (2018)	Entrepreneurship Theory and Practice	1
Cui et al. (2016)	Journal of Business Ethics	2
Cullinan et al. (2019)	Social & Environmental Accountability Journal	4
D'Amico et al. (2014)	Business Strategy and the Environment	9
da Silva Oliveira et al. (2019)	Meditari Accountancy Research	4
Dai et al. (2017)	International Journal of Production Economics	2
Dai et al. (2019)	Sustainability	1
Dal Maso et al. (2018)	Journal of Environmental Management	1
Dang et al. (2020)	Finance Research Letters	4
Danso et al. (2019)	Journal of Business Research	6
Danso et al. (2019)	Business Strategy and the Environment	1
Dardour et al. (2016)	Gestiòn Internacional	1

Study	Journal	N. of effect sizes
De Mendonca et al. (2019)	Business Strategy and the Environment	2
de Nuccio et al. (2020)	British Food Journal	1
De Villiers et al. (2015)	Accounting and Business Research	4
Del Bosco et al. (2016)	Journal of World Business	2
Deng et al. (2019)	Sustainability	2
Derchi et al. (2020)	Journal of Business Ethics	2
Desender et al. (2020)	Corporate Governance An International Review	6
DesJardine et al. (2020)	Academy of Management Journal	2
Devie et al. (2019)	Social Responsibility Journal	3
Dias et al. (2018)	Social Responsibility Journal	3
Dick et al. (2020)	Family Business Review	2
Diebecker et al. (2016)	Review of Managerial Science	1
Dintimala et al. (2018)	Accounting Analysis Journal	4
Dinu et al. (2019)	Ekonomie a Management	1
Dixon-Fowler et al. (2015)	Journal of Business Ethics	1
Djoutsa Wamba et al. (2020)	Corporate Social Responsibility and Environmental Management	2
Doellman et al. (2018)	Available at SSRN 3047944	2
Du et al. (2015)	Journal of Business Ethics	1
Du et al. (2019)	Journal of Business Research	1
Du et al. (2020)	Journal of Business Ethics	1
Dubey et al. (2017)	Annals of Operations Research	1
Dunbar et al. (2019)	Journal of Corporate Finance	2
Dunbar et al. (2020)	Journal of Corporate Finance	1
Duque-Grisales et al. (2019)	Journal of Business Ethics	6
Duque-Grisales et al. (2020)	Business Strategy and the Environment	1
Dutordoir et al. (2018)	Journal of Corporate Finance	2
Dyduch (2017)	International Journal of Trade, Economics & Finance	1
Eberhardt-Toth (2016)	Journal of Cleaner Production	1
Eding et al. (2017)	Corporate Social Responsibility and Environmental Management	1
Ellouze (2020)	Managerial Finance	1
Elmagrhi et al. (2018)	Business Strategy and the Environment	2
Emeka-Nwokeji et al. (2019)	Journal of accounting, business & social sciences	3
Erhemjamts et al. (2019)	Journal of Business Research	1
Esteban-Sanchez et al. (2017)	Journal of Cleaner Production	3
Ezeagba et al. (2017)	International Journal of Academic Research in Business & Social Sciences	1
Fallah et al. (2019)	Social Responsibility Journal	4
Fatemi et al. (2017)	Global Finance Journal	2

Study	Journal	N. of effect sizes
Feng et al. (2017)	American Journal of Business	2
Feng et al. (2018)	Business Strategy and the Environment	6
Feng et al. (2020)	Journal of Cleaner Production	4
Fernández-Gago et al. (2016)	Review of Managerial Science	1
Fernández-Gago et al. (2018)	Corporate Social Responsibility and Environmental Management	9
Fernando et al. (2019)	Resources, conservation and recycling	2
Ferrero-Ferrero et al. (2016)	Sustainability	1
Fiandrino et al. (2018)	Social Responsibility Journal	2
Fiaschi et al. (2016)	Journal of World Business	2
Flammer et al. (2016)	Strategic Management Journal	2
Flammer et al. (2019)	Strategic Management Journal	1
Foo et al. (2018)	Expert Systems With Applications	1
Francis et al. (2016)	Business & Society	4
Franco et al. (2019)	International Journal of Hospitality Management	3
Francoeur et al. (2016)	Journal of Business Ethics	3
Francoeur et al. (2017)	Journal of Business Ethics	3
Fu et al. (2019)	Strategic Management Journal	2
Galbreath (2016)	Business & Society	2
Galbreath (2017)	Business Strategy and the Environment	3
Gali et al. (2020)	Technological Forecasting and Social Change	6
Gallardo-Vázquez et al. (2019)	Sustainability	4
Gallego-Álvarez et al. (2016)	Online Information Review	1
Gallego-Álvarez et al. (2019)	Business Strategy and the Environment	4
Gamhewage et al. (2018)	n.a.	2
Ganda et al. (2018)	Sustainability	2
Gao et al. (2020)	Available at SSRN	2
Garcia et al. (2016)	International Conference on Management & the Environment	2
Garcia et al. (2017)	Journal of Cleaner Production	4
Garcia et al. (2020)	Business Strategy and the Environment	1
García Martín et al. (2019)	Corporate Social Responsibility and Environmental Management	2
García-Meca et al. (2018)	Administrative Sciences	2
García-Sánchez (2019)	Business Ethics: A European Review	4
Garcia-Sanchez et al. (2015)	Long Range Planning	3
García-Sánchez et al. (2018)	Corporate Social Responsibility and Environmental Management	2
García-Sánchez et al. (2019)	Corporate Social Responsibility and Environmental Management	4
García-Sánchez et al. (2020)	Corporate Social Responsibility and Environmental Management	3

Study	Journal	N. of effect sizes
García-Sánchez et al. (2020)	Corporate Social Responsibility and Environmental Management	1
Gatimbu et al. (2018)	Business Strategy and the Environment	3
Gherghina et al. (2016)	Economics & Sociology	4
Ghoul et al. (2016)	Journal of Banking & Finance	1
Giannarakis et al. (2017)	Business Strategy and the Environment	1
Glass et al. (2016)	Business Strategy and the Environment	3
Gnanaweera et al. (2018)	Cogent Business & Management	1
Godos-Díez et al. (2018)	Review of Managerial Science	3
Godos-Díez et al. (2019)	Corporate Social Responsibility and Environmental Management	6
Gómez-Bolaños et al. (2019)	Business Strategy and the Environment	1
Gong et al. (2017)	Quality & Quantity	3
González-Ramos et al. (2018)	International Journal of Innovation	1
Gras et al. (2018)	Strategic Organization	2
Grewal et al. (2016)	Available at SSRN	2
Griffin et al. (2019)	Available at SSRN	2
Griffin et al. (2020)	Available at SSRN	1
Groening et al. (2016)	Journal of Business Ethics	4
Grougiou et al. (2015)	Journal of Business Research	2
Gul et al. (2020)	Journal of Business Research	1
Guo et al. (2018)	Emerging Markets Review	4
Gupta et al. (2017)	Strategic Management Journal	2
Habbash (2016)	Social Responsibility Journal	1
Habib et al. (2017)	Business Strategy and the Environment	1
Haleem et al. (2017)	Journal of Cleaner Production	1
Hamrouni et al. (2019)	Journal of Applied Accounting Research	2
Hamrouni et al. (2020)	Management Decision	1
Han et al. (2016)	Asian Journal of Sustainability	1
Han et al. (2019)	Business Strategy and the Environment	1
Han et al. (2020)	Industrial Management & Data Systems	1
Hang et al. (2018)	Asian Journal of Finance & Accounting	2
Hang et al. (2018)	International Finance & Banking	3
Hannah et al. (2020)	Journal of Management Studies	1
Hao et al. (2018)	Sustainability	3
Hapsoro et al. (2020)	Jurnal Akuntansi dan Auditing Indonesia	2
Haque (2017)	British Accounting Review	1
Haque et al. (2017)	Business Strategy and the Environment	1
Haque et al. (2020)	British Journal of Management	4

Study	Journal	N. of effect sizes
Harjoto (2016)	Review of Quantitative Finance & Accounting	3
Harjoto et al. (2016)	Journal of Business Ethics	2
Harjoto et al. (2017)	Journal of Product and Brand Management	9
Harjoto et al. (2020)	Advances in Accounting	1
Harper et al. (2019)	American Journal of Business	2
Hasan et al. (2016)	Journal of Business Ethics	3
Hasan et al. (2017)	Journal of Contemporary Accounting & Economics	3
Hassan et al. (2017)	Business Strategy and the Environment	1
Helfaya et al. (2017)	Business Strategy and the Environment	2
Henry et al. (2018)	Business Strategy and the Environment	1
Hirunyawipada et al. (2018)	Journal of Business Research	3
Hmaittane et al. (2019)	Review of Accounting & Finance	2
Ho et al. (2016)	Cogent Business & Management	3
Ho et al. (2016)	Pacific-Basin Finance Journal	1
Ho et al. (2019)	Advances in Pacific Basin Business, Economics & Finance	1
Hoi et al. (2016)	Journal of Business Ethics	2
Hong et al. (2017)	Journal of Cleaner Production	2
Hrazdil et al. (2019)	Canadian Academic Accounting Association (CAAA) Annual Conference	2
Hu et al. (2020)	Sustainability	2
Huang et al. (2015)	Journal of Business Ethics	3
Huang et al. (2016)	Emerging Markets Finance and Trade	2
Hubbard et al. (2017)	Strategic Management Journal	12
Hummel et al. (2016)	Journal of Accounting and Public Policy	2
Hummel et al. (2017)	Journal of Business Ethics	2
Hussain et al. (2016)	Journal of Business Ethics	2
Ioannou et al. (2014)	Strategic Management Journal	1
Islam et al. (2020)	Social Responsibility Journal	1
Issa (2017)	Australian Journal of Basic & Applied Sciences	2
Jackson et al. (2019)	Journal of Business Ethics	1
Jacoby et al. (2018)	Journal of International Financial Markets, Institutions & Money	1
Jahid et al. (2020)	Journal of Asian Finance, Economics & Business	1
Jahmane et al. (2020)	Finance Research Letters	4
Jain et al. (2019)	British Journal of Management	1
Jang et al. (2019)	Corporate Governance (Bingley)	2
Jarboui et al. (2020)	Journal of Financial Crime	1
Javed et al. (2020)	Corporate Social Responsibility and Environmental Management	1

Study	Journal	N. of effect sizes
Jia (2019)	Corporate Social Responsibility and Environmental Management	1
Jia et al. (2019)	Strategic Management Journal	3
Jiang et al. (2018)	Journal of Cleaner Production	1
Jo et al. (2015)	Global Finance Journal	1
Jung et al. (2016)	International Journal of Contemporary Hospitality Management	3
Kachouri et al. (2020)	Journal of Global Responsibility	1
Kalu et al. (2016)	Journal of Environmental Management	1
Kamasak et al. (2018)	Business Ethics: A European Review	3
Kanashiro et al. (2017)	Journal of Business Ethics	1
Kang et al. (2016)	Journal of Marketing	1
Kang et al. (2016)	International Journal of Contemporary Hospitality Management	6
Kao et al. (2016)	Journal of Management	1
Kao et al. (2018)	Pacific-Basin Finance Journal	2
Karim et al. (2019)	Indian Journal of Corporate Governance	3
Kassinis et al. (2016)	Corporate Social Responsibility and Environmental Management	3
Kesto (2017)	Global Journal of Management & Business Research	2
Khan et al. (2014)	British Accounting Review	1
Khan et al. (2016)	Accounting Review	2
Khan et al. (2019)	Sustainability	2
Khan et al. (2020)	Journal of Cleaner Production	1
Khan et al. (2020)	Environmental Science and Pollution Research	6
Khattak (2020)	Journal of Public Affairs	4
Kiessling et al. (2015)	Journal of Business Ethics	4
Kim et al. (2015)	Journal of Management	4
Kim et al. (2017)	Asia-Pacific Journal of Financial Studies	6
Kim et al. (2017)	Sustainability	1
Kim et al. (2018)	Sustainability	9
Kim et al. (2018)	Management Research Review	9
Kim et al. (2018)	Journal of Business & Industrial Marketing	1
Kim et al. (2018)	Sustainability	1
Kim et al. (2019)	Journal of Distribution Science	2
Kim et al. (2019)	Economic Research-Ekonomska Istrazivanja	6
Kim et al. (2019)	Sustainability	2
Kim et al. (2019)	Journal of Distribution Science	3
Knight et al. (2018)	Business Strategy and the Environment	9
Konadu (2017)	Economics & Business Review	5

Study	Journal	N. of effect sizes
Koo (2016)	Available at SSRN	9
Krishnamurti et al. (2018)	Journal of Contemporary Accounting & Economics	1
Kumar et al. (2018)	Journal of Indian Management	1
La Rosa et al. (2017)	European Management Journal	3
Labelle et al. (2015)	Journal of Business Ethics	3
Laguir et al. (2018)	Management Decision	9
Lahouel et al. (2019)	Journal of Cleaner Production	6
Lamb et al. (2016)	Business & Society	1
Lanis et al. (2014)	Journal of Business Ethics	9
Laskar et al. (2016)	Social Responsibility Journal	2
Latan et al. (2018)	Journal of Environmental Management	1
Lau et al. (2018)	Journal of Cleaner Production	2
Law Chapple et al. (2017)	Available at SSRN	1
Lee (2015)	Journal of Business Ethics	2
Lee et al. (2014)	Business Strategy and the Environment	1
Lee et al. (2015)	Journal of Cleaner Production	2
Lee et al. (2016)	Journal of Applied Business Research	2
Lee et al. (2017)	Journal of Accounting and Public Policy	6
Lee et al. (2017)	Sustainability	2
Lee et al. (2018)	Social Responsibility Journal	4
Lee et al. (2018)	Journal of Distribution Science	1
Lee et al. (2020)	Journal of Business Research	1
Lenz et al. (2017)	Journal of the Academy of Marketing Science	1
Leonidou et al. (2015)	Journal of Business Ethics	3
Lewandowski (2017)	Business Strategy and the Environment	1
Li et al. (2016)	International Journal of Managerial Finance	1
Li et al. (2016)	Journal of Business Ethics	3
Li et al. (2018)	Journal of International Financial Markets, Institutions & Money	5
Li et al. (2019)	n.a.	2
Li et al. (2019)	Journal of Business Ethics	1
Li et al. (2019)	Business Strategy and the Environment	1
Li et al. (2020)	International Journal of Production Economics	9
Li et al. (2020)	Journal of Business Finance & Accounting	2
Lian et al. (2019)	International Research Journal of Applied Finance	2
Lin et al. (2019)	Corporate Social Responsibility and Environmental Management	1
Lin et al. (2019)	Sustainability	2
Lin et al. (2019)	North American Journal of Economics and Finance	4

Study	Journal	N. of effect sizes
Lin et al. (2019)	Social Responsibility Journal	2
Lin et al. (2020)	Corporate Social Responsibility and Environmental Management	9
Liu (2019)	Corporate Social Responsibility and Environmental Management	2
Liu et al. (2017)	Journal of Business Research	1
Liu et al. (2017)	International Journal of Environmental Research and Public Health	1
Liu et al. (2019)	Sustainability	2
Liu et al. (2019)	Journal of Management Studies	2
Liu et al. (2019)	Sustainability	2
Lone et al. (2016)	Corporate Governance: The International Journal of Business in Society	1
Long et al. (2017)	Energy Policy	1
Long et al. (2019)	Corporate Social Responsibility and Environmental Management	2
Lopatta et al. (2015)	Business & Society	2
Lopatta et al. (2016)	European Management Review	1
Lopatta et al. (2020)	International Journal of Accounting	2
López Puertas-Lamy et al. (2017)	Journal of Business Finance & Accounting	2
López-González et al. (2018)	Journal of Cleaner Production	6
López-González et al. (2019)	Corporate Social Responsibility and Environmental Management	2
López-Pérez et al. (2017)	Corporate Social Responsibility and Environmental Management	3
Lu et al. (2018)	Asian Review of Accounting	1
Lucato et al. (2017)	Journal of Environmental Management	8
Luo (2017)	Accounting and Finance	1
Luo et al. (2018)	Business Strategy and the Environment	2
Luo et al. (2019)	Emerging Markets Review	1
Maas (2016)	Journal of Business Ethics	6
Mahmood et al. (2020)	Sustainability	2
Maletič et al. (2015)	Total Quality Management & Business Excellence	2
Manning et al. (2018)	Corporate Social Responsibility and Environmental Management	1
Manokarana et al. (2018)	Management Science Letters	2
Manrique et al. (2017)	Sustainability	2
Mao et al. (2016)	Journal of Cleaner Production	3
Mao et al. (2019)	Asia-Pacific Journal of Accounting & Economics	4
Maqbool et al. (2017)	Pacific Business Review International	2
Maqbool et al. (2019)	Journal of Global Responsibility	2

Study	Journal	N. of effect sizes
Marhfor et al. (2017)	Working Papers in Responsible Banking & Finance of the University of St &rews School of Management	4
Marín-Vinuesa et al. (2018)	Organization & Environment	6
Martí-Ballester (2016)	Journal of Cleaner Production	6
Martinez-Conesa et al. (2017)	Journal of Cleaner Production	1
Martínez-Ferrero et al. (2017)	Business Ethics: A European Review	2
Martínez-Ferrero et al. (2018)	Corporate Social Responsibility and Environmental Management	1
Masoud et al. (2017)	"British Journal of Education, Society &	16
Masud et al. (2018)	Behavioural Science"	2
Mathuva et al. (2016)	Asian Journal of Sustainability & Social Responsibility	4
Matthiesen et al. (2017)	Advances in Accounting	1
McGuire et al. (2017)	Cross Cultural & Strategic Management	3
Melloni et al. (2017)	Journal of Business Ethics	4
Memon et al. (2019)	Journal of Accounting and Public Policy	2
Michaels et al. (2017)	Corporate Social Responsibility and Environmental Management	8
Miralles-Quirós et al. (2019)	Journal of Management Control	4
Mirghafoori et al. (2017)	Sustainability	1
Miroshnychenko et al. (2017)	Corporate Social Responsibility and Environmental Management	4
Moneva et al. (2019)	Journal of Cleaner Production	2
Moratis et al. (2018)	Journal of Sustainable Tourism	1
Motwani et al. (2016)	International Journal of Corporate Social Responsibility	2
Moussa et al. (2019)	International Journal of Research in IT & Management	8
Muller (2018)	Business Strategy and the Environment	2
Muttakin et al. (2016)	Business & Society	2
Mutuc et al. (2019)	Journal of Business Ethics	2
Mutuc et al. (2019)	Sustainability	2
Nag et al. (2016)	Asia-Pacific Social Science Review	12
Nair et al. (2019)	Global Business Review	1
Nasih et al. (2019)	Pacific-Basin Finance Journal	1
Nazari et al. (2017)	Entrepreneurship & Sustainability Issues	2
Nekhili et al. (2017)	Journal of Contemporary Accounting & Economics	8
Nguyen et al. (2019)	Journal of Business Research	1
Nguyen et al. (2019)	Management Science Letters (discontinued)	1
Nguyen et al. (2020)	Management Science Letters (discontinued)	3
Nguyen et al. (2020)	Journal of Asian Finance, Economics & Business	6
Niemann et al. (2019)	Accounting	6
Ning et al. (2019)	Business Strategy and the Environment	1

Study	Journal	N. of effect sizes
Nirino et al. (2019)	Asia-Pacific Journal of Accounting & Economics	5
Nirino et al. (2020)	British Food Journal	2
Nishitani et al. (2020)	Journal of Intellectual Capital	1
Nollet et al. (2015)	Journal of Cleaner Production	2
Nor et al. (2016)	Economic Modelling	1
Nuber et al. (2019)	Procedia Economics & Finance	6
Obeidat et al. (2020)	Corporate Social Responsibility and Environmental Management	2
Odziemkowska et al. (2017)	Journal of Business Ethics	2
Oh et al. (2016)	Academy of Management Annual Meeting Proceedings	2
Oh et al. (2016)	Journal of Business Ethics	6
Oh et al. (2016)	Journal of Business Ethics	6
Oh et al. (2017)	Journal of Management	4
Oh et al. (2019)	Journal of Business Ethics	4
Oikonomou et al. (2019)	Journal of Business Research	12
Ok et al. (2019)	European Journal of Finance	2
Orazalin (2019)	Sustainability	2
Orazalin (2019)	Corporate Governance (Bingley)	2
Orazalin et al. (2018)	Business Strategy and the Environment	1
Orazalin et al. (2019)	Energy Policy	2
Orazalin et al. (2020)	Environmental Science and Pollution Research	1
Ortas et al. (2018)	Corporate Social Responsibility and Environmental Management	1
Ortas et al. (2020)	Corporate Social Responsibility and Environmental Management	1
Ortiz-de-Mandojana et al. (2016)	Accounting Auditing & Accountability Journal	2
Ouni et al. (2020)	Corporate Social Responsibility and Environmental Management	2
Oyewumi et al. (2018)	Sustainability	1
Ozdemir et al. (2020)	Future Business Journal	1
Paiva et al. (2018)	International Journal of Contemporary Hospitality Management	3
Pan et al. (2018)	International Forum on Management	1
Park (2017)	Management Decision	12
Park et al. (2020)	Social Responsibility Journal	1
Park et al. (2020)	Australian Journal of Management	2
Patrisia et al. (2016)	Corporate Social Responsibility and Environmental Management	1
Pekovic et al. (2020)	Eurasian Business Review	2
Peng (2019)	Review of Managerial Science	2
Pérez et al. (2017)	Corporate Social Responsibility and Environmental Management	2

Study	Journal	N. of effect sizes
Pérez-Cornejo et al. (2019)	Accounting Auditing & Accountability Journal	3
Petrenko et al. (2015)	Corporate Social Responsibility and Environmental Management	6
Pham et al. (2018)	Strategic Management Journal	2
Pham et al. (2020)	Multinational Business Review	3
Phan et al. (2020)	Journal of Business Research	1
Poddi et al. (2016)	Sustainability	2
Price et al. (2017)	Journal of International Business & Economics	1
Pucheta-Martínez et al. (2018)	Journal of Business Research	1
Qian et al. (2017)	Sustainable Development	1
Qian et al. (2018)	British Accounting Review	4
Radhouane et al. (2018)	Journal of Cleaner Production	2
Rahman et al. (2019)	Journal of Cleaner Production	6
Rahman et al. (2020)	Journal of Brand Management	2
Ramanathan (2016)	Indonesian Management & Accounting Research	2
Rashid et al. (2020)	Journal of Business Ethics	2
Reimer et al. (2017)	Managerial Auditing Journal	2
Reimsbach et al. (2018)	Journal of Business Ethics	2
Ren et al. (2019)	Journal of Cleaner Production	2
Reverte et al. (2016)	Business Strategy and the Environment	2
Rezaee et al. (2019)	Journal of Cleaner Production	2
Rhou et al. (2018)	Global Finance Journal	3
Rizwan et al. (2016)	International Journal of Hospitality Management	2
Rjiba et al. (2020)	Pakistan Journal of Social Sciences	6
Rodrigo et al. (2016)	Finance Research Letters	3
Rodriguez et al. (2016)	Business Ethics: A European Review	4
Rodriguez-Fernandez (2015)	RAE Revista de Administracao de Empresas	2
Rossi et al. (2019)	BRQ Business Research Quarterly	2
Rothenberg et al. (2015)	Review of Managerial Science	9
Ruggiero et al. (2017)	Business & Society	1
Ruggiero et al. (2018)	Journal of Cleaner Production	4
Ryou et al. (2018)	Sustainability	1
Ryszko (2016)	n.a.	1
Sadeghi et al. (2016)	Sustainability	1
Safdar Sial et al. (2018)	International Journal of Law & Management	6
Saixing Zeng et al. (2016)	Sustainability	4
Sajko et al. (2020)	Management Decision	1
Salehi et al. (2018)	Journal of Management	1
Salvi et al. (2018)	EuroMed Journal of Business	4

Study	Journal	N. of effect sizes
Sannino et al. (2020)	International Journal of Business & Management	3
Sardana et al. (2020)	Corporate Social Responsibility and Environmental Management	6
Sassen et al. (2016)	Journal of Cleaner Production	2
Schaupp (2016)	Journal of Business Economics	4
Schreck et al. (2015)	Available at SSRN	3
Sciulli et al. (2017)	Business & Society	2
Sethi et al. (2015)	Pacific Accounting Review	2
Shabbir et al. (2020)	Journal of Business Ethics	3
Shahab et al. (2018)	Environmental Science and Pollution Research	2
Shahab et al. (2018)	International Journal of Disclosure & Governance	2
Shahab et al. (2019)	Business Strategy and the Environment	3
Shahzad et al. (2015)	Business Strategy and the Environment	2
Shahzad et al. (2016)	Business & Society	1
Shahzad et al. (2017)	Corporate Social Responsibility and Environmental Management	4
Shahzad et al. (2020)	Corporate Social Responsibility and Environmental Management	1
Shakil et al. (2019)	Journal of Knowledge Management	1
Shakil et al. (2020)	Management of Environmental Quality	4
Sharabati (2018)	International Journal of Bank Marketing	3
Shaukat et al. (2015)	Social Responsibility Journal	2
Shaukat et al. (2018)	Journal of Business Ethics	2
Sheikh (2018)	EFMA Annual Meetings	2
Sheikh (2020)	Journal of Economics & Business	3
Sheikh (2020)	International Journal of Business Governance & Ethics	2
Shen et al. (2016)	International Journal of Managerial Finance	1
Shen et al. (2019)	Harvard Business School Working Paper	4
Shirasu et al. (2020)	Asia Pacific Journal of Management	24
Shu et al. (2019)	Global Finance Journal	2
Sial et al. (2018)	Asia Pacific Journal of Management	2
Singh et al. (2017)	Sustainability	4
Siueia et al. (2019)	Sustainability	2
Siueia et al. (2019)	Journal of Cleaner Production	2
Slager et al. (2015)	Revista de Contabilidad-Spanish Accounting Review	2
Song et al. (2017)	Business & Society	2
Starčević et al. (2016)	Journal of Cleaner Production	6
Su et al. (2014)	Ekonomski pregled	2
Sudana et al. (2019)	Journal of Business Ethics	6
Sun et al. (2018)	Asia Pacific Business Review	1

Study	Journal	N. of effect sizes
Sun et al. (2019)	Corporate Social Responsibility and Environmental Management	3
Sun et al. (2020)	Business Strategy and the Environment	2
Sundarasen et al. (2016)	Sustainability	2
Surroca et al. (2020)	Corporate Governance (Bingley)	4
Suttipun (2017)	Strategic Management Journal	1
Symeou et al. (2017)	Corporate Ownership & Control	1
Symeou et al. (2019)	Journal of World Business	1
Taliento et al. (2019)	Journal of Business Research	3
Tamayo-Torres et al. (2018)	Sustainability	3
Tang et al. (2014)	International Journal of Production Research	2
Tang et al. (2017)	Strategic Management Journal	2
Tashman et al. (2018)	Business Strategy and the Environment	2
Tasnia et al. (2020)	Journal of International Business Studies	8
Theodoulidis et al. (2017)	Journal of Financial Reporting & Accounting	2
Thorne et al. (2015)	Tourism Management	1
Ting (2020)	Journal of Business Ethics	2
Tran et al. (2018)	Finance Research Letters	4
Tran et al. (2019)	Accounting and Finance	3
Trivedi et al. (2016)	Management Science Letters (discontinued)	1
Trumpp et al. (2015)	Asian Journal of Business Ethics	2
Truong et al. (2019)	Business Strategy and the Environment	2
Tsai et al. (2020)	Sustainability	1
Tzouvanas et al. (2019)	International Journal of Environmental Research and Public Health	3
Umoren et al. (2016)	British Accounting Review	2
Ur Rehman et al. (2020)	ICAN 2nd Annual International Academic Conference on Accounting & Finance	1
Uyar et al. (2020)	Sustainability	3
Vacca et al. (2020)	Journal of Cleaner Production	10
Valle et al. (2019)	Sustainability	1
Valls Martínez et al. (2020)	European Journal of International Management	1
Velte (2016)	Corporate Social Responsibility and Environmental Management	3
Velte (2017)	Problems & Perspectives in Management	1
Vesal et al. (2020)	Journal of Global Responsibility	1
Vũ et al. (2019)	Industrial Marketing Management	3
Walls et al. (2015)	Indian Journal of Finance	1
Wan et al. (2020)	Journal of Business Ethics	1
Wang et al. (2016)	Journal of Cleaner Production	4
Wang et al. (2017)	Journal of Business Research	1

Study	Journal	N. of effect sizes
Wang et al. (2019)	Journal of Cleaner Production	2
Wang et al. (2020)	International Journal of Environmental Research and Public Health	3
Wang et al. (2020)	Corporate Social Responsibility and Environmental Management	6
Wei et al. (2015)	International Journal of Applied Economics, Finance & Accounting	2
Wen et al. (2017)	Journal of Business Ethics	2
Wen et al. (2020)	Frontiers of Business	1
Wong et al. (2017)	Emerging Markets Review	1
Wu et al. (2020)	Business Strategy and the Environment	1
Wu et al. (2020)	Journal of Cleaner Production	4
Wu et al. (2020)	Corporate Social Responsibility and Environmental Management	2
Wu et al. (2020)	Sustainability	1
Wulandari et al. (2019)	Sustainability	9
Xi' et al. (2017)	Journal of Accounting, Finance & Auditing Studies	2
Xiang et al. (2020)	Journal of Applied Business Research	3
Xiao et al. (2018)	Review of Managerial Science	3
Xu et al. (2016)	Ecological Economics	1
Xu et al. (2016)	Social Responsibility Journal	2
Xu et al. (2019)	Applied Economics Letters	3
Xu et al. (2019)	Corporate Social Responsibility and Environmental Management	6
Xu et al. (2019)	Review of Quantitative Finance & Accounting	1
Yang et al. (2017)	Business Strategy and the Environment	2
Yang et al. (2017)	Finance Research Letters	2
Yang et al. (2018)	Asia-Pacific Journal of Accounting & Economics	4
Yang et al. (2018)	Environment, Development & Sustainability	1
Yang et al. (2019)	Marketing Intelligence & Planning	2
Yang et al. (2020)	Emerging Markets Finance and Trade	1
Ye et al. (2020)	International Journal of Production Economics	1
Yeh et al. (2019)	International Journal of Operations & Production Management	1
Yim et al. (2019)	Asia Pacific Management Review	3
Yoo et al. (2019)	European Journal of Marketing	5
Yook et al. (2020)	Sustainability	2
Yoon et al. (2019)	Corporate Social Responsibility and Environmental Management	6
Yoon et al. (2019)	Sustainability	8
Youn et al. (2016)	Journal of Asian Finance, Economics & Business	2
Yu et al. (2016)	International Journal of Hospitality Management	1

Study	Journal	N. of effect sizes
Yu et al. (2017)	Technological Forecasting and Social Change	1
Yu et al. (2020)	Sustainability	3
Yuan et al. (2017)	Journal of Cleaner Production	2
Yuan et al. (2020)	Journal of Business Research	1
Yuen et al. (2017)	Journal of Business Ethics	1
Yuen et al. (2016)	Maritime Policy & Management	2
Yuen et al. (2017)	Transportation Research Part E: Logistics and Transportation Review 95	1
Yuen et al. (2018)	Transportation Research Part A: Policy and Practice 98	2
Yusof et al. (2017)	Transportation Research Part A: Policy and Practice, 113, 397-409	2
Yusoff et al. (2018)	Journal of Cleaner Production	1
Zaid et al. (2019)	Global Journal Al-Thaqafah	4
Zaid et al. (2019)	Corporate Social Responsibility and Environmental Management	5
Zaid et al. (2020)	Journal of Global Responsibility	2
Zamil et al. (2019)	Journal of Cleaner Production	6
Zamir et al. (2018)	Indonesian Journal of Sustainability Accounting & Management	2
Zanzana (2018)	Asia Pacific Journal of Management	2
Zeng (2015)	Available at SSRN	6
Zeng (2018)	Accounting Perspectives	2
Zeng (2021)	Social Responsibility Journal	1
Zhan et al. (2018)	Social Responsibility Journal	4
Zhang et al. (2016)	Resources, Conservation and Recycling	1
Zhang et al. (2018)	R&D Management	3
Zhang et al. (2019)	Corporate Social Responsibility and Environmental Management	2
Zhang et al. (2020)	Journal of Purchasing and Supply Management	1
Zhang et al. (2020)	Academy of Management Journal	6
Zhang et al. (2020)	Industrial Marketing Management	3
Zhang et al. (2020)	Journal of Cleaner Production	2
Zhang et al. (2020)	Sustainability	1
Zhao et al. (2016)	Journal of Cleaner Production	3
Zhao et al. (2016)	Strategic Management Journal	1
Zhao et al. (2016)	Business Ethics: A European Review	2
Zhao et al. (2018)	Technological Forecasting and Social Change	3
Zhao et al. (2020)	International Review of Economics & Finance	1
Zhong et al. (2017)	Sustainability	2
Zhou et al. (2019)	Review of Accounting & Finance	1
Zhou et al. (2020)	Sustainability	2

Study	*Journal*	*N. of effect sizes*
Zhuang et al. (2018)	Industrial Management & Data Systems	2
Zhuang et al. (2019)	Sustainability	6
Zolotoy et al. (2019)	Corporate Social Responsibility and Environmental Management	2
Zou et al. (2018)	Journal of Banking & Finance	1
Abdelfattah et al. (2020)	Business Strategy and the Environment	2
Abdelzaher et al. (2016)	Journal of International Accounting, Auditing & Taxation	1
Abd-Mutalib et al. (2017)	Journal of Global Responsibility	2
Abeysekera et al. (2016)	Advanced Journal of Technical & Vocational Education	2

Appendix to Essay III

Table A.14: Overview of SMI Companies, Industries, and ESG KPIs in Compensation I / II

Company	*Industry*	*STI*			*LTI*		
		ESG KPI			*ESG KPI*		
Sector		*E*	*S*	*G*	*E*	*S*	*G*
Consumer Goods, Food & Beverage							
Compagnie Financiere Richemont	Apparel, Accessories & Footwear	*1*	*1*	*1*	*1*	X	*1*
Nestle SA	Processed Foods	X	X		X		
Extractives & Mineral Processing							
Holcim AG	Construction Materials	X	X		X		
Geberit AG	Construction Materials	X					
Financials							
Partners Group Holding AG	Asset Management & Custody Activities	*2*	*2*	*2*			
UBS Group AG	Asset Management & Custody Activities	*1*	X	X	*1*	X	X
Swiss Life Holding AG	Insurance	X	X	X	X	X	X
Swiss Re AG	Insurance	X	X				
Zurich Insurance Group AG	Insurance		X		X		
Healthcare							
Lonza Group AG	Biotechnology & Pharmaceuticals	X	X	X			
Novartis AG	Biotechnology & Pharmaceuticals	X	X	X			
Roche Holding AG	Biotechnology & Pharmaceuticals	X	X				
Alcon AG	Medical Equipment & Supplies	X	X	X			
Sonova Holding AG	Medical Equipment & Supplies	X	X				

(Continued)

Table A.15: Overview of SMI Companies, Industries, and ESG KPIs in Compensation II / II

Company	*Industry*	*STI*			*LTI*		
		ESG KPI			*ESG KPI*		
Sector		*E*	*S*	*G*	*E*	*S*	*G*
Resource Transformation							
Givaudan SA	Chemicals				X	X	
Sika AG	Chemicals	X	X				
ABB Ltd	Electrical & Electronic Equipment	X	X	X	X		
Technology & Communications							
Logitech International SA	Hardware	X		X			
Swisscom AG	Telecommunication Services	X	X		*3*	*3*	*3*
Transport							
Kuehne + Nagel International AG	Air Freight & Logistics						

Notes: This table provides an overview of the 20 SMI companies, sorted by the primary SICS sector (Sustainable Industry Classification System) of the Sustainability Accounting Standards Board (SASB). Industry refers to the primary sub-SICS industry. The last 6 columns show the use of sustainability-related metrics within short-term incentives (STI) and long-term incentives (LTI) by area: Environmental (E), Social (S), and Governance (G).

[1] Unspecific consideration of sustainability.

[2] Diverging compensation system, annual target achievement determines LTI compensation amount, which is then dependent on long-term target achievement. Only ESG themes are considered in the analysis.

[3] No use of LTI.

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Affidavit

„Ich erkläre hiermit, dass ich die vorgelegten und nachfolgend aufgelisteten Aufsätze selbstständig und nur mit den Hilfen angefertigt habe, die im jeweiligen Aufsatz angegeben oder zusätzlich in der nachfolgenden Liste aufgeführt sind. Bei den von mir durchgeführten und in den Aufsätzen erwähnten Untersuchungen habe ich die Grundsätze guter wissenschaftlicher Praxis, wie sie in der Satzung der Justus-Liebig-Universität Gießen zur Sicherung guter wissenschaftlicher Praxis niedergelegt sind, eingehalten."

- Höhre, A. (2024). Exploring the Evidence of CSP & CFP: a Meta-Regression Analysis of Regional Differences and Institutional Circumstances. Working Paper.
- Höhre, A. (2024). The Determinants and Consequences of Sustainability Incentives in CEO Compensation Systems: European Evidence. Working Paper.
- Höhre, A. (2024). Executive Compensation Systems of Swiss SMI Companies: A Focus on ESG Incentives. Working Paper.

Giessen, 20. December 2024

Andreas Höhre