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IMPACT OF ESG ON CORPORATE PERFORMANCE: A MULTIDIMENSIONAL STUDY OF INDIAN LISTED COMPANIES

A Thesis Submitted

In Partial Fulfilment of the Requirements

for the Degree of

DOCTOR OF PHILOSOPHY

by

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CANDIDATE'S DECLARATION

15 I Prachi Jain, hereby certify that the work which is being presented in the thesis entitled **"Impact of ESG on the Corporate Performance: A Multidimensional Study of the Indian Listed Companies"** in partial fulfillment of the requirements for the award of the Degree of Doctor of Philosophy, submitted in the Department of University School of Management and Entrepreneurship, Delhi Technological University is an authentic record of my own work carried out during the period from January 2023 to March 2026 under the supervision of Dr. Priya Malhotra (Supervisor, Assistant Professor, University School of Management and Entrepreneurship, Delhi Technological University) and Dr. Nikunj Agarwal (Co-Supervisor, Assistant Professor, SRCC, University of Delhi).

The matter presented in the thesis has not been submitted by me for the award of any other degree of this or any other Institute.

**Prachi Jain
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CERTIFICATE BY THE SUPERVISOR(s)

Certified that **Prachi Jain (2K22/PHDUSME/502)** has carried out her search work presented in this thesis entitled “**Impact of ESG on the Corporate Performance: A Multidimensional Study of the Indian Listed Companies**” for the award of **Doctor of Philosophy** from the University School of Management and Entrepreneurship, Delhi Technological University, Delhi, under our supervision. The thesis embodies results of original work, and studies are carried out by the student herself, and the contents of the thesis do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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IMPACT OF ESG ON THE CORPORATE PERFORMANCE: A MULTIDIMENSIONAL STUDY OF THE INDIAN LISTED COMPANIES

Prachi Jain

ABSTRACT

In the evolving corporate governance landscape and sustainable business strategy, Environmental, Social, and Governance (ESG) frameworks have emerged as critical instruments for firms to signal responsibility, enhance transparency, mitigate risks, and foster long-term value creation. ESG disclosures are increasingly viewed not merely as compliance tools but as strategic levers that shape firm behaviour, influence stakeholder relationships, and contribute to financial outcomes. Despite growing scholarly and practitioner interest, the existing literature on the ESG–corporate performance nexus remains fragmented, characterised by a lack of consensus on theoretical foundations, limited contextual diversity, and minimal integration of firm-level financial policy variables, such as dividend behaviour.

This doctoral thesis addresses these research gaps through a structured, multi-method investigation that spans bibliometric analysis, advanced panel econometrics, meta-analytic synthesis, and logistic regression modelling. The central aim is to examine how ESG disclosures influence corporate performance, measured across accounting, market, and financial dimensions, as well as from the dividend policy perspective, and how these effects are moderated by contextual factors such as industry classification, national economic development, and firm-specific attributes. The thesis also highlights the underexplored relationship between ESG engagement and dividend policy, thereby contributing novel insights to the literature on sustainable finance and corporate financial strategy.

The thesis is organised into seven interrelated chapters, beginning with the identification of gaps in the literature through a comprehensive bibliometric and thematic literature review guided by the TCCM (Theory–Context–Characteristics–Methodology) framework. This hybrid review of previous studies identifies three dominant research streams: (1) ESG's influence on firm value and ownership dynamics; (2) stakeholder engagement, regulation, and ESG strategy; and (3) ESG as a risk management and innovation tool. The review highlights critical gaps, including an overreliance on a single theoretical perspective (e.g., stakeholder theory), the underrepresentation of emerging markets (especially India), and a narrow focus on

conventional performance outcomes, with insufficient attention to dividend-related metrics.

To address these gaps, the second phase of the research empirically explores the ESG–corporate performance nexus within the Indian context. As a large and rapidly growing emerging economy with rising sustainability obligations and evolving ESG disclosure mandates (e.g., SEBI’s BRSR framework), India offers a ground for such analysis. The empirical analysis utilises data on 605 distinct corporations listed on the National Stock Exchange of India (NSE) over the period 2015–2023. ESG data are obtained from Refinitiv Eikon, while financial and corporate data are sourced from CMIE Prowess. The sample comprises firms satisfying the predefined listing and data-availability criteria required for the analysis. Utilising the Method of Moments Quantile Regression (MMQR), the study finds that ESG disclosure, both aggregated and disaggregated into E, S, and G dimensions, has a positive influence on corporate outcomes. Notably, the impact of environmental disclosures is stronger in higher-performing quantiles. At the same time, the effects of social and governance dimensions vary, affirming the relevance of stakeholder and legitimacy theories in heterogeneous market settings.

Extending this inquiry, the third empirical chapter incorporates industry-specific analysis by classifying 605 Indian-listed corporations observed over 2015–2023 into environmentally sensitive industries (SI) and non-sensitive industries (NSI) categories. The analysis is based on ESG information from Refinitiv Eikon and corporate financial data from CMIE Prowess, with the number of firm-year observations varying across years according to ESG data availability. Applying System-GMM estimation, the results reveal a divergent relationship between the two categories. While NSI firms benefit significantly from ESG disclosures, SI firms often encounter diminished or negative returns due to heightened compliance burdens and regulatory scrutiny. These findings challenge the validity of uniform ESG strategies and underscore the importance of sector-specific sustainability frameworks.

The thesis then broadens its scope to the global context in the fourth empirical chapter, focusing on the cement industry, an archetype of environmentally intensive sectors facing urgent sustainability imperatives. Using an international sample of 70 publicly listed cement companies across 29 countries and 770 firm-year observations over the period 2013–2023, this chapter examines the moderating role of National Economic Development (NED) in the ESG–performance relationship. The initial dataset comprised 301 listed cement companies, from which firms with incomplete information were excluded based on the study's predefined data-availability criteria.

ESG and financial information were obtained from Refinitiv Eikon, while country-level GDP per capita was obtained primarily from the World Bank, with IMF data used where required. The analysis reveals that corporations in developed economies are better positioned to convert ESG engagement into superior financial outcomes due to stronger institutional support, regulatory infrastructure, and market maturity. Conversely, companies in developing economies face structural constraints that limit the strategic and economic benefits of ESG adoption. These results reinforce the Institutional Difference Hypothesis (IDH) and emphasize the contextual sensitivity of ESG–performance linkages.

While prior chapters of this thesis establish the relevance of ESG disclosures in shaping accounting-based, financial, and market performance outcomes, profitability alone does not fully capture how sustainability strategies translate into shareholder value. ESG initiatives often require substantial long-term investments, potentially altering firms' internal cash allocation decisions and creating trade-offs between reinvesting in sustainability and distributing earnings to shareholders. Dividend policy, therefore, emerges as a critical financial channel through which the economic consequences of ESG engagement can be assessed. As dividends remain a primary consideration for shareholders, integrating ESG into dividend decisions provides deeper insight into how firms balance stakeholder-oriented sustainability objectives with shareholder wealth maximisation. Recognising this linkage, the thesis extends the ESG–performance discourse by examining dividend policy as a complementary and policy-relevant outcome of ESG disclosure.

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Hence, the next chapter employs a meta-analytic approach to consolidate empirical evidence on the relationship between ESG disclosures and dividend policy, a relatively underexplored area in sustainability research. Synthesising previous peer-reviewed studies, the analysis finds a statistically significant positive relationship between ESG and dividend payouts. Among the ESG pillars, governance disclosures have the greatest influence. Subgroup analyses reveal that firm size, profitability, and national economic development account for the observed heterogeneity in the literature. These findings empirically validate agency and signalling theories in the ESG–dividend domain, suggesting that transparent ESG practices enhance investor trust and shape dividend distribution policies.

In the sixth empirical chapter, we focus on the global hospitality sector, a service-oriented industry where sustainability and financial outcomes are closely interlinked. Using ESG and financial data for publicly listed hospitality firms across countries, the study covers the period 2004–2023. Firms were identified using the relevant North

American Industry Classification System (NAICS) categories, following Hwang et al. (2024). The initial dataset comprised 1,401 corporations, which was reduced to 918 unique firms after applying the required ESG and financial data-availability criteria. Using logistic panel regression, the study investigates how ESG performance affects both the likelihood and stability of dividend payments. While higher ESG performance increases the probability of dividend issuance, it is negatively associated with dividend stability, indicating that firms engaged in sustainability initiatives may prioritise reinvestment over consistent shareholder payouts. This duality supports the pecking order theory and further illustrates the trade-offs between short-term financial policy and long-term sustainability goals in capital-intensive industries.

The findings of this thesis carry significant implications for theory, practice, and policy. Theoretically, the research advances ESG literature by integrating diverse frameworks, including stakeholder theory, agency theory, signalling theory, pecking order theory, and institutional theory, offering a more comprehensive understanding of the ESG-performance nexus. By contextualising ESG impacts within emerging markets, such as India, and across environmentally sensitive and non-sensitive sectors, the study challenges the “one-size-fits-all” paradigm. It underscores the role of national economic development and institutional maturity in moderating ESG outcomes. Practically, the findings provide actionable insights for corporate managers, investors, civil society, and regulators, underscoring the need to align ESG investments with sector-specific risk exposures, strategic priorities, and diverse stakeholder expectations. For managers, the results highlight ESG as a value-enhancing strategic tool rather than a compliance obligation. For investors and civil society, ESG disclosures emerge as credible signals of transparency, governance quality, and long-term accountability. For policymakers and regulators, the thesis highlights the importance of developing nuanced, sector-specific, and context-aware ESG disclosure frameworks that enhance data comparability, reduce information asymmetry, and improve the real economic effectiveness of sustainability reporting across industries and institutional settings.

Despite these contributions, several avenues remain open for future inquiry. Limitations related to data quality, ESG score standardization, and sectoral coverage suggest the need for more granular, text-based, or qualitative approaches to ESG assessment. Expanding the research to include additional sectors (e.g., healthcare, technology, retail) and broader geographic regions, particularly in underrepresented emerging and frontier economies, can offer richer cross-national comparisons. Future research can benefit from expanding sectoral and geographic scope, applying advanced causal inference techniques, and incorporating qualitative or text-based

ESG metrics. Greater attention to underexplored financial outcomes, such as innovation efficiency, capital allocation, and risk management, can further enrich the field. A more interdisciplinary and context-sensitive research agenda will be crucial to capturing the evolving role of ESG in corporate strategy and sustainable value creation. A greater emphasis on interdisciplinary and behavioral perspectives will also enhance our understanding of managerial decision-making and investor responses to ESG, helping shape more resilient and sustainable business models in the future.

This thesis makes a comprehensive and methodologically rigorous contribution to the ESG field by integrating bibliometric, panel-based, meta-analytic, and industry-specific approaches. It captures the diversity of ESG outcomes across various contexts, from India to the global, and from sectoral to firm-level, encompassing performance to dividend policy, thus offering a holistic lens through which scholars, practitioners, and policymakers can better understand the evolving dynamics of corporate sustainability.

LIST OF PUBLICATIONS

Published Papers

- Research Paper Titled **“Exploring the connection between environmental, social, and governance (ESG) disclosure and dividend policy: a meta-analytic approach”** in Review of Managerial Science (SSCI, IF- 9.6 (2024), Scopus Citescore- 16.3, Published on 4 September 2025) DOI: 10.1007/s11846-025-00927-5
- Research Paper Titled **“Does National Economic Development (NED) influence ESG on corporate performance? Evidence from the global cement industry”** in International Journal of Productivity and Performance Management (ABDC-B, ESCI IF- 4.1, Scopus Citescore- 10.3, Published on 21 June 2025) DOI: 10.1108/IJPPM-01-2025-0074
- Research paper titled **“Does ESG Impact Corporate Performance in Environmentally Sensitive and Non-Sensitive Industries? A Dynamic Panel Approach”** in Benchmarking: An International Journal (ABDC-B, ESCI IF-4.8, Scopus Citescore-10.4, Published on 28 February 2025). DOI: 10.1108/BIJ-12-2024-1087
- Research paper titled **“Unveiling the Alliance between Environmental, Social, and Governance (ESG) and Corporate Performance”** in Empirical Economic Letters (ABDC listed, IF: 1.21, Published on 23 April 2024). <https://doi.org/10.5281/zenodo.11372438>.

Under Review

- Do ESG Disclosures Drive Performance? NIFTY Evidence Using MMQR: (ABDC-B, ESCI, IF-4.3, Scopus listed)
- ESG and Dividend Policy: Insights from Global Hospitality Firms. (SSCI, IF- 5.7, Scopus listed)

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CHAPTER 1

INTRODUCTION

In the contemporary corporate landscape, sustainability has emerged as a central pillar of strategic decision-making, fundamentally transforming how corporations operate and engage with stakeholders. This paradigm shift reflects the growing recognition that sustainability is not merely a compliance obligation but a source of competitive advantage and long-term value creation. The Environmental, Social, and Governance (ESG) framework is at the forefront of this shift, providing a structured and holistic approach to assessing and integrating sustainability into corporate strategies. ESG extends beyond environmental considerations to encompass social responsibility and corporate governance practices. By addressing climate impact, employee well-being, ethical leadership, and stakeholder engagement, ESG enhances a company's ability to manage risk, build resilience, and foster trust among stakeholders. The Social pillar of ESG, in particular, emphasises the importance of inclusivity, where companies increasingly adopt Diversity, Equity, and Inclusion (DEI) principles to cultivate fair, representative, and empowering work environments (Eccles & Serafeim, 2013). These practices attract and retain top talent, aligning organisations with the values of socially conscious stakeholders. Amid growing global challenges, including economic volatility, health crises, and geopolitical tensions, the role of ESG has become even more critical. Stakeholders, including investors, regulators, and civil society, demand greater transparency and accountability in ESG disclosures, reinforcing the need for companies to embed sustainability at the core of their operations. By doing so, firms are better equipped to identify opportunities, mitigate risks, and ensure long-term financial and operational success. This study investigates the intricate relationship between ESG practices and corporate performance, thereby contributing to the broader discourse on the strategic and financial implications of sustainability in the corporate sector.

This chapter provides a comprehensive overview of the research and a detailed description of the core concepts while identifying the key research problems. Section 1.1 outlines the background of the study, establishing the context and relevance of ESG in the contemporary corporate environment and highlighting its growing significance in strategic and financial decision-making. Section 1.2 introduces the concept of ESG disclosure, highlighting its crucial role in promoting corporate sustainability and accountability. It also examines how ESG serves as a framework for assessing non-financial performance. Subsection 1.2.1 presents the dimensions of ESG, detailing the three core pillars—Environmental, Social, and Corporate Governance. Section 1.3 traces the origin and growth of ESG, beginning with 1.3.1, which examines the evolution of responsible investment, followed by 1.3.2, which

explores the Millennium Summit and the rise of ESG discussions. Subsection 1.3.3 reflects on the evolving ESG landscape over the past decade, and 1.3.4 offers insights into the present and future perspectives of ESG practices. Section 1.4 discusses the global standard-setters for ESG disclosure, focusing on the role of international regulatory and reporting bodies in shaping consistent ESG frameworks. Section 1.5 shifts the focus to the Indian context, evaluating the regulatory developments, corporate initiatives, and ESG adoption trends in India. Section 1.6 elaborates on the concept of corporate performance, laying the groundwork for understanding how ESG metrics can influence firm-level outcomes both financially and operationally, while Section 1.7 investigates the link between ESG disclosure and corporate performance. Building on this foundation, Section 1.8 identifies the research gaps by critically reviewing existing literature and highlighting the limitations, inconsistencies, and underexplored areas in the current understanding of ESG and its impact on corporate performance. Section 1.9 presents the rationale of the study, justifying the need for this research in light of emerging sustainability trends, evolving stakeholder expectations, and the pressing demand for transparent ESG practices in both global and Indian contexts. Section 1.10 outlines the research objectives and questions, clearly defining the aims of the study and formulating the key research questions that guide the empirical investigation. Section 1.11 explains the thesis structure, providing a roadmap of the chapters and their interconnections to ensure logical flow and coherence throughout the document. Section 1.12 defines the key terms used in the study to establish conceptual clarity and uniformity in interpretation. Finally, Section 1.13 presents the summary of the chapter, recapping the main themes discussed and setting the stage for the literature review that follows.

1.1 Background of the Study

In recent years, ESG has gained significant traction as stakeholders and regulators have increasingly demanded corporate accountability and sustainable development. ESG integration into corporate strategy is no longer considered a peripheral activity but rather a core component influencing corporate performance (Ioannou & Serafeim, 2012). Companies today are evaluated not only on their financial metrics but also on how responsibly they operate within society and the environment. This shift is particularly significant in environmentally sensitive industries characterized by business activities with significant socio-environmental landscape and more likely to damage social and environmental factors, where sustainability concerns are deeply embedded in business operations (Elmaghrabi et al., 2025).

Understanding the impact of ESG on corporate performance requires a multidimensional perspective that encompasses operational, financial, and market indicators. From an operational standpoint, ESG-aligned firms are often better equipped to manage environmental risks, reduce resource inefficiencies, and foster

stakeholder trust, factors that can enhance operating variables (Friede et al., 2015). Financially, ESG performance may influence capital allocation, improve access to finance, and reduce financing costs (Dhaliwal et al., 2010). On the market front, ESG practices and disclosures can shape investor perception, affect stock valuations, and enhance overall firm value, commonly reflected in market-based metrics (Albuquerque et al., 2019; Krüger, 2015).

Importantly, dividend policy, a key mechanism of shareholder wealth distribution, serves as a strategic signal of financial health and corporate stability (Denis & Osobov, 2008). The interplay between ESG performance and dividend behaviour, particularly in terms of dividend payout and stability, remains a critical yet underexplored area for long-term value creation and corporate signalling. Furthermore, emerging firms are increasingly recognising the strategic relevance of ESG in building resilience and securing a competitive advantage. The existing literature highlights a variety of benefits, including enhanced financial performance, improved reputation, and easier access to capital, as well as notable challenges, such as implementation costs and the lack of standardised reporting frameworks. These trade-offs are particularly pronounced in developing economies, where institutional infrastructure and ESG enforcement mechanisms are still evolving.

The significance of this investigation is especially pronounced in the Indian context, where ESG adoption is accelerating due to regulatory initiatives such as Business Responsibility and Sustainability Reporting (BRSR), rising investor activism, and increasing public awareness (Veeravel, Murugesan, et al., 2024). Moreover, the world corporate landscape is highly heterogeneous, with varying ESG maturity levels and sector-specific sensitivities. For instance, firms operating in high-emission sectors like cement or oil and gas are subject to more rigorous ESG scrutiny and may exhibit different performance outcomes than service-sector firms (Khan, 2022). These differential impacts raise pertinent questions about the role of ESG in influencing corporate performance across industries globally.

Given this backdrop, the present study aims to investigate how ESG performance affects operating efficiency, financial structure, and market valuation, with a specific focus on its relationship with dividend payout and dividend stability. Moreover, it examines how these relationships differ across industries, with a particular focus on environmentally sensitive sectors. The findings aim to offer meaningful insights for corporate strategists, investors, and policymakers in promoting ESG-led growth and sustainable financial practices.

1.2 The Concept of ESG Disclosure

ESG disclosure refers to the systematic reporting of a company's environmental performance, social practices, and governance structures, intended to enhance

transparency, accountability, and stakeholder engagement. According to Dhaliwal et al. (2010), ESG disclosure plays a pivotal role in signaling a firm's commitment to sustainable practices and is often associated with reduced information asymmetry and improved access to capital. Eccles et al. (2014) emphasise that ESG disclosures serve as a critical communication channel through which firms report their non-financial risks and sustainability strategies. Similarly, Hummel & Schlick (2016) argue that effective ESG reporting allows stakeholders to assess firm legitimacy and long-term value orientation, particularly in contexts where voluntary or mandatory reporting frameworks guide corporate behaviour.

This study draws the ESG disclosure data and definitions from Refinitiv Eikon (formerly Thomson Reuters), a widely recognised global provider of ESG metrics. Refinitiv employs a transparent and comprehensive methodology to collect, verify, and score ESG-related information based on public disclosures from corporate reports, sustainability reports, company websites, and regulatory filings. The ESG disclosure provided by Refinitiv reflects a firm's relative performance and commitment across the three ESG pillars. This source has been selected due to its wide coverage, consistent methodology, and frequent use in peer-reviewed empirical studies (Friede et al., 2015; Ioannou & Serafeim, 2012), making it suitable for cross-industry and international comparative analysis.

By using Refinitiv-based ESG disclosures, this research ensures methodological reliability and comparability, enabling a nuanced analysis of ESG impacts across firms, especially in environmentally sensitive industries in India.

1.2.1 Dimensions of ESG

The ESG framework comprises three interrelated dimensions, Environmental, Social, and Corporate Governance, which encapsulate the broader spectrum of a firm's sustainability performance.

Environmental (E): The environmental dimension assesses how firms manage their impact on natural ecosystems. Key indicators include carbon emissions, energy usage, waste management, water efficiency, and environmental innovation. Firms that excel in this dimension typically demonstrate proactive environmental risk management and a commitment to minimising their ecological footprint. Environmental practices in high-emission sectors are especially crucial for regulatory compliance and long-term risk mitigation (Clarkson et al., 2008).

Social (S): This dimension assesses a firm's relationships with stakeholders, including employees, customers, suppliers, and communities. Metrics under the social pillar include employee health and safety, labour rights, human capital development, diversity and inclusion, customer satisfaction, and community engagement. A strong

social profile can enhance employee morale, customer loyalty, and stakeholder trust, which are increasingly linked to long-term financial performance (Eccles et al., 2014).

Corporate Governance (G): The governance dimension reflects the quality of a firm's leadership, board structure, executive compensation, shareholder rights, audit practices, and transparency. Effective governance mechanisms are fundamental to ensuring ethical conduct, minimising agency problems, and aligning managerial decisions with shareholder interests. Governance is particularly influential in emerging markets like India, where weak institutional mechanisms can amplify corporate governance risks (La Porta et al., 2000; Shleifer & Vishny, 1997).

Each of these dimensions is scored individually in Refinitiv Eikon (as shown in Figure 1.1), enabling researchers and investors to assess both aggregate ESG performance and specific areas of strength or weakness. This multidimensionality is particularly valuable in examining the heterogeneity of ESG impact across industries and performance metrics, including operating, financial, and market performance, as well as dividend policy.



Figure 1.1: ESG Sub-Themes
Source: Refinitiv Eikon

1.3 Origin and Growth of ESG

The concept of ESG gained formal momentum in 2004, when the United Nations Global Compact (UNGC), under the leadership of then-Secretary-General Kofi Annan, initiated a global dialogue to integrate environmental, social, and governance considerations into capital markets. This initiative culminated in the publication of the landmark 2005 report, *Who Cares Wins: Connecting Financial Markets to a Changing World*, which articulated the business case for ESG integration. The report

emphasised that ESG considerations play a material role in long-term value creation and outlined four strategic objectives: fostering more resilient financial markets, advancing sustainable development, enhancing stakeholder awareness and dialogue, and strengthening trust in financial institutions.

Although ESG gained formal recognition in the early 2000s as a value-oriented investment framework, its intellectual and practical origins can be traced back to the evolution of responsible investment, notably socially responsible investing (SRI), which laid the groundwork for integrating ethical, social, and governance considerations into financial decision-making.

1.3.1 The Evolution of Responsible Investment

The roots of responsible investment can be traced back to the 1970s, with the emergence of SRI, which enabled investors to align their financial portfolios with their ethical and social values. The 1980s witnessed a surge in SRI, particularly through divestment campaigns targeting companies associated with apartheid South Africa. Over time, SRI evolved into a broader framework, akin to modern corporate social responsibility (CSR), that addresses human rights, labour practices, and ethical governance.

According to the US Social Investment Forum (1995), the integration of ESG into mainstream investment strategies began gaining traction in the early 1990s. A pivotal milestone was reported when the Forum estimated that USD 639 billion was managed under socially responsible investment (SRI) strategies in North America, marking a significant shift toward ethical financial decision-making. This era saw institutional investors increasingly recognise the long-term financial value of addressing ESG risks and opportunities, prompting asset managers to design ESG-oriented portfolios and screening frameworks.

A landmark contribution to the ESG discourse emerged in 1998 with John Elkington's publication, "Cannibals with Forks: The Triple Bottom Line of 21st Century Business." In this book, Elkington introduced the "Triple Bottom Line" framework, which evaluates corporate performance based on three key dimensions: people, planet, and profit. He aimed to advocate for the inclusion of non-financial factors in corporate valuation and encourage corporations to incorporate social and environmental concerns alongside financial metrics. This perspective resonated globally, further strengthening the foundation of socially responsible investment.

1.3.2 The Millennium Summit and the Rise of ESG Discussions

The early 2000s marked a pivotal shift as global leaders began to integrate sustainability into governance and policy. The 2000 Millennium Summit in New York led to the establishment of the Millennium Development Goals (MDGs), which set

the stage for integrating ESG at the national and corporate levels. The same year, the launch of the Carbon Disclosure Project (CDP) urged companies to report climate-related impacts, signalling a broader trend toward ESG transparency.

In 2004, the term "ESG" officially entered mainstream discourse with the publication of *Who Cares Wins*. This report formalised ESG under three core dimensions, Environmental, Social, and Governance, and called for its integration into corporate strategy and investment analysis. Over the following years, several international frameworks emerged to guide ESG reporting and practice, including the Principles for Responsible Investment (PRI), Climate Disclosure Standards Board (CDSB), and Sustainability Accounting Standards Board (SASB). These frameworks laid the groundwork for the global ESG reporting infrastructure. ESG's origins within the financial sector were driven by the hypothesis that firms with strong ESG performance would achieve superior long-term shareholder value by mitigating reputational and legal risks. The launch of the PRI in 2006 marked a significant institutional milestone, as signatories committed to incorporating ESG into investment and ownership decisions. Since then, the exponential rise in PRI signatories and associated assets under management underscores ESG's growing strategic relevance.

1.3.3 The Last Decade: An Evolving ESG Landscape

Over the last decade, ESG has been shaped by key global initiatives, regulatory reforms, and shifts in corporate commitments. The 2015 adoption of the Sustainable Development Goals (SDGs) replaced the MDGs, expanding the sustainability agenda to 17 goals with 169 measurable targets, thereby institutionalising ESG within broader development frameworks.

Simultaneously, the establishment of the Task Force on Climate-related Financial Disclosures (TCFD) in 2015 marked a significant advance in ESG reporting. The TCFD provided a unified framework for corporations and investors to disclose climate-related risks and opportunities, thereby reinforcing ESG as a critical component of financial analysis.

In 2017, the World Economic Forum launched the Compact for Responsive and Responsible Leadership, with 140 CEOs pledging alignment with the SDGs. The COVID-19 pandemic in 2020 tested corporate ESG commitments, yet firms with robust ESG frameworks demonstrated greater resilience, highlighting ESG's role in risk management and organisational adaptability.

1.3.4 ESG: Present and Future Perspectives

Today, ESG has evolved into a global mainstream framework used to evaluate and guide corporate performance across environmental, social, and governance dimensions. Metrics such as carbon emissions per revenue and employee turnover

rates are now standard indicators of sustainability. ESG scores and ratings by agencies such as MSCI, Bloomberg, Refinitiv Eikon, and Sustainalytics influence investor decisions and capital flows.

The regulatory environment has matured, with mandates such as the European Union's Corporate Sustainability Reporting Directive (CSRD) and the proposed SEC climate disclosure rules in the United States, aligning with similar regulatory frameworks in countries like Canada, Brazil, India, Australia, and Japan. These frameworks aim to standardise ESG disclosures and enhance corporate accountability. Investment strategies have also evolved, with some funds excluding companies that fail to meet ESG criteria, while others actively seek out firms with strong ESG performance. ESG indices, including those developed by Morgan Stanley Capital International (MSCI) and S&P, now serve as benchmarks for sustainable investment portfolios.

As climate change, social inequality, and governance challenges intensify, ESG is increasingly integral to corporate strategy, investment decisions, and policymaking. Its sustained expansion through regulations, rating systems, and stakeholder expectations underscores its lasting importance in driving sustainable economic growth.

1.4 Global Standard-setters for ESG Disclosure

The landscape of ESG disclosure standards is undergoing a transformative shift, driven by international efforts to establish a cohesive and unified global framework. A pivotal milestone occurred at the 26th United Nations Climate Change Conference (COP26) in November 2021, when the International Financial Reporting Standards Foundation (IFRS Foundation) announced the formation of the International Sustainability Standards Board (ISSB). The ISSB's mandate is to develop a global baseline of high-quality, transparent, and comparable sustainability disclosure standards, with a particular focus on addressing the information needs of investors.

A critical step toward reducing fragmentation in ESG reporting was the consolidation of several leading standard-setting organisations under the IFRS Foundation umbrella. The Climate Disclosure Standards Board (CDSB) merged into the IFRS Foundation, while the Value Reporting Foundation (VRF), formed through the integration of the Sustainability Accounting Standards Board (SASB) and the International Integrated Reporting Council (IIRC), also joined by mid-2022. These consolidations reinforced the ISSB's role as the primary global body for sustainability standard-setting.

In March 2022, the IFRS Foundation and the Global Reporting Initiative (GRI) formally announced a collaboration aimed at aligning the ISSB and the Global Sustainability Standards Board (GSSB). This partnership is designed to bridge the gap

between investor-oriented disclosures and broader stakeholder-focused sustainability reporting. Subsequently, on March 31, 2022, the ISSB released exposure drafts for its inaugural standards:

- **IFRS S1: General Requirements for Disclosure of Sustainability-related Financial Information**
- **IFRS S2: Climate-related Disclosures**

These standards were developed based on prototypes prepared by the Technical Readiness Working Group (TRWG), which drew upon contributions from globally recognized organizations such as the CDSB, the International Accounting Standards Board (IASB), the Task Force on Climate-related Financial Disclosures (TCFD), the VRF, and the World Economic Forum (WEF). The WEF's International Business Council (IBC) also played a pivotal role in developing core ESG metrics aligned with emerging global sustainability standards.

The groundwork for this harmonisation was laid by five leading ESG standard-setters, CDP, CDSB, GRI, IIRC, and SASB, collectively known as the "Group of Five." In 2020, this consortium collaborated with the IFRS Foundation to publish a prototype climate-related financial disclosure standard, offering a roadmap for unifying fragmented ESG reporting frameworks into a coherent global system.

(Figure 1.1 illustrates the evolution and consolidation of major global standard-setters for ESG disclosure, adapted from the International Finance Corporation's "Beyond the Balance Sheet: Understanding the Global Reporting Frameworks.")

1.4.1 Regulatory Developments in Developed Economies

The International Organisation of Securities Commissions (IOSCO) has taken a central role in facilitating the alignment of global ESG reporting standards, mirroring its past contributions to financial reporting convergence. IOSCO has committed to supporting the IFRSF and the ISSB in establishing a structured, consistent, and comparable system of sustainability disclosures that can be adapted across jurisdictions.

At the national level, several regulatory bodies in developed economies have undertaken significant policy initiatives:

- **European Union (EU):** In April 2021, the European Commission (EC) proposed the Corporate Sustainability Reporting Directive (CSRD), which mandates comprehensive sustainability disclosures for corporations. Under the CSRD, the European Financial Reporting Advisory Group (EFRAG) has been tasked with developing the European Sustainability Reporting Standards (ESRS). The EU

aims to harmonize its reporting framework with global standards to ensure consistency and interoperability.

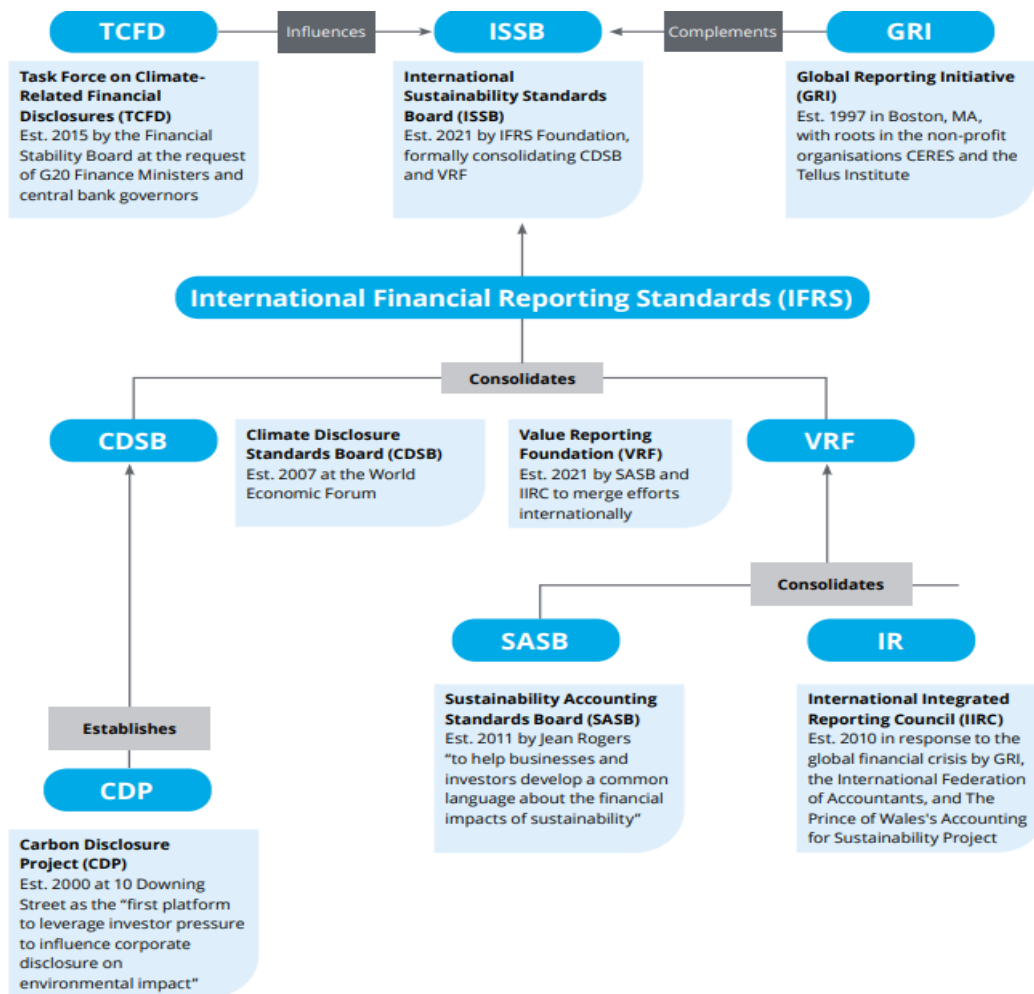


Figure 1.2: Evolution and Consolidation of Global ESG Disclosure Standard-Setters
Source: Corporate Governance (Harvard Law School) — "The Rise of International ESG Disclosure Standards,"

- United States (US):** The Securities and Exchange Commission (SEC) issued a proposed rule in March 2022 titled *The Enhancement and Standardization of Climate-related Disclosures for Investors*. This rule seeks to formalize ESG-related disclosures for publicly listed companies. Moreover, the U.S. administration's international climate finance strategy emphasizes collaboration with the IFRSF and IOSCO to promote globally consistent ESG disclosure standards. The SEC co-chairs IOSCO's Technical Expert Group, which actively evaluates the feasibility and implementation of ISSB's sustainability standards.

These collective initiatives represent a significant step toward achieving global coherence in ESG reporting. They aim to provide stakeholders, particularly investors,

with reliable, comparable, and decision-useful information that aligns sustainability considerations with financial materiality.

1.5 ESG in Emerging Nations

ESG has become a central focus in the corporate boardrooms of emerging nations, investor discussions, and regulatory frameworks. Amidst an evolving macroeconomic landscape, geopolitical uncertainties, and growing sustainability imperatives, businesses and investors are under increasing pressure to integrate ESG considerations into strategic and operational decisions. Companies across various sectors are expected to address critical issues, including climate change, biodiversity loss, ethical governance, and inclusive stakeholder engagement.

For instance, over the past two decades, ESG reporting practices in India have gradually evolved toward greater standardization and transparency, primarily driven by increasing demand from investors, regulators, and other stakeholders. While ESG discourse initially gained momentum in developed nations, by the late 2000s, emerging markets began to recognize the strategic importance of non-financial disclosures. This shift gave rise to a more robust and inclusive regulatory framework, designed to curb greenwashing and promote authentic sustainability.

India's journey toward ESG formalisation began with the introduction of Corporate Social Responsibility (CSR) guidelines in 2009. These voluntary guidelines encouraged firms to go beyond financial performance and integrate social responsibility into their business operations. CSR reporting provided a structured approach for planning, executing, and disclosing community-oriented initiatives. A significant regulatory milestone came in 2011 when the Securities and Exchange Board of India (SEBI) mandated the Business Responsibility Report (BRR) for the top 100 listed companies by market capitalisation. Over time, this requirement expanded to cover the top 500 companies by FY 2015–16 and the top 1,000 by FY 2019–20. This effort marked a foundational step in formalising corporate accountability and sustainability disclosure.

Further advancing this agenda, the Ministry of Corporate Affairs (MCA) introduced the National Guidelines on Responsible Business Conduct (NGRBC) in 2019, outlining nine core principles emphasising legal compliance and a broader commitment to sustainable development. These principles align closely with the United Nations Sustainable Development Goals (SDGs), providing Indian corporations with a strategic roadmap to embed sustainability across environmental, social, and governance domains.

A transformational shift occurred with the introduction of the Business Responsibility and Sustainability Report (BRSR), which replaced the BRR. Effective FY 2022–23,

SEBI mandated BRSR reporting for the top 1,000 listed companies. The BRSR framework integrates the NGRBC principles and aligns with global reporting standards, including the GRI Standards, CDP, DJSI, and TCFD. It emphasises quantifiable key performance indicators (KPIs) to enhance transparency and comparability.

Table 1.1: BRSR Compliance Timeline

Financial Year	Applicability by Market Capitalization
2023–2024	Top 150 listed companies
2024–2025	Top 250 listed companies
2025–2026	Top 500 listed companies
2026–2027	Top 1,000 listed companies

1.5.1 Why ESG is Critical for India

As one of the fastest-growing economies, India stands at the nexus of rapid industrialisation and urgent sustainability challenges. The integration of ESG principles is crucial for meeting global environmental and social expectations, as well as safeguarding national economic resilience and investor trust. The following subsections outline key drivers that reinforce the importance of ESG in India.

Climate Commitments and Environmental Vulnerability

India is highly vulnerable to the adverse effects of climate change, including erratic monsoons, rising sea levels, water scarcity, and extreme weather events. In response, the country has made ambitious international commitments:

- Reduce emissions intensity of GDP by 45% (from 2005 levels) by 2030
- Achieve 50% electric power from non-fossil fuel sources by 2030
- Create an additional carbon sink of 2.5–3 billion tonnes CO₂ equivalent
- Achieve net-zero emissions by 2070 (COP26)

The corporate sector is expected to play a central role in achieving these targets through innovation in clean energy, sustainable operations, waste management, and decarbonization initiatives. ESG adoption enables firms to align their practices with India's national climate goals, reinforcing competitiveness and compliance.

Social Development and Inclusive Growth

India's diverse and complex socio-economic landscape presents significant development challenges, including poverty, unemployment, gender inequality, and

limited access to education and healthcare. ESG-aligned firms prioritising fair labour practices, diversity, and community engagement catalyse inclusive growth. Integrating social indicators into corporate strategies ensures better management of workforce wellbeing, consumer safety, and social impact—key enablers of equitable economic development.

Strengthening Governance and Investor Confidence

Transparent governance mechanisms are foundational to sustainable business in emerging economies. Historically, Indian firms have grappled with regulatory compliance issues and opaque governance structures. ESG frameworks offer tools to promote accountability, ethical conduct, and robust risk management systems. According to the 2023 EY Global Institutional Investor Survey, over 90% of investors consider ESG performance a reliable indicator of a company's long-term resilience. SEBI's BRSR mandate in India strengthens corporate transparency and boosts investor confidence across sectors.

Corporate Sector Adoption and Sectoral Disparities

Indian corporations have begun integrating ESG into core business operations. A 2024 survey by Uniquis Consultech and IMA India reveals:

- 75% of large firms have defined sustainability goals
- 84% voluntarily disclose ESG targets
- 50% have embedded ESG into strategic planning
- Nearly 50% have dedicated ESG teams

However, gaps remain. Only 29% of small and medium enterprises (SMEs) have defined ESG goals, highlighting a disparity in capacity and awareness. Sectoral analysis reveals that high-impact industries, such as manufacturing and chemicals, are leading the way in ESG adoption, while sectors with less regulatory pressure tend to lag behind. Interestingly, only 30% of firms cited investor pressure as a driver, suggesting regulatory mandates and leadership vision are equally influential.

Emerging Risks and Strategic Imperatives

As ESG matures into a board-level agenda, firms that fail to adopt meaningful ESG practices risk reputational damage, regulatory penalties, and diminished stakeholder trust. Conversely, firms with robust ESG frameworks are better equipped for robust governance, crisis response, and long-term business continuity—critical factors in an uncertain global environment.

In conclusion, ESG in India has transcended its initial framing as a compliance measure. It is now a strategic enabler for sustainable growth, resilience, and global competitiveness. By integrating ESG into national development goals and industry-specific frameworks, India can foster an economically robust, socially inclusive, and environmentally responsible corporate ecosystem.

1.6 Concept of Corporate Performance

Corporate performance is a multifaceted construct that reflects a firm's ability to achieve its strategic, financial, and operational objectives in a dynamic and competitive environment. Traditionally, corporate performance has been measured using financial indicators such as profitability, return on assets, earnings per share, and stock market performance. However, contemporary research increasingly advocates for a more holistic approach that integrates a broader set of performance metrics to capture both short-term efficiency and long-term value creation.

This study conceptualises corporate performance as a composite outcome comprising three primary dimensions: operating performance, financial performance, and market performance, with a special emphasis on dividend policy as a strategic financial decision. This inclusive framework enables a comprehensive evaluation of how firms manage internal efficiencies, external market perceptions, and shareholder expectations, particularly in relation to ESG practices. In our study, we measure corporate performance based on the given parameters:

- **Operating performance** pertains to a firm's internal efficiency and productivity, often assessed through metrics such as Return on Assets (ROA) or operating margins. ESG-aligned operational practices, such as energy efficiency, waste reduction, and employee well-being, can contribute to more sustainable and cost-effective operations.
- **Financial performance**, proxied by ROCE, reflects a firm's efficiency in utilising its capital to generate profits, assesses how effectively a company converts its capital into earnings, and is particularly relevant in evaluating long-term financial health and capital allocation decisions. The integration of ESG considerations can influence financial performance by reducing risk exposure, lowering capital costs, and improving access to sustainable finance, thus enhancing overall capital efficiency.
- **Market performance** includes investor perception, firm valuation, and market competitiveness, commonly evaluated using market-based measures such as Tobin's Q or stock returns. ESG disclosures can shape market sentiment, improve investor trust, and impact the firm's valuation in the long run.

- **Dividend policy**, while often studied independently, is herein considered an integral part of corporate performance (Benlemlih, 2019). Dividend decisions serve as a key signalling mechanism to shareholders, reflecting management's confidence in future earnings and the firm's financial health. The relationship between ESG practices and dividend policy remains a critical area of inquiry, particularly as sustainability considerations become embedded in corporate finance strategies.

By adopting this integrated perspective, the study aims to assess not only the direct impacts of ESG performance on various facets of corporate performance but also to uncover sectoral and contextual variations, particularly in environmentally sensitive industries and within the Indian corporate ecosystem. This multidimensional framework aligns with stakeholder theory and modern corporate governance perspectives, which advocate for evaluating firm success beyond mere financial returns.

1.7 ESG Disclosure and Corporate Performance

The relationship between ESG disclosure and corporate performance has gained increasing prominence as sustainability becomes central to strategic business decision-making worldwide. ESG disclosure, defined as the transparent communication of a firm's sustainability-related initiatives, risks, and impacts, plays a crucial role in shaping how stakeholders perceive firms and, ultimately, their performance. Empirical evidence suggests a positive correlation between ESG transparency and various dimensions of corporate performance. For instance, Friede, Busch, and Bassen (2015) established that most of the over 2,000 empirical studies observed a favourable link between ESG practices and financial outcomes. Similarly, Dhaliwal et al. (2011) found that companies with comprehensive ESG enjoy a lower cost of capital and enhanced firm valuation, reinforcing the financial materiality of sustainability reporting.

Beyond financial performance, ESG disclosure positively influences non-financial dimensions such as corporate reputation, employee satisfaction, customer loyalty, and stakeholder trust; these factors are increasingly recognised as intangible assets with long-term value implications. Firms that demonstrate transparency in their ESG practices are perceived as better governed, more accountable, and more resilient to external shocks. From a strategic financial standpoint, dividend policy is also critical to corporate performance. ESG disclosure can influence dividend payout decisions and stability, signalling reduced risk and improved governance quality. Companies with consistent and credible ESG practices are more likely to maintain stable dividend distributions, thereby enhancing investor confidence and reducing informational asymmetries, which are particularly significant in markets with weaker investor protection mechanisms.

However, the strength and nature of the ESG-performance link vary across industries. The ESG impact in environmentally sensitive sectors, such as the cement, energy, oil and gas, chemicals, and mining industries, which have high environmental footprints and are subject to regulatory scrutiny, varies in exposure. In such sectors, ESG practices are essential risk mitigation tools for maintaining a license to operate and achieving long-term sustainability. Firms in these industries often face direct consequences for non-compliance, including litigation, fines, and reputational damage, making ESG integration a strategic necessity (Clarkson et al., 2011; Khan, 2022). Conversely, in less environmentally sensitive industries, such as IT, finance, retail, and professional services, ESG disclosure may serve more as a reputational lever, influencing stakeholder perceptions, brand loyalty, and talent acquisition. Here, ESG adoption reflects broader stakeholder alignment and ethical commitment, rather than direct operational risk management.

These patterns are evident not only in emerging markets like India, where regulatory initiatives such as Business Responsibility and Sustainability Reporting (BRSR) have begun to institutionalise ESG practices, but also at a global level, where sector-specific ESG materiality is increasingly acknowledged by frameworks such as the SASB Materiality Map and the GRI Standards. The Global Reporting Initiative (GRI) and Task Force on Climate-related Financial Disclosures (TCFD) further support industry-wide ESG standardisation, allowing for meaningful cross-sectoral analysis. Despite such advances, the diversity of ESG challenges across industries, ranging from environmental degradation to social inequality and governance lapses, necessitates sector-specific strategies and performance benchmarks.

In light of these dynamics, this study aims to critically evaluate the impact of ESG disclosure on corporate performance by examining financial indicators such as Return on Assets (ROA), Return on Capital Employed (ROCE), and Tobin's Q, as well as dividend payout and stability. Furthermore, it aims to investigate how these relationships vary across industries with differing environmental sensitivities within the Indian context and the broader global landscape. By adopting a sectoral lens and integrating financial and non-financial performance measures, the study contributes to a more nuanced understanding of how ESG disclosure shapes firm behaviour, performance, and sustainability trajectories in an increasingly interconnected and sustainability-conscious world.

1.8 Research Problem

The increasing global focus on corporate sustainability has elevated the importance of Environmental, Social, and Governance (ESG) practices, both as regulatory mandates and strategic imperatives. Despite widespread adoption in policy and business narratives, a clear understanding of how ESG practices translate into measurable corporate performance outcomes remains fragmented and context-specific. Firms are

increasingly expected to align profit motives with broader social and environmental responsibilities. However, stakeholders lack clarity on whether and how ESG transparency and implementation drive long-term value creation. The complexity is heightened when performance is considered in financial terms, operational effectiveness, market valuation, and strategic financial decisions such as dividend policy.

Moreover, the impact of ESG is unlikely to be uniform across sectors or regions. Industries' environmental exposure and regulatory obligations vary, making a sector-agnostic approach to ESG-performance analysis insufficient. Similarly, while developed economies dominate the ESG research landscape, emerging markets such as India remain underexplored, with evolving regulatory structures and diverse industry compositions. As firms grapple with increasing ESG pressures in such contexts, the lack of localised, multi-dimensional evidence limits strategic and policy responses.

Thus, the research problem addressed in this thesis is the limited understanding of the multifaceted impact of ESG disclosures on various aspects of corporate performance, including operational, financial, market-based, and dividend-related, across industries and economic contexts. This problem becomes particularly critical in emerging economies and environmentally sensitive sectors, where the strategic stakes of ESG performance are high but empirically underexamined.

1.9 Research Gaps

Although ESG has become a cornerstone of global corporate discourse, the existing academic literature reveals several persistent gaps that limit a holistic understanding of its strategic implications, particularly in emerging markets and across industries with varying environmental sensitivities.

First, there is a regional imbalance in ESG research. Most empirical studies are concentrated in developed economies, where robust regulatory frameworks, investor activism, and data infrastructure support ESG adoption. In contrast, despite recent regulatory reforms like the Business Responsibility and Sustainability Reporting (BRSR) mandate, emerging markets such as India remain underrepresented in ESG-performance research (Seth & Mahenthiran, 2022). Such economies' unique institutional dynamics, stakeholder pressures, and industry structures call for localised, evidence-based analyses to inform practice and policy.

Second, much of the current research focuses narrowly on financial performance metrics, overlooking the multi-dimensional nature of corporate performance. ESG disclosures may influence a broader set of outcomes, including operating efficiency (ROA), financial structure (ROCE), market valuation (Tobin's Q), and dividend

behaviour, all of which are crucial for long-term strategic planning and shareholder communication. Particularly, dividend policy remains an underexplored aspect of ESG outcomes, despite its relevance as a signal of firm stability, investor orientation, and governance quality.

Third, ESG issues and their materiality differ significantly across sectors. Many studies employ a cross-industry approach, which overlooks industry-specific ESG sensitivities. In sectors such as cement, oil, and chemicals, ESG factors have direct and tangible operational consequences, whereas in hospitality, services, or IT, they are more reputational and stakeholder-oriented. Despite this, industry-level studies remain sparse. Our study also includes research in the global cement industry, which has addressed this gap by evaluating how ESG influences firm performance, moderated by national economic development (NED). Another study on the hospitality sector also examines how ESG disclosures influence dividend policy decisions, providing a unique perspective on how sustainability commitments impact financial signalling in service-oriented, less environmentally sensitive industries.

Fourth, macroeconomic moderators, such as national economic development (NED), institutional maturity, and sectoral policy environments, remain largely absent from ESG-performance models. Understanding how these broader contexts influence ESG effectiveness is crucial for generating meaningful cross-country and cross-industry comparisons.

Finally, while the ESG–dividend policy link is gaining academic attention, the evidence is fragmented. A comprehensive meta-analysis on this relationship is currently lacking, which limits the synthesis of existing findings and the identification of consistent patterns or divergences across geographies and sectors. This thesis also aims to address this gap by conducting a systematic meta-analysis of global ESG-dividend policy studies, thereby contributing to the development of theory and informing future empirical research directions.

This thesis is uniquely positioned to fill the identified research gaps through a multidimensional, multisectoral, and multimethod approach. It advances understanding by linking ESG disclosures to various corporate performance dimensions across environmentally sensitive and non-sensitive industries, within both Indian and global contexts.

1.10 Rationale of the study

In an era marked by rising environmental degradation, social inequality, and governance failures, the role of corporations has expanded beyond profit maximisation to include accountability to a broader set of stakeholders. ESG frameworks offer a structured approach to aligning business practices with

sustainability goals. While the concept has gained global recognition, its effective integration into strategic and financial decision-making, especially in emerging economies, is still in progress. This study is driven by the need to understand how ESG disclosures, as expressions of corporate responsibility, contribute to a firm's overall performance across multiple dimensions.

The rationale for this research lies in its effort to provide evidence-based insights that can inform corporate strategy, investment decisions, and public policy. Companies are increasingly challenged to demonstrate how ESG practices influence long-term value creation through profitability, enhanced operational efficiency, a stable financial structure, stronger market valuation, and responsible shareholder payouts. This study offers a comprehensive, multi-dimensional view of corporate performance, positioning ESG not as a peripheral compliance tool, but as a central element of corporate governance and value delivery.

Furthermore, the research is especially timely as India and other emerging markets undergo rapid transformations in ESG regulation, stakeholder expectations, and capital market behaviour. India's Business Responsibility and Sustainability Reporting (BRSR) mandate represents a pivotal shift toward mandatory ESG disclosures. However, corporate leaders and investors still lack localised evidence to guide implementation and decision-making. This study is well-positioned to fill that need by providing empirical, context-sensitive analysis at both firm and sectoral levels.

Additionally, ESG integration is not a one-size-fits-all approach. The distinctive challenges and opportunities faced by different industries call for customised approaches. This research recognises that ESG's materiality varies across sectors and designs its investigation accordingly. It focuses on environmentally sensitive industries, where regulatory risk and stakeholder scrutiny are high, as well as less sensitive service sectors, where ESG serves as a strategic and reputational tool. Including diverse sectors enriches the generalizability and practical value of the study.

Although the primary empirical focus of this thesis is on Indian listed companies, the multidimensional nature of the research necessitates the incorporation of international evidence for selected research dimensions. The Indian context provides the central setting for examining the overall relationship between ESG and corporate performance; however, certain industry-specific dimensions of this relationship require a broader geographical perspective because industries operate across national boundaries and are subject to differences in institutional, regulatory, economic and industry-specific conditions.

Accordingly, chapter 5 and 7 of the study employ international datasets to investigate ESG-related relationships within specific industries. These international analyses are intended to complement the India-focused investigations rather than alter the central

focus of the thesis. The inclusion of international evidence enables a more comprehensive examination of the multidimensional nature of ESG and its implications for corporate performance, while the Indian listed-company context remains the principal empirical setting of the study.

Ultimately, this research contributes to both academic knowledge and applied practice by combining firm-level analysis with global perspectives, supported by empirical investigations and a meta-analytical synthesis. Doing so offers a balanced, interdisciplinary contribution that bridges sustainability, finance, and corporate governance.

In essence, the rationale of this study is to address the growing demand for clarity on the strategic value of ESG, not only as a regulatory obligation but also as a driver of holistic corporate performance. It offers timely, actionable insights relevant to business leaders, investors, regulators, and scholars aiming to promote sustainable development and responsible capitalism.

1.11 Research Aim and Questions

This study aims to develop a comprehensive understanding of how ESG disclosures impact various dimensions of corporate performance across sectors and regions, with a focus on the Indian context and global industry comparisons. The thesis examines both the direct effects of ESG on performance, including operational, financial, market, and dividend-related aspects, as well as the differential effects across environmentally sensitive and less sensitive industries. It further examines the moderating role of macroeconomic factors, such as national economic growth, and the financial signalling role of dividend policy in ESG-aligned firms. This research offers a comprehensive, multi-level analysis that contributes to both academic theory and practical strategies in sustainable corporate governance.

To support this aim, the following research objectives have been defined:

1. To examine the existing literature and identify dominant trends and theoretical developments on the relationship between ESG performance and corporate performance across sectors and geographies.
2. To empirically examine the heterogeneous impact of ESG factors on the operational, financial, and market performance of Indian-listed companies, thereby uncovering nuanced insights beyond average analysis across different levels of corporate performance.
3. To investigate the differential impact of ESG practices on corporate performance between environmentally sensitive (SI) and non-sensitive industries (NSI) in India.

4. To explore the relationship between ESG practices and corporate performance in the global cement industry and examine the moderating role of national economic development (NED) in shaping this relationship.
5. To investigate the relationship between ESG disclosures and dividend policy through meta-analysis by synthesising global empirical findings and identifying consistent patterns, divergences, and gaps in the literature.
6. To analyse the influence of ESG disclosures on dividend payout and stability in the global hospitality industry.

Accordingly, this thesis aims to answer the following research questions:

1. What are the key trends, theoretical foundations, and gaps in the existing literature on ESG and corporate performance across industries and regions?
2. How do ESG factors influence operational, financial, and market-based performance in Indian-listed companies?
3. Are there significant variations in the ESG-performance relationship between India's environmentally sensitive and non-sensitive industries?
4. How do ESG practices impact corporate performance in the global cement industry, and how does national economic growth moderate this relationship?
5. What do global empirical studies reveal about the ESG-dividend policy relationship, and what insights emerge from a meta-analysis of this literature?
6. How do ESG disclosures influence dividend payout and stability in the global hospitality sector?

1.12 Thesis Structure

This thesis is structured around multiple empirical and analytical studies that collectively aim to examine the multi-dimensional influence of ESG disclosures on corporate performance across diverse contexts. The research adopts a sectoral, performance-level, and methodological lens, integrating Indian and global perspectives. Each chapter builds upon the previous one, offering a comprehensive and nuanced exploration of ESG's role in shaping operational, financial, market, and dividend outcomes across industries with varying environmental sensitivities. The organization of the thesis is outlined as follows:

Chapter 1 introduces the study by presenting the background, research problem, objectives, gaps, and rationale. It further outlines the key concepts and definitions related to ESG and corporate performance, emphasizing the growing importance of ESG disclosures. The chapter concludes with the research aim, questions, and a description of the thesis structure.

Chapter 2 provides a comprehensive review of the existing literature on ESG and corporate performance. It examines global and regional trends, theoretical frameworks, and methodological patterns, identifying key conceptual debates and empirical findings. This chapter lays the intellectual foundation for the following studies and highlights the unresolved questions the thesis aims to address.

Chapter 3 presents Study 1, which empirically investigates the heterogeneous impact of ESG factors on the operational (ROA), financial (ROCE), and market (Tobin's Q) performance of Indian-listed firms. The study employs panel data econometric techniques to examine firm-level variability in ESG outcomes, providing practical insights into how ESG influences corporate value drivers in emerging markets.

Chapter 4 introduces Study 2, which explores the sectoral variation in the ESG-performance relationship, comparing environmentally sensitive industries (SI) with non-sensitive industries (NSI) within the Indian context. This study reveals how ESG materiality and stakeholder expectations differ by industry, informing the need for sector-specific ESG strategies.

Chapter 5 details Study 3, which focuses on the global cement industry, an environmentally intensive sector. The chapter examines the impact of ESG practices on firm performance across countries, while also analysing the moderating role of national economic development (NED). It offers cross-country insights and contextual comparisons relevant for sustainability strategies in resource-intensive sectors.

Chapter 6 presents Study 4, a systematic literature review and meta-analysis of the relationship between ESG and dividend policy across global contexts. The chapter synthesises existing empirical evidence, identifies patterns and inconsistencies, and provides recommendations for future research.

Building upon the preceding study, Chapter 7, Study 5 examines the impact of ESG disclosures on dividend policy, with a specific focus on dividend payout and stability in the global hospitality sector. This chapter examines the role of ESG as a financial signalling mechanism and its implications for shareholder value and capital allocation.

Chapter 8, the final chapter, offers the conclusion of the thesis, summarising key findings across all studies. It discusses the research's theoretical contributions, managerial implications, and policy relevance. The chapter also acknowledges limitations and outlines potential avenues for future research, reinforcing the significance of ESG in driving sustainable corporate performance.

1.13 Key Terms

To ensure conceptual clarity and consistency throughout the thesis, the following key terms are defined and supported by relevant literature:

- **Environmental, Social, and Governance (ESG):** A framework used to evaluate an organisation's performance beyond financial metrics by incorporating environmental responsibility, social equity, and governance effectiveness. ESG has become an important determinant of firm value and stakeholder trust (Eccles et al., 2014c; Friede et al., 2015c).
- **ESG Disclosure:** The formal communication of a firm's ESG-related risks, initiatives, and performance metrics through sustainability reports, regulatory filings, or integrated reports. ESG disclosure aims to enhance transparency and accountability, often guided by frameworks such as the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and Task Force on Climate-related Financial Disclosures (TCFD) (Dhaliwal et al., 2014).
- **Corporate Performance:** A multidimensional construct that includes financial, operational, market-based, and strategic outcomes. In this study, corporate performance includes:
 - Return on Assets (ROA): Used as a proxy for operational efficiency and managerial performance. This metric evaluates how effectively a firm utilizes its assets to generate earnings. Previous studies, including Velte (2020) and Wang & Sarkis (2017). We have employed ROA in similar ESG-performance investigations.
 - Return on Capital Employed (ROCE): Applied as a measure of financial performance, particularly to assess profitability relative to total capital employed. Its application in ESG-related empirical research is consistent with Maqbool & Bakr (2019) and Veeravel, Murugesan, et al. (2024).
 - Tobin's Q: Represents market-based performance and reflects investor perceptions of firm value. This ratio has been widely used in the literature (e.g., Choi & Wang (2009) ; Velte (2017) to analyze how intangible assets, such as sustainability practices, affect valuation.
 - Dividend Payout: The proportion of earnings distributed to shareholders, signalling firm stability and profitability (Fatemi et al., 2018).
 - Dividend Stability: The consistency of dividend payments over time, often reflecting governance strength and predictable cash flows (Khan, 2022).
- **Environmentally Sensitive Industries (SI):** Environmentally sensitive industries are those with a high environmental footprint, where ESG issues are intrinsically linked to core business operations. These sectors, such as cement, energy, oil and gas, and chemicals, are characterised by activities that significantly affect the socio-environmental landscape (Halkos & Skouloudis, 2016). Following prior studies (Gracia & Siregar, 2021; Miralles-Quirós et al. 2018; Yoon et al. 2018) And in line with the

Global Industry Classification Standard (GICS), industries in the energy, materials, and utilities sectors are classified as environmentally sensitive.

- **Non-Sensitive Industries (NSI):** Non-sensitive industries comprise sectors where ESG considerations are primarily reputational or stakeholder-driven, rather than stemming from direct environmental intensity. Examples include information technology, hospitality, services, and finance. Consistent with previous literature (Gracia & Siregar, 2021; Yoon et al., 2018), all industries outside the energy, materials, and utilities sectors, according to the Global Industry Classification Standard (GICS), are categorised as non-sensitive.
- **National Economic Development (NED):** National economic development represents the macroeconomic context that shapes ESG adoption and its performance implications across countries. In this study, NED is proxied by the natural logarithm of GDP per capita, which reflects the mean economic output per person and serves as an indicator of a nation's economic productivity, standard of living, and financial well-being. To ensure normality in distribution, the natural logarithm of GDP per capita was applied, consistent with prior empirical research (Zhou et al., 2020).
- **Dividend Policy:** A strategic financial decision regarding the distribution of profits, often influenced by cash flow availability, ESG engagement, and investor expectations. It serves as a financial signalling mechanism (Ananzeh, Khalifeh, et al., 2024).
- **Meta-Analysis:** A quantitative synthesis of empirical findings across multiple studies to determine the average effect size, direction, and robustness of relationships under investigation (Hunter & Schmidt, 2004).
- **Firm Age** is included as a control variable to capture the maturity and institutional experience of a company. It is computed as the natural logarithm of the difference between the fiscal year and the year of incorporation (Doshi et al., 2024a). Older firms may benefit from more established operational frameworks and reputational capital, which can influence both their engagement in sustainability initiatives and financial outcomes.
- **Firm Size**, measured as the natural logarithm of total assets, reflects organisational scale and resource availability (Buallay, 2019; Velte, 2017). Larger firms are generally expected to have more comprehensive disclosure systems and greater capacity to implement sustainability practices (Hillman et al., 2000; Veeravel, Murugesan, et al., 2024).
- **Leverage**, captured by the debt-to-equity ratio, serves as an indicator of financial risk and capital structure (Bhandari, 1988). Firms with lower leverage tend to demonstrate stronger ESG engagement, as high debt levels may constrain

investments in sustainability due to higher interest obligations and perceived market risk.

- **Sales Growth** is also included to represent the firm's growth trajectory. It is calculated as the annual change in sales and provides insights into the company's capacity to allocate resources toward long-term sustainability efforts and strategic innovation (Bansal et al., 2021).

1.14 Summary

This chapter introduces the foundational concepts of ESG disclosures and their evolving significance in shaping corporate performance. It outlines how ESG has moved from a voluntary ethical concern to a strategic framework embedded in global and national business practices. The chapter highlights the growing demand for ESG transparency. It explores the theoretical and practical relevance of assessing its impact across multiple dimensions, including operational, financial, market-based, and strategic aspects, such as dividend policy.

In doing so, the chapter identifies key research problems and gaps in existing literature. This thesis articulates the rationale, which lies in the need to provide empirical, sector-specific, and context-sensitive evidence. The study acknowledges that ESG's material relevance varies significantly across industries, particularly between environmentally sensitive and less sensitive sectors, and that these variations are especially critical in emerging economies such as India, where ESG regulation and adoption are still evolving. It also recognises the lack of clarity regarding how ESG practices affect dividend policies, especially in service-oriented industries.

Additionally, this chapter presents the research objectives and questions that guide the thesis. It provides an overview of the thesis structure, outlining how each subsequent chapter addresses the multifaceted relationship between ESG performance and its implications. It introduces the conceptual scope of the thesis, which includes empirical analyses of firm-level ESG effects, cross-sectoral comparisons, macroeconomic moderation, and a global meta-analytical synthesis of ESG-dividend studies.

This chapter provides a critical foundation, setting the stage for the detailed examination of ESG disclosure practices and their implications for corporate performance in the subsequent chapters. In the next chapter, the thesis presents a comprehensive review of the literature on ESG, corporate performance, industry dynamics, and sustainability reporting, identifying theoretical linkages, methodological approaches, and empirical trends that underpin the present research.

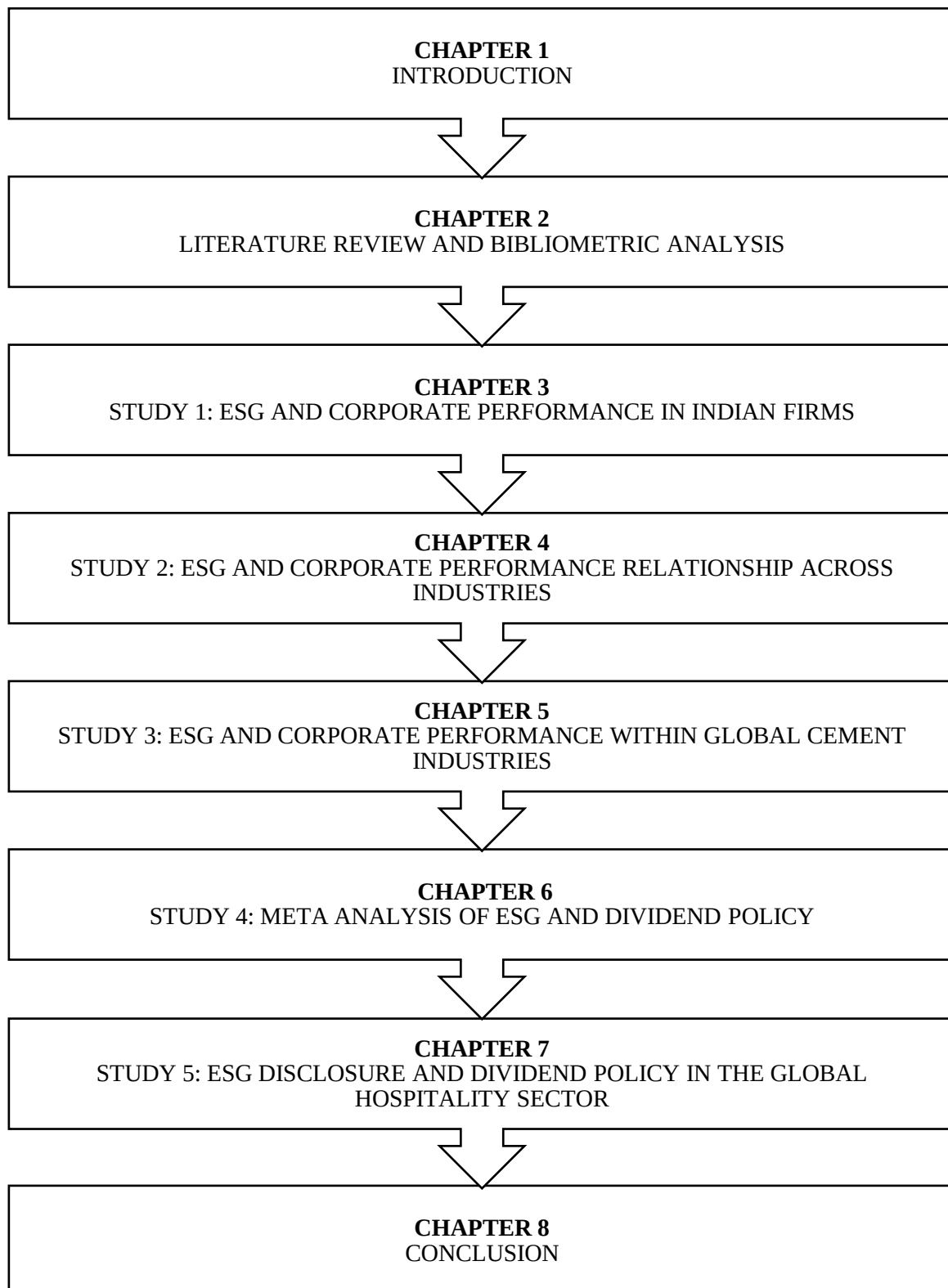


Figure 1.3: Structure of the Thesis
Source: Authors' Own Compilation

CHAPTER 2

LITERATURE REVIEW ON ESG DISCLOSURES AND CORPORATE PERFORMANCE

2.1. Introduction

Sustainable development has emerged as a pivotal response to escalating environmental and socio-economic challenges, with ESG considerations now widely regarded as integral to this agenda. ESG serves as the foundational framework for promoting sustainability by aligning corporate behaviour with long-term environmental stewardship, social responsibility, and ethical governance (Sultana et al., 2018; Wan and Dawod, 2022). This integrated approach is particularly relevant in addressing the compound effects of climate change, economic recessions, and global health crises (Cardillo et al., 2023). ESG has evolved into a key standard for evaluating corporate performance, influencing decision-making processes (Galbreath, 2013) and enhancing corporate reputation (Flammer and Bansal, 2017). The rising prominence of ESG is further driven by increased public concern over environmental degradation, unethical business practices, and corporate accountability (Lee and Lee, 2022). Consequently, credit rating agencies and institutional investors are increasingly incorporating ESG metrics into their evaluations (Ferguson et al., 2019).

Academic interest in ESG has grown significantly, with numerous studies exploring its relationship with corporate performance (Gonçalves et al., 2023; Guney et al., 2020; Lee et al., 2023; Tekin & Güçlü, 2023; Velte, 2019; Zicari, 2014) and the determinants of ESG disclosure (Chen & Xie, 2022; Elmghaamez et al., 2023; Fu et al., 2023; Khandelwal et al., 2023; Van Hoang et al., 2023). Several studies have conducted a bibliometric analysis on the broad topic of ESG (Li et al., 2021; Savio et al., 2023; Wang et al., 2023). While much of this literature intersects with sustainable development, CSR, socially responsible investing, and corporate risk (Gillan et al., 2021; Li et al., 2021b; Park et al., 2023), some have explored ESG disclosures (Pu et al., 2023), socially responsible investment, and the link between ESG and corporate risk (Bajaj et al., 2022; Gao et al., 2021; Syed & Bawazir, 2021). Notably, Khan (2022) conducted a study investigating the alliance between ESG and firm performance, primarily through a meta-analysis of past empirical research.

Despite these contributions, a comprehensive and integrated evaluation of ESG's impact on corporate performance remains limited. This thesis addresses that gap by exploring unresolved questions related to financial performance, risk assessment, governance adequacy, shareholder engagement, and ESG compliance mechanisms. It applies an investigative lens to ESG as a driver of corporate excellence and

stakeholder value creation. The outcomes of ESG integration can be observed through reductions in greenhouse gas emissions, enhanced social equity, ethical conduct, and broader societal benefits.

This study combines bibliometric analysis, content review, and framework evaluation (Figure 2.1) to identify influential literature and gain insights into its structure. Key contributors, authors, journals, institutions, and countries are assessed (Donthu et al., 2021) and the literature is categorised into three dominant themes:

1. CSR, ESG, and financial performance: Effects on firm value and ownership structures.
2. Corporate responsibility, stakeholder engagement, regulatory alignment, and financial outcomes.
3. Strategic ESG insights and risk management dynamics.

The study also applies the TCCM (Theory–Context–Characteristics–Methodology) framework to offer structured directions for future research and outlines the theoretical and managerial implications derived from the literature. The following sections provide detailed insights into the methodology, thematic findings, and strategic implications of ESG research.

2.2. Methodology

This chapter employs a dual approach combining bibliometric and content analysis to map the status, trends, and thematic evolution of ESG research. Bibliometric analysis is applied to quantify publication outputs, citation metrics, and scholarly impact, while also visually representing interconnections between key research components (Donthu et al., 2021). This is complemented by a structured framework analysis to explore distinct dimensions of ESG research, following the methodology outlined by Haggarty (1996). The primary objective is to identify research gaps, propose future research directions, and provide actionable insights.

For content analysis, the TCCM (Theory–Context–Characteristics–Methodology) framework was employed (Goyal and Kumar, 2021; Hentzen et al., 2022). As depicted in Figure 2.6, this framework aids in systematically organising relevant details related to theoretical foundations, contextual focus, key constructs, data sources, research design, and analytical techniques. Due to its adaptability and structured design, TCCM has become one of the most widely used frameworks in literature reviews (Paul et al., 2023).

2.2.1 Database Selection

The bibliographic records were retrieved from the Scopus database, known for its extensive coverage of the social sciences domain, encompassing reputable publications (Van Eck and Waltman, 2014). Scopus and Web of Science (WOS) are recognised as extensive databases. Scopus boasts over 76 million records (Baas et al., 2020), to some degree surpassing WOS (Birkle et al., 2020), and is widely used by researchers for comprehensive reviews across various disciplines, as seen in Web of Science and Google Scholar. Scopus provides approximately 20% broader coverage compared to Web of Science, while Google Scholar yields results with varying levels of accuracy (Falagas et al., 2008a). In this paper, Scopus was selected as the preferred database; however, this does not imply superiority over alternative databases in relevance.

2.2.2 Search Strategy

In July 2023, we conducted a comprehensive search in the Scopus database using the following keywords: (*"Environmental, Social, and Corporate Governance"* OR *"ESG"* OR *"Environmental, Social, and Governance"*) AND (*"Corporate"* Or *"Compan*"* Or *"Firm*"*) AND (*"Performance"*). Our refined selection process yielded 495 relevant articles, as article patterns are more dynamic and responsive to changes in research trends, as shown in Table 2.1, after examining titles and abstracts. Out of 495, we analysed 218 top ABDC-ranked papers from the last four years, prompted by the remarkable surge in publications reflecting the rising global consciousness around sustainability.

Table 2.1: Search Strategy and Filtration Criteria

Screening Criteria	Excluded	Accepted
Filter Criteria		
Search Engine: Scopus		
July,2023		
Keywords: ("Environmental, Social, and Corporate Governance" OR "ESG" OR "Environmental, Social, and Governance") AND ("Corporate" Or "Compan*" Or "Firm*") AND ("Performance")		1600
Language: English	13	1587
Only Articles	266	1321
Subject: "Business, management and accounting" and "Economics, econometrics and finance"	373	948
Filtered blank author keywords	31	917
For bibliometric analysis: Incorporate papers if 'Titles, abstracts, and keywords' show they are pertinent to the study's area of interest (i.e., ESG in companies) only.	422	495
For content analysis: Articles published between 2019 and 2022, exclusively from ABDC (A*, A, and B categories).	277	218

2.3 Findings

2.3.1 Publication Trends in ESG and Corporate Performance Research

Publication Trends

To answer RQ1 and RQ2 (as shown in Figure 2.1), this study investigates 495 research publications from 205 journals published between 2011 and 2023. Among 1,196 authors, 50 were published by individual authors, and the rest collaboratively as co-authors. Notably, 26.46% of articles resulted from global collaborations, indicating substantial international cooperation. The inaugural publication in 2011 proposed an innovative ‘integrated decision model’ emphasising the integration of financial data and ESG factors while advocating against reliance on existing valuation methods (Nielsen & Noergaard, 2011). Subsequently, a consistent exponential increase in publications ensued.

Figure 2.2 illustrates an evident increase in this field's research activities particularly post-2021 (during the Covid-19 era) marked by a threefold increase attributed to the increased focus on sustainable investment strategies. This upward trend continued in 2023, with 159 publications in the first half of the year, reflecting sustained interest in ESG research due to increased awareness, regulatory changes, and growing investor demand for responsible and ethical business practices.

Prominent Journals in the ESG and Corporate Governance field

In the area, a total of 205 different publications were found. Table 2.1 highlights the top journals with at least five publications, totalling 19 prolific journals. To rank this journal, we consider total publications, total citations, and average citations, consistent with the Bhukya and Paul (2023) approach. This approach accords a higher ranking to journals with higher citation and publication counts. Furthermore, when two journals exhibit the same number of publications, priority is given to the one with a higher citation count. Outcomes show the topmost productive journals include; Business Strategy and the Environment (TP = 28; TC = 1632), Corporate Social Responsibility and the Management (TP = 26; TC = 428), Finance Research Letters (TP = 19; TC = 233), Journal of Sustainable Finance and Investment (TP = 18; TC = 1060), Journal of Cleaner Production (TP = 14; TC = 506).

Prominent Authors and affiliations in the ESG and corporate Performance field

Table 3.1 presents influential authors based on their H-index and total citation counts, along with their affiliations and countries of origin, as well as the top-producing and top-cited countries. Buallay A is the most impactful author who mentioned sustainable reporting impact based on the H-index, whereas Cheng B, Ioannou I, and Serafeim collaboratively found out whether CSR positively impacts funding availability (Cheng et al., 2014). This paper is prominent in the domain with the highest citation i.e., 1475 respectively

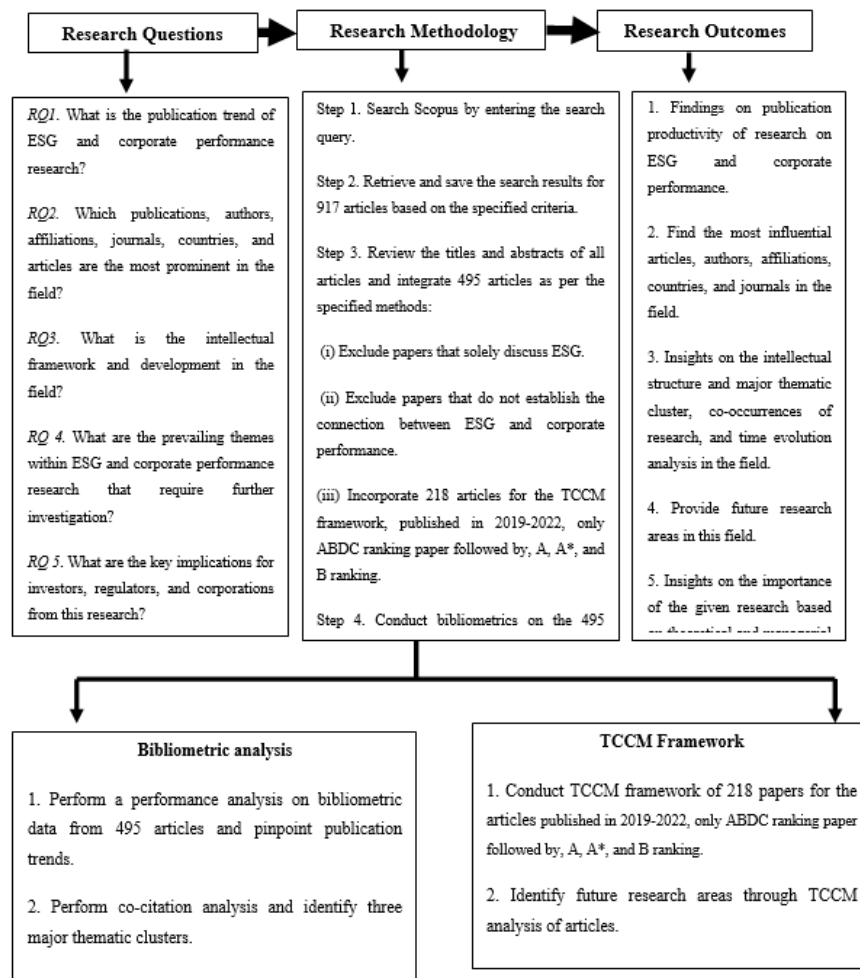


Figure 2.1: Conceptual Framework
Source: Authors' own compilation

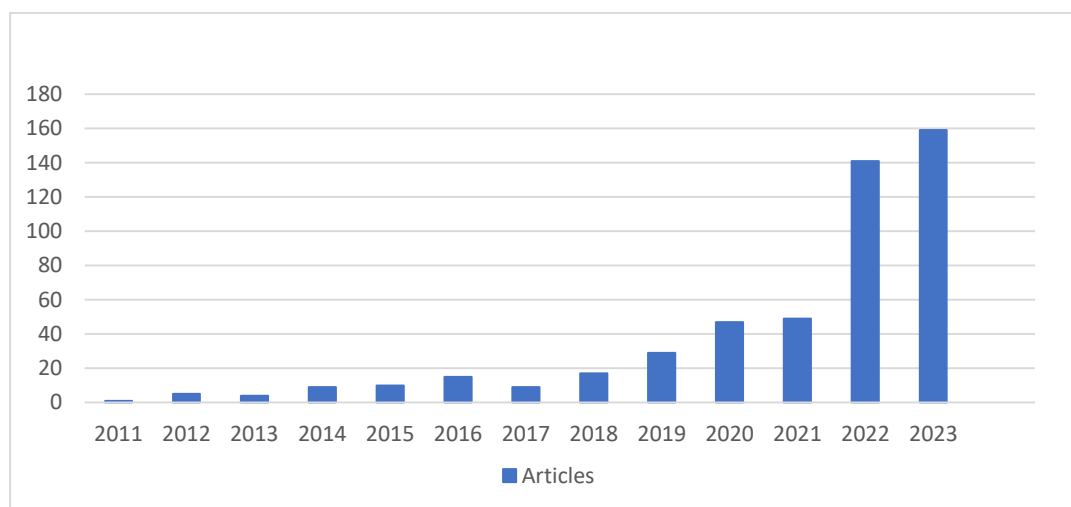


Figure 2.2: Evolution of articles on ESG and corporate performance
Source: Authors' own estimation

Top influential articles on ESG and corporate performance

Table 2.4 highlights the significant articles along with the authors, titles, and publication years. The most cited paper is Cheng et al. (2014). The other top five most cited documents are Fatemi et al. (2018); Friede et al. (2015); Nollet et al. (2016); Wang and Sarkis (2017); Xie et al. (2019). These highly cited papers primarily focus on ESG or sustainability in the context of financial performance, firm value, and financial accessibility. Friede et al. (2015) reviewed the 2200 articles and showed that only 10% of the literature does not summarise the non-negative connection between ESG and financial performance. Fatemi et al. (2018) explored the positive influence of ESG on corporate value and the importance of disclosure. However, Nollet et al. (2016) found a nonpositive connection between ESG and return on capital (accounting performance variable), whereas Xie et al. (2019) found positive evidence of the linkage between ESG and corporate efficiency.

2.3.2 Intellectual Structure

Co-occurrence analysis

Through the application of co-occurrence analysis, we are addressing the third research question, intellectual structure and development in the area. We visualise the structure in Figure 2.3 by setting a threshold limit of five instances of co-occurrences for author-specified keywords. In this visualisation, the dimensions of the nodes indicate the frequency of co-occurrence, with each node representing a keyword. Co-occurrence signifies when two keywords are referenced concurrently in the same document, and the thickness of connecting lines quantifies the frequency of keyword co-occurrences (Callon et al., 1983).

Research on ESG and its impact on corporate performance centres on several key themes, including corporate social responsibility, sustainable development, firm value, corporate financial performance, socially responsible investing, and risk. The research is underpinned by prominent theoretical frameworks like Stakeholder theory, legitimacy theory, and information asymmetry, emphasising the valuable knowledge of the interconnectedness between ESG and corporate performance outcomes. Notably, the relationship has garnered particular attention within the energy sector, emphasising its relevance and implications within this particular industry context.

Theme Evolution Analysis

Through VOS-viewer, we generate an overlay visualisation of keywords, integrating the temporal aspect into the co-occurrence network. This method enables us to investigate the progression of themes over time. The varying colour spectrum in Figure 2.4 is established based on the scores assigned to time intervals, demonstrating the relationship between these scores and specific colours. In this context, Fig. 11

vividly represents the prevailing themes and their chronological development since 2019, offering insights into their evolution and maturity.

Table 2.2: Most Influential Sources

Source	TP	TP ranking	TC	TC ranking	AC ranking	AC
Business Strategy and The Environment	28	1	1632	1	58.29	5
Corporate Social Responsibility and Environmental Management	26	2	428	6	16.46	11
Finance Research Letters	19	3	233	9	12.26	12
Journal Of Sustainable Finance and Investment	18	4	1060	2	58.89	4
Journal Of Cleaner Production	14	5	506	4	36.14	6
Journal Of Business Ethics	11	6	939	3	85.36	1
Journal Of Global Responsibility	9	7	270	8	30	8
International Review of Financial Analysis	8	8	52	13	6.5	14
Cogent Business and Management	8	9	34	15	4.25	16
Global Finance Journal	7	10	439	5	62.71	3
Social Responsibility Journal	6	11	176	10	29.33	9
Economic Analysis and Policy	6	12	21	17	3.5	17
Applied Economics	6	13	20	18	3.333	18
Journal Of Asset Management	5	14	323	7	64.6	2
Corporate Governance (Bingley)	5	15	167	11	33.4	7
Environment, Development and Sustainability	5	16	105	12	21	10
Sustainability Accounting, Management and Policy Journal	5	17	35	14	7	13
Australasian Accounting, Business and Finance Journal	5	18	29	16	5.8	15
Pacific Basin Finance Journal	5	19	8	19	1.6	19

TP= Total Publication, TC= Total Citation, AC= Average Citation

Table 2.3: Prominent Authors, Affiliations, and Countries

Authors	H_INDEX	TP	Authors	TC	TP	Affiliation	TP	Country	TP	TC
Buallay A	7	10	Cheng B	1475	1	Ahlia University	14	UK	57	2791
About A	3	3	Ioannou I	1475	1	Universidade De Lisboa	14	US	53	3613
Bodhanwala R	3	4	Serafeim G	1475	1	University Of Zaragoza	13	India	51	489
Bodhanwala S	3	4	Busch T	1049	2	Capital University of Economics and Business	11	China	50	353
Dorfleitner G	3	3	Bassen A	850	1	University Of Bologna	10	Italy	47	518
El Khoury R	3	3	Friede G	850	1	University Of Kassel	10	Germany	33	3174
Erragragui E	3	3	Sarkis J	432	2	Macquarie University	9	Malaysia	31	375
Halbritter G	3	3	Wang Z	432	4	Universiti Teknologi Mara	9	France	29	1047
Jitmaneeroj B	3	3	Klein C	346	3	Bocconi University	8	Australia	25	959
Managi S	3	3	Zwergel B	346	3	Comsats University Islamabad	8	Spain	21	531

TP= Total Production, TC= Total Citation

Table 2.4: Most influential articles

Authors	Title	Year	Source Title	Cited by
Cheng et al.	Corporate social responsibility and access to finance	2014	Strategic Management Journal	1475
Friede et al.	ESG and financial performance: aggregated evidence from more than 2000 empirical studies	2015	Journal of sustainable finance and investment	850
Fatemi et al.	ESG performance and firm value: the moderating role of disclosure	2018	Global Finance Journal	330
Nollet et al.	Corporate social responsibility and financial performance: a non-linear and disaggregated approach	2016	Economic modelling	261
Xie et al.	Do environmental, social, and governance activities improve corporate financial performance?	2019	Business strategy and the environment	259
Wang and Sarkis	Corporate Social Responsibility Governance, Outcomes, and Financial Performance	2017	Journal of Cleaner Production	257
Aouadi and Marsat	Do ESG controversies matter for firm value? Evidence from international data	2018	Journal of Business Ethics	231
Drempetic et al.	The influence of firm size on the ESG score: Corporate sustainability ratings under review	2020	Journal of Business Ethics	203
Ng and Rezaee	Business sustainability performance and cost of equity capital	2015	Journal of Corporate Finance	202
Kölbel et al.	How media coverage of corporate social irresponsibility increases financial risk	2017	Strategic Management Journal	199

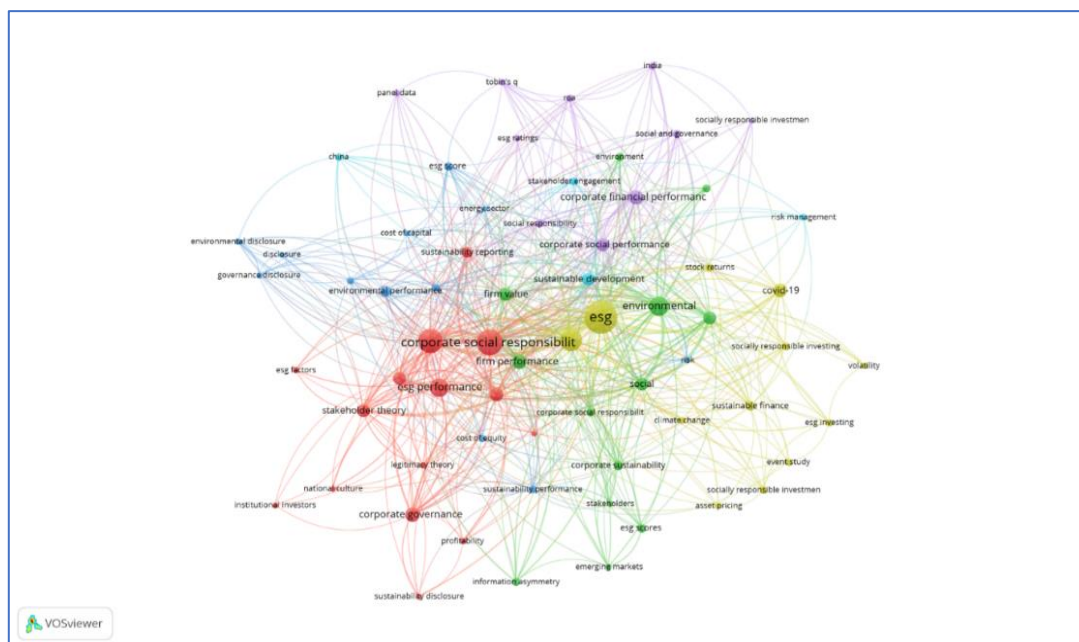


Figure 2.3: Co-occurrence network of authors' specified keywords
Source: VOS viewer

structure and theoretical foundations. The VOS Viewer identified three clusters in the article co-citation analysis. Each cluster is depicted in a different colour.

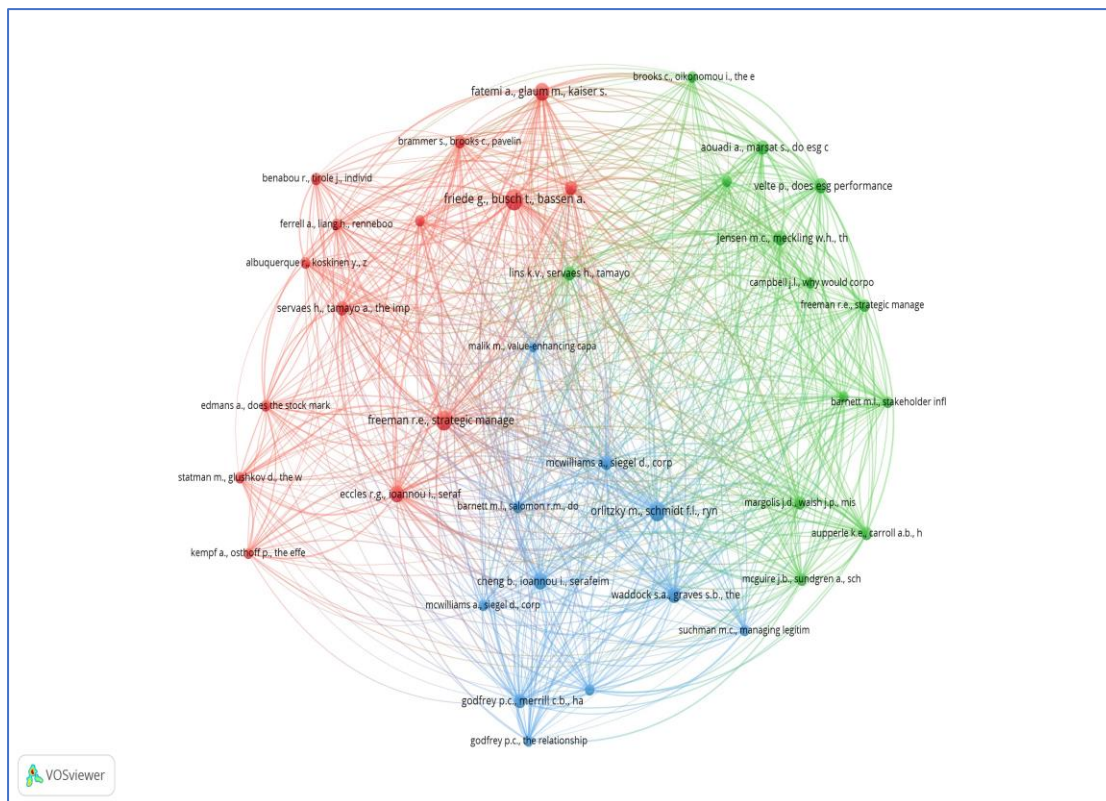


Figure 2.5: Co-citation network of documents
Source: VOS viewer

Thematic Clusters from Co-Citation Analysis

The co-citation analysis identified three major thematic clusters, each representing a distinct stream of research in the ESG–corporate performance literature. These clusters were visualised through VOSviewer and colour-coded for interpretative clarity (e.g., red, green, and blue), as displayed in Figure 2.6.

Cluster I: The Interplay of CSR, ESG, and Financial Performance – Effects on Firm Value and Ownership (Red Cluster)

This cluster (red) encompasses the relationship between CSR, ESG factors, various financial aspects, stock returns, organisational processes, and employee satisfaction, as well as their combined impact on corporate firm value. It also explores Sustainable and Responsible Investment (SRI) ratings and the concept of a social responsibility score.

Bénabou and Tirole (2010) argued that interpretations of corporate social responsibility include a focus on the long term, philanthropy for stakeholders, and insider-driven corporate philanthropy. This cluster examines how companies' CSR and ESG commitments impact their long-term financial performance and overall value. Albuquerque et al. (2019) demonstrate an industry equilibrium model where CSR serves as an investment for product distinctiveness, enhancing profitability. Eccles et al. (2014) find positive outcomes for corporate sustainability on financial and employee performance. On the other hand, Kempf and Osthoff (2007) propose a strategy to earn an abnormal return of up to 8.9% by investing in socially responsible stocks and divesting from stocks with weak socially responsible ratings. Moreover, Statman and Glushkov (2009) show the advantages of high-social-responsibility companies. Considering the firm value, studies reveal a non-negative association between disclosure and firm value (Fatemi et al., 2018a). This influence is particularly true concerning high consumer awareness (Servaes and Tamayo, 2013). Moreover, CSR mitigates the negative relationship between managerial entrenched power and value (Ferrell et al., 2016a).

Contrarily, Barnea and Rubin (2010) observed an adverse correlation between CSR disclosure and financial leverage. Similarly, Brammer et al. (2006) find a non-positive interaction between social and financial outcomes. In line with prior scholarly investigation, Friede et al. (2015) concluded that roughly 90% of investigations established a positive relation. Notably, a significant most of these studies yielded positive results across various periods.

Cluster II: Delving into the nexus of Corporate Responsibility, Stakeholder engagement, regulators, and financial performance: Insights from a diverse perspective (Green Cluster)

This cluster explores the intricate relationship between corporate decision-making, innovation, stakeholder engagement, and their combined impact on performance, firm value, and long-term sustainability.

The Freeman (2010) paper emphasized the importance of managerial decisions that precedence the well-being of stakeholders rather than treating them as a means to achieve corporate objectives. This point is grounded in the recognition that stakeholders wield substantial influence over corporate management (Barnett, 2007a) and companies should behave in socially responsible ways (Campbell, 2007). This notion aligns with the Aouadi and Marsat (2018) perspective on the value of enhancing firm visibility, a strategy through which companies can derive profits from their Corporate Social Performance (CSP). By the trajectory of non-financial stakeholder influence on financial performance, an empirical study determined that

effective stakeholder engagement serves a dual role. They not only facilitate a company to be endowed with exceptional financial performance in prolonging its competitive edge significantly, but also have a significant impact by expediting the recuperation of underperforming firms from unfavourable circumstances (Choi and Wang, 2009).

In the domain of the association between CSR and financial outcomes, significant aspects come to light from diverse vantage points. For instance, the role of chief executive officer (CEO) assumes paramount importance. An empirical investigation by Aupperle et al. (1985) highlights the lack of influence exerted by the administered CEO on the relationship between social responsibility and profitability. Furthermore, a study examines the impact of environmental regulations on corporate performance. They presented the affirmative link that connecting environmental regulation and financial performance manifests with greater frequency in jurisdictions adhering to common law tradition, as opposed to those following civil law frameworks (Horváthová, 2010). Nonetheless, a critical aspect emerges during periods of adversity, as exemplified by the Great Recession of 2008. The confidence between a company and both its stakeholders and investors is fostered via investments in social capital, which yields substantial benefits (Lins et al., 2017).

Cluster III: Unravelling strategic insights and risk management dynamics (Blue Cluster)

The key findings in this cluster (blue) yielded notable results, revealing an enhancement in financial accessibility that led to decreased agency costs through stakeholder involvement and diminished informational asymmetry due to high transparency (Cheng et al., 2014). Another noteworthy observation is that such efforts elicit positive perceptions from stakeholders, subsequently mitigating unfavourable assessments and penalties toward companies largely due to the cultivation of goodwill. Furthermore, one paper showcases a risk management model that contributes to establishing goodwill (Godfrey et al., 2009a). In addition, research endeavours to assess the impact of CSR by conducting empirical assessments of firm performance against CSR and highlighting the role of R&D investment (McWilliams and Siegel, 2000). In 2001, they formulated a hypothesis that a firm's extent of CSR hinges on various factors. Moreover, McWilliams and Siegel (2001) conclude that a neutral association prevails between CSR and financial performance.

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Chapter 2

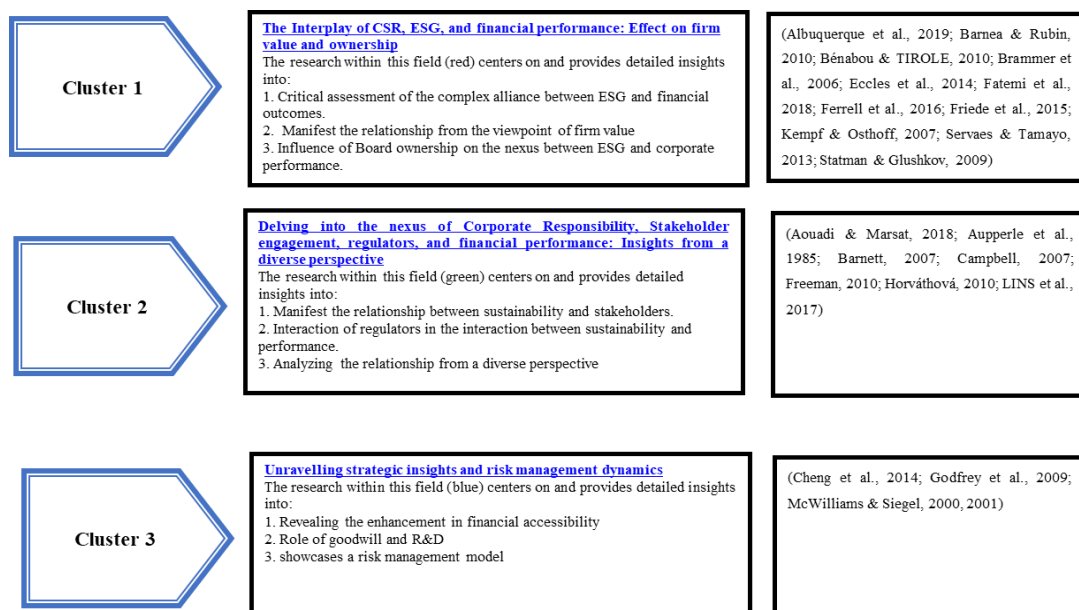


Figure 2.6: Visualisation of key Clusters

Source: Authors' own compilation

2.4. Discussion

The discussion segment comprises the subsequent components: TCCM analysis (as shown in Figure 2.7) for identifying prospects for future study, theoretical and managerial implications, limitations, and concluding remarks.

2.4.1 Recognising crucial gaps in research and investing perspective direction for further study avenues:

In response to the fourth research question regarding themes for further investigation, we endorse the TCCM framework to guide future directions that sustainable scholars to further enhance their understanding of this area (Paul and Rosado-Serrano, 2019; Yadav and Chakrabarti, 2022).

Theory

A comprehensive and structured literature review reveals that six key theoretical perspectives have been predominantly employed to examine the relationship between ESG practices and corporate performance. These include Stakeholder Theory, Shareholder Theory, Agency Theory, Signalling Theory, Legitimacy Theory, and the Trade-Off Theory. Each offers distinct conceptual frameworks for interpreting the strategic and financial implications of ESG integration.

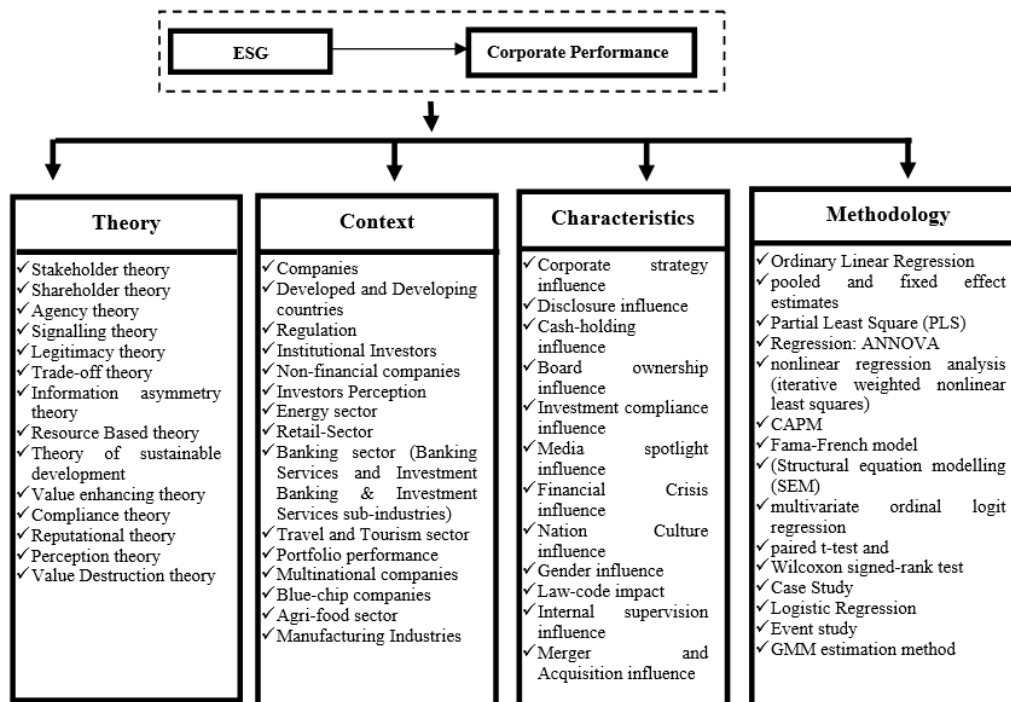


Figure 2.7: TCCM Framework
Source: Author's own compilation

Among them, Stakeholder Theory,(Freeman, 2010) supports a positive association between ESG engagement and long-term firm value by emphasizing corporate accountability to all stakeholders, not just shareholders. In contrast, Shareholder Theory (Friedman, 1970) views ESG activities as a potential diversion from the core objective of profit maximisation, unless such activities directly enhance shareholder wealth. Despite the widespread application of these theoretical models, existing research lacks a unified or conclusive framework that fully captures the complexity and multidimensionality of the ESG-performance nexus. This gap has prompted scholars to explore alternative or integrative frameworks, including the role of cultural context (Lemma et al., 2022) and ownership structure (Chen et al., 2022; Dakhli, 2021)in shaping ESG disclosure and performance outcomes.

Recent developments in financial modelling have further extended the theoretical base. ESG variables have been integrated into investment decision frameworks such as the Capital Asset Pricing Model (CAPM) and the Fama–French Three-Factor Model to assess their influence on stock returns and risk-adjusted performance (Reber et al., 2022; Zerbib, 2022). These integrations reinforce ESG’s relevance beyond internal management to external investor strategies and valuation dynamics.

Agency Theory (Jensen & Meckling, 1976a) and Signaling Theory (Lee et al., 2022) have also been used extensively to explain how ESG disclosures reduce information

asymmetry and agency costs, thus fostering investor confidence and improving financial performance (Adegbite et al., 2019; Buallay, 2022; Filbeck et al., 2022a; Tsai & Wu, 2022). However, theoretical understanding remains fragmented, particularly when explaining inconsistencies or anomalies in ESG's impact across different firm sizes, industry types, ownership patterns, and economic environments.

A more holistic understanding of the ESG-performance relationship requires incorporating strategic management perspectives, especially those addressing external drivers such as macroeconomic factors, industry sensitivities, customer orientation, regulatory expectations, and investor activism, alongside internal factors like board composition, corporate culture, and ESG maturity. Additionally, firm age, foreign ownership, and governance quality may act as moderators in the ESG-performance dynamic, yet remain insufficiently theorised. In conclusion, future research should focus on developing multi-theoretical or integrative frameworks that can accommodate the evolving strategic role of ESG. Such models would enable a more context-sensitive and granular analysis of how ESG practices contribute to both short-term performance metrics and long-term value creation, thereby enhancing the theoretical sophistication of sustainability research in corporate finance and governance.

Context

More broadly, the relevance and applicability of stakeholder theory and ESG research must be carefully interpreted within specific national, cultural, and regulatory contexts. While stakeholder theory (Freeman, 2010a) posits that corporate accountability to all stakeholders is essential for long-term success, the effectiveness of this principle is deeply influenced by regional norms, regulatory structures, and societal values.

For instance, Wasiuzzaman et al. (2022) demonstrate that national institutions and regulatory environments significantly moderate the relationship between ESG practices and corporate performance. Similarly, Lemma et al. (2022) show that in cultures characterised by high individualism, long-term orientation, masculinity, and uncertainty avoidance, the traditionally negative ESG-performance link weakens or may even reverse, particularly when cultural traits surpass specific thresholds. These findings suggest that cultural and institutional heterogeneity shapes ESG outcomes. Despite this, the vast majority of ESG-related studies have been conducted in developed economies (e.g., USA, EU, Australia), leaving a research gap in developing markets, especially in India, where regulatory frameworks (e.g., SEBI's BRSR), socio-economic priorities, and firm-level governance structures differ significantly. Exploring ESG implications in Indian corporations, particularly in

relation to shareholder wealth maximisation, can provide insights that are not generalizable from Western contexts.

Furthermore, the existing literature offers a limited comparative analysis across sectors and industries, particularly between environmentally sensitive and non-sensitive industries. Sectoral heterogeneity, such as the contrast between the cement and IT sectors or hospitality versus heavy manufacturing, is likely to yield differential ESG impacts on operational and financial performance. These distinctions are critical for developing sector-specific sustainability strategies. An additional underexplored dimension is the impact of market volatility and risk exposure on ESG. In developing countries with high capital flow sensitivity and unstable regulatory enforcement, ESG performance may interact differently with idiosyncratic risk, market fluctuations, or cost of capital. Future research should investigate how ESG practices mitigate such risks, providing resilience in uncertain economic environments. In summary, scholars are encouraged to pursue research that captures the contextual nuances of ESG across geographies, industries, and regulatory frameworks, especially in emerging economies. Doing so will help build a more comprehensive understanding of ESG's role in driving corporate performance under diverse institutional and cultural configurations.

Characteristics

A comprehensive literature examination reveals significant heterogeneity in how researchers conceptualise and operationalise ESG and corporate performance. Scholars have explored a diverse array of firm-level characteristics, such as corporate strategy (Arvidsson & Dumay, 2022), corporate reputation (Becchetti et al., 2022), gender diversity on boards (Qureshi et al., 2020), media visibility (Gao et al., 2022), and legal and ethical compliance (Filbeck et al., 2022). Collectively, these works highlight the multidimensionality of ESG-related constructs and their diverse impact on firm outcomes.

One critical construct emerging from this body of work is the role of internal governance mechanisms in shaping ESG reporting and performance outcomes. As Yuan et al. (2022) highlighted, internal supervisory structures can significantly enhance non-financial reporting quality and contribute to sustainable corporate practices. In response to the growing demand for ESG transparency, such mechanisms can help mitigate information asymmetry, a persistent concern that is exacerbated by firm agency conflicts. Future research should thus explore how internal governance reforms, such as ESG-focused audit committees or sustainability oversight boards, influence ESG disclosure quality and broader corporate performance outcomes.

A further gap identified in our review is the limited understanding of the antecedents of non-financial performance, particularly in the aftermath of mergers and acquisitions (M&A). Studies also emphasize that M&A activities, especially in the first year post-deal, can reshape a firm's ESG posture (Barros, Verga Matos, et al., 2022; Caiazza et al., 2021). However, empirical evidence on how such structural shifts affect sustainability outcomes and stakeholder value remains sparse. Future investigations should analyze whether M&A-induced governance, culture, or ownership changes amplify or dilute ESG impact.

Ownership dynamics, especially foreign or family ownership, constitute another underexplored dimension. While Lin & Nguyen (2022) underscore the role of board ownership in steering ESG performance, the motivational underpinnings behind ownership influence, such as altruism, long-termism, or social responsibility, are not sufficiently theorized. Future research should empirically investigate how reflective ownership values (e.g., social impact orientation, collaborative leadership styles, or family business traditions) moderate the relationship between ESG investment and long-term firm performance.

In addition, while transformative global events such as the Great Recession (Petitjean, 2019) and the COVID-19 pandemic (El Khoury et al., 2022) are widely acknowledged as ESG turning points, few studies have experimentally or longitudinally assessed how these crises reshape corporate sustainability strategies and resilience. A deeper investigation into how crises drive institutional learning and shift corporate ESG priorities could provide valuable insights for both theory and practice.

Moreover, the managerial perspective on ESG remains underdeveloped. While ESG is often framed as a tool for risk mitigation and enhanced governance, few studies examine how internal management strategies, leadership attitudes, and organisational culture directly impact ESG-related financial and non-financial outcomes. This includes factors such as employee engagement in sustainability, resource allocation toward ESG initiatives, and ESG communication strategies.

Finally, the darker side of ESG, including practices such as greenwashing, has received limited empirical attention. As firms increasingly signal their sustainability efforts, concerns regarding the credibility and verifiability of ESG claims are on the rise. Future research must explore the prevalence, drivers, and consequences of such practices to safeguard the integrity of ESG frameworks. In summary, future research should adopt a more nuanced and multidimensional view of ESG and its associated constructs, focusing on internal controls, strategic leadership, ownership motivation, post-M&A transitions, and crisis-induced learning, while remaining vigilant about ethical risks such as greenwashing.

Methodology

Our comprehensive literature review reveals that a substantial body of ESG–corporate performance research predominantly employs quantitative methods, particularly Ordinary Least Squares (OLS) regression, to estimate linear associations between ESG practices and firm-level outcomes (Atif & Ali, 2021; Benjamin et al., 2022; Daszyńska-Żygadło et al., 2020; Tampakoudis & Anagnostopoulou, 2020; Xie et al., 2019a). While such empirical techniques are foundational for modeling causality, they may oversimplify the multidimensional and context-dependent nature of ESG impacts, especially within diverse firm characteristics and economic conditions.

Future research should consider expanding methodological diversity to capture the complex dynamics of corporate performance more comprehensively. Specifically, we advocate for including advanced panel data econometric models such as pooled OLS, logistic regression, and GMM models to analyse aspects related to ESG. Additionally, emerging methods, such as network analysis, could be leveraged to map stakeholder interactions and information flow within sustainability ecosystems. These approaches can offer deeper insights, particularly when comparing performance across firm size, age, ownership structure, or sector-specific ESG exposure.

Another promising direction lies in qualitative and mixed-methods research, which remains underutilised in the ESG domain. Conducting in-depth interviews with investors, fund managers, and sustainability officers could help uncover the motivations behind ESG-aligned investment decisions, whether internal ethical values or external regulatory and reputational pressures drive them. Such qualitative data would enrich our understanding of the non-financial dimensions of performance and illuminate how stakeholders perceive and prioritise ESG strategies.

Moreover, we recommend that future studies integrate multi-source longitudinal data, capturing firm behaviour and ESG outcomes across multiple time points. This approach enhances the robustness and generalizability of empirical findings while accounting for temporal variability and external shocks, such as regulatory changes or global crises (e.g., the COVID-19 pandemic). Applying such temporal models would also facilitate the identification of lag effects between ESG actions and firm performance outcomes.

In conclusion, future research should adopt a pluralistic methodological outlook that blends quantitative rigor with qualitative depth, enabling a richer exploration of the ESG–corporate performance nexus. Such methodological expansion will advance theoretical development and generate actionable insights for corporate managers, policymakers, and investors navigating the evolving sustainability landscape.

2.5 Implications of the study

This study offers a substantive contribution to the ESG–corporate performance literature by adopting a hybrid analytical approach that synthesises performance analysis and scientific mapping techniques to uncover the field's intellectual structure and thematic evolution. By compiling and analysing a robust corpus of 495 articles, particularly those published between 2019 and 2022 in ABDC-ranked journals (A*, A, and B), we provide a foundational overview that contextualises the field's historical development, current state, and future trajectories. Through co-citation and co-occurrence analysis, we identify key scholarly contributions, influential authors, reputable journals, and leading affiliations that shape the research domain in this area. These bibliometric insights serve as a navigational tool for organisational scholars and practitioners seeking to understand the empirical mechanisms by which ESG influences financial and strategic outcomes.

Furthermore, this study contributes to theory development by mapping gaps across the TCCM dimensions. We identify the underutilization of integrative and dynamic theoretical models, the concentration of research in developed economies, the narrow focus on traditional financial metrics, and the lack of methodological diversity. By outlining these limitations, we propose a targeted research agenda to help scholars advance a more nuanced and context-sensitive understanding of ESG's strategic role within corporate governance frameworks. Ultimately, the study enhances the conceptual foundation for future work by articulating how ESG-related disclosures, stakeholder engagement, and non-financial performance dimensions intersect, enriching academic inquiry and managerial practice.

The findings of this study have significant implications for a wide range of stakeholders, including corporate managers, investors, policymakers, and regulatory bodies, who aim to align business performance with the Sustainable Development Goals. In today's business landscape, where sustainability imperatives are reshaping financial decision-making, integrating ESG principles into investment evaluation, risk management, and corporate governance is becoming a strategic necessity. The study reaffirms that firms with strong ESG performance are better positioned to enhance financial returns, reduce exposure to reputational and regulatory risks, and strengthen shareholder engagement.

Empirical evidence from prior literature supports this, with studies noting that ESG responsiveness varies by sector, geographic region, and regulatory stringency (Duque-Grisales & Aguilera-Caracuel, 2021). Moreover, elements such as employee representation on boards (Nekhili et al., 2021) and industry-specific ESG challenges (Qureshi et al., 2020) further highlight the need for context-driven ESG strategies. For managers, the study provides insights into how sustainability-oriented strategies, such as

green product innovation, ethical sourcing, and responsible corporate governance, can be integrated into performance frameworks. Sustainable investment principles may enhance a firm's reputation and create long-term value. Our findings offer regulators an evidence-based foundation for shaping ESG disclosure requirements and sustainability indices. Policymakers can leverage this research to promote regulatory reforms that encourage transparency, accountability, and ethical governance through ESG-focused mandates, such as India's BRSR framework. For investors, the bibliometric insights offer a data-driven basis for assessing ESG metrics and integrating them into portfolio optimisation and capital allocation strategies. Firms demonstrating robust ESG practices may be favoured for their resilience and long-term value generation, while those lacking credible ESG initiatives may face increased risk premiums or divestment. This study bridges academic research and practical application by underscoring how ESG integration can catalyse corporate transformation, regulatory innovation, and responsible investing, thereby supporting a more sustainable and ethically grounded economic system.

2.6 Conclusion and Limitations of the Study

This chapter was developed with two primary objectives: first, to comprehensively map the existing scholarly literature on the nexus between ESG and corporate performance; second, to extend the field through a hybrid analytical approach that combines bibliometric techniques with the TCCM framework. Through this multidimensional review, the study has charted the thematic evolution, theoretical foundations, contextual disparities, and methodological gaps that currently characterise the ESG–corporate performance discourse.

The application of the TCCM framework proved instrumental in highlighting underexplored dimensions across theory, context, constructs, and methodology, particularly within the context of emerging economies like India, as well as sector-specific ESG sensitivities. These insights serve as a conceptual roadmap for future research and offer strategic value to corporate decision-makers, investors, and regulators seeking to align performance metrics with sustainability imperatives. Despite its contributions, this chapter acknowledges key limitations, including the language and disciplinary scope of the reviewed literature, as well as the exclusion of practitioner-based and non-peer-reviewed insights. However, by synthesising findings across high-quality academic sources and presenting targeted recommendations, this chapter establishes a strong intellectual foundation for advancing ESG research and practice.

Based on the TCCM framework, this thesis systematically addresses the key gaps identified in the ESG–corporate performance and ESG–dividend policy literature, as summarised in Table 2.5. By integrating multiple theories, including agency, stakeholder, signalling, trade-off, and institutional perspectives, the thesis strengthens the theoretical foundation for ESG–performance linkages. It expands contextual relevance by incorporating data from emerging markets, such as India, and conducting sector-specific analyses, including those in environmentally sensitive and

hospitality sectors. Regarding construct development, the thesis goes beyond traditional profitability metrics to include dividend payout and stability. Methodologically, it employs advanced techniques, including MMQR (Chapter 3), System GMM (Chapter 4), and meta-analysis (Chapter 6), to provide robust and comprehensive empirical insights, thereby bridging key theoretical, contextual, and methodological gaps in the existing literature.

Building on this foundation, the next chapter transitions from conceptual exploration to empirical validation. Specifically, the forthcoming analysis, *"ESG Disclosure and Corporate Performance: An Empirical Study of NIFTY Listed Companies Using Method of Moments Quantile Regression,"* investigates how ESG practices influence firm-level outcomes within Indian markets. The chapter uses advanced panel data econometrics to capture heterogeneous effects across the performance distribution, thereby offering granular, policy-relevant insights into the ESG-performance dynamic among Indian firms.

Table 2.5: Summary of Theoretical, Contextual, Construct, and Methodological (TCCM) Contributions in Thesis Findings

Component	Current Focus in Literature	Gaps Identified	Contributions and Recommendations (Aligned with Thesis Objectives)
Theory	Dominant reliance on Stakeholder, Agency, Signaling, and Legitimacy Theories to explain ESG-performance linkages. CSR is often used as a proxy for ESG.	Limited integration of multiple theories. Weak linkage between ESG and specific financial policies, such as dividend strategy. Moderating effects, such as national context, are often overlooked.	Developed an integrated theoretical framework combining Agency, Signaling, Stakeholder, Trade-off, and Institutional Theories. Applied the Institutional Difference Hypothesis (IDH) to explore national-level heterogeneity. Integrated theory-building with performance and payout strategy linkages across empirical chapters.
Context	Focus on developed markets (the USA, UK, EU, and Australia); large-cap ESG leaders dominate the samples.	Sparse evidence from emerging markets, especially India. Sector-specific ESG performance differences are largely unexamined. Minimal research on environmentally sensitive vs. non-sensitive sectors.	Comparative ESG performance study across Indian industries (Chapters 3 and 4). Contextualized firm strategies under national economic development and legal origin (Chapter 5). The global hospitality sector was investigated for ESG dividend linkage (Chapter 7).
Characteristics (Constructs)	ESG is typically measured as an aggregate score or via separate E, S, and G components. Firm performance is measured by ROA, ROE, and Tobin's Q.	Dividend policy is largely ignored in ESG-performance literature. A limited view of corporate performance often lacks multidimensional aspects (financial, market, and payout). Firm-specific variables (ownership, risk, governance) are often underexplored.	Expanded performance construct to include dividend payout and stability (Chapters 6 and 7). Controlled for multiple firm-specific and macroeconomic variables to reflect ESG's financial implications more holistically.
Methodology	Predominantly uses OLS, Fixed/Random Effects, and Panel regression—limited use of SEM or simple meta-analysis.	Few studies use advanced causal inference methods (e.g., System GMM, MMQR). - Lack of robustness checks, interaction terms, or heterogeneous effect estimation. - Minimal content analysis or event studies.	MMQR (Method of Moments Quantile Regression) was employed in Chapter 3 to capture distributional effects of ESG across performance quantiles. Applied System GMM in Chapter 4 for comparative studies between causal inference on the ESG-performance link in the Indian cement sector. Conducted a meta-analysis in Chapter 6 on the ESG-dividend policy nexus across 55 global studies. Used logistic and linear regression for hospitality industry-level dividend modeling (Chapter 7).

CHAPTER 3

ESG DISCLOSURE AND CORPORATE PERFORMANCE – AN EMPIRICAL STUDY ON NIFTY LISTED COMPANIES

3.1 Introduction

Amid dynamic global transformations, corporations are increasingly adopting formal ESG reporting frameworks to align with the evolving expectations of diverse stakeholders, including employees, customers, suppliers, government bodies, and investors. This strategic shift reflects a growing commitment to integrating sustainability goals into corporate decision-making and highlights the development of organisational frameworks centered on ESG principles. (Kao, 2023; Khanchel et al., 2023; Rahmaniati & Ekawati, 2024). ESG factors are no longer peripheral; they are intrinsically linked to core business operations, elevating environmental and social accountability to central themes in corporate governance and performance evaluation. This evolution marks a fundamental redefinition of corporate responsibility, where ESG disclosure emerges as a critical tool for performance assessment, strategic positioning, and stakeholder engagement. As research and practice continue to advance, ESG disclosures are expected to reveal more profound strategic implications for firms, reflecting a permanent shift in how business success is understood and measured (Doh & Guay, 2006; Friede et al., 2015c; Rahmaniati & Ekawati, 2024).

The academic emphasis on sustainability outcomes has primarily emerged from advanced economies such as the United States, the United Kingdom, Europe, and China (Ahmad et al., 2021, 2023; Alkaraan et al., 2023; Bax et al., 2023; Buallay, 2019; Deng & Cheng, 2019; Doh & Guay, 2006; Dong et al., 2023; Gonçalves et al., 2023; He et al., 2023; Kao, 2023; Ortas et al., 2015; Tanjung, 2023; Van Hoang et al., 2023; Verga Matos et al., 2020; Weber, 2014; Yiheng et al., 2024; Zhao et al., 2018). Nonetheless, scholarly investigations have also extended to global sustainability efforts, considering regional clusters and diverse socio-economic landscapes (Kilic et al., 2022; Lei et al., 2023; Strekalina et al., 2023; J. Wan et al., 2024). In this context, emerging economies such as India have witnessed a transformative shift in the financial and corporate landscape, underscoring a deepening relationship between ESG practices and corporate performance outcomes. This evolving nexus manifests across financial indicators, market valuation, capital structure, and investor perception (B. et al., 2022; Chelawat & Trivedi, 2016; Malik & Kashiramka, 2024; P. Sharma et al., 2020; Singh, 2023).

India's corporate evolution is marked by a decisive turn towards sustainable practices, with firms increasingly adopting Corporate Social Responsibility (CSR) frameworks and issuing detailed Business Responsibility and Sustainability Reports (BRSR) in line with the regulatory mandates outlined in the Companies Act, 2013, and SEBI's evolving guidelines. These regulatory frameworks have triggered heightened compliance and stakeholder engagement, fostering a strong momentum toward transparency and ESG integration. The growing scrutiny from investors and regulatory bodies has, in turn, catalysed a surge in ESG-focused academic literature, particularly examining the interplay between ESG disclosures and firm performance in the Indian context (Narula et al., 2024; Nenavani et al., 2024; D. Sharma et al., 2019; Suprabha et al., 2024; Veeravel et al., 2024; Yadav & Jain, 2023). Despite growing research, empirical findings on the ESG–corporate performance relationship remain inconclusive. While many studies highlight a positive impact of ESG initiatives on financial outcomes (Kalia & Aggarwal, 2023; Rao et al., 2023; Ray & Goel, 2023), others report adverse effects (S. Gupta & Aggarwal, 2024a; A. Singh et al., 2023) or no relationship (Williams, 2022). Some even propose a non-linear (U-shaped) relationship, suggesting that the link varies by intensity and context (Anwer et al., 2023; Jung & Yoo, 2023; Maqbool & Bakr, 2019; Teng et al., 2022; Tran et al., 2023).

This study addresses the persistent ambiguity in the ESG–corporate performance relationship, which complicates strategic decision-making for managers navigating sustainability agendas. Inconsistencies in sample selection, methodological inefficiencies, and difficulties in accurately measuring ESG variables have all contributed to inconclusive findings (Hyun et al., 2023). For instance, Rao et al. (2023) reported a negative association between ESG scores and return on equity using data from the top 50 Nifty-listed firms, while Veeravel et al. (2024), applying a similar econometric model to a different dataset, found a positive link between ESG disclosure and market outcomes such as Tobin's Q. To resolve these contradictions, the present study combines empirical investigation and theoretical framing to examine how ESG practices relate to key corporate performance indicators in India. By employing a broader firm-level sample and an integrated conceptual model (see Figure 1), this research aims to generate more generalizable and context-sensitive insights.

The analysis focuses on three core indicators of corporate performance: return on assets (ROA) to evaluate operational efficiency, return on capital employed (ROCE) to capture financial performance, and Tobin's Q as a proxy for market valuation (Narula et al., 2024). In contrast to prior studies limited by narrow sampling strategies or focusing on firms with high market capitalization, this study adopts an

inclusive approach by analyzing a diverse range of companies listed on the National Stock Exchange (NSE). By overcoming these methodological constraints, the research offers more generalizable insights and caters to a broader audience including policymakers, investors, civil society and corporate leaders—seeking to understand how ESG dimensions influence corporate outcomes in the dynamic Indian context.

To capture the nuanced relationship between ESG dimensions and corporate performance, the study employs the Method of Moments Quantile Regression (MMQR) with fixed effects (Machado & Silva, 2019). This advanced econometric approach enables the estimation of heterogeneous effects of ESG and its dimensions across different quantiles of firm performance. By going beyond average effects, MMQR provides a richer and more precise understanding of how ESG factors influence varying operational, financial, and market performance levels, as measured by ROA, ROCE, and Tobin's Q. This methodological advancement addresses potential limitations of traditional regression models. It facilitates more robust and granular policy and managerial implications. The findings drawn from our analysis are supported by well-established theoretical frameworks, including stakeholder and legitimacy theories (Freeman, 1984; Suchman, 1995).

The study emphasizes that investors and other economic stakeholders prefer companies with higher ESG overall and in specific areas, including Environmental, Social, and Governance. This preference positively impacts the company's performance (Kumar & Firoz, 2022). According to legitimacy theory, our research indicates that companies that adhere to environmental, social, and regulatory standards while actively fostering a favorable public perception can consistently enhance their performance (Jha & Rangarajan, 2020a; Suchman, 1995). To ensure long-term sustainability, companies must obtain social validation to ensure their long-term sustainability (Deephhouse, 1996). This study provides valuable data that empowers individuals to make well-informed choices and participate in strategic decision-making. Our analysis indicates that increased levels of ESG disclosures are linked to improved operating (ROA), financial (ROCE), and market performance (Tobin's Q) across all sustainability factors, and these impacts are more significant in higher quantiles. Figure 2 provides a visual representation that strong sustainability practices substantially boost different performance indicators within a company.

This study underscores the critical role of ESG in informing policymaking by offering robust empirical evidence and nuanced analysis. The insights generated can assist regulatory bodies in crafting policies that promote sustainable business practices across the entire corporate spectrum, rather than concentrating solely on top-tier or high-capitalization firms. By adopting an inclusive sample of NSE-listed companies,

the study widens its relevance to attract a broader base of market participants, particularly investors seeking to align their portfolios with sustainability objectives, irrespective of firm size. In parallel, corporate executives can leverage the findings as a strategic benchmark to understand the nuanced link between ESG practices and corporate performance, aiding in formulating sustainability-oriented strategies. Ultimately, the study's comprehensive scope and rigorous methodology contribute meaningfully to the discourse on sustainable business conduct in India, encouraging evidence-based policymaking, informed investment, and corporate accountability in ESG integration.

3.2 Theoretical Background and Hypotheses Formulation

The growing integration of ESG criteria into corporate decision-making has stimulated considerable academic inquiry into its relationship with corporate performance. Although several meta-analyses and empirical reviews affirm the positive effects of ESG on firm outcomes (Brooks & Oikonomou, 2018; Friede et al., 2015c; Hang et al., 2019), the precise nature of this relationship remains complex and context-dependent. Particularly in emerging economies such as India, the evidence is nuanced and evolving, given institutional voids, regulatory transitions, and varied stakeholder pressures (Veeravel, Murugesan, et al., 2024; Veeravel, Sadharma, et al., 2024)

This study integrates key theoretical frameworks, the Stakeholder Theory (Freeman, 1984), Resource-Based View (RBV) (Barney, 1991), Legitimacy Theory (Suchman, 1995), Agency Theory (Jensen & Meckling, 1976a), and Signaling Theory (Spence, 1973), to clarify the potential pathways through which ESG practices affect operational, financial, and market performance. We focus on the disaggregated dimensions of ESG to better capture the differential effects of environmental, social, and governance performance.

3.2.1 ESG Disclosure and Overall Performance

Stakeholder theory (Freeman, 1984) posits that firms operate within a network of stakeholders, employees, investors, customers, regulators, and communities, whose needs must be addressed to sustain long-term success. High ESG performance enhances stakeholder relationships by signaling corporate responsibility and ethical behavior (Turban & Greening, 1997), which in turn enhances firm reputation (Zimon et al., 2022), reduces transaction costs, and fosters consumer loyalty (Orlitzky et al., 2003a). These relational gains translate into improved operational efficiency (ROA), financial outcomes (ROCE), and market valuation (Tobin's Q).

Complementing this view, the Resource-Based View suggests that ESG capabilities, such as green innovation, community engagement, or governance frameworks, can serve as strategic, VRIN (valuable, rare, inimitable, non-substitutable) resources (Barney, 1991). These capabilities enhance competitive advantage, reduce costs, and open new markets (Hart & Dowell, 2011).

Legitimacy theory further explains how ESG transparency enables firms to evolve societal expectations and regulatory norms, especially in emerging markets (Deegan, 2002). By publicly disclosing ESG metrics, firms bolster their legitimacy, minimize reputational risk, and maintain their “license to operate” (Suchman, 1995), which has direct financial implications.

Finally, signaling theory argues that ESG disclosure reduces information asymmetry. Voluntary ESG reporting conveys signals about managerial competence, long-term orientation, and risk management (Spence, 1973), positively influencing investor confidence and firm valuation (Tobin’s Q).

Together, these perspectives support the following overarching hypothesis:

H1: There is a substantial connection between a company’s ESG score disclosure and its operational, financial, and market performance throughout all quantiles.

3.2.2 Environmental Disclosure and Performance

Environmental practices, such as emissions reduction, waste management, and energy efficiency, have been linked to varied financial outcomes in the literature (Guenther & Hoppe, 2014; Pinheiro et al., 2022). From the resource-based view, firms that integrate environmental sustainability into their core strategy develop unique capabilities that can result in superior efficiency, innovation, and regulatory compliance (Hart, 1995; Hart & Dowell, 2011). These capabilities reduce costs and help firms secure a competitive advantage (Blanco et al., 2009).

Simultaneously, stakeholder and legitimacy theories posit that environmentally proactive firms are better positioned to gain public approval, enhance investor trust, and attract green capital (Clarkson et al., 2008; Manrique & Martí-Ballester, 2017). These reputational benefits often translate into favorable operational and market outcomes (W. Li et al., 2025).

However, neoclassical and agency theories caution that implementing environmental initiatives often entails substantial upfront costs, which could negatively affect short-term profitability (Ayayi & Wijesiri, 2022). Yet, as Horváthová (2012) shows, these investments may yield positive long-term returns.

Accordingly, we propose:

H1a: There is a substantial connection between a company's Environmental Score (ES) disclosure and operational, financial, and market performance throughout all quantiles.

3.2.3 Social Disclosure and Performance

The social dimension of ESG encompasses labor practices, community involvement, customer relations, and diversity. Stakeholder theory argues that firms engaging meaningfully with social stakeholders enjoy enhanced employee morale, lower turnover, and greater customer loyalty (Freeman, 1984). These relational advantages can strengthen a firm's internal capabilities and long-term performance.

Legitimacy theory similarly suggests that socially responsible behavior aligns with societal norms, thereby bolstering firm legitimacy and mitigating reputational risk. Empirical studies have linked social engagement to improved financial performance, especially when social investments are well-communicated (Margolis & Walsh, 2003).

Nevertheless, critics grounded in agency theory warn that excessive social investments may be motivated by managerial self-interest, diverting resources from shareholder value creation (Barnea & Rubin, 2010b; Masulis & Reza, 2013). Some evidence also points to an inverted U-shaped relationship, where moderate levels of social investment yield the highest returns (Flammer, 2015; Y. Kim & Statman, 2012).

Thus, we posit:

H1b: There is a substantial connection between a company's Social Score (SS) disclosure and operational, financial, and market performance throughout all quantiles.

3.2.4 Governance Disclosure and Performance

Governance mechanisms, such as board independence, audit quality, and shareholder rights, are essential for aligning managerial behavior with shareholder interests (Jensen & Meckling, 1976a). Agency theory forms the core rationale here: sound governance reduces agency costs, enhances transparency, and ensures efficient capital allocation (T. J. Brown, 2006).

Resource dependence theory further underscores the role of governance in securing critical external resources (Pfeffer & Salancik, 1978). Governance structures that

ensure board diversity, ethical oversight, and regulatory compliance can help firms avoid litigation and enhance stakeholder trust.

However, some studies identify a negative or null relationship, suggesting that poorly implemented governance reforms can lead to inefficiencies or mere compliance without impact (Agrawal & Knoeber, 1996). Despite this variability, the bulk of theoretical and empirical literature suggests that high governance quality enhances both performance and valuation.

H1c: There is a substantial connection between a company's Governance Score (GS) disclosure and operational, financial, and market performance throughout all quantiles.

By integrating these theoretical lenses, this framework (as shown in Figure1) underscores the multifaceted pathways through which ESG disclosures can influence firm performance. Furthermore, by adopting a quantile regression approach, this study captures the differential impact of ESG across varying levels of firm performance, offering a more nuanced and empirically rich perspective on the strategic value of ESG in emerging market settings.

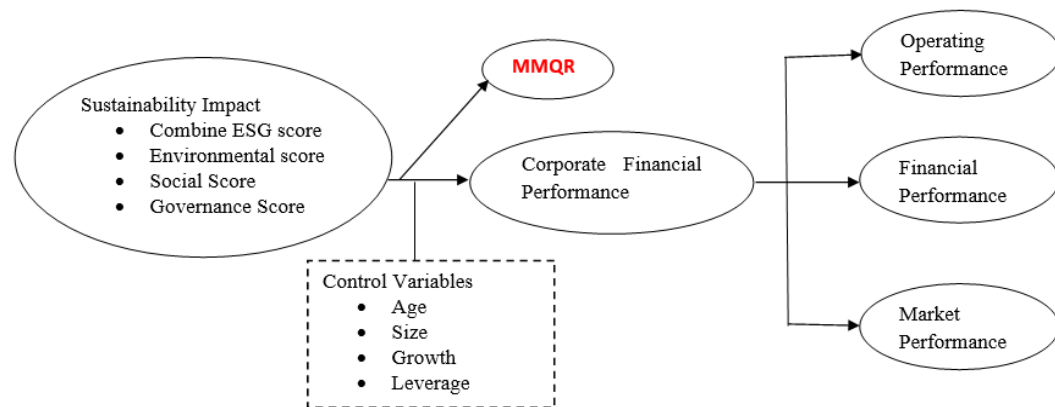


Figure 3.1: Conceptual Model
Source: Authors' own compilation

3.3. Data and Modelling

To assess the effect of ESG, we employ a dataset comprising 605 distinct corporations listed on the NSE. Since the selection predates NSE's diversification across industries, adherence to stringent regulatory standards, and market-driven imperatives. The analysis spans nine years, specifically from 2015 to 2023; this period is optimal because India introduced CSR legal obligations in 2015, prompting

corporations to disclose their performance beforehand, as specified in the Indian Companies Act of 2013. The ESG data is acquired from the Refinitiv EIKON ESG data (Chen et al., 2023; Rao et al., 2023), while the financial data of companies is obtained from CMIE Prowess.

3.3.1 Variables

The research has been facilitated by the utilisation of pertinent empirical variables, which are elaborated upon in the subsequent description:

Dependent Variables

The study defines corporate performance as the outcome variable. The evaluation is conducted using three prominent indicators: (i) ROA (Return on Assets), (ii) ROCE (Return on Capital Employed), and (iii) Tobin's Q as defined by Narula et al. (2024); Veeravel et al. (2024). Prior research has commonly utilised these metrics as outcome variables to examine the performance of corporations, employing appropriate panel data regression (Buallay, 2019; Alareeni & Hamdan, 2020; Pätäri et al., 2012; Choi & Wang, 2009). We utilise ROA as a measure to evaluate operational performance (Velte, 2020; Wang & Sarkis, 2017). Additionally, ROCE is employed as an indicator of financial performance, consistent with the studies conducted by Maqbool and Bakr (2019) and Veeravel et al. (2024). Tobin's Q is employed as a measure of market performance, as indicated by Choi & Wang (2009); Velte (2020). For more clarification, refer to Table 3.1.

Independent Variables

The primary independent variable we use is the ESG disclosure extracted from the Thomson Reuters Eikon database (Refinitiv ESG score), which comprises three distinct sub-elements: the environmental score (ES), the social score (SS), and the governance score (GS). These sub-scores determine the central aspect of ESG that impacts corporate performance (Buallay et al., 2017). Widely used in the studies (Eccles et al., 2014; Ioannou & Serafeim, 2012; Kalia & Aggarwal, 2023; Shi & Veenstra, 2021), this database is considered a surrogate for sustainability reporting and offers stakeholders a standardised metric to assess ESG performance (DasGupta & Roy, 2023; Mishra et al., 2024a).

The Refinitiv ESG score is a thorough and unbiased assessment, making it suitable for evaluating corporate ESG performance. The scoring system of the database allows for the evaluation of a company's reporting comprehensiveness, with scores ranging from 100, indicating complete disclosures and reflecting the extent of reporting¹.

¹ To normalize the ESG score, we conducted division by 100.

Control Variables

We consider the given control variables to mitigate bias stemming from unobservable disparities among companies and enhance the accuracy of our estimation models. To improve our estimation models, we consider the following control variables: The natural logarithm of total assets is used as a substitute to quantify the magnitude of a company (Gupta & Aggarwal, 2024). Assessing corporate performance is significantly influenced by the size of the firm. Past studies suggest that larger firms provide more comprehensive information than smaller firms (Aggarwal et al., 2007; Chelawat & Trivedi, 2016; Zhang et al., 2020). The debt-equity ratio represents the financial leverage level of companies (Bhandari, 1988; Doshi et al., 2024; Gupta & Aggarwal, 2024; Solomon, 1963). Firm growth is measured by determining the proportion of the difference in sales from the initial sales. (Buallay, 2019b; Mishra et al., 2024a). The absence of age bias in the sample selection bolsters the reliability of findings when age is considered by applying the logarithm of the fiscal year and subtracting the incorporation year (Doshi et al., 2024; Fu & Li, 2023), as illustrated in Table 3.1.

3.3.2 Methodology

This study employs the fixed-effect method of moments quantile regression (MMQR), as proffered by Machado and Silva (2019), to empirically examine the hypotheses outlined earlier.

Table 3.1: Variables of the study

Variables	Abbreviations	Description
<i>Dependent variable</i>		
Return on Assets: Operating performance	ROA	EBIT/Total Assets
Return on Capital Employed: Financial performance	ROCE	EBIT/Capital Employed
Tobin's Q: Financial Performance	TQ	(Market Capitalisation + DEBT)/ Total Assets
<i>Independent Variable</i>		
Combine Environmental, Social, and Governance	ESG	Overall Environmental, Social, and Governance Disclosure Score
Environmental score	E	Individual Environmental Disclosure Score
Social Score	S	Individual Social Disclosure Score
Governance Score	G	Individual Governance Disclosure Score
<i>Control variable</i>		
Size		log of total assets
Growth		(Current year sales- Previous year sales) /Previous year sales
Leverage		Debt/Equity
Age		log of the fiscal year minus the incorporation year

In Table 3.2, the descriptive analysis reveals non-normality in the data distribution, as indicated by the Jarque-Bera test, suggesting potential estimation errors in OLS regression (Cheng et al., 2021). Thus, the regression estimation may not be successful due to the inability to fulfil the low variance condition. Hence, the panel regression model has the potential to fail in uncovering crucial relationships. Therefore, it is advisable to use estimators that consider the distribution characteristic when estimating models for series that are not normally distributed. Additionally, mean-based regression analysis assumes that the impact of any factor on corporate performance is consistent throughout the entire distribution. The correlation between corporate performance and ESG is expected to vary at different points along the distribution curve. Nevertheless, more than mean-based regression approaches are needed to analyse this situation. Koenker & Bassett (1978) introduced Quantile Regression to explore how independent variables impact dependent variables in different contexts. We employ the fixed effects moment-quantile regression (MMQR) method, a recently developed statistical approach suggested by Machado and Silva (2019). This method incorporates individual effects affecting the entire distribution, rather than an approach that solely focuses on individual effects on the means. Furthermore, MMQR can generate persuasive forecasts even when the model contains endogenous explanatory variables and is non-linear (Esen et al., 2024). The MMQR enables the examination of diverse spatial impacts among quantities. This regression method offers robust estimation even when nonnormality exists in the data. In contrast, it exhibits significant strength compared to approaches that treat nonlinearity as a hypothetical concept, particularly exponential methods and the threshold effect. MMQR provides a deeper understanding of how independent variables affect the complete conditional distribution of the predicted variable. It calculates the impact of individual differences on the full range of values. The MMQR method is valuable in finance applications due to its adaptability and effectiveness. It enables the calculation of conditional quantiles, which helps in understanding the impact of ESG pillars on various corporate performance metrics. The formulation of the location-scale variant model for conditional quantile is encapsulated in the following equations.

$$Y_{it}(\tau|X_{it}) = \alpha_{it} + \beta_{1it}ESG + \beta_{2it}leverage + \beta_{3it}age + \beta_{4it}size + \beta_{5it}growth + \varepsilon_{it} \quad (i)$$

$$Y_{it}(\tau|X_{it}) = \alpha_{it} + \beta_{1it}Env + \beta_{2it}leverage + \beta_{3it}age + \beta_{4it}size + \beta_{5it}growth + \varepsilon_{it} \quad (ii)$$

$$Y_{it}(\tau|X_{it}) = \alpha_{it} + \beta_{1it}Soc + \beta_{2it}leverage + \beta_{3it}age + \beta_{4it}size + \beta_{5it}growth + \varepsilon_{it} \quad (iii)$$

$$Y_{it}(\tau|X_{it}) = \alpha_{it} + \beta_{1it}Gov + \beta_{2it}leverage + \beta_{3it}age + \beta_{4it}size + \beta_{5it}growth + \varepsilon_{it} \quad (iv)$$

In this study, Y (predicted variables), i.e., ROA/ROCE/Tobin's Q, in which ROA_{it} , $ROCE_{it}$, $Tobin's Q_{it}$ is the τ^{th} conditional quantile function. X_{it} is the independent variable.

$$QY_{it}(\tau|X_{it}) = \alpha_i + \theta_i q(\tau) + X'_{it}\beta + Z'_{it}\gamma q(\tau) \quad (v)$$

In this context, $QY_{it}(\tau|X_{it})$ represents the quantile distribution of the predicted variable. $\alpha_i(\tau) = \alpha_i + \theta_i q(\tau)$ denotes the scalar parameter, which signifies the quantile τ fixed effect for the individual, with $q(\tau)$ being the τ th sample quantile. The predicted variable is contingent upon the location of the explanatory variables. Addressing the optimization problem outlined in the above equation, the τ -the sample quantile represented by $q(\tau)$ can be calculated according to the equation below.

$$\min_q \sum_i \sum_t \rho_\tau(R_{it} - (\delta_i + Z'_{it}q)), \quad (vi)$$

here $\rho_\tau(A)$ showing the standard loss function of quantile τ , which equals $(\tau \text{ AI } \{A > 0\} + (\tau - 1) \text{ AI } \{A \leq 0\})$.

3.3. Descriptive Statistics

Table 3.2 presents a detailed descriptive analysis of the variables examined in the study. The sample demonstrates a mean (with standard deviation) ROA of 0.111 (0.093), indicating that the included corporations have a positive average return. Additionally, the average ROCE is 0.183 (0.161), and the TQ is 2.789 (2.964). After being adjusted for scale, the average ESG scores stand at 0.460, ranging from a minimum of 0.120 to a maximum of 0.822. These figures indicate that the sustainability outcomes of the sample companies are heterogeneous.

Table 3.3 presents the Pearson correlation matrix for the variables examined in the study, aiming to address the issue of multicollinearity. We observe a negative correlation between a company's value (measured by ROA, ROCE, and TQ) and ESG, ES, and SS. However, there is a favourable correlation with GS. Nevertheless, it is crucial to recognise that these correlation findings may be influenced by the exclusion of specific variables and biases in the sample selection, which is accounted for in our analysis. In addition, to confirm the absence of multicollinearity, the Variance Inflation Factor (VIF) was assessed for all models (Table 3.4). The VIF confirms the absence of multicollinearity among variables, as the values were found to be below 2, which is consistent with previous research (Kline, 2011).

Table 3.2: Descriptive Statistics

	1	2	3	4	5	6	7	8	9	10
VARIABLES	Mean	Std	Min	Max	P25	P50	P75	Skewness	Kurtosis	JB Test
ROA	0.111	0.093	-0.161	0.433	0.055	0.097	0.156	0.706	4.918	1255***
ROCE	0.183	0.161	-0.230	0.842	0.086	0.158	0.248	1.256	6.428	3997***
TQ	2.789	2.964	0.133	16.836	0.860	1.786	3.551	2.331	9.442	9022***
Size	4.661	0.784	2.931	6.863	4.125	4.558	5.101	0.579	3.287	314.9***
Growth	0.162	0.435	2.968	-0.660	-0.005	0.097	0.226	3.712	23.065	9.1***

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	1	2	3	4	5	6	7	8	9	10
Age	1.494	0.330	0.000	2.204	1.342	1.505	1.724	-1.220	6.504	4110***
Leverage	0.714	1.342	0.000	8.630	0.030	0.260	0.770	3.783	19.457	7.1***
ESG	0.460	0.161	0.120	0.822	0.344	0.453	0.575	0.128	2.405	36.39***
ES	0.391	0.227	0.000	0.911	0.214	0.369	0.550	0.330	2.300	81.02***
SS	0.500	0.204	0.089	0.928	0.340	0.494	0.655	0.070	2.195	58.45***
GS	0.502	0.225	0.069	0.933	0.322	0.505	0.687	-0.041	1.996	88.81***

***, **, and * indicate statistical significance at the 0.1%, 1%, and 5% levels, respectively.

Table 3.3: Pearson Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11
1. ROA	1.000										
2. ROCE	0.8739*	1.000									
3. TQ	0.4469*	0.4254*	1.000								
4. ESG	-0.082	-0.071	0.008	1.000							
5. ES	-0.1742*	-0.104	-0.096	0.8194*	1.000						
6. SS	-0.1181*	-0.1212*	-0.005	0.8985*	0.7622*	1.000					
7. GS	0.060	0.051	0.043	0.6165*	0.3171*	0.3698*	1.000				
8. Size	0.030	-0.006	-0.1722*	0.3325*	0.4619*	0.4244*	0.048	1.000			
9. Growth	-0.002	0.010	0.2100*	-0.2320*	-0.1663*	-0.2662*	-0.101	-0.1800*	1.000		
10. Age	0.0774*	0.014	-0.1910*	0.2237*	0.2477*	0.2414*	0.1181*	0.3923*	-0.2759*	1.000	
11. DE	-0.2507*	-0.2590*	-0.1948*	0.037	0.050	0.000	0.051	0.058	-0.046	-0.0920*	1.000

* Indicate statistical significance at the 5% level.

3.4 Empirical Findings

3.4.1 Return on Assets: Operating Performance

The outcomes of an MMQR regression analysis are displayed in Table 3.5. The dependent variable in the (1), (2), (3), and (4) models is an estimation of the ROA, while the independent variables are ESG, ES, SS, and GS. The table presents the predicted parameters for independent variables and several other variables: Leverage (DE), Age, Size, and Growth.

(i) ESG and ROA

At the 10th quantile level, an elevated ESG is uncovered to have a favourable and statistically significant impact on ROA (with p-value<0.05). Moreover, DE and Size display adverse and statistically significant coefficients, suggesting that increased values of these variables correspond to decreased ROA. In contrast, Age shows positive and varying significance levels, suggesting that these variables may explain variations in ROA at only a few quantile levels. Transitioning to the 20th quantile level, the effect of ESG on ROA remains statistically significant (with p-value<0.01). The adverse and considerable impact of DE and Size on ROA persists implying that

these may account for variations in ROA across all quantile levels, as consistent patterns are observed across subsequent quantile levels. Nevertheless, ESG and Growth exhibit a favourable and statistically significant relationship with ROA across quantiles, implying that they may significantly influence the ROA of corporations at different levels. However, it is essential to acknowledge that age is positive at certain quantile levels, indicating a potentially positive relationship with ROA, albeit it lacks statistical significance. The analyses reveal a positive association between ESG and ROA across all quantile levels.

According to the graph depicted in Figure 3.2 (ROA_ESG), it is apparent that the ESG factors hold greater prominence in the upper quantiles. Beginning at 0.0312 in the 10th percentile, it steadily rises to 0.128 in the 90th percentile. The increasing significance of ESG performance in higher quantiles, as indicated in Model 1 and the figure, can be attributed to top-performing companies' more efficient integration of ESG considerations into their operations. These companies are likely to have developed robust and efficient strategies and practices regarding ESG disclosure. Moreover, these strategies and practices must align with regulatory requirements, meet stakeholders' expectations, and make a positive contribution to value creation. Companies that enhance their ESG performance typically experience improved operational efficiency, enhanced risk management, and long-term sustainability, thereby bolstering their operating performance and value creation. This trend illustrates a positive feedback loop in which excellent overall ESG performance becomes a distinguishing characteristic of high-performing companies. Consequently, these companies are incentivised to further invest in and prioritise ESG initiatives.

(ii) Environmental Score and ROA

Model 2 displays the outcomes of an analysis, where the variable being examined is the ROA, and one of the independent variables is a specific ES. Results show that a higher ES has a positive effect on ROA at the 10th, 20th, and 30th quantile levels; however, this effect is not statistically significant. The coefficients for the variables DE and Size exhibit a negative and statistically significant relationship, demonstrating that higher values of these variables are linked to lower ROA. The Age coefficient lacks statistical significance, while the Growth coefficient exhibits a positive and statistically significant relationship across all quantiles. When transitioning to the 40th percentile, the association between ES and ROA remains positive and highly significant at $p > 0.05$. The variables of Size and DE continue to harm the operating performance of Indian companies. Age has a positive but statistically insignificant impact starting from the 60th quantile. Consistent patterns persist at the subsequent quantile levels. ES consistently exhibits favourable and statistically significant effects on ROA, indicating its significance in elucidating differences in ROA among various

quantiles. The positive relationship between ES and ROA suggests that companies with higher ES scores are more likely to have higher ROA, although the significance levels differ. Figure 3.2, ROA_Env demonstrates a consistent upward trend across quantiles, indicating that ES factors improve in the initial and advanced stages of corporations' operating performance in the Indian economy. The impact of environmental contribution is positive and statistically significant solely in the upper quantiles (40th, 50th, 60th, 70th, 80th, and 90th). ES has a significant impact on operating performance, particularly in the top quantiles of ROA. Corporations' operating performance level is positively influenced by their environmental contribution, indicating that ecological disclosures favor corporations with higher ROA and discriminate against those with poorer operating performance. These findings enhance our understanding of how environmental factors and other variables affect a company's profitability across various quantile levels. Prior research has also posited that a company's environmental performance contributes to its positive reputation, leading the community to perceive it as valuable and commendable (Murphy, 2002; Sudha, 2020).

(iii) Social Score and ROA

The impact of the social score (as shown in Table 3.5) is also consistently validated across all quantiles, with positive and statistically significant coefficients for SS. This suggests that corporate social contributions have a positive impact on operating performance (ROA) across all levels of return in corporations. The impact of DE and Size on ROA is consistently negative and statistically significant across all quantiles. In contrast, the outcomes of Growth and Age are favourable. However, the impact of Growth and Age varies significantly across different quantiles, as demonstrated in the table. Additionally, Figure 3.2 (ROA_Soc) illustrates a positive trend in the social score coefficient across quantiles. Specifically, the coefficient starts at 0.0421 in the 10th quantile and gradually increases to reach 0.142 in the 90th quantile. This phenomenon can be attributed to the proficiency of successful companies in incorporating social contributions into their operations. As a result, they have achieved notable levels of efficiency, which has had a positive impact and added value to their organisations. Therefore, high-performing companies have implemented effective management practices and undergone structural changes. In contrast, less-performing companies must make more significant structural changes to improve their operating performance. Indications imply that companies typically bear responsibility when engaging in philanthropic and ethical endeavours. Since businesses are an integral part of society, corporate social responsibility has a substantial impact on profitability. A robust social performance enhances public relations and upholds societal ethical standards (Chollet & Sandwidi, 2018; Saeed et al., 2023). In addition,

variables such as Size and DE consistently exhibit unfavorable relations with ROA across different quantile levels. Age and Growth have a positive effect, while both impacts on ROA variations are inconsistent.

(iv) Governance Score and ROA

Further research on the impact of governance supports positive governance score coefficients across all quantiles. However, these coefficients are only statistically significant at higher levels (70th, 80th, and 90th) with a p-value<0.05. This suggests that corporate governance has a positive effect on operating performance (ROA), but this effect is only significant for corporations with a higher degree of return. The impact of DE and Size on ROA is consistently negative and statistically significant across all quantiles. In contrast, the outcomes of Age and Growth are favorable. The impact of Growth varies across different quantiles, as demonstrated in Table 3.5. The coefficient of the governance score also exhibits a positive trend across quantiles, starting at 0.00319 in the 10th quantile and gradually increasing to reach 0.0353 in the 90th quantile (see Figure 3.2). This phenomenon can be attributed to the fact that the majority of high-performing companies have successfully integrated governance into their management practices, resulting in significant levels of efficiency that positively contribute to the overall value of the corporations. Therefore, high-performing companies have implemented effective management strategies and undergone structural changes. In contrast, less-performing companies must make more significant structural changes to improve their operating performance. In addition, variables such as Size and DE consistently exhibit an adverse relation with ROA across different quantile levels. The Age variable has a positive impact, while the Growth variable shows a combination of significant and insignificant effects, explaining the variations in ROA.

Table 3.4: Results from MMQR: ROA

	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
(1) ROA-ESG(Combine)											
ESG	0.0759*** (5.17)	0.0310** (3.13)	0.0312* (2.070)	0.0433** (3.190)	0.0541*** (4.130)	0.0618*** (4.660)	0.0694*** (5.000)	0.0796*** (5.2)	0.0895*** (5.21)	0.104*** (5.05)	0.128*** (4.74)
DE	-0.0152*** (-8.46)	-0.00115 (-0.94)	-0.0135*** (-7.72)	-0.0140*** (-8.83)	-0.0144*** (-9.31)	-0.0147*** (-9.26)	-0.0150*** (-8.91)	-0.0153*** (-8.19)	-0.0157*** (-7.42)	-0.0163*** (-6.37)	-0.0171*** (-5.14)
Age	0.0147 (1.69)	-0.00464 (-0.78)	0.0214* (2.430)	0.0196* (2.470)	0.0180* (2.350)	0.0168* (2.160)	0.016 (1.920)	0.0141 (1.56)	0.0127 (1.24)	0.0104 (0.85)	0.00693 (0.43)
Size	-0.0268*** (-7.37)	-0.00800** (-3.12)	-0.0153*** (-3.82)	-0.0184*** (-5.21)	-0.0212*** (-6.35)	-0.0232*** (-6.94)	-0.0251*** (-7.26)	-0.0278*** (-7.33)	-0.0303*** (-7.14)	-0.0342*** (-6.67)	-0.0402*** (-6.01)
Growth	0.0202** (3.11)	0.00571 (1.41)	0.012 (1.280)	0.014 (1.720)	0.0162* (2.170)	0.0176* (2.520)	0.0191** (2.850)	0.0209** (3.25)	0.0228*** (3.51)	0.0255*** (3.65)	0.0298*** (3.45)
Constant	0.200*** (10.14)	0.0989*** (7.24)	0.0578** (2.61)	0.0964*** (4.94)	0.131*** (7.11)	0.155*** (8.46)	0.179*** (9.45)	0.212*** (10.24)	0.244*** (10.53)	0.291*** (10.46)	0.365*** (10.21)
(2) ROA-ENV											

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	location	scale	Q10	Q20	Q30	Q40	Q50	Q60	Q70	Q80	Q90
ES	0.0262*	0.0131	0.00732	0.013	0.0168	0.0201*	0.0235*	0.0276*	0.0320**	0.0381**	0.0488*
	(2.51)	(1.86)	(0.67)	(1.33)	(1.78)	(2.11)	(2.38)	(2.56)	(2.64)	(2.64)	(2.54)
DE	-0.0158***	-0.00126	-0.0139***	-0.0145***	-0.0149***	-0.0152***	-0.0155***	-0.0159***	-0.0163***	-0.0169***	-0.0179***
	(-8.52)	(-1.03)	(-7.59)	(-8.75)	(-9.17)	(-9.19)	(-8.90)	(-8.30)	(-7.56)	(-6.57)	(-5.26)
Age	0.017	-0.00329	0.0213*	0.0199*	0.0190*	0.0182*	0.0173*	0.0163	0.0152	0.0136	0.0109
	(1.880)	(-0.55)	(2.34)	(2.45)	(2.41)	(2.28)	(2.07)	(1.78)	(1.48)	(1.11)	(0.67)
Size	-0.0248***	-0.00673*	-0.0151***	-0.0180***	-0.0200***	-0.0216***	-0.0234***	-0.0255***	-0.0277***	-0.0309***	-0.0364***
	(-6.43)	(-2.49)	(-3.52)	(-4.79)	(-5.58)	(-6.08)	(-6.36)	(-6.39)	(-6.20)	(-5.78)	(-5.10)
Growth	0.0202**	0.00597	0.0116	0.0141	0.0159*	0.0174*	0.0189**	0.0208**	0.0228***	0.0256***	0.0305***
	(3.100)	(1.50)	(1.23)	(1.72)	(2.11)	(2.46)	(2.83)	(3.23)	(3.54)	(3.72)	(3.54)
Constant	0.212***	0.1000***	0.0677**	0.111***	0.140***	0.165***	0.191***	0.223***	0.256***	0.303***	0.384***
	(10.2)	(7.1)	(2.84)	(5.3)	(7.07)	(8.41)	(9.51)	(10.31)	(10.69)	(10.64)	(10.32)
(3) ROA-SOC											
SS	0.0879***	0.0316***	0.0421***	0.0550***	0.0652***	0.0736***	0.0818***	0.0910***	0.102***	0.118***	0.142***
	(7.03)	(3.6)	(3.38)	(4.94)	(6.05)	(6.68)	(6.97)	(7.02)	(6.84)	(6.43)	(5.87)
DE	-0.0144***	-0.000682	-0.0135***	-0.0137***	-0.0140***	-0.0141***	-0.0143***	-0.0145***	-0.0148***	-0.0151***	-0.0156***
	(-8.10)	(-0.56)	(-7.39)	(-8.41)	(-8.85)	(-8.82)	(-8.49)	(-7.89)	(-7.06)	(-5.96)	(-4.71)
Age	0.0128	-0.00455	0.0194*	0.0175*	0.0161*	0.0149	0.0137	0.0124	0.0108	0.00847	0.00496
	(1.49)	(-0.77)	(2.25)	(2.28)	(2.16)	(1.95)	(1.69)	(1.39)	(1.06)	(0.68)	(0.3)
Size	-0.0338***	-0.0112***	-0.0175***	-0.0221***	-0.0257***	-0.0287***	-0.0316***	-0.0349***	-0.0388***	-0.0444***	-0.0531***
	(-8.85)	(-4.42)	(-3.99)	(-5.67)	(-7.00)	(-7.93)	(-8.54)	(-8.90)	(-8.93)	(-8.56)	(-7.92)
Growth	0.0206**	0.00546	0.0127	0.0149	0.0167*	0.0181**	0.0195**	0.0211***	0.0231***	0.0258***	0.0300***
	(3.25)	(1.41)	(1.4)	(1.86)	(2.29)	(2.66)	(3.01)	(3.37)	(3.66)	(3.78)	(3.54)
Constant	0.228***	0.113***	0.0652**	0.111***	0.147***	0.177***	0.206***	0.239***	0.279***	0.336***	0.423***
	(11.57)	(8.61)	(2.84)	(5.48)	(7.74)	(9.44)	(10.73)	(11.71)	(12.28)	(12.28)	(12.21)
(4) ROA-GOV											
GS	0.018	0.0103	0.00319	0.00742	0.0105	0.0132	0.0159	0.0191	0.0225*	0.0274*	0.0353*
	(1.9)	(1.57)	(0.32)	(0.83)	(1.23)	(1.53)	(1.77)	(1.95)	(2.04)	(2.07)	(2.03)
DE	-0.0167***	-0.00173	-0.0142***	-0.0149***	-0.0154***	-0.0158***	-0.0163***	-0.0168***	-0.0174***	-0.0182***	-0.0195***
	(-9.12)	(-1.42)	(-8.01)	(-9.26)	(-9.77)	(-9.81)	(-9.51)	(-8.90)	(-8.14)	(-7.10)	(-5.82)
Age	0.0198*	-0.00195	0.0226*	0.0218**	0.0212**	0.0207**	0.0202*	0.0196*	0.0189	0.018	0.0165
	(2.27)	(-0.33)	(2.52)	(2.71)	(2.73)	(2.63)	(2.44)	(2.17)	(1.86)	(1.48)	(1.04)
Size	-0.0208***	-0.00484	-0.0139***	-0.0158***	-0.0173***	-0.0185***	-0.0198***	-0.0213***	-0.0229***	-0.0252***	-0.0289***
	(-5.87)	(-1.88)	(-3.71)	(-4.84)	(-5.52)	(-5.86)	(-5.94)	(-5.78)	(-5.45)	(-4.94)	(-4.29)
Growth	0.0201**	0.0059	0.0116	0.014	0.0158*	0.0173*	0.0189**	0.0207**	0.0226***	0.0255***	0.0299***
	(3.06)	(1.46)	(1.22)	(1.67)	(2.06)	(2.42)	(2.8)	(3.2)	(3.52)	(3.71)	(3.53)
Constant	0.189***	0.0888***	0.0619**	0.0983***	0.125***	0.148***	0.171***	0.198***	0.228***	0.270***	0.338***
	(9.05)	(6.14)	(2.68)	(4.84)	(6.47)	(7.66)	(8.54)	(9.12)	(9.34)	(9.23)	(8.86)

Robust t-statistics are enclosed in parentheses. ***, **, and * indicate statistical significance at the 0.1%, 1%, and 5% levels, respectively.

3.4.2 Return on Capital Employed: Financial Performance

Table 3.6 displays the outcomes of the MMQR analysis, with the financial performance (ROCE) results as the dependent variable. The independent variables in the (5), (6), (7), and (8) model is ESG, ES, SS, and GS.

(i) ESG and ROCE

At the 10th percentile level, a higher ESG score has a positive but statistically insignificant impact on ROCE. The regression analysis reveals that the coefficients for DE and Size variables are negative and statistically significant. This suggests that as the values of these variables increase, the ROCE tends to decrease. On the other hand, Age demonstrates statistically significant levels of positive correlation, indicating that these variables may account for differences in ROCE at this specific level. At the 30th quantile level, the relationship between ESG and ROCE becomes statistically significant, as indicated by a $p\text{-value} > 0.01$. The variables of DE and Size consistently and significantly impact ROCE, suggesting that these factors may account for variations in ROCE across all levels of quantiles. Consistent patterns continue to exist at the subsequent quantile levels. ESG factors and Growth consistently show positive and statistically significant impacts on ROCE from this quantile. It is essential to highlight that the coefficient for age also has a positive statistically significant correlation with ROCE. This indicates that these factors are crucial in explaining the differences in ROCE across middle and upper quantiles. The findings suggest a positive relationship between ESG and the ROCE from the 30th to all higher quantiles. Based on the data presented in Table 3.6 and Figure 3.2, it is evident that the ESG factor is more prominent in the upper quantiles. It reached a value of 0.202 in the 90th quantile. This phenomenon can be attributed to many successful companies effectively incorporating ESG considerations into their estimations. As a result, they have achieved notable levels of efficiency, leading to positive outcomes and added value. Therefore, higher-performance companies have already implemented effective management strategies and undergone structural changes. In contrast, less-performing companies must make more substantial structural changes to improve their financial performance. In addition, variables such as Size and DE consistently exhibit negative correlations with ROCE across different quantile levels. The Age variable has a positive effect, while the Growth variable has a varied impact on explaining the variations in ROCE.

(ii) Environmental and ROCE

In contrast, model 6 displays the outcomes of a quantile regression analysis, where the variable representing ROCE is the dependent variable, and ES is one of the independent variables. At the lower quantile levels, an increase in ES impacts ROCE positively, but this effect is not statistically significant. The coefficients for the variables DE and Size exhibit a negative correlation. They are statistically significant, suggesting that higher values of these variables are linked to lower ROCE. The Growth coefficient lacks statistical significance, while the Age coefficient exhibits a positive and statistically significant relationship across all quantiles. ES and ROCE's

relationship remains positive and highly significant when transitioning to the middle quantile level. The variables of Size and DE have a negative and statistically significant impact on the ROCE. The Age and Growth of a company favor its ROCE, and this trend continues consistently across different levels of quantiles. ES consistently exhibits favorable and statistically significant impacts on ROCE, indicating its significance in elucidating variations in ROCE across various quantiles, suggesting that companies with higher ES tend to have higher ROCE. Figure 3.2, ES demonstrates a clear positive trend across quantiles, indicating that ES increases in the initial stages and improves further in the advanced stages of financial performance for corporations in the Indian economy. The impact of environmental contribution is positive and statistically significant only in the middle and upper quantiles (50th, 60th, 70th, 80th, and 90th). Corporations' financial performance level is positively influenced by their ecological contribution, indicating that environmental disclosures favor corporations with higher financial outcomes while being biased against those with poorer performance.

(ii) Social Score and ROCE

The social score (SS) is consistently supported across all quantiles, with positive and significant coefficients in all quantities (except the lower quantile of 10). This suggests that corporate social contributions positively impact financial performance (ROCE) across various corporate returns. The impact of DE and Size on ROCE is consistently negative and statistically significant across all quantiles. In contrast, the outcomes of Age and Growth are favorable. The impact of Growth varies significantly across different quantiles, as demonstrated in Table 3.6. Additionally, Figure 3.2 illustrates a positive trend in the social score coefficient across quantiles. Specifically, the coefficient starts at 0.0291 in the 10th and gradually increases to 0.257 in the 90th quantile. This phenomenon can be attributed to the fact that in most high-performing companies, there is a strong emphasis on making social contributions as a part of their activities. This is particularly evident in India, where the Company Act of 2013 mandates that listed companies engage in Corporate Social Responsibility (CSR). Over time, companies prioritizing CSR can achieve significant efficiency gains, resulting in positive outcomes and added value for the corporations. In addition, variables such as Size and DE consistently exhibit a negative relationship with ROCE across different quantile levels. The Age and Growth variables have a positive effect, while the Growth shows a mix of significant and insignificant impacts in explaining the variations in ROCE.

(iv) Governance Score and ROCE

The impact of the governance score is observed in model 8, showing that the influence on financial performance (ROCE) is insignificant. The effect of DE and

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Size on ROCE is consistently negative and statistically significant across all quantiles. In contrast, the outcomes of Age and Growth are favorable. The effects of Growth vary significantly across all quantiles, as presented in Table 3.7. However, the overall result indicates that Indian corporations have not been maximal in implementing corporate governance in the context of financial performance; results are aligned with Doshi et al. (2024), Jyotiti & Khanna (2021), Primasari & Prasasti (2024).

Table 3.5: Results from MMQR: ROCE

	location	scale	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
(5) ROCE-ESG(Combine)											
ESG	0.101*** (4.36)	0.0650*** (3.75)	0.00813 (0.37)	0.0354 (1.83)	0.0537** (2.84)	0.0704*** (3.6)	0.0865*** (4.09)	0.104*** (4.4)	0.129*** (4.58)	0.157*** (4.61)	0.202*** (4.5)
DE	-0.0256*** (-9.14)	-0.00201 (-0.95)	-0.0228*** (-9.59)	-0.0236*** (-11.21)	-0.0242*** (-11.41)	-0.0247*** (-10.88)	-0.0252*** (-10.00)	-0.0257*** (-8.94)	-0.0265*** (-7.63)	-0.0274*** (-6.45)	-0.0288*** (-5.18)
Age	0.0609*** (4.49)	0.0212* (2.08)	0.0307* (2.47)	0.0396*** (3.61)	0.0456*** (4.21)	0.0510*** (4.5)	0.0563*** (4.57)	0.0620*** (4.48)	0.0701*** (4.25)	0.0794*** (3.96)	0.0940*** (3.57)
Size	-0.0378*** (-6.56)	-0.0162*** (-3.73)	-0.0147* (-2.52)	-0.0215*** (-4.24)	-0.0261*** (-5.34)	-0.0302*** (-6.06)	-0.0343*** (-6.45)	-0.0387*** (-6.57)	-0.0448*** (-6.46)	-0.0519*** (-6.18)	-0.0630*** (-5.68)
Growth	0.0329** (3.26)	0.0107 (1.72)	0.0177 (1.35)	0.0222 (1.91)	0.0252* (2.32)	0.0279** (2.7)	0.0306** (3.03)	0.0335*** (3.32)	0.0376*** (3.56)	0.0422*** (3.63)	0.0496*** (3.47)
Constant	0.231*** (7.56)	0.117*** (5.11)	0.0645* (2.02)	0.114*** (4.13)	0.147*** (5.57)	0.177*** (6.59)	0.206*** (7.22)	0.238*** (7.54)	0.282*** (7.61)	0.334*** (7.45)	0.414*** (7.04)
(6) ROCE-ENV											
ES	0.0399* (2.48)	0.0281* (2.35)	0.00027 (0.02)	0.0118 (0.85)	0.0196 (1.46)	0.0267 (1.93)	0.0334* (2.27)	0.0410* (2.51)	0.0520** (2.68)	0.0641** (2.75)	0.0843** (2.73)
DE	-0.0261*** (-9.00)	-0.00218 (-0.99)	-0.0231*** (-9.36)	-0.0240*** (-10.95)	-0.0246*** (-11.18)	-0.0251*** (-10.70)	-0.0256*** (-9.88)	-0.0262*** (-8.86)	-0.0271*** (-7.53)	-0.0280*** (-6.38)	-0.0296*** (-5.08)
Age	0.0627*** (4.55)	0.0217* (2.08)	0.0322* (2.56)	0.0411*** (3.69)	0.0471*** (4.29)	0.0526*** (4.58)	0.0578*** (4.65)	0.0636*** (4.56)	0.0721*** (4.3)	0.0814*** (4.01)	0.0971*** (3.59)
Size	-0.0358*** (-5.90)	-0.0144** (-3.10)	-0.0155* (-2.53)	-0.0214*** (-4.01)	-0.0254*** (-4.95)	-0.0291*** (-5.54)	-0.0325*** (-5.83)	-0.0364*** (-5.90)	-0.0420*** (-5.74)	-0.0482*** (-5.45)	-0.0586*** (-4.95)
Growth	0.0328** (3.25)	0.00993 (1.6)	0.0188 (1.45)	0.0229* (1.98)	0.0256* (2.37)	0.0282** (2.72)	0.0305** (3.03)	0.0332** (3.29)	0.0371*** (3.51)	0.0414*** (3.55)	0.0486*** (3.36)
Constant	0.249*** (7.74)	0.127*** (5.3)	0.0704* (2.09)	0.122*** (4.17)	0.158*** (5.63)	0.190*** (6.67)	0.220*** (7.34)	0.255*** (7.72)	0.304*** (7.84)	0.359*** (7.71)	0.451*** (7.27)
(7) ROCE-SOC											
SS	0.135*** (6.57)	0.0747*** (4.74)	0.0291 (1.58)	0.0602*** (3.69)	0.0804*** (5.01)	0.1000*** (5.9)	0.120*** (6.42)	0.140*** (6.61)	0.166*** (6.59)	0.201*** (6.45)	0.257*** (6.08)
DE	-0.0241*** (-8.86)	-0.00127 (-0.64)	-0.0223*** (-9.08)	-0.0228*** (-10.40)	-0.0232*** (-10.63)	-0.0235*** (-10.29)	-0.0239*** (-9.56)	-0.0242*** (-8.63)	-0.0246*** (-7.51)	-0.0252*** (-6.29)	-0.0262*** (-4.93)
Age	0.0568*** (4.26)	0.0201* (2.01)	0.0284* (2.32)	0.0367*** (3.39)	0.0421*** (3.94)	0.0474*** (4.25)	0.0527*** (4.32)	0.0582*** (4.24)	0.0652*** (4.05)	0.0745*** (3.76)	0.0895*** (3.38)
Size	-0.0497*** (-8.04)	-0.0229*** (-5.16)	-0.0172** (-2.66)	-0.0267*** (-4.69)	-0.0329*** (-6.01)	-0.0389*** (-7.04)	-0.0449*** (-7.76)	-0.0513*** (-8.12)	-0.0592*** (-8.19)	-0.0698*** (-8.04)	-0.0869*** (-7.51)
Growth	0.0335*** (3.43)	0.00978 (1.64)	0.0196 (1.51)	0.0237* (2.06)	0.0263* (2.46)	0.0289** (2.84)	0.0315** (3.2)	0.0342*** (3.50)	0.0376*** (3.73)	0.0421*** (3.8)	0.0494*** (3.59)
Constant	0.275*** (7.56)	0.144*** (5.11)	0.0703* (2.02)	0.130*** (4.13)	0.169*** (5.57)	0.207*** (6.59)	0.245*** (7.22)	0.285*** (7.54)	0.335*** (7.61)	0.402*** (7.45)	0.510*** (7.04)

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	location	scale	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
	(8.94)	(6.61)	(2.1)	(4.45)	(6.06)	(7.39)	(8.39)	(8.99)	(9.27)	(9.3)	(8.98)
(8) ROCE-GOV											
GS	0.00226 (0.16)	0.00565 (0.51)	-0.00572 (-0.40)	-0.00337 (-0.27)	-0.00182 (-0.15)	-0.000378 (-0.03)	0.000947 (0.07)	0.00254 (0.17)	0.00463 (0.27)	0.00714 (0.34)	0.0113 (0.4)
DE	-0.0278*** (-9.75)	-0.00324 (-1.48)	-0.0233*** (-9.84)	-0.0246*** (-11.74)	-0.0255*** (-12.05)	-0.0263*** (-11.54)	-0.0271*** (-10.70)	-0.0280*** (-9.58)	-0.0292*** (-8.26)	-0.0306*** (-7.04)	-0.0330*** (-5.68)
Age	0.0680*** (4.96)	0.0260* (2.5)	0.0313* (2.54)	0.0421*** (3.86)	0.0493*** (4.56)	0.0559*** (4.92)	0.0620*** (5.03)	0.0693*** (4.97)	0.0789*** (4.74)	0.0904*** (4.45)	0.109*** (4.03)
Size	-0.0299*** (-5.47)	-0.0106* (-2.47)	-0.0150** (-2.79)	-0.0194*** (-4.19)	-0.0223*** (-4.97)	-0.0250*** (-5.40)	-0.0274*** (-5.53)	-0.0304*** (-5.45)	-0.0343*** (-5.16)	-0.0390*** (-4.79)	-0.0467*** (-4.26)
Growth	0.0327** (3.24)	0.0105 (1.72)	0.0178 (1.37)	0.0222 (1.92)	0.0251* (2.31)	0.0278** (2.68)	0.0302** (2.98)	0.0332** (3.29)	0.0371*** (3.53)	0.0418*** (3.61)	0.0495*** (3.45)
Constant	0.227*** (7.12)	0.110*** (4.53)	0.0721* (2.22)	0.118*** (4.19)	0.148*** (5.48)	0.176*** (6.36)	0.202*** (6.86)	0.233*** (7.1)	0.274*** (7.08)	0.322*** (6.87)	0.403*** (6.4)

Robust t-statistics are enclosed in parentheses. ***, **, and * indicate statistical significance at the 0.1%, 1%, and 5% levels, respectively.

3.4.3 Tobin's Q: Market Performance

Tobin's Q has been extensively employed to elucidate the effect of sustainability on corporate market effectiveness. It is the third dependent variable in our study, which utilized MMQR regression analysis to assess market performance.

(i) ESG and Tobin's Q

The findings indicate that the combined ESG factors positively impact market performance when considering a lower quantile level. However, this effect is not statistically significant. The Size coefficients exhibit a negative and statistically significant relationship, suggesting that larger values of these variables are linked to lower Tobin's Q. Age and DE have insignificant effects on market performance, indicating that these factors may not account for differences in Tobin's Q at different quantile levels. When considering the middle quantile level, the association between ESG and Tobin's Q becomes statistically significant, indicated by a p-value of less than 0.01. Consistent patterns continue to exist at the subsequent quantile levels. The Size of ESG factors consistently shows adverse and statistically significant effects on Tobin's Q (at a significance level of 0.01 percent). Overall results indicate that ESG factors are important in explaining the variations in Tobin's Q across different quantiles. Based on the data presented in Table 3.7 and Figure 3.2, it is evident that the ESG factor is more prominent in the upper quantiles. It reached a value of 9.567 in the 90th quantile. This phenomenon can be attributed to the fact that many successful companies have effectively integrated ESG considerations into their operations. As a result, they have achieved notable levels of efficiency, leading to positive outcomes and added value.

(ii) Environmental Score and Tobin's Q

Additionally, the outcomes of a panel quantile analysis, where Tobin's Q is the predicted variable, and ES is one of the independent variables. The results indicate that a higher ES has a positive and statistically significant impact on market performance across all quantiles (at the 0.01 percent level). This suggests that companies' environmental disclosures have a considerable influence on the market value of companies. Investors are more inclined to be attracted to corporations that prioritize ecological factors. The coefficients for the variables DE and Size exhibit an adverse and statistically significant relationship, suggesting that higher values of these variables are linked to lower Tobin's Q, whereas age positively impacts market performance. As depicted in Figure 3.2 ES, there is a clear upward trend across quantiles. The given phenomenon can be attributed to the fact that in most high-performing companies, there is a strong emphasis on making environmental contributions as a part of their activities. Environmental scores significantly impact market performance at all levels of Tobin's Q.

(iii) Social Score and Tobin's Q

The SS impact on market performance is well-supported across all quantiles, with positive and statistically significant coefficients for the social score. This suggests that corporate social contributions positively impact market performance across various corporate returns. The impact of DE and Size on Tobin's Q is consistently unfavorable and statistically significant across all quantiles. In contrast, the outcomes of the Age and Growth level of companies are favorable. The impact of Growth varies significantly across different quantiles, as demonstrated in Table 3.7. Additionally, Figure 3.2 illustrates a positive trend in the social score coefficient across quantiles. Specifically, the coefficient starts at 1.574 in the 10th and gradually increases to 7.854 in the 90th quantile. This phenomenon can be attributed to the investors' preference for socially responsible companies that not only boost the market value of corporations but also improve their ability to acquire debt from the market.

(iv) Governance Score and Tobin's Q

The last model shows that the governance score coefficients positively and significantly affect market performance across all quantiles. This is supported by Table 3.7 and Fig. 3.2, which show that corporate governance has a positive impact. The governance score coefficient also exhibits a positive trend across quantiles, starting at 0.454 in the 10th and gradually increasing to 3.912 in the 90th quantile. The study's results suggested that companies are likely to adopt appropriate corporate governance practices, resulting in enhanced effectiveness in corporate performance and minimizing agency costs (Neralla, 2022).

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Table 3.6: Results from MMQR: Tobin's Q

	Location	scale	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
(9) TQ -ESG(Combine)											
ESG	5.049*** (3.73)	2.423* (1.99)	2.136 (1.11)	2.597 (1.46)	3.048 (1.86)	3.516* (2.33)	4.122** (2.97)	4.800*** (3.65)	5.582*** (4.18)	6.998*** (4.32)	9.567*** (3.73)
DE	-0.253 (-1.57)	-0.052 (-0.36)	-0.19 (-0.80)	-0.2 (-0.91)	-0.21 (-1.04)	-0.22 (-1.18)	-0.233 (-1.36)	-0.247 (-1.53)	-0.264 (-1.62)	-0.294 (-1.49)	-0.349 (-1.12)
Age	-1.101 (-1.35)	-0.599 (-0.81)	-0.381 (-0.32)	-0.495 (-0.45)	-0.607 (-0.59)	-0.722 (-0.77)	-0.872 (-1.01)	-1.04 (-1.27)	-1.233 (-1.49)	-1.583 (-1.59)	-2.218 (-1.40)
Size	-2.045*** (-6.22)	-0.958** (-3.24)	-0.893* (-2.03)	-1.075** (-2.65)	-1.254*** (-3.35)	-1.439*** (-4.16)	-1.678*** (-5.26)	-1.947*** (-6.42)	-2.255*** (-7.28)	-2.815*** (-7.41)	-3.831*** (-6.34)
Growth	0.556 (0.78)	0.499 (0.78)	-0.0447 (0.04)	0.0503 (0.05)	0.143 (0.16)	0.24 (0.29)	0.365 (0.49)	0.505 (0.71)	0.666 (0.93)	0.958 (1.11)	1.487 (1.09)
Constant	12.92*** (6.73)	6.565*** (3.81)	5.025* (1.99)	6.273** (2.7)	7.495*** (3.49)	8.765*** (4.41)	10.41*** (5.68)	12.24*** (7.01)	14.36*** (8.03)	18.20*** (8.28)	25.16*** (7.19)
(10) TQ-Env											
ES	2.927*** (7.61)	1.201*** (3.52)	1.497*** (6.48)	1.722*** (7.98)	1.941*** (8.9)	2.151*** (9.06)	2.454*** (8.63)	2.757*** (7.97)	3.183*** (7.09)	3.850*** (6.16)	5.223*** (5.1)
DE	-0.295*** (-4.54)	-0.0934 (-1.47)	-0.183*** (-5.90)	-0.201*** (-7.44)	-0.218*** (-7.90)	-0.234*** (-7.24)	-0.258*** (-5.94)	-0.281*** (-4.96)	-0.315*** (-4.07)	-0.366*** (-3.30)	-0.473** (-2.60)
Age	-1.085** (-3.26)	-0.494 (-1.64)	-0.497* (-2.49)	-0.590** (-3.20)	-0.680*** (-3.67)	-0.766*** (-3.81)	-0.891*** (-3.66)	-1.015*** (-3.40)	-1.191** (-3.06)	-1.465** (-2.69)	-2.029* (-2.30)
Size	-2.105*** (-15.34)	-0.979*** (-7.97)	-0.940*** (-11.83)	-1.123*** (-14.84)	-1.302*** (-16.85)	-1.473*** (-17.16)	-1.720*** (-16.65)	-1.967*** (-15.75)	-2.314*** (-14.02)	-2.858*** (-12.22)	-3.976*** (-10.10)
Growth	0.527* (2.18)	0.484** (2.71)	-0.0498 (-0.32)	0.0409 (0.27)	0.129 (0.81)	0.214 (1.26)	0.336 (1.74)	0.458* (2.05)	0.630* (2.3)	0.899* (2.48)	1.452** (2.6)
Constant	14.35*** (17.53)	7.189*** (9.78)	5.787*** (12.54)	7.134*** (16)	8.448*** (18.54)	9.705*** (18.92)	11.52*** (18.59)	13.33*** (17.83)	15.88*** (15.93)	19.87*** (14.03)	28.09*** (11.59)
(11) TQ-Soc											
SS	4.002*** (8.36)	2.045*** (4.82)	1.574*** (6.14)	1.929*** (7.99)	2.275*** (9.12)	2.707*** (9.5)	3.205*** (9.1)	3.828*** (8.45)	4.498*** (7.78)	5.635*** (6.89)	7.854*** (6.13)
DE	-0.269*** (-3.97)	-0.0525 (-0.81)	-0.207*** (-6.83)	-0.216*** (-8.09)	-0.225*** (-8.15)	-0.236*** (-6.94)	-0.248*** (-5.46)	-0.264*** (-4.22)	-0.282*** (-3.42)	-0.311** (-2.65)	-0.368* (-1.97)
Age	-1.026** (-3.15)	-0.509 (-1.75)	-0.422* (-2.09)	-0.510** (-2.70)	-0.596** (-3.17)	-0.704*** (-3.44)	-0.827*** (-3.41)	-0.983** (-3.21)	-1.149** (-2.98)	-1.432** (-2.68)	-1.984* (-2.37)
Size	-2.238*** (-15.88)	-1.121*** (-9.30)	-0.907*** (-11.15)	-1.102*** (-14.06)	-1.291*** (-15.65)	-1.528*** (-16.51)	-1.801*** (-16.20)	-2.143*** (-15.59)	-2.509*** (-14.51)	-3.133*** (-12.54)	-4.349*** (-11.44)
Growth	0.548* (2.23)	0.510** (2.86)	-0.0575 (-0.35)	0.031 (0.19)	0.117 (0.71)	0.225 (1.27)	0.349 (1.75)	0.505* (2.14)	0.672* (2.38)	0.956** (2.58)	1.509** (2.74)
Constant	14.10*** (18.09)	7.331*** (10.79)	5.392*** (11.88)	6.663*** (15.23)	7.904*** (17.1)	9.455*** (18.29)	11.24*** (18.14)	13.47*** (17.68)	15.87*** (16.54)	19.95*** (14.24)	27.91*** (12.96)
(12) TQ- Gov											
GS	1.819*** (6)	1.118*** (4.25)	0.454* (2.21)	0.679*** (3.57)	0.892*** (4.67)	1.145*** (5.57)	1.387*** (5.94)	1.692*** (6.02)	2.062*** (5.87)	2.622*** (5.57)	3.912*** (5.00)
DE	-0.339*** (-5.18)	-0.112 (-1.68)	-0.203*** (-5.81)	-0.225*** (-7.87)	-0.246*** (-8.85)	-0.272*** (-8.08)	-0.296*** (-6.79)	-0.327*** (-5.55)	-0.363*** (-4.60)	-0.419*** (-3.78)	-0.548** (-2.94)
Age	-0.770* (-2.34)	-0.37 (-1.24)	-0.317 (-1.57)	-0.392* (-2.14)	-0.462* (-2.54)	-0.546** (-2.69)	-0.626** (-2.61)	-0.728* (-2.42)	-0.850* (-2.21)	-1.036* (-1.98)	-1.464 (-1.70)
Size	-1.635*** (-13.98)	-0.835*** (-7.97)	-0.614*** (-9.29)	-0.782*** (-12.65)	-0.942*** (-14.23)	-1.131*** (-15.24)	-1.312*** (-14.92)	-1.540*** (-14.09)	-1.816*** (-12.88)	-2.234*** (-11.53)	-3.199*** (-9.45)
Growth	0.565* (2.18)	0.561** (2.85)	-0.12 (-0.71)	-0.00761 (-0.05)	0.0993 (0.58)	0.226 (1.22)	0.348 (1.68)	0.501* (2.06)	0.686* (2.33)	0.967* (2.54)	1.614** (2.68)
Constant	11.82*** (15.02)	6.212*** (8.63)	4.234*** (9.61)	5.484*** (13.49)	6.669*** (15.31)	8.075*** (16.52)	9.421*** (16.13)	11.12*** (15.19)	13.17*** (13.85)	16.28*** (12.39)	23.46*** (10.09)

Robust t-statistics are enclosed in parentheses. ***, **, and * indicate statistical significance at the 0.1%, 1%, and 5% levels, respectively.

Our findings indicate that ESG, particularly social considerations, consistently exerts a significant positive impact across all quantiles, regardless of whether corporations demonstrate low or high social responsibility performance. However, while high-quantile companies may benefit from disclosing positive environmental factors, this relationship is not pronounced for lower-quantile firms. Notably, the impact of governance scores mirrors that of environmental scores, concerning operational (ROA) and market (TQ) performance, albeit with a less pronounced effect on financial performance (ROCE). Moreover, Companies demonstrating solid operational, financial, and market performance are more likely to have a favorable impact on disclosing information about environmental, social, and governance issues (as shown in Figure 3.2), highlighted by the increasing trend across quantiles.

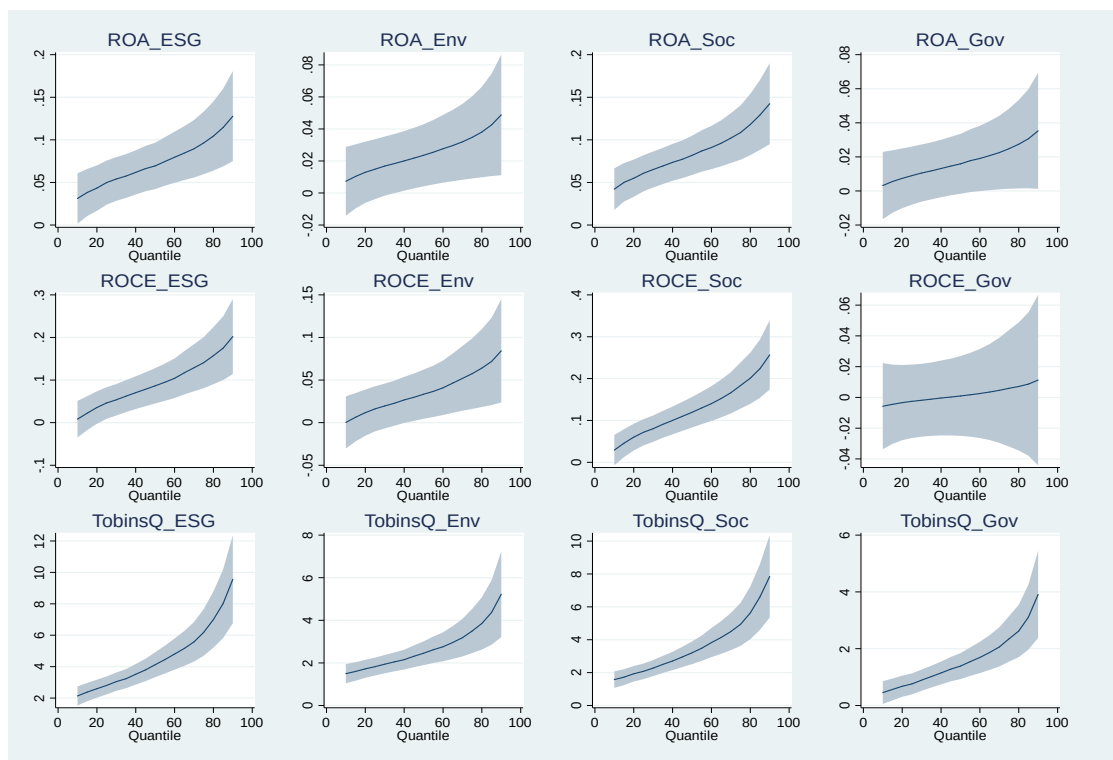


Figure 3.2: MMQR Plots
Source: Authors' own estimation

3.4. Discussion

This chapter examines how ESG factors impact corporate performance, analysing each pillar individually. Consistent with existing literature in the Indian context, our findings align with prior studies, confirming a significant positive relationship between corporate performance indicators and ESG scores (Dalal & Thaker, 2019; Bodhanwala & Bodhanwala, 2018; Roberts, 1992; Waddock & Graves, 1997). This relationship indicates that companies that provide more detailed information about

their sustainability practices generally achieve better performance measures (Sharma et al., 2024).

It can be inferred that companies with high profitability use their excess cash flow to have more resources for spending on sustainability, such as CSR and ESG activities (Crisóstomo et al., 2011). Additionally, companies prioritising ESG/CSR initiatives foster trust-based relationships with a wide range of stakeholders, which is crucial for the success of the corporations (El et al., 2017; Maqbool & Zameer, 2018). While previously, corporations focused primarily on profit maximisation with partial contributions to the economy, environment, and society through taxes, integrating ESG factors into business strategy is gradually gaining prominence in addressing the requirements of diverse stakeholder groups. Companies disclose ESG data in their annual and sustainability reports to enable investors and other interested parties to assess and compare their non-financial achievements. Corporations that demonstrate solid corporate performance can cover the costs associated with ESG activities and are more likely to provide detailed information about their environmental, social, and corporate governance initiatives in their reports (Chung et al., 2024). The study reveals numerous potential factors that are beneficial for companies' financial operations, crucial for value addition, and for enhancing the quality of disclosure. Furthermore, companies with strong operational, economic, and market performance are more inclined to provide extensive information on non-financial factors, demonstrating a willingness to invest in value-creation activities. These conclusions are drawn from a sample of Nifty-listed Indian companies, significantly contributing to the existing literature by establishing a correlation between sustainability disclosure and the performance of Indian companies.

3.5. Conclusion and Implications of the Study

This chapter has provided a comprehensive empirical evaluation of the relationship between ESG disclosures and corporate performance in the context of publicly listed Indian companies. Utilising the Method of Moments Quantile Regression (MMQR), the analysis has revealed the heterogeneous influence of ESG practices across different performance quantiles and measures, including operational (ROA), financial (ROCE), and market-based (Tobin's Q) metrics, during the period from 2015 to 2023.

The findings underscore a consistent and significant association between ESG performance and improved corporate outcomes, particularly highlighting that social disclosure exerts the most stable and positive influence across all quantiles, while environmental factors contribute more prominently at the higher ends of the performance distribution. Governance factors, though important, show more varied

effects, suggesting the need for more industry-specific governance reforms and frameworks.

From a policy perspective, these results underscore the need for stronger ESG disclosure regulations, broader adoption of sustainability reporting standards, and more robust corporate governance mechanisms. Regulators and financial institutions should promote ESG as a value driver, not just a compliance obligation, particularly for long-term resilience and inclusive growth. Managers and boards, on the other hand, must integrate ESG principles into strategic planning to attract sustainability-oriented investors and improve stakeholder engagement.

Nonetheless, this analysis is conducted at an aggregate level across all sectors, without explicitly distinguishing between industries with different environmental exposures or sustainability risks. This raises an important question: Does the impact of ESG on corporate performance differ across environmentally sensitive and less sensitive industries? Given that industry context plays a critical role in determining ESG materiality and performance implications, a more nuanced examination is warranted.

Hence, the next chapter delves deeper into this critical dimension by exploring the Differential Impact of ESG Disclosures on Corporate Performance across Environmentally Sensitive and less sensitive industries: a dynamic panel analysis. By adopting a dynamic panel estimation technique, Chapter 4 aims to investigate whether the ESG-performance relationship exhibits systematic variation when segmented by industry environmental sensitivity, thereby offering more tailored insights for policymakers, investors, and corporate leaders operating across diverse sectors.

CHAPTER 4

ASSESSING THE DIFFERENTIAL IMPACT OF ESG DISCLOSURES ON CORPORATE PERFORMANCE ACROSS ENVIRONMENTALLY SENSITIVE AND NON-SENSITIVE INDUSTRIES: A DYNAMIC PANEL ANALYSIS

4.1. Introduction

In recent years, sustainability has become integral to corporate strategy, emphasising long-term viability and financial market resilience (Aras et al., 2018). This shift stems from corporations' concerns about economic stability, investor confidence, and competitive advantage. Thus, sustainability has emerged as a critical factor for organisational success and growth, focusing on waste management, carbon footprint reduction, and operational efficiency (Eccles & Serafeim, 2013). This transition is fueled by growing stakeholder awareness (Maji & Lohia, 2023), prompting firms to consider environmental and social responsibility alongside profit maximisation (Arianpoor et al., 2023; Khandelwal et al., 2023). As social and climate change gain prominence (Ge et al., 2016; Quang et al., 2022), they converge environmental stewardship, social responsibility, and corporate governance performance into (ESG) principles. The ESG word, first introduced by the United Nations in 2004 through the "Who Cares Wins" reports, guides investors in integrating environmental, social, and governance factors into their investment decisions (United Nations, 2020).

With the growing interest, ESG reporting has become a pivotal framework for assessing corporate sustainability (Kolk & Perego, 2010; Zhou, 2022). Effective ESG management mitigates environmental degradation, social controversies, and governance scandals risk, thereby averting financial and reputational harm (Eccles et al., 2014). Moreover, robust ESG performance can lead to cost savings through enhanced efficiencies, a stronger reputation, improved financing, increased profitability, and lower capital costs. These advantages, however, are contingent on market conditions, regulations, and firm actions (Busch et al., 2016; Eccles et al., 2014). Hence, the influence of ESG on the performance of corporations can be complex, influenced by the company's operations and commitment to adopting eco-friendly practices (Rahman et al., 2023).

The relationship between ESG and corporate performance is intricate and context-dependent, yielding mixed results across past studies (Alareeni & Hamdan, 2020; Jyoti & Khanna, 2021; Rahman et al., 2023.; Savio et al., 2023; Zhou et al., 2022). Some research reflects that ESG benefits (Rahman et al., 2023), while others report insignificant or negative (Almulhim & Aljughaiman, 2023; Brammer et al., 2005; Jain

et al., 2019). Discrepancies arise from data selection, sample size, industries, timing, methodology, and study context (i.e., developed vs. developing countries listed or following a particular index) (Busch et al., 2016). Furthermore, ESG approaches and performance metrics further complicate the findings, especially in emerging markets (Orlitzky et al., 2003b; Orlitzky & Shen, 2013). These inconsistencies underscore the need for more rigorous research on this domain (Khan, 2022a; Lin et al., 2019).

Due to significant challenges, industries with high environmental impact, such as oil, chemicals, and mining, face increasing regulatory pressure to improve their environmental performance (Pisani et al., 2017). Indian firms are no exception, including those involved in environmental disasters over the past decades; notable examples include the Bhopal disaster in 1984, the world's worst industrial accident caused by methyl isocyanate gas exposure, and the 2020 Assam gas leak, which resulted in a blown-out, methane leakage, subsequent fires, fatalities, and environmental damage. These incidents have heightened scrutiny of corporate sustainability. Hence, Indian firms now prioritise ESG disclosure to enhance credibility and secure stakeholder support (Braam & Peeters, 2018; Dong et al., 2014; Tadros & Magnan, 2019). However, such reporting is often met with scepticism, as stakeholders question the credibility of environmental claims (Cho & Patten, 2007). To address this, many companies seek external assurance from an independent third party to enhance their ecological disclosure credibility and safeguard their image and reputation by procuring voluntary external assurance services (Gillet-Monjarret, 2015; Cho et al., 2014).

This study categorises firms based on environmental sensitivity. Following the definition by Halkos & Skouloudis (2016), environmentally sensitive industries comprise sectors whose business activities significantly impact the socio-environmental landscape. In line with prior studies, Gracia & Siregar (2021), Miralles-Quirós et al. (2018), and Yoon et al. (2018), we classify industries within the energy, materials, and utilities sectors as environmentally sensitive industries, following the Global Industry Classification Standard (GICS). All other industries are categorised as NSI industries. Unlike prior studies that primarily focused on developed economies (Ademi & Klungseth, 2022; Hamrouni et al., 2019), this study diverges from and extends the literature by investigating the relationship between ESG disclosure and corporate performance in SI and NSI companies in India, a rapidly growing economy. We examine how ESG disclosures affect operating, financial, and market performance from 2015 to 2023, encompassing Indian listed firms. This study examines whether there is a difference in the profitability of industries due to sustainability, highlighting the varying effects on corporate performance in SI and NSI (Arian et al., 2023; Omar & Zallom, 2016). Moreover, we

incorporate individual ESG dimensions, offering nuanced insights into their distinct impacts. At this end, the following research question will be explored. How does the extent of ESG disclosure impact corporate performance (i.e., operating, financial, and Tobin's Q) in the environmentally sensitive and non-sensitive industries of Indian companies? Is there any difference in the association between ESG (and its dimensions) and corporate performance based on the environmental sensitivity of the corporation?

Notably, we focused on India for several reasons. India became one of the world's top five economies in terms of Gross Domestic Product (GDP)² and most prominent in terms of demographic footprints, overtaking China³. It emerged as a leading participant in sustainability discourse, driven by its unique institutional environment, cultural diversity, and evolving regulatory framework. A notable shift towards sustainable practices is evident, as Indian corporations are progressively embracing Corporate Social Responsibility (CSR) initiatives and releasing comprehensive "Business Responsibilities and Sustainability Reports (BRSR)" in 2021 as a result of regulatory requirements such as the Companies Act of 2013 and supervision from the Securities and Exchange Board of India (SEBI). With mounting scrutiny from regulators and investors, the volume of ESG research has seen significant growth, particularly in exploring the interaction of ESG factors and profitability, particularly in the Indian context (Narula et al., 2024; Nenavani et al., 2024; D. Sharma et al., 2019; Suprabha et al., 2024; Veeravel et al., 2024; Yadav & Jain, 2023).

Furthermore, India's rapid economic growth and technological advancement have also intensified environmental challenges (Malik & Kashiramka, 2024). Additionally, the country's vulnerability to climate change (manifested in rising sea levels and extreme weather events) emphasises the critical need for corporations to adopt robust environmental practices that mitigate risks and contribute to a sustainable future. Hence, Indian firms' environmental commitments are pivotal in global climate change efforts (Lu & Cheng, 2023; Zhao et al., 2018c). Addressing social issues like poverty, inequality, and access to basic needs aligns corporate strategies with societal goals. Strong governance practices enhance accountability, attract investment, and build trust in the evolving market. Furthermore, increasing public awareness, stakeholder activism, and shifting consumer preferences have intensified the demand for ESG adoption. Moreover, India's prominence as a top investment destination in Europe and the US, driven by efforts to reduce reliance on uncertain economies, further amplifies the global significance of its sustainability practices (Narula, 2012; Palmate et al., 2021; Rao et al., 2023). India is also at the forefront of development among emerging

² India Overtakes UK as the World's Fifth-Largest Economy | World Economic Forum

³ <https://www.un.org/development/desa/dpad/publication/un-desapolicy-brief-no-153-india-overtakes-china-as-the-worlds-most-populous-country/>

nations⁴, offering significant value as a model that can be replicated in other emerging countries. The country's evolving sustainability landscape, regulatory advancements, and corporate strategies for ESG offer actionable insights for nations with similar socio-economic contexts and institutional frameworks.

This study makes several contributions to the existing literature. First, it addresses a critical gap by focusing on the association between ESG reporting and corporate performance in SI and NSI companies. It also conducts an industry-focused study for India, providing implications for other emerging markets. Second, it explores how environmental sensitivity influences ESG's impact on operational, financial, and market performance, providing an in-depth understanding of the orientation diversity and sensitivity in ESG practices. Third, it considers individual ESG dimensions (E, S, and G) beyond overall ESG impact, offering different perspectives. Fourth, the study's rigorous methodology uses a robust econometric approach, specifically system-GMM, to control for time effects and potential endogeneity issues, thereby enhancing the credibility and generalizability of the findings. Fifth, we employed a sample of Indian listed companies rather than relying on any specific representative index, enhancing its generalizability across- small, medium, and large enterprises. This broad sampling approach ensures that the findings are equally replicable to various companies in the securities basket, providing more comprehensive insights to managers and investors. Finally, the empirical results inform the design of legal and regulatory frameworks to enhance sustainability in respective industries. As a result, it suggests that ESG factors influence corporate outcomes differently across both industry types, and simply following sustainability is somewhat naïve. Across listed businesses in SI, there is an insignificant association between strengthening the credibility of their non-financial reporting and implementing effective corporate governance systems, and reduced profitability, as sensitive firms face more challenges and scrutiny from stakeholders. Meanwhile, in NSI companies, ESG practices have a positive and significant impact on performance, underscoring their importance for long-term value creation and investor recognition. The varying effects of environmental, social, and governance (ESG) factors underscore the need for companies to develop customised sustainable strategies to see both SI and NSI corporations succeed economically.

4.2. Theoretical Background and Literature Review

The relationship between ESG and corporate performance has garnered significant attention, with numerous meta-analyses and literature surveys examining the dynamic (Brooks & Oikonomou, 2018; Friede et al., 2015a; Hang et al., 2019). For instance,

⁴ <https://pib.gov.in/PressNoteDetails.aspx?NoteId=153357&ModuleId=3®=3&lang=1>

Peloza (2009) and Friede et al. (2015) report that most research indicates positive results, attributing this to competitive advantage (Danso et al., 2019) by enhancing reputation (Zimon et al., 2022) and consumer loyalty (Orlitzky et al., 2003b). This, in turn, is expected to boost profits (Freeman, 1984). Furthermore, Chen et al. (2023) found that ESG substantially impacts profitability in large-scale companies and high-risk scenarios. Conversely, some studies highlight the costs and time required for sustainable practices, which may reduce profitability (Jaeger & Upadhyay, 2020; Cerciello et al., 2023). Others, like Franco et al. (2020), discover a U-shaped, indicating the complexity of ESG's impact.

4.2.1 Aggregating ESG and Corporate Performance

Despite the extensive studies, there still needs to be a consensus on the impact of ESG disclosure on firm profitability (Khandelwal et al., 2023; Lu & Cheng, 2023). For instance, Salehi & Arianpoor (2021) reveal a mutual relationship between financial and non-financial sustainability performance, emphasizing the need for a comprehensive approach to assessing sustainability performance across various components. Variability in empirical findings from diverse characteristics of ESG data and methodologies employed in its collection and analysis (Busch & Hoffmann, 2011; Chatterji et al., 2009; Stefan & Paul, 2008). Studies reveal that firms disclose their ESG commitment to meet legitimacy criteria and improve performance (Lee & Raschke, 2023). Contrary to these observations, agency cost theory posits that sustainability disclosures adversely impact the firm's value due to associated costs (Giannopoulos et al., 2022; Hussaini et al., 2021; Lahouel et al., 2021). Nevertheless, these practices may yield positive effects in the long term (Behl et al., 2022a).

Stakeholder theory claims that fostering positive relationships with internal and external stakeholders through corporate disclosure enhances performance, thereby ensuring long-term business sustainability (Freeman, 2010b). Also, ESG practices assist in bolstering efficiency and value (Mohammad & Wasiuzzaman, 2021). Chelawat & Trivedi (2016) assess that ESG positively influences not only market value but also the operating and financials of the firms. A strong ESG score enhances reputation (Pham & Tran, 2020), lower debt cost (Gigante & Manglaviti, 2022), and improves capital access at a lower rate (Ramirez et al., 2022; Wong et al., 2021). These benefits are observed in developed economies (Gartia & Panda, 2024) due to stringent regulations and effective ESG communication. Recently, emerging economies have also moved towards mandatory regulations. For instance, Indian regulators have mandated ESG disclosures for India's top 1000 listed companies. Complying with these requirements necessitated substantial investments, meaning firms must have adequate financial resources to support and enhance their ESG disclosures.

In India, the impact of ESG disclosures on corporate performance yields mixed results. For instance, a 2024 study by Veeravel et al. (2024) using GMM methodology reveals that better ESG disclosures lead to superior financial performance. Dalal & Thaker (2019), Chelawat & Trivedi (2016), and Sinha et al. (2023) similarly note that improved accounting and market-based outcomes for firms with strong ESG performance. However, Bansal et al. (2022) find benefits only when sustainability reporting exceeds a certain threshold. Gupta et al. (2021) emphasize the significant role of environmental sustainability across performance dimensions. In contrast, Jha and Rangarajan (2020) reported no substantial link, indicating that firms with varying sustainability measures performance are similar in economic measures. In another study, Mishra et al. (202) show a significant negative of ESG disclosures on performance measures. This diverse body of literature highlights that ESG factors can vary widely depending on the specific measures and thresholds considered.

4.2.2 Environmental practices and corporate performance

Environmental practices have been a focal point for researchers (Pinheiro et al., 2022), with their financial results yielding contrasting results, being described as positive, negative, insignificant, U-shaped, and even reverse U-shaped (Guenther & Hoppe, 2014; Lee et al., 2016; Lewandowski, 2017; Wagner, 2005). Some studies reveal that environmentally friendly activities yield superior profits (Blanco et al., 2009; Molina-Azorín et al., 2009; Nakao et al., 2007; Schultze & Trommer, 2012). As a pioneering study, Cohen et al. (1997) analyzed S&P 500 constituents between 1987 and 1989 and found that environmental compliance positively affected return on assets and equity. Subsequent studies have corroborated these findings with meta-analyses, confirming a linear and positive association between corporate environmental performance and financial profitability. This positive is observed in developed countries (Campbell, 2007b; Fijałkowska et al., 2018) and emerging economies (Manrique & Martí-Ballester, 2017; Voinea et al., 2020). The natural resource-based viewpoint is that corporate environmental practices offer a competitive advantage, resulting in better financial outcomes (Hart, 1995; Hart & Dowell, 2011; Russo & Fouts, 1997). Another strand of literature reports a negative association (Boakye et al., 2021; Hasan et al., 2022; Preston & O'Bannon, 1997; Wong et al., 2018). For instance, Xie et al. (2019) found a significant negative effect of environmental commitment on profitability across nearly 7,000 firms in 74 countries. According to neoclassical theories, the costs of implementing ecological activities can outweigh the benefits, thus reducing competitiveness (Ayayi & Wijesiri, 2022; García-Sánchez & Prado-Lorenzo, 2012; Jo et al., 2015; Lioui & Sharma, 2012), since environmental initiatives require time and cost.

A third tranche of the literature suggests that the relationship between environmental practices and financial profitability is more complex than simply negative and positive; some research argues for a neutral impact (Ortiz-de-Mandojana & Aragon-Correa, 2015; Zou et al., 2015) while others U-shaped and inverse U-shaped effect (Boakye et al., 2020; Guo & Lu, 2021). For instance, Horváthová (2012) found that the relationship between environmental practices and profitability initially appears hostile but turns positive over time. The lack of consensus partly stems from the heterogeneity of measures to capture the environmental impact. Different methodologies and contexts make it challenging to generalize findings.

4.2.3 Social practices and corporate performance

The relationship between CSR and firm performance continues to be a topic of significant debate (Adamkaite et al., 2023), with studies offering three main perspectives: positive, negative, and non-linear. The first tranche of literature supports stakeholder theory and supports a positive association between CSR and financial performance. According to Freeman (1984), firms exist within an ecosystem of stakeholders, including employees, customers, suppliers, communities, and shareholders. Engaged stakeholders contribute to better financial outcomes, ensuring long-term success (Mhlanga & Moloi, 2020) and sustainability (Kitchen, 2020). Conversely, another tranche posits that CSR harms financial performance (K. E. Aupperle et al., 1985; Graves & Waddock, 2000). A recent study using data from 15 countries (2011-2020) reveals that CSR hinders firm performance (Hsiao et al., 2024). This view is supported by the trade-off theory, which argues that pro-social activities impose additional costs on firms, ultimately reducing profitability (Cai et al., 2016; Friedman, 1970).

Research by Nollet et al. (2016) and Mittal et al. (2008) concludes that firms committed to CSR generate significantly less economic value. The agency theory further supports this view, suggesting that managers pursue social contribution for personal reputation at the expense of shareholders, leading to deterioration in firm wealth (Barnea & Rubin, 2010c). Consequently, social activities are often seen as problems with the managerial agency (Benbou & Tirole, 2010; Masulis & Reza, 2013). Other studies indicate no association (Garcia-Castro et al., 2010; McWilliams & Siegel, 2000b) or non-linear relationships (Flammer, 2015). For instance, Wagner and Schaltegger (2004) show that CSR and firm outcomes have an inverted U-shaped curve relationship based on data from the EU manufacturing industry. Similarly, Kim and Statman (2012) report that social commitment increases financial profitability only up to a certain point, after which it has a negative performance effect, aligning with this agency's view (Flammer, 2015).

4.2.4 Governance practices and Corporate Performance

This relationship has been extensively reviewed, with studies presenting various perspectives (Martínez-Ferrero & Frías-Aceituno, 2015a; Nguyen et al., 2021; Rodriguez-Fernandez, 2016). Corporate governance arises from the separation of business ownership (principals/shareholders) and the management (agents), encompassing the rules and practices that guide firm operations and align stakeholders' interests (Cuervo, 2002). Effective corporate governance promotes sustainable development and ethical business practices (Lambertini & Tampieri, 2015; Manasakis et al., 2014) while mitigating sustainability-related controversies. The board of directors is critical in ensuring the firm's financial viability (Agnese et al., 2023).

A significant body of literature suggests a positive association between corporate governance and financial profitability. Stewardship theory posits that employees are intrinsically motivated to perform the tasks, leading to improved business track records (Davis et al., 1997; Muth & Donaldson, 1998). Donaldson & Preston (1995) claims that top management does not need to oversee manager's work closely, as they aim to achieve superior financial results. Alternatively, resource dependency theory supports the positive relationship, emphasizing that governance must interact with external organizations to secure essential resources for firm survival (Pfeffer & Salancik, 1978). Implementing effective management frameworks and governance structures can improve financial results and competitive advantage (Hillman et al., 2000). Conversely, some studies identify a negative relationship (Agrawal & Knoeber, 1996; Saidat et al., 2019). Cherian et al. (2019) find that specific corporate board characteristics negatively impact ROE. Similarly, Paniagua et al. (2018) analyzed 1207 companies from 59 countries across 19 sectors (2013–2015) and observed the adverse effects of corporate governance on performance. The agency cost theory explains these results, posing that those managers may not act in the owners' best interest due to a lack of incentives (Jensen & Meckling, 1976b). Although appropriate rewards can mitigate the agency problem (Grossman & Hart, 1986), they might backfire, leading managers to pursue personal goals over the firm's best interest (Brown, 2006; Krüger, 2015).

4.2.5 ESG disclosure and controversial environmentally sensitive firms

The variability in social or environmental disclosure content across different industries is a focal point of current research (Branco & Rodrigues, 2008; Teng et al., 2021). Studies by Han et al. (2021) and Huang et al. (2024) emphasize the challenges faced by inherently more polluting industries such as thermal power generation and steel production. These sectors, characterized by significant environmental footprints,

are under intense stakeholder pressure and social scrutiny, which drive them towards extensive ESG disclosure. Kuo and Chang (2021) note that firms in SI face unique challenges in ESG reporting, using Sustainable Development Goals (SDG) reporting as a strategy to mitigate negative public image. Since 2015, research has focused on ESG within specific sectors, particularly the energy industry (Horobet et al., 2024; Makridou et al., 2024). For instance, Zhao et al. (2017) find that high ESG can enhance the financial performance of firms in Chinese energy power. In contrast, Adamkaite et al. (2023) conclude that sustainability efforts do not impact the economic performance of nine Lithuanian energy companies. Similarly, Constantinescu et al. (2021) discover a varied connection between ESG and market values across various sectors, such as oil and gas, renewable energy, and utilities, indicating both positive and a negative link. Another study in the Indian context finds that while ESG disclosure positively affects firm performance, the relationship is moderated by industry climate sensitivity, with the effect being more substantial for less climate-sensitive industries (Maji & Lohia, 2024b).

Although the global interest in ESG (Arianpoor & Salehi, 2020; R. Chen & Zhang, 2024; S. Chen et al., 2023; Nie et al., 2024; Salehi et al., 2018; Salehi & Arianpoor, 2021; Shafeeq Nimr Al-Maliki et al., 2023; Zhou et al., 2024; Zimon et al., 2022), few studies have differentiated the impact between environmentally sensitive and non-sensitive industries (Naeem et al., 2022). Research indicates that firms in SI exhibit higher environmental performance, where they define sensitive industries as those operating in sectors marked by societal taboos, moral conflicts, and political pressure, including weapons, nuclear, biotech, gambling, alcohol, and adult entertainment. Moreover, environmentally sensitive industries encompass energy, mining, metals, construction, chemicals, pulp, and paper, known for their significant environmental impact and regulatory scrutiny (Garcia et al., 2017). Companies in these industries invest heavily in environmental and social management to mitigate their operational impact and face stricter regulatory frameworks and social pressures due to their substantial environmental footprints (Miralles-Quirós et al., 2018). However, this study defines environmentally sensitive industries as those whose business activities significantly impact socio-environmental landscapes (Halkos & Skouloudis, 2016). In line with prior studies, Gracia & Siregar (2021), Miralles-Quirós et al. (2018), and Yoon et al. (2018), we classify industries within the energy, material, and utilities sectors as environmentally sensitive industries, following the GICS. All other industries are categorized as non-environmentally sensitive industries.

Previous studies point out different firm characteristics due to the firm's affiliation with SI (Iatridis, 2013; Miralles-Quirós et al., 2018; Wang et al., 2022; Yoon et al., 2018). ESG disclosure in these industries may not significantly contribute to corporate

sustainable growth, potentially due to the stricter regulatory scrutiny and accusation of “greenwashing” (Ren, Zhang, et al., 2022). This scrutiny leads firms to use impression management tactics in their sustainable disclosures (Appiagyei & Donkor, 2024; Hahn & Lülfs, 2013). Xue et al. (2023) highlight that regardless of the disclosure regime, an adverse relationship exists between disclosures and firm value, with the effect being more pronounced in SI companies.

Numerous academic studies indicate a positive association between a firm’s market value and its ESG scores (Abdi et al., 2022; Bissoondoyal-Bheenick et al., 2023a; Carnini Pulino et al., 2022; Chouaibi et al., 2021). However, these findings do not account for whether a firm belongs to an SI or NSI. The link between robust corporate ESG performance and increased corporate outcomes varies in both industries, highlighting the need for further research into the nuanced impacts of ESG on corporate performance. Given the significant influence on stakeholders and regulatory frameworks, particularly in SI companies (Wichianrak et al., 2023). Hence, it is imperative and novel to explore the differentiated impacts of ESG on SI and NSI corporate performance in India. To the best of our knowledge, no prior study has addressed this distinction analysis, as shown in the conceptual framework (Figure 1), which is crucial for developing targeted strategies to enhance corporate performance and sustainable growth.

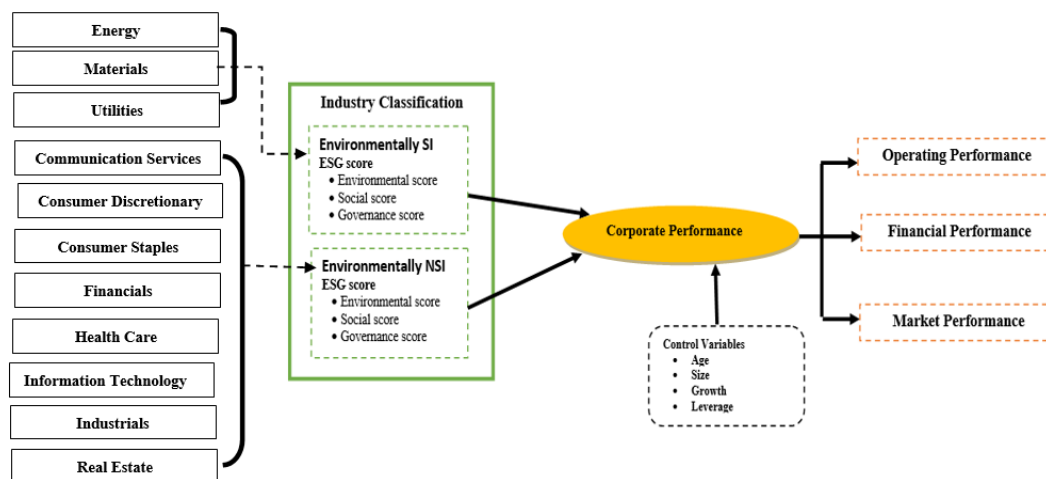


Figure 4.1: Conceptual Framework
Source: Authors own work

4.3. Research Design and Methodology

4.3.1 Sample and Data Description

The study examines the differential impact of ESG and dimensions on corporate performance across SI and NSI industries among Indian companies listed on the NSE

from 2015 to 2023. The initial period of this investigation is prompted by the implementation of laws mandating the disclosure of information in 2014-15. A sample comprising 605 Indian-listed corporations which have headquarters in India. These corporations were selected based on the corporate metrics from Prowess databases and the availability of ESG disclosure data sourced from Refinitiv Eikon. Notably, the availability of ESG scores varies across corporations and years based on the availability of ESG data for selected companies. Consequently, the sample size fluctuates annually based on the availability of data from the chosen companies.

To delve into the distinct industry contexts, the study classifies corporations based on the GICS classification provided by Morgan Stanley Capital International (MSCI) and Standard & Poor (S&P), which are utilised by the global community. Table 4.1 illustrates the sample's industry classification, ensuring a representative and unbiased portrayal of the broader economy.

Table 4.1: Distribution of the sample by the industry

Panel A					Panel B	
Sample distribution across industries					Sample classification between environmentally sensitive industries and non-sensitive industries	
GICS Sector Name		Companies	Percent	Cum.	Criteria	No. of companies
					Total listed companies in the sample	605
1	Communication Services	19	3.14	3.14	Companies in sensitive industries include energy (4), materials (9), and utilities (11).	
2	Consumer Discretionary	94	15.54	18.68		
3	Consumer Staples	42	6.94	25.62		
4	Energy	13	2.15	27.77		
5	Financials	95	15.7	43.47	Companies in non-sensitive industries, all companies excluding energy, materials, and utility sectors.	152
6	Health Care	50	8.26	51.74		
7	Industrials	106	17.52	69.26		
8	Information Technology	29	4.79	74.05		
9	Materials	119	19.67	93.72		
10	Real Estate	18	2.98	96.69		
11	Utilities	20	3.31	100		
Total		605	100			
						453

As shown in Panel, the companies represented in the sample are well-distributed across several sectors, with materials (19.67%), industrials (17.52%), and financials (15.7%) as the most prominent segments. At the same time, real estate, utilities, and information technology have the lowest concentration. Panel B classified industries into SI and NSI. The analysis explicitly defines the businesses operating in the energy, materials, and utility sectors as environmentally sensitive companies, following the framework employed by Yoon et al. (2018) and Gracia and Siregar (2021). The energy sectors encompass energy equipment and services and the oil, gas,

and consumable fuel industries; the materials sector includes chemicals, construction materials, containers and packaging, metals and mining, and papers and forest products industries; the utility sectors include electric, gas, water, and power and renewable electric producers' industries. The categorisation allows for a nuanced examination of how SI industries may interact with ESG factors in driving corporate performance.

4.3.2 Variable and measurement

The research has been facilitated by the utilisation of pertinent empirical variables, which are elaborated upon in the subsequent description:

Dependent Variables

Table 4.2 outlines the variables in this study, focusing on corporate performance, which is assessed using three key metrics: operating (indicated by ROA), financial (ROCE), and market (Tobin's Q) as defined by Narula et al. (2024); Veeravel et al. (2024). Prior research has commonly utilised these metrics as outcome variables to examine the performance of corporations, employing appropriate panel data regression (Buallay, 2019; Alareeni & Hamdan, 2020; Pätäri et al., 2012; Choi & Wang, 2009).

We utilise ROA as a measure to evaluate operational performance; it assesses how effectively and efficiently a corporation utilises its total assets to generate profit, thereby providing insights into its overall operational efficiency and performance (Velte, 2020; Wang & Sarkis, 2017a). Additionally, ROCE is employed as an indicator of financial performance; it evaluates the firm's profitability and efficiency in utilising its capital. It provided insights into how efficiently a firm generates returns from capital invested (Maqbool & Bakr, 2019; Veeravel et al., 2024). Tobin's Q is employed as a measure of market performance; it is a market-based metric for assessing a company's performance and market valuation. In addition to market performance, it accounts for the long-term replacement cost of a country's assets, making it a significant indicator in sustainable investment strategies, as defined by Narula et al. (2024) and Veeravel et al. (2024).

Independent Variables

ESG scores from Refinitiv Eikon-DataStream reflect a composite measure derived from publicly available data, such as annual reports, stock market filings, corporate websites, newspapers, and CSR reports from reputable corporations across environmental, social, and corporate governance dimensions. This database objectively and transparently evaluates a company's ESG practices, accountability,

and effectiveness. The scoring system evaluates companies using 186 key metrics and industry-specific criteria, generating a percentage score ranging from 0 to 100 (Bruna et al., 2022; Rajesh & Rajendran, 2020; Sarkis & Cordeiro, 2001; Shakil, 2021). These scores reflect a firm's performance across ten critical E, S, and G themes. Where the E discloses the emissions, innovation, and resource usage. The S pillar includes human rights, workforce, community, and product responsibility. The G pillar covers shareholders, management, and CSR strategy. These data are calculated based on publicly available data utilizing Refinitiv's specific methodology⁵.

Control Variables

Moreover, this study incorporates control variables to enhance the study's internal validity, thus mitigating the confounding factors and bolstering the robustness of the findings. We include the following control variables to enhance the efficiency of the measurement model. Firm age, measured as the natural logarithm of the fiscal year minus the incorporate year, reflects the influence of mature firms, which may possess more established operational structures and reputational capital, affecting their sustainability initiatives and financial performance (Doshi et al., 2024d). The firm size, determined by the natural logarithm of total assets (Bualay, 2019b; Hillman et al., 2000; Velte, 2017a), is a key factor influencing corporate performance. Larger firms generally exhibit superior disclosure strategies compared to small companies (Veeravel et al., 2024). Leverage, measured by debt-to-equity ratio, captures financial risk, with evidence suggesting that firms with lower debt levels tend to adopt stronger ESG practices than highly leveraged firms (Bhandari, 1988). High leverage may reduce operational efficiency by increasing interest expenses, which limits investment in growth and innovation. Moreover, it also impacts market performance, as investors may view highly leveraged firms as riskier. Another control variable is sales growth, which is calculated as annual changes in sales included to account for a firm's growth trajectory, which can impact the ability to allocate resources to sustainability initiatives (Bansal et al., 2021; Chen & Ibhagui, 2019).

Table 4.2: Definitions of key variables

Symbol	Definition	Measurement	Source
<i>Dependent Variables</i>			
ROA	Return on Assets	Operating Performance: Earnings Before interest and tax divided by Total Assets	Prowess
ROCE	Return on Capital Employed	Financial Performance: Earnings Before interest and tax divided by Capital Employed	Prowess

⁵ https://www.lseg.com/content/dam/data-analytics/en_us/documents/methodology/lseg-esg-scores-methodology.pdf

Chapter 4

Symbol	Definition	Measurement	Source
TQ	Tobin's Q	(Market Capitalisation+ Debt)/ Total Assets	Prowess
Independent variables			
ESG	Environmental, Social, and Governance score	The aggregate score consists of parameters from Thomson Reuters.	Refinitiv Eikon
ES	Environmental Score	The environmental score consists of parameters such as natural systems and ecosystems. Thomson Reuters has analyzed 57 indicators to measure the score.	Refinitiv Eikon
SS	Social Score	The social score is the company's ability to increase loyalty and trust with its workforce, customers, and society. Thomson Reuters has utilized 60 indicators to measure the score.	Refinitiv Eikon
GS	Governance Score	The governance score consists of parameters such as the systems and processes of a company, which are in the best interests of its shareholders. Thomson Reuters has assessed 48 indicators to measure the score.	Refinitiv Eikon
Control variables			
Age	Firm Age	log of the fiscal year minus the incorporation year	Prowess
Size	Firm Size	Natural logarithm of total assets	Prowess
Growth	Firm Growth	determined by the growth rate of core business revenue	Prowess
DE	Firm Leverage	Total company debt divided by shareholder's equity	Prowess

4.3.3 Model Specification

The interplay between ESG and corporate performance, along with relevant control variables, involves potential endogeneity issues, such as mutual influence, reverse causality, and simultaneity (Kahloul et al., 2022; Martínez-Ferrero & Frías-Aceituno, 2015). To navigate this, we employed the system-GMM, recommended by Arellano & Bond (1991) and refined by Arellano & Bover (1995) and Blundell & Bond (1998). This approach utilises lagged variables as instruments, combining equations in both first differences and levels, as illustrated in the given equations.

System GMM is widely used in ESG research (Agnese et al., 2023; Sinha Ray & Goel, 2023b) due to its robust ability to mitigate econometric issues like weak instruments, size distortion, and omitted variable bias. By leveraging instruments from both level and first-differenced equations, this technique effectively addresses

challenges in dynamic panel data, ensuring robust and precise estimates through asymptotic normality (Dwibedi et al., 2024).

$$ROA_{it}(SI) = \emptyset ROA_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

$$ROCE_{it}(SI) = \emptyset ROCE_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

$$Tobin's Q_{it}(SI) = \emptyset Tobin's Q_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

$$ROA_{it}(NSI) = \emptyset ROA_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

$$ROCE_{it}(NSI) = \emptyset ROCE_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

$$Tobin's Q_{it}(NSI) = \emptyset Tobin's Q_{it-1} + \beta_1 ESG_{it} + \beta_2 Age_{it} + \beta_3 Size_{it} + \beta_4 Growth_{it} + \beta_5 leverage_{it} + \varepsilon_{it}$$

ROA, ROCE, and Tobin's Q are operational, financial, and market performance indicators. Here, SI and NSI represent environmentally sensitive and non-sensitive industries. Concurrently, ESG (and E, S, and G pillars individually) scores are explanatory variables, with age, size, growth, and leverages as controls. Parameters $\emptyset$ and β represents coefficients, i denotes cross-sections, t represents time, and ε is the error term.

To ensure robustness, data were winsorized at the 1 and 99 percentiles. VIF (Variance Inflation Factor) and correlation tests have been employed to test multicollinearity, while Wooldridge and modified Wald tests addressed serial correlation and heteroscedasticity. Instrument validity was confirmed using Sargon and Hansen tests (Arellano & Bond, 1991), ensuring the reliability of the dynamic analyses.

4.4. Descriptive Statistics and Correlation Matrix

Table 4.3 presents descriptive statistics of this study. The mean ROA is 0.111, indicating an average return on assets for the sample companies, ranging from – 16.1% to 43.3%, while ROCE averages 18.3%, surpassing the ROA return. Tobin's Q ratio averages 2.789, signifying that the market value of companies exceeds their replacement cost. The average ESG disclosure score is 46 out of 100, with pillar-wise mean scores of 39.1 for environmental disclosure, 50.0 for social disclosure, and 50.2 for governance disclosure. These values indicate variation in the level of disclosure across the three ESG pillars, with social and governance disclosure exhibiting higher average scores than environmental disclosure. The control variables include age (mean = 1.494), size (mean = 4.661), growth (mean = 0.162), and leverage (mean = 0.714), providing an overview of the financial and firm-specific characteristics of the sample.

2

Table 4.3: Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
ROA	5,311	0.1111	0.0930	-0.1612	0.4328
ROCE	5,311	0.1830	0.1608	-0.2296	0.8423
Tobin's Q	3,430	2.7897	2.9620	0.1327	16.8364
ESG	2,100	0.4600	0.1605	0.1199	0.8224
Env	2,101	0.3913	0.2267	0.0000	0.9112
Soc	2,100	0.5001	0.2038	0.0894	0.9279
Gov	2,100	0.5018	0.2249	0.0692	0.9333
Age	5,409	1.4943	0.3299	0.0000	2.2041
Size	5,311	4.6612	0.7843	2.9308	6.8626
Growth	4,775	0.1615	0.4352	-0.6601	2.9679
DE	5,207	0.7141	1.3419	0.0000	8.6300

Table 4.4 presents the Pearson correlation matrix, revealing varying associations between ESG and corporate performance across both industries. ESG and performance indicators exhibit negative correlations in SI industries, whereas NSI is generally favorable. However, the correlation matrix does not provide a definitive analysis. Therefore, we employed multivariate models to investigate these dynamics further. As a preliminary diagnostic tool, we employed the Pearson correlation matrix to identify potential multicollinearity among the variables within SI and NSI companies. Multicollinearity occurs when two or more predictors in multiple regression models are highly correlated (Kennedy, 2008; Wooldridge, 2015). While the correlation matrix offers initial insights, it must comprehensively depict the relationship. We calculated and displayed the mean VIF in their respective model to address this limitation, presenting a more nuanced understanding of multicollinearity.

Table 4.4: Pairwise Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11
Panel A: Sensitive Industries											
ROA	1.000										
ROCE	0.9237*	1.000									
TQ	0.3751*	0.3390*	1.000								
ESG	-0.1311*	-0.1090*	-0.029	1.000							
Env	-0.1544*	-0.1136*	-0.1085*	0.8269*	1.000						
Soc	-0.065	-0.026	-0.1246*	0.7902*	0.7242*	1.000					
Gov	-0.046	-0.080	0.1325*	0.3653*	0.052	-0.010	1.000				
Age	0.045	0.045	-0.0813*	0.2086*	0.1882*	0.2245*	0.0858*	1.000			
Size	-0.2250*	-0.2007*	-0.2588*	0.4227*	0.5394*	0.6120*	-0.1573*	0.2670*	1.000		
Growth	0.1015*	0.0927*	0.1414*	-0.0909*	-0.0979*	-0.1345*	0.037	-0.1439*	-0.047	1.000	
DE	-0.3162*	-0.3151*	-0.1928*	0.068	0.0878*	0.1369*	-0.1475*	-0.0832*	0.1897*	0.021	1.000

4

	1	2	3	4	5	6	7	8	9	10	11
Panel B: Non-Sensitive Industries											
ROA	1.000										
ROCE	0.7076*	1.000									
TQ	0.4912*	0.4679*	1.000								
ESG	0.1555*	0.1072*	0.1376*	1.000							
Env	0.0653*	0.0896*	0.029	0.7105*	1.000						
Soc	0.1326*	0.1339*	0.0861*	0.8423*	0.6562*	1.000					
Gov	0.1202*	0.012	0.1189*	0.6780*	0.2846*	0.3626*	1.000				
Age	0.026	0.1589*	-0.0470*	0.0648*	0.1682*	0.1216*	-0.1034*	1.000			
Size	-0.2108*	0.0436*	-0.2433*	0.1683*	0.2531*	0.3063*	-0.035	0.2954*	1.000		
Growth	0.033	0.032	0.1226*	-0.045	-0.0791*	-0.0593*	-0.004	-0.1646*	-0.080	1.000	
DE	-0.2241*	-0.2296*	-0.1986*	-0.0858*	-0.1268*	-0.029	-0.0884*	-0.0908*	0.2855*	0.023	1.000

4.5. Empirical Results

We examine the relationship between ESG and corporate performance among SI and NSI companies using a two-step system-GMM. Tables 4.5, 4.6, and 4.7 present operating, financial, and market performance results, respectively. Here, Model (1) evaluates the overall ESG score, while Models (2), (3), and (4) assess individual dimensions' impact, respectively. The estimated coefficients β and corresponding t-values (in parentheses) are reported.

One concern is the potential endogeneity issue due to reverse causality between the variables. To address endogeneity, measurement errors, and unobserved heterogeneity, we employed system-GMM, controlling for time-fixed effect. The AR tests confirm no second-order correlation (with p-value>0.05), and the Sargon and Hansen tests (p>0.05) validate the instrument sets. These results ensure the robustness and unbiasedness of the models.

4.5.1 Impact of ESG on the operating performance across SI and NSI

Table 4.5 outlines the impact of ESG on the operating performance of corporations for SI (Panel A) and NSI (Panel B). For SI, the results indicate that ESG has an insignificant (-0.0228) effect (Chung et al., 2024). Supporting this, Yoon et al. (2018) suggested that firms in sensitive industries are held to higher standards to address the environmentally harmful activities associated with their operations. These standards may lead to costs for these corporations rather than benefits. For instance, industries such as mining, cement, and chemicals, which have stricter sustainability practices, may impose significant compliance costs. In contrast, ESG positively and significantly influences ROA ($\beta = 0.514$, p-value<0.01) across NSI firms, indicating that investing in companies with vital ESG initiatives can yield higher returns (Xu & Zhu, 2024; Veeravel et al. (2024).

Moreover, robust ESG practices enhance a corporation's reputation, bolster stakeholder confidence, and improve operational efficiency. This observation is consistent with stakeholder theory, which posits that ethical and moral considerations are critical in organisational decisions (Freeman et al., 2020). Consequently, businesses that effectively manage ESG risks and capitalise on ESG opportunities exhibit superior performance (Dong et al., 2023; Rahman et al., 2023; C. Zhao et al., 2018). These findings align with numerous seminal studies documenting a favourable association between ESG and firm performance (Albitar et al., 2020; Rahman et al., 2023). This finding underscores the strategic importance of integrating ESG considerations into management to achieve sustainable financial success.

A standalone analysis reveals that environmental ($\beta = 0.0259$, $p\text{-value} < 0.05$), social ($\beta = 0.0483$, $p\text{-value} < 0.05$), and governance ($\beta = 0.0165$, $p\text{-value} < 0.10$) factors exhibit significant positive impacts on NSI companies. Social factors, in particular, are crucial to improving outcomes, as highlighted by stakeholders positively evaluating social concerns (Fosu et al., 2024). These findings underscore the importance of societal contributions in fostering value creation and enhancing public image, thereby encouraging stakeholder investment. Conversely, in SI firms, we find that while aggregate ESG disclosure does not have a significant impact (Masongweni & Simo-Kengne, 2024), governance factors ($\beta = -0.0317$, $p\text{-value} < 0.05$) show a negative and significant impact, contradicting stakeholder theory, aligning with the findings of Yoon et al. (2018). This relationship is likely due to the burden of regulatory burdens, suggesting that increased focus on sustainability can detract from corporate objectives. These industries often have stringent disclosure requirements due to their potential for negative environmental impacts, which can hinder performance (Yoon et al., 2018). These findings highlight the varied effects of ESG across different industries, shaped by regulatory demands and stakeholders' expectations.

Control variables show a negative and significant association between size and leverage with the operating performance, indicating that smaller firms are generally more profitable and higher leverage increases risk, reducing profitability, aligning with the pecking order theory, which posits that higher debt levels reduce profit margins (Gupta & Aggarwal, 2024; Malik & Kashiramka, 2024; Veeravel et al., 2024). Conversely, growth consistently shows a positive impact across industries.

Table 4. 5: ESG and ROA: System GMM two-step model

	Panel A: Environmentally Sensitive Industries				Panel B: Environmentally Non-Sensitive Industries			
	1	2	3	4	5	6	7	8
	ROA	ROA	ROA	ROA	ROA	ROA	ROA	ROA
L.ROA	0.570*** (4.01)	0.560*** (3.95)	0.545*** (3.66)	0.575*** (4.23)	0.514*** (5.27)	0.501*** (4.86)	0.503*** (5.02)	0.531*** (5.4)
ESG	-0.0228 (-1.12)				0.0515*** (3.53)			
Env		-0.0141 (-0.83)				0.0259** -2.55		
Soc			0.00178 (0.08)				0.0483*** (3.7)	
Gov				-0.0317** (-2.26)				0.0165* (1.74)
Age	0.0105 (0.82)	0.00884 (0.69)	0.011 (0.8)	0.0131 (1.04)	0.0134 (1.32)	0.0134 (1.28)	0.0138 (1.36)	0.0170* (1.65)
Size	-0.000556 (-0.08)	-0.00061 (-0.08)	-0.00406 (-0.45)	-0.0035 (-0.54)	-0.0170*** (-2.84)	-0.0171*** (-2.78)	-0.0200*** (-3.35)	-0.0126** (-2.20)
Growth	0.0523*** (3.57)	0.0514*** (3.53)	0.0508*** (3.5)	0.0525*** (3.51)	0.0204*** (3.00)	0.0201*** (3.03)	0.0201*** (2.97)	0.0203*** (3.06)
DE	-0.0190*** (-3.67)	-0.0192*** (-3.65)	-0.0188*** (-3.60)	-0.0192*** (-3.99)	-0.00504** (-2.05)	-0.00523** (-2.11)	-0.00500** (-2.05)	-0.00573** (-2.39)
constant	0.0458 (0.85)	0.0458 (0.81)	0.0505 (0.85)	0.0563 (1.07)	0.0984*** (3.03)	0.114*** (3.32)	0.114*** (3.40)	0.0850*** (2.65)
N	503	503	503	503	1222	1222	1222	1222
Arellano-Bond test for AR(1)	0.021	0.019	0.020	0.021	0.000	0.000	0.000	0.000
Arellano-Bond test for AR(2)	0.678	0.723	0.714	0.693	0.625	0.620	0.683	0.686
Sargon test	0.081	0.083	0.100	0.102	0.391	0.385	0.367	0.405
Hansen test	0.343	0.356	0.349	0.379	0.827	0.819	0.841	0.780
Max VIF	1.48	1.71	1.88	1.27	1.25	1.33	1.35	1.16
Mean VIF	1.23	1.31	1.38	1.14	1.12	1.18	1.16	1.07
YEAR EFFECT	YES	YES	YES	YES	YES	YES	YES	YES

This table uses the model: $ROA \sim \text{constant} + \text{ESG scores (E, S or G)} + \text{control variables} + \text{year fixed effect}$. Year-fixed effects are omitted for brevity. Panel A represents highly environmentally sensitive companies, whereas Panel B focuses on less sensitive ones. Robust t-statistics are in parentheses, and ***, **, and * indicate statistical significance at 1%, 5%, and 10%, respectively. VIF represents the variance inflation factor.

4.5.2 Impact of ESG on the financial performance across SI and NSI

In Table 4.6, the analysis reveals ESG disclosure and its dimensions on the financial performance of SI companies, whereas Panel B focuses on NSI companies. The analysis indicates that ESG positively and significantly impacts ROCE for NSI ($\beta =$

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0.0303, p -value <0.10) but is insignificant for SI (-0.0228), highlighting that NSI firms benefit more from sustainability initiatives (Bocken & Geradts, 2020). In contrast, SI companies face challenges such as high compliance costs, substantial investments, and a short-term financial focus, which can dilute ESG's immediate initiatives. Like ROA, we decompose ESG performance into individual components and find that only governance disclosure has a significantly negative impact on sensitive corporations ($\beta = -0.0603$, p -value < 0.01). This negative valuation effect is inconsistent with the stakeholder theory. However, it aligns with the trade-off theory, which may emphasise the substantial costs and complexities of maintaining strong governance standards. In NSI, social performance ($\beta = 0.0329$, p -value <0.05) significantly impacts financial performance, enhancing productivity, brand reputation, loyalty, and ethical investors. These factors bolster companies' financial stability and growth prospects. Whereas in the SI industries, the impact of governance disclosure is significant but negative; in other words, we can say that the firms with better governance practices would have a lower market value (Yoon et al. (2018)).

Among the control variables, growth and age have a significant positive effect on financial performance. This suggests that firms experiencing growth and those with older trends tend to perform better financially. Conversely, leverage exhibits a negative and significant association with ROCE, indicating that higher debt levels negatively impact profitability.

Table 4.6: ESG and ROCE: System GMM two-step model

	Panel A: Environmentally Sensitive Industries				Panel B: Environmentally Non-Sensitive Industries			
	1	2	3	4	5	6	7	8
	ROCE	ROCE	ROCE	ROCE	ROCE	ROCE	ROCE	ROCE
L.ROCE	0.487*** (3.04)	0.483*** (3.12)	0.508*** (3.47)	0.515*** (3.37)	0.769*** (7.60)	0.770*** (7.32)	0.763*** (7.37)	0.785*** (7.66)
ESG	-0.0377 (-1.22)				0.0303* (1.65)			
Env		-0.0145 (-0.61)				0.0181 (1.43)		
Soc			0.0101 (0.33)				0.0329** (2.00)	
Gov				-0.0603*** (-3.14)				0.00351 (0.29)
Age	0.0304* (1.68)	0.0275 (1.52)	0.0285 (1.58)	0.0326* (1.90)	0.0200** (2.09)	0.0194** (2.06)	0.0203** (2.13)	0.0215** (2.31)
Size	0.00127 (0.11)	-0.00017 (-0.01)	-0.003 (-0.22)	-0.00249 (-0.24)	-0.00561 (-0.77)	-0.00574 (-0.75)	-0.00819 (-1.03)	-0.00206 (-0.31)
Growth	0.0728*** (3.76)	0.0731*** (3.79)	0.0747*** (3.96)	0.0743*** (3.87)	0.0383*** (3.07)	0.0388*** (3.11)	0.0381*** (3.06)	0.0392*** (3.16)
DE	-0.0342*** (-5.42)	-0.0344*** (-5.54)	-0.0345*** (-6.51)	-0.0348*** (-6.17)	- (-2.15)	- (-2.14)	- (-2.14)	- (-2.36)

	Panel A: Environmentally Sensitive Industries				Panel B: Environmentally Non-Sensitive Industries			
_cons	0.052 (0.64)	0.0537 (0.65)	0.0379 (0.47)	0.0609 (0.79)	0.0277 (0.68)	0.0358 (0.80)	0.0388 (0.89)	0.0176 (0.44)
N	503	503	503	503	1222	1222	1222	1222
Arellano-Bond test for AR(1)	0.03	0.028	0.027	0.027	0	0	0	0
Arellano-Bond test for AR(2)	0.692	0.765	0.791	0.715	0.62	0.943	0.914	0.937
Sargon test	0.093	0.089	0.099	0.114	0.385	0.068	0.068	0.074
Hansen test	0.298	0.326	0.383	0.356	0.819	0.406	0.392	0.393
Max VIF	1.48	1.71	1.88	1.27	1.25	1.33	1.35	1.16
Mean VIF	1.23	1.31	1.38	1.14	1.12	1.18	1.16	1.07
YEAR EFFECT	YES	YES	YES	YES	YES	YES	YES	YES

This table uses the model: $ROCE \sim \text{constant} + \text{ESG scores (E, S or G)} + \text{control variables} + \text{year fixed effect}$. Year-fixed effects are omitted for brevity. Panel A represents highly environmentally sensitive companies, whereas Panel B focuses on less sensitive ones. Robust t-statistics are in parentheses, and ***, **, and * indicate statistical significance at 1%, 5%, and 10%, respectively. VIF represents the variance inflation factor.

4.5.3 Impact of ESG on the market performance across SI and NSI

As shown in Table 4.7, results based on market factors also demonstrate a stark contrast, measured by Tobin's Q, between SI and NSI corporations. ESG factors and their dimensions do not significantly impact the market performance of SI companies (Atan et al., 2018). The reason could be that investors and stakeholders lack confidence and trust in the ESG practices and operations of these corporations in emerging markets (Naeem et al., 2022). Moreover, another explanation could be that investors in these industries may prioritise immediate financial returns over long-term ESG improvements, leading to an insignificant impact. For SI firms, ESG disclosure may function as a signalling and reputation mechanism, fostering sustainable growth. However, stricter environmental regulations in recent years have complicated their effectiveness. Instead of attracting stakeholders, such disclosures risk being perceived as "greenwashing," "potentially undermining their role in fostering sustainable corporate success (Ren, Li et al., 2022; Wang et al., 2022).

In contrast, analysis indicates a significant positive impact of ESG ($\beta = 1.612$, p-value<0.10), with environmental ($\beta = 2.066$, p-value<0.05) and social ($\beta = 1.512$, p-value<0.05) dimensions playing a pivotal role. This implies that strong ESG practices are more highly valued by investors, boosting market valuation, as reflected by Tobin's Q (Malik & Kashiramka, 2024). Improvements in environmental and social practices enhance brand reputation and customer loyalty, which are recognized and rewarded. Additionally, firm age significantly impacts sensitive industries, whereas size negatively and substantially impacts non-sensitive sectors.

Table 4.7: ESG and Tobin's Q: System GMM two-step model

	Panel A: Environmentally Sensitive Industries				Panel B: Environmentally Non-Sensitive Industries			
	1	2	3	4	5	6	7	8
	TQ	TQ	TQ	TQ	TQ	TQ	TQ	TQ
L. TQ	0.797*** (4.41)	0.807*** (4.34)	0.782*** (4.51)	0.789*** (4.50)	0.924*** (13.80)	0.925*** (13.56)	0.937*** (13.57)	0.926*** (16.09)
ESG	0.752 (1.26)				1.612* (1.94)			
Env		0.647 (1.06)				2.066** (2.56)		
Soc			0.87 (1.40)				1.512** (2.09)	
Gov				0.259 (0.76)				0.536 (1.62)
Age	-0.614* (-1.87)	-0.601* (-1.88)	-0.642** (-2.02)	-0.690** (-2.11)	0.416 (1.29)	0.288 (0.89)	0.467 (1.44)	0.451 (1.39)
Size	-0.458 (-1.53)	-0.492 (-1.52)	-0.539* (-1.66)	-0.398* (-1.69)	-0.944** (-2.42)	-1.212*** (-2.65)	-1.031** (-2.43)	-0.678** (-2.17)
Growth	0.123 (0.89)	0.126 (0.92)	0.13 (1.03)	0.123 (0.90)	0.156 (0.70)	0.187 (0.82)	0.133 (0.57)	0.169 (0.75)
DE	-0.112 (-0.69)	-0.0935 (-0.50)	-0.116 (-0.76)	-0.124 (-0.73)	-0.0184 (-0.23)	-0.0202 (-0.24)	-0.0181 (-0.21)	-0.0312 (-0.43)
_cons	3.769** (2.09)	3.954** (2.00)	4.177** (2.24)	3.837** (2.25)	2.25 (1.43)	4.772** (2.45)	2.494 (1.48)	1.485 (1.09)
N	445	445	445	445	951	951	951	951
Arellano-Bond test for AR(1)	0.048	0.049	0.044	0.046	0.001	0.001	0.001	0.000
Arellano-Bond test for AR(2)	0.481	0.485	0.495	0.474	0.604	0.432	0.604	0.689
Sargon test	0.156	0.145	0.181	0.153	0.706	0.725	0.706	0.581
Hansen test	0.14	0.109	0.203	0.168	0.116	0.189	0.116	0.113
Max VIF	1.46	1.72	1.82	1.25	1.18	1.29	1.28	1.09
Mean VIF	1.22	1.32	1.37	1.15	1.10	1.15	1.14	1.05
YEAR EFFECT	YES	YES	YES	YES	YES	YES	YES	YES

This table uses the model Tobin's Q ~ constant + ESG scores (E, S or G) + control variables + year fixed effect. Year-fixed effects are omitted for brevity. Panel A represents highly environmentally sensitive companies, whereas Panel B focuses on less sensitive ones. Robust t-statistics are in parentheses, and ***, **, and * indicate statistical significance at 1%, 5%, and 10%, respectively. VIF represents the variance inflation factor.

4.6. Discussion and Contribution of the Study

Intriguingly, the summarised results (as shown in Table 4.8) suggest that ESG factors have differentiating impacts on corporate outcomes across various industry types. In SI companies, ESG initiatives may insignificantly influence performance indicators in emerging economies, as firms often engage in ESG activities primarily to meet regulatory obligations and social contracts rather than to drive profitability (Naeem et al., 2022). Additionally, in line with recent research on sustainable practices, factors such as organisational productivity, macro policies, and technological advancements have been

identified as crucial for enhancing the performance of sustainability-driven models (Bagherpasandi et al., 2024a, 2024b). Consequently, companies in these industries may face a challenging balance between regulatory demands and profitability in emerging nations. Furthermore, among ESG dimensions, Governance operations, in particular, exhibit an inverse relationship, aligning with shareholder theory (Friedman, 1970) and incurring reputational expenses (Mendiratta et al., 2023; Nirino et al., 2021; Wu et al., 2023), high innovational costs (Liu, 2023), and regulatory burdens (Gracia & Siregar, 2021; Jucá et al., 2024; Nilipour et al., 2020), which might be seen as a cost rather than a performance driver (Makridou et al., 2024).

Table 4.8: Summarized Results

	Hypotheses	Results (SI)	Results (NSI)
H1	A significant relationship association exists between operating performance and its overall ESG performance.	Insignificantly Negative	significantly Positive
H1a	A significant relationship association exists between operating performance and environmental performance.	Insignificantly Negative	significantly Positive
H1b	A significant relationship association exists between operating performance and social performance.	Insignificantly Positive	significantly Positive
H1c	A significant relationship association exists between operating performance and governance performance.	Significantly Negative	significantly Positive
H2	A significant relationship association exists between financial performance and overall ESG performance.	Insignificantly Negative	significantly Positive
H2a	A significant relationship association exists between financial performance and environmental performance.	Insignificantly Negative	Insignificantly Positive
H2b	A significant relationship association exists between financial performance and social performance.	Insignificantly Positive	Significantly Positive
H2c	A significant relationship association exists between financial performance and governance performance.	Significantly Negative	Insignificantly Positive
H3	A significant relationship association exists between market performance and its overall ESG performance.	insignificantly Positive	Significantly Positive
H3a	A significant relationship association exists between market performance and environmental performance.	insignificantly Positive	Significantly Positive
H3b	A significant relationship association exists between market performance and social performance.	insignificantly Positive	Significantly Positive
H3c	A significant relationship association exists between market performance and governance performance.	insignificantly Positive	Insignificantly Positive

Moreover, companies with high ESG scores are not immune to reputational issues arising from scandals involving inadequate social or governance practices and environmental mishaps (Liu, 2024; Xue et al., 2023). However, some studies argue that environmental innovation leads to long-term cost savings (Fiore et al., 2017) through improved production efficiency (Hojnik & Ruzzier, 2016), productivity (Arvanitis et al., 2017), and lower input costs. Doran and Ryan (2012) suggest that firms are willing to incur initial expenses for green technologies, following the same

Hellström (2007) asserts that short-term sacrifices can lead to long-term cost reductions. Theoretically, the negative relationship between corporate performance and aggregate ESG performance of environmentally sensitive industries supports the shareholder theory (Barnea & Rubin, 2010; Friedman, 1970) and opposes the stakeholder theory (Freeman, 1984; Wang, 2024). ESG disclosures in environmentally sensitive corporations are driven by regulatory obligations and the potential to enhance corporate reputation, with key motivations including regulatory compliance and stakeholder pressures (Khamisu et al., 2024).

Most importantly, research findings contrast (Miralles-Quirós et al., 2018), who show a more significant positive valuation effect of CSR in environmentally sensitive industries by analysing the sample of Brazilian firms. Furthermore, the negative effect of corporate governance practice on firm valuation in environmentally sensitive industries is well aligned with the studies of Yoon et al. (2018) based on Korean markets. Moreover, environmental, social, and governance dimensions have a distinctive impact.

Conversely, in NSI industries, ESG practices have a significant impact on performance, underscoring their importance for long-term value creation and investor recognition. This result supports stakeholder theory (Freeman, 1984), which posits that strong ESG propositions help businesses attract and retain top talent, enhance employee motivation by fostering a sense of purpose, and boost overall productivity. The study findings indicate that implementing social responsibility and environmental practices may increase the return on assets, return on capital employed, and Tobin's Q in non-sensitive industries (Rahman et al., 2023). The varying effects of environmental, social, and governance (ESG) factors underscore the need for companies to develop customised sustainable strategies to see both environmentally sensitive and non-sensitive sectors achieve economic success and sustainability (Jucá et al., 2024). Furthermore, three core pillars of ESG also show a positive impact, resulting in those businesses that adopt ESG standards gaining advantages, including better corporate reputation with stakeholders and employees, higher returns on investments, competitive advantage over industry rivals, appeal to investors and lenders, improved financial performance, and increased customer loyalty (Maji & Lohia, 2023).

4.6.1 Contributions to Theory, Practice, and Policy

This chapter makes significant theoretical contributions. First, to the authors' best knowledge, this is the first research to classify sectors according to environmental sensitivity and investigate the influence of ESG disclosure on company performance in the Indian market. We explore the listed firms rather than taking any indices that

aid in replicating the findings for all companies in the securities basket. Secondly, the study's findings support the initial hypothesis that the impact of ESG and its dimensions on corporate performance has varied based on environmental sensitivity classification.

From a policy perspective, government and regulatory bodies are crucial in promoting clean technologies through carbon taxes and environmental mandates (Costa & Ferrão, 2010). Stringent ecological measures can facilitate the implementation of advanced green technologies (Farinelli et al., 2005) and enhance eco-technologies development, fostering optimisation and innovation within the enterprise ecosystem (Jang et al., 2016). As clean technologies become more cost-effective over time (Chang, 2011), they help firms comply with stringent environmental regulations, offsetting initial acquisition and installation costs (Arvanitis et al., 2017). In this context, Ghisetti and Quatraro (2013) posit that even firms not directly affected by environmental regulation may invest in clean technologies to signal their commitment to social and ecological responsibilities and position themselves for future market opportunities. Additionally, polluting firms that integrate the latest eco-innovations will likely lead to research and development (R&D) for clean technologies in the long run. Hence, regulators should continue to support and strengthen ESG initiatives by offering firms guidance, assistance, and financial grants. Ultimately, compliance and disclosure of ESG benefits society as firms contribute value to the environment and community.

The work's economic implications encourage the advancement of ESG programs; the research provides insightful recommendations for businesses in both sectors, enhancing the body of knowledge on corporate sustainability. For instance, regarding ESG strategy implementations, corporations in the SI industries should move beyond mere regulatory compliance by adopting proactive sustainability initiatives, such as developing carbon management strategies, investing in renewable energy, and pursuing eco-innovation to reduce further costs and risks. Additionally, transparency and investor trust may be increased by strengthening stakeholder involvement through specialised sustainability committees and coordinating ESG reporting with global frameworks, such as the Global Reporting Initiative (GRI). NSI sectors should prioritise community involvement, diversity efforts, and employee-centric projects to improve their social reputations. Industry-wide ESG disclosure reliability may be increased, and digital advancements like AI-driven sustainability reporting systems can streamline disclosure.

The study offers key managerial implications, such as prioritising ESG performance and improving disclosure, which can enhance financial success and market valuation relative to industry peers. In SI, strategic resource allocation is pivotal to balance

immediate financial returns and long-term sustainability goals. Investing in areas with strong regulatory compliance potential despite high costs ensures long-term value. Furthermore, findings suggest that allocating resources to sustainable activities deepens stakeholder engagement and ensures crisis resilience. This research also offers key insights to investors. For instance, NSI companies with superior ESG performance tend to exhibit better operating efficiency, financial performance, and market valuation; incorporating ESG performance into investment decisions can yield improved returns. Lastly, the findings emphasise the significance of implementing a robust legal framework and vigilant oversight to ensure effective ESG implementation. Governance streamlining is vital in balancing oversight with corporate outcomes, while reputation management underscores the necessity of ESG investment in building stakeholder trust and market competitiveness.

4.7. Conclusions and Future Research Directions

The increasing emphasis on sustainable development is progressively transforming corporate strategies, helping mitigate the adverse environmental impacts of business operations while aligning with the interests of stakeholders. In the face of rising social disruptions and climate-related challenges, firms are under mounting pressure to adopt environmentally and socially responsible practices. This evolution is often driven by regulatory mandates and broader policy frameworks that incentivise sustainability across industries. While a considerable body of literature has explored ESG practices within developed economies (Bassen et al., 2006; Cheng et al., 2014; Dhaliwal et al., 2014), the evidence from emerging markets remains comparatively underexplored (Baughn et al., 2007; Dobers & Halme, 2009), despite their growing role in global economic systems.

Motivated by this gap, the current study applies a two-step system-GMM approach to analyse the relationship between ESG disclosures and corporate performance, using a panel of 605 Indian-listed firms from 2015 to 2023. The analysis includes four disclosure types: (i) aggregate ESG score, (ii) environmental disclosure, (iii) social disclosure, and (iv) corporate governance disclosure, while classifying companies as environmentally sensitive (SI) or non-sensitive (NSI). The findings reveal notable differences in how ESG practices influence corporate outcomes across these two groups.

In NSI firms, ESG disclosures exhibit a significant and positive association with operational efficiency, financial performance, and market valuation, suggesting that ESG serves as a strategic value driver. In contrast, for SI firms, ESG activities appear more compliance-oriented and less linked to improved profitability. This may be due to high governance costs, reputational risks, and stringent regulatory scrutiny, which

dilute the performance benefits (Yoon et al., 2018). These outcomes emphasise the necessity of tailoring ESG approaches to the environmental sensitivity of industries. They also call for a differentiated regulatory framework that reflects industry-specific ESG burdens and opportunities (Appiagyei & Donkor, 2024). Moreover, larger firms—typically better resourced—are more likely to meet ESG standards and use them strategically to reduce regulatory exposure and gain investor trust. This highlights the urgency for emerging economies to develop more rigorous, transparent, and adaptable ESG reporting frameworks than their developed counterparts (Chen et al., 2023).

From a theoretical perspective, the study contributes to the growing literature on ESG–corporate performance dynamics in emerging markets, particularly India. Examining an institutional context different from that of most Western economies offers relevant insights that can inform ESG strategies in other emerging countries with similar socio-economic and governance structures.

However, the study also acknowledges limitations. The results reflect ESG outcomes over a finite period and may not capture the longitudinal effects of ESG integration. Hence, future research could be enriched through the following directions:

1. Cross-country comparisons: Extending the analysis to other developing economies with diverse institutional and regulatory landscapes could deepen the understanding of global ESG impacts.
2. Longitudinal analysis: Incorporating more extended datasets over a longer period may help capture the dynamic evolution of ESG effects on corporate performance.
3. Sector-specific studies: Conducting more granular, industry-wise examinations could provide more tailored insights and facilitate better ESG standardisation across sectors.

This study lays the foundation for understanding the differentiated effects of ESG in various industrial contexts within emerging markets. While the broader thesis primarily focuses on Indian listed companies, next chapter extends the empirical investigation to an international sample because the research question examined here is inherently industry-specific and requires evidence across different national and institutional settings. The international dataset therefore complements the India-focused analyses presented elsewhere in the thesis and enables the study to examine whether the identified ESG relationship holds across diverse country contexts within the selected industry.

Chapter 4

4

Building on these findings, the subsequent chapter explores a more nuanced dimension of ESG performance—the role of national economic development (NED) in shaping the relationship between ESG and corporate performance. Specifically, the next chapter examines whether and how country-level economic development affects the financial outcomes of ESG practices, utilising firm-level data from the global cement industry. This cross-national inquiry further extends the thesis's contribution by integrating macroeconomic factors into the ESG-performance discourse.

CHAPTER 5

THE MODERATING ROLE OF NATIONAL ECONOMIC DEVELOPMENT IN THE ESG–CORPORATE PERFORMANCE NEXUS: EVIDENCE FROM THE GLOBAL CEMENT INDUSTRY

5.1. Introduction

The growing emphasis on sustainability transcends national boundaries, with global leaders convening to discuss these critical issues and develop inclusive agendas that all sovereign states can follow. For instance, in 2015, the United Nations adopted the Sustainable Development Goals (SDGs) to outline a 15-year world initiative to eradicate destitution, protect the environment, and improve human life and prospects worldwide (UN, 2020). In this global effort toward sustainability, the cement industry has emerged as a key player in both environmental and economic transparency. As a foundational sector for infrastructure development, it has significantly contributed to both global Gross Domestic Product (GDP) (5.4% in 2020) and employs 7.7% of the worldwide workforce (Schlorke et al., 2020). Furthermore, in 2019, global cement production exceeded four billion tons (Belaïd, 2022) and is projected to grow 5.4% annually until 2032 (IMARC Group, 2023). However, it is also one of the most carbon-intensive industries (Wang et al., 2023), responsible for approximately 6% of global human-induced CO₂ emissions in 2018 (Uratani & Griffiths, 2023), with clinker production being a primary contributor (World Economic Forum, 2024). The report of the International Energy Agency mentions that to meet the 2050 net-zero emissions target, the sector needs to reduce its emissions by 4% annually until 2030 (IEA, 2023). Hence, environmental challenges place the sector at the center of sustainability discussions and make it a critical study of ESG frameworks. While numerous studies have explored the relationship between ESG practices and firm performance across various sectors, such as construction (Bezerra et al., 2024), logistics (Kim et al., 2024), automobile (Pal, 2024), and the energy sector (Makridou et al., 2024). A thorough review of the existing literature reveals that studies have yet to thoroughly examine this sector, even though it is perceived as an environmentally sensitive industry⁶. Hence, a substantial gap persists in understanding the connection between ESG practices and corporate efficiency within the global cement industry.

Furthermore, existing literature rarely explores how country-level factors, particularly NED, moderate the ESG-performance relationship. ESG initiatives may yield

6 <https://www.fairplanet.org/story/concrete-climate-change-environmental-injustice/>

different outcomes depending on institutional, regulatory, and market maturity, particularly when comparing developed and developing nations (Behl et al., 2022). Effective integrations of ESG principles may empower firms to foster growth and generate value, given the pronounced differences in associations in various nations (Behl et al., 2022; Odell & Ali, 2016). For instance, sustainability concerns may vary between countries like the United Kingdom and China, reflecting their different level of economic development (Kang et al., 2012). This suggests that the effect of ESG could be influenced by a country's stage of economic growth. Furthermore, emerging economies such as Malaysia, marked by rapid industrialization, expanding cement production, and evolving ESG regulations such as Bursa Malaysia's sustainability disclosure framework, illustrate how mid-level economic development affects ESG integration (Aziz et al., 2018; Sambasivan et al., 2017). Hence, exemplifies broader trends in ESG transitions across emerging markets, enhancing the generalizability of our findings. Consequently, it is essential to investigate how the economic development of a nation shapes the ESG and corporate performance relationship to create universal methodologies and metrics that can precisely evaluate ESG's impact on corporate performance, thereby reducing inconsistencies in research findings, specifically in a global context (Alshehhi et al., 2018).

Researchers have employed a range of theoretical frameworks to analyze market variations in relation to ESG initiatives. Building on this, our study adopts the IDH and Market Orientation theory to investigate how NED influences the financial outcomes of ESG practices. These frameworks help explain how varying levels of economic and social development across countries shape firms' ESG engagement and how such practices translate into business performance in diverse national contexts. Institutional theory emphasizes firms' pursuit of legitimacy through social and environmental responsiveness within their organizational environment (Meyer & Rowan, 1977). Specifically, the IDH emphasizes that strategic decisions regarding ESG can significantly differ based on a region's degree of economic development (Julian & Ofori-dankwa, 2013; Matten & Moon, 2008; Robertson, 2009) while market orientation theory highlights how firms customized ESG strategies to align with consumer and stakeholder expectations (Deng & Dart, 1994; Lafferty & Hult, 2001). These theories suggest that a nation's economic environment can significantly affect organizational decisions about adopting and implementing ESG practices (Hwang et al., 2024).

In summary, while the cement industry's role in economic development is undeniable, it faces significant challenges in integrating ESG principles. Addressing these issues requires a concerted effort from industry stakeholders, policymakers, and investors to foster sustainable practices and technologies that can reconcile industrial growth with environmental stewardship. Hence, the central research question of our study is: How

does National Economic Development (NED) influence the relationship between ESG disclosures and corporate performance in the global cement industry?

To the best of our knowledge, this research represents one of the earliest empirical efforts to examine the moderating role of NED in shaping the ESG-performance linkage within the global cement industry. Using panel data from 70 cement companies across 29 countries over the period 2013 to 2023, our analysis shows that while environmental efforts can potentially dampen profitability, improvements in social performance tend to positively influence firm value. Our findings showed that NED positively affects a firm's profitability when it invests in and adopts environmental and social initiatives. Significantly, corporations in more economically developed countries are more likely to achieve higher firm value through these practices. These findings highlight the need to consider the economic environment when assessing, from an international perspective, the global influence of ESG initiatives on financial performance and contribute to the literature within the cement industry by examining the impact of ESG principles on profitability. The results underscore the importance of integrating macroeconomic conditions when evaluating ESG impacts, offering new insights for policymakers, researchers, and firms operating in this critical but understudied sector.

5.2. Theoretical Framework and Hypothesis Formulation

5.2.1 ESG and Financial Performance: A Theoretical and Empirical Perspectives

ESG principles are built upon ethical business conduct and responsible investment strategies. In corporate sustainability, the main issue is determining the extent to which a firm must balance profitability against the cost of implementing ESG initiatives (Morgenstern et al., 2022). There is a wealth of literature on ESG and its impact on profitability (Adamkaite et al., 2023). However, the findings remain debated and inconclusive (Chen & Xie, 2022), showing a range of conclusions and employing different samples and methodologies to support their claims (Shin et al., 2023). For instance, Elmaghrabi et al. (2025) investigate the influence of firm- and country-level sustainability governance on corporate sustainability performance in environmentally sensitive industries, highlighting the positive roles of sustainability committees, environmental management teams, regulatory quality, and environmental performance while noting the negative impact of gender inequality. With shifts in global policy landscapes, nations increasingly prioritise sustainable and healthy development, prompting academia to explore ways to help firms simultaneously enhance performance and fulfil social responsibilities. Primary theories that elaborate relationships are stakeholder theory (Freeman, 1984), agency theory (Jensen & Meckling, 1976), and trade-off theory (Friedman, 1970), which offer conflicting perspectives (Ferrell et al., 2016).

A literature segment posits that ESG improves corporate performance, drawing on Freeman's (1984) stakeholder theory. This theory acknowledges that financial benefits are expected when companies take responsibility for fulfilling stakeholders' expectations, making investments in ESG activities beneficial for firms' profitability. In alignment with the theory, Lee & Isa (2020) emphasise the benefits of actively participating in ESG practices. Most existing research, including Velte (2017), Zhao et al. (2018), Alareeni & Hamdan (2020), Bahadori et al. (2021), Jaisinghani & Sekhon (2022), Maji & Lohia (2024) and Sandberg et al. (2023) support this perspective, asserting that ESG initiatives boost employees' productivity through improved morale (Baron, 2008), reduce energy and material consumption (Qi et al., 2014) and foster favorable relationships with various stakeholders, such as consumers, regulators, and society (Hou, 2019). Luo et al. (2024) suggest that it also assists in enhancing the sociopolitical legitimacy of the firm by receiving positive stakeholder awareness and gaining essential resources. Studies advocating this perspective show that preference for stakeholder relationships leads to more robust financial performance due to enhanced customer and employee loyalty and the capability to attract and retain top talent- crucial factors for a firm's competitiveness and economic performance (Shi & Veenstra, 2021).

The second perspective is based on agency theory (Jensen & Meckling, 1976) posits that engaging in ESG practices can create conflict among managers and shareholders, as these practices may not align with shareholders' best interests (Chen et al., 2021). The trade-off theory (Friedman, 1970) also argues that ESG may hinder firm performance (Lee & Isa, 2020), asserting that a firm's primary obligation is to maximize shareholder profits while investing in ESG initiatives might lead to increased costs, potentially diminishing profitability (Qureshi et al., 2021). Consequently, several studies have grounded these two theories and demonstrated the inverse relationship, e.g., (Barnea & Rubin, 2010; Brown et al., 2006). Similarly, Moore (2001), based on data from the UK supermarket industry, revealed a negative association between contemporaneous CSR and financial performance. This mixed evidence suggests that ESG's financial impact is likely context-dependent, particularly influenced by institutional and sectoral factors.

5.2.2 ESG Challenges and Sustainability in the Cement Industry

Cement manufacturing is characterised by large-scale operations involving the transformation of substantial quantities of raw materials into commercial products, which demands intensive use of non-renewable resources and energy, primarily in the form of thermal fuels and electricity (Supino et al., 2016). Consequently, it stands among the most resource and energy-intensive industrial sectors and significantly contributes to global CO₂ emissions (Salem, 2019; Savović & Mimović, 2022). This

is predominantly due to the production of clinker, the core ingredient in cement, whose manufacturing accounts for approximately 60% of calcination-related emissions and requires about 40% of the thermal energy input (Nunes & Costa, 2021). The clinker burning phase is thus central to the cement production process, both from energy consumption and environmental performance perspectives, and is pivotal for the transition toward a more sustainable cement industry (Barbhuiya et al., 2024).

Sustainability within the cement sector is inherently multifaceted, encompassing a range of issues vital to its long-term viability and social legitimacy. These include optimising resource efficiency, minimising emissions, safeguarding worker and community health, and ensuring responsible land and water management while maintaining competitiveness and profitability. Given the industry's integral role in infrastructure development and its dependence on energy- and emissions-intensive practices, it faces growing scrutiny from stakeholders demanding enhanced sustainability measures (Priya et al., 2024).

This evolving awareness among consumers, regulators, and investors has heightened expectations for cement companies to adopt ESG practices, particularly those with direct implications for societal and environmental well-being. Nevertheless, despite the growing recognition of ESG as a strategic imperative, firms operating in environmentally sensitive sectors, such as cement, often incur substantial costs when implementing sustainability initiatives. These financial burdens can impede the realisation of short-term economic returns, as highlighted by prior studies that question the immediate profitability of ESG-related investments in such high-impact industries (Daszynska-Zygadlo et al., 2016).

5.2.3. The Economic Context's Role in ESG Adoption and Effectiveness

Several studies have offered varied perspectives on the association between economic conditions and ESG practices. For instance, Diaye et al. (2022) find a favorable connection between ESG disclosure and Gross Domestic Product (GDP) per capita in the long term; this relationship must be more evident in the short term. This implies that higher GDP levels generally demonstrate more robust ESG performance, and the study of Zhou et al. (2020) supports this viewpoint. Moreover, in 2004, Egri et al. (2004) suggest that their country-level economic development influences managers' perspectives on corporate ecological and social responsibilities. More specifically, in countries with medium to low GDP levels, managers tend to be more individualistic and place less emphasis on ESG activities than their counterparts in high GDP nations (Kang et al., 2016).

On the other hand, Buallay (2019) provides a contrasting viewpoint regarding the impact of macroeconomic factors on ESG disclosure in the banking sector. His results

show that countries with lower GDP levels exhibit better social and environmental disclosures, while governance is more pronounced in nations with higher GDP levels. Supporting this, Naomi & Akbar (2021) identify an inverse impact of environmental scores on GDP but a positive impact on governance scores. These studies reveal that the effect of individual ESG pillars varies according to the economic status and development level, underscoring the need for separate analyses to explore these relationships. Such an approach could yield new insights into how ESG influences financial performance in different economic contexts.

5.2.4. Institutional Difference Hypothesis and Market Orientation Model

Understanding the divergence in ESG performance across countries requires an institutional and market-oriented lens. Institutional factors may be instrumental in identifying the differences between developed and developing countries regarding ESG performance (Campbell, 2006). The IDH proposed by Julian & Ofori-dankwa (2013), rooted in institutional theory (Meyer & Rowan, 1977; Powell & DiMaggio, 1991), explains how institutional disparities influenced ESG practices. According to them, emerging economies with weaker institutional frameworks often prioritize short-term financial objectives over ESG investment due to poor regulatory enforcement and less societal pressure (Amao, 2008; Blowfield & Frynas, 2005; Waddell, 2000). Firms in these regions are less motivated to adopt sustainability practices, viewing them as additional costs rather than strategic benefits (Frynas, 2005; Ofori & Hinson, 2007). Thus, the lack of external pressure contrasts with developed economies, where institutional strengths drive CSR and ESG adoption, positively enhancing the impact of sustainability in the ESG on corporate performance (Hoskisson et al., 2000).

The industry in which companies operate is another critical factor explaining variations in ESG performance between companies from developed and emerging countries. For instance, industries characterized as “controversial” (Cai et al., 2012), such as sensitive sectors, usually belong to extractive and resource-intensive industries, including oil and gas, mining, chemicals, and steelmaking (Kilian & Hennigs, 2014). From a practical point of view, these sectors, including cement manufacturing, are often considered controversial and sensitive due to their significant potential for social and/or environmental harm. In the context of emerging economies, these industries create a paradox. While contributing to pollution, resource depletion, and community displacement, they are also known for their significant economic and CSR contributions. Many companies in this sector take on roles expected of governments, such as constructing daycare centers and hospitals, to compensate for gaps in public infrastructure and services caused by institutional weakness (Dobers & Halme, 2009). This dynamic is particularly relevant in

developing economies, where institutional fragility often restricts the government's capacity to provide essential services, emphasizing the complex interplay between economic development, sectoral characteristics, and ESG initiatives. Hence, economic development plays a significant role in moderating the adoption of ESG practices and influencing corporate behavior and outcomes across different regions.

Alongside institutional dynamics, the market orientation framework adds another explanatory dimension. Given by the Scandinavian school's internationalization offers an insightful perspective on how firms expand beyond their home borders, often prioritizing regions with similar cultural and institutional environments. Rugman & Verbeke (2004) highlight that companies prefer entering markets with regulatory and cultural familiarity to reduce risks and costs associated with unfamiliar territories. For instance, Multinational companies (MNCs) often prefer neighboring countries where institutional environments are more predictable, emphasizing the influence of the corporation's home country in shaping organizational strategies. While firms from developed countries may venture into less developed markets, their primary revenue still originates from developed regions (Newfarmer et al., 2009). This priority for market similarity aligns with the market-oriented approach, which posits that organizational strategy is deeply embedded in market demand (Hooley et al., 1990). This approach directly influences firm value (Hong & Chen, 1998; Lafferty & Hult, 2001). This profoundly ingrained approach is crucial in driving financial performance, as highlighted by (Lafferty & Hult, 2001). In both economies, firms aim to maximize profits by catering to customer needs. Adopting a market-oriented approach in the highly competitive and volatile cement industry is particularly crucial for driving financial performance (Kohli & Jaworski, 1990).

In developed economies, the emphasis on sustainability has led firms to incorporate ESG initiatives to align with market demands (Hassanein & Elmaghrabi, 2025). Fostering enhanced profitability and competitive advantages in their markets creates a "virtuous cycle" where firms actively engaged in ESG initiatives attract environmentally conscious customers and tend to improve sales and profitability, gain reputational benefits, and enjoy reduced operating costs through government incentives (Inoue & Lee, 2011; Shin et al., 2023; Waddock & Graves, 1998). In contrast, in developing economies, resource constraints hinder the ability to promote or support sustainable practices (Luo et al., 2013). These challenges include a shortage of skills and expertise, limited awareness of marketing's strategic role, and restricted financial resources (Ennew et al., 1993; Lafferty & Hult, 2001). Hence, the consumers in these regions are less sensitive to environmental and social issues, often focusing on immediate and practical needs rather than sustainability (Power & Elster, 2005; UNDP, 2006). Higher costs for eco-friendly products can lead to lower sales volumes, as affordability remains a significant concern (Kushwaha & Sharma, 2016).

5.2.5 Institutional and Market Dynamics Shaping ESG Performance in Emerging Economies' Cement Industry

There is substantial literature on ESG in developed economies, where established institutional factors reshape substantial practices (Abedifar et al., 2023; Garcia & Orsato, 2020; Elsayed & Hassanein, 2024). However, research in developing countries still needs to be explored (Alshehhi et al., 2018). Developing economies may yield unique findings due to factors that differ from those in developed nations, such as heightened political instability, variations in environmental regulations and norms (Benameur et al., 2023), and distinct social challenges (Alazzani et al., 2017), including wage disparities (Behl et al., 2022; Khanna & Palepu, 2000; Odell & Ali, 2016). Studies also mentioned that ESG incentives differ significantly across countries (e.g., Ioannou & Serafeim, 2012; Reverte, 2009) because, in emerging markets, firms often prioritize capital accumulation over the strategic benefit of socially responsible investments (Garcia & Orsato, 2020).

Moreover, in emerging economies, the demand for cement is projected to rise significantly, driven by urbanization and infrastructure needs. However, this growth poses challenges in balancing development with environmental sustainability. Stakeholders are increasingly advocating for sustainable practices within the industry, emphasizing the importance of Environmental, Social, and Governance (ESG) considerations⁷.

Implementing ESG initiatives in the cement sector involves substantial costs, including investments in cleaner technologies, alternative fuels, and carbon capture methods. These financial burdens can be particularly challenging for companies operating in regions with limited regulatory incentives or consumer demand for sustainable products⁸.

The theoretical convergence helps explain the divergence in ESG and financial performance findings across geographies. The interaction of institutional weakness (limiting regulatory incentives) and market pragmatism (prioritizing affordability over sustainability) in emerging economies suggests a unique ESG-performance dynamic, distinct from developed markets where stronger institutions and demand create a virtuous cycle. This highlights the importance of NED as a moderating factor.

5.2.6 Research Gaps and Hypotheses Formulation

Although considerable research has been conducted, the results have varied, presenting a range of perspectives (Abdelbaky et al., 2024; Benameur et al., 2024;

⁷ <https://docs.columbiathreadneedle.com/documents/ESG%20Viewpoint-Assessing%20physical%20climate%20risk.pdf?inline=true>

⁸ <https://www.ifc.org/content/dam/ifc/doc/mgrt/ifc-strengtheningsustainability-cement-web.pdf>

Ferrell et al., 2016; Hamed et al., 2023; Hassanein et al., 2024). This variation has driven us to examine the relationship within the cement industry, as the potential causes and boundary conditions, particularly in a global context where empirical studies have been relatively sparse; rather than adopting a specific position based on prior findings, this study formulates non-directional alternative hypotheses to examine the significant influence of ESG and its dimension on financial performance. The null hypotheses are as follows.

H1: ESG disclosure does not significantly influence corporate performance within the cement industry.

H1a: Environmental disclosure does not significantly influence corporate performance within the cement industry.

H1b: Social disclosure does not significantly influence corporate performance within the cement industry.

H1c: Corporate governance disclosure does not significantly influence corporate performance within the cement industry.

Considering the institutional differences between developed and emerging countries, the study further examines whether national economic development conditions moderate the relationship between ESG disclosure and corporate performance. Prior literature suggests that differences in institutional and market conditions may influence the extent to which ESG practices translate into corporate outcomes. However, given the limited and varied empirical evidence, the present study does not assume a specific direction of moderation. Accordingly, the following non-directional alternative hypotheses are formulated:

H2a: NED significantly moderate the relationship between environmental disclosure and corporate performance.

H2b: NED significantly moderate the relationship between social disclosure and corporate performance.

H2c: NED significantly moderate the relationship between corporate governance disclosure and corporate performance.

5.3. Methodology

5.3.1 Data Collection

We source ESG disclosure scores and financial information of publicly listed global cement companies from the Refinitiv Eikon database (Tahat & Hassanein, 2024), recognised for its extensive coverage of ESG metrics worldwide. Given that ESG

concerns have gained prominence, our sample spans from 2013 to 2023 within 29 countries, as shown in *Table A1*. The initial dataset comprised 301 listed cement companies, but corporations with incomplete data were excluded from the analysis. Consequently, the final dataset includes 70 globally listed organisations, resulting in 770 observations. Additionally, GDP per capita counted as NED was obtained from the World Bank database, which is regularly updated with the latest historical data. When the data were unavailable, estimates from the IMF (International Monetary Fund) database were utilised as substitutes.

5.3.2 Variables and Measurement

The research has been facilitated by the utilisation of pertinent empirical variables, which are elaborated upon in the subsequent description:

Dependent Variables

Table 5.2 presents the variables utilized in this study, emphasizing corporate performance assessed through two principal metrics: operational performance, indicated by Return on Assets (ROA), and market performance, represented by Tobin's Q (Narula et al., 2024; Veeravel et al., 2024). Prior research has frequently employed these metrics as outcome variables to evaluate corporate performance (Jain & Malhotra, 2025) often utilizing panel data regression techniques (Buallay, 2019; Alareeni & Hamdan, 2020; Pätäri et al., 2012; Choi & Wang, 2009).

ROA serves as a measure of operational efficiency, reflecting how effectively a corporation utilises its total assets to generate profit, thereby offering insights into overall operational performance (Velte, 2020; Z. Wang & Sarkis, 2017). Tobin's Q, conversely, serves as a market-based indicator, assessing a company's performance and market valuation by comparing its market value to the replacement cost of its assets. This ratio is particularly significant in sustainable investment strategies, as it accounts for the long-term replacement cost of a company's assets (Narula et al. 2024 and Veeravel et al. 2024).

Independent Variables

The independent variables in the study are a firm's Environmental (Env), Social (Soc), and Governance (Gov) disclosure scores. These scores, which range from 0 to 100, aim to provide an objective, transparent evaluation of a company's ESG practices, accountability, and effectiveness. Refinitiv's scores reflect a firm's performance across ten critical themes within the subcategories. These data are calculated from publicly available data, utilising Refinitiv's specific methodology.

Control Variables

To measure the moderating effect of NED, we proxied for it using GDP per capita. We applied a natural log transformation to approximate a normal distribution better, which is consistent with the approach in several previous studies (Zhou et al., 2020).

GDP per capita showed the mean economic output per person. This measure reflects the standard of living and financial well-being of that country's average residents and thus the nation's overall economic productivity and health. It is often used as a benchmark of a country's economic development. This study includes control variables such as Age, size, Growth, and Leverage, summarised in *Table 5.1*.

Table 5.1: List of Variables

Symbol	Definition	Measurement	Source	References
ROA	Return on Assets	Earnings Before interest and tax divided by Total Assets	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Boubakri et al., 2016)
TQ	Tobin's Q	Market Capitalisation + Debt divided by Total Assets	Refinitiv Eikon	Velte (2020)
ESG	Environmental, Social, and Governance score	The overall score consists of parameters by Thomson Reuters.	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Mishra et al., 2024)
Env	Environmental Score	The environmental score consists of parameters by Thomson Reuters	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Mishra et al., 2024)
Soc	Social Score	The social score consists of parameters by Thomson Reuters	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Mishra et al., 2024)
Gov	Governance Score	The governance score consists of parameters by Thomson Reuters	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Mishra et al., 2024)
NED	National Economic Development	Natural Logarithm of GDP per Capita	World Bank	Zhou et al. (2020)
Age	Firm Age	Log of the fiscal year minus the incorporation year	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Boubakri et al., 2016)
Size	Firm Size	Natural logarithm of total assets	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Boubakri et al., 2016)
Growth	Firm Growth	Determined by the growth rate of core business revenue	Refinitiv Eikon	(Bissoondoyal-Bheenick et al., 2023; Boubakri et al., 2016)
DE	Firm Leverage	Total company debt divided by shareholders' equity	Refinitiv Eikon	(Veeravel et al., 2024).

5.3.3 Analytical Approach

To evaluate the above hypotheses, this study utilises panel regression analysis. However, to obtain more accurate and reliable results, several previous studies highlight the need to use a robust model rather than relying solely on fixed or random

effects. A strong model effectively addresses concerns such as heterogeneity and correlation. The given panel regression model was examined in this study:

$$ROA/Tobin'sQ_{it} = \alpha_0 + \alpha_1 ESG_{it} + \alpha_2 NED_{it} + \alpha_3 Age_{it} + \alpha_4 Size_{it} + \alpha_5 Growth_{it} + \alpha_6 DE_{it} + \varepsilon_{it} \quad 5.1$$

$$ROA/Tobin'sQ_{it} = \alpha_0 + \alpha_1 Env_{it} + \alpha_2 Soc_{it} + \alpha_3 Gov_{it} + \alpha_4 NED_{it} + \alpha_5 Age_{it} + \alpha_6 Size_{it} + \alpha_7 Growth_{it} + \alpha_8 DE_{it} + \varepsilon_{it} \quad 5.2$$

The model to test the moderation effect:

$$ROA/Tobin'sQ_{it} = \alpha_0 + \alpha_1 Env_{it} + \alpha_2 Soc_{it} + \alpha_3 Gov_{it} + \alpha_4 (Env_{it} * NEG_{it}, Soc_{it} * NEG_{it}, Gov_{it} * NED_{it}) + \alpha_5 NEG_{it} + \alpha_6 Age_{it} + \alpha_7 Size_{it} + \alpha_8 Growth_{it} + \alpha_9 DE_{it} + \varepsilon_{it} \quad 5.3$$

ROA and Tobin's Q are dependent variables that represent a company's performance. ESG is an explanatory variable representing the sustainability score. Furthermore, to control for unobserved heterogeneity, the analysis includes both firm-level and year-fixed effects, allowing us to account for time-invariant characteristics specific to each company as well as macroeconomic shocks across years (Borralho et al., 2022).

5.4 Descriptive Results

The descriptive statistics are presented in Table 5.2, with all the variables winsorized at the 1% and 99% percentiles to minimize the influence of outliers (Bissoondoyal-Bheenick et al., 2023). The average ROA is 5.06%, ranging from -1.2% to 24.28%, which indicates significant variability but overall positive profitability in the cement sector during the study period.

Table 5.2: Descriptive Statistics

Variables	N	Mean	SD	Skewness	Kurtosis	Range	Min	Max
ROA	770	0.0506	0.0543	1.2249	4.1750	0.2550	-0.0122	0.2428
TQ	755	-0.0561	0.3833	0.3048	3.3328	2.4304	-1.2133	1.2171
ESG	770	0.1934	0.2553	0.9219	2.3658	0.7888	0.0000	0.7888
Env	770	0.1734	0.2547	1.2884	3.4706	0.9196	0.0000	0.9196
Soc	770	0.1974	0.2762	1.0567	2.5979	0.8656	0.0000	0.8656
Gov	770	0.2235	0.2863	0.8431	2.2281	0.8892	0.0000	0.8892
Age	770	1.5042	0.3867	-1.3809	6.1056	2.1847	0.0000	2.1847
Size	770	9.1823	0.5445	0.4321	3.1054	2.8064	7.9735	10.7800
DE	770	0.6312	0.6548	2.3015	10.2621	3.8858	0.0000	3.8858
Growth	770	0.0302	0.2068	2.1729	12.8571	1.5457	-0.4009	1.1448
NED	770	4.3599	0.3857	0.0305	1.7282	1.3391	3.7383	5.0774

The ESG disclosure scores range from 0 to 78.9, with a mean of 19, suggesting that the sustainability disclosures of these industries are generally low. The individual pillars of ESG have a mean score of 17.3, 19.7, and 22.4, respectively. Tobin's Q has

a minimum of -1.213 and 1.217, with an average value of -0.056, showing considerable fluctuations in market valuation relative to assets. The mean values for size and growth are 9.18 and 0.03, respectively, while the average leverage is 0.63, indicating that the average firms have more equity than debt. The national economic development average is 4.36.

Table 5.3 displays the Pearson's correlation coefficients among variables. The analysis reveals that ROA does not correlate strongly with E, S, and G scores. The low correlation underscores the need for a panel analysis to address complex, dynamic, and control for heterogeneity. The findings indicate a significantly positive relationship with the control variables, Size and Lev, and a negative is observed with the moderating variable, NED. Although the correlation among the E, S, and G is high ($r > .70$), raising concerns about potential multicollinearity, the VIF values of these and all other variables are below the critical threshold of 10, suggesting that multicollinearity is not a significant issue. As a result, the variables are deemed suitable for inclusion in the regression models.

5.5 Empirical Results

5.5.1 Influence of ESG on financial performance

Table 5.4 illustrates the effect of ESG on profitability within the global cement industry, with individual pillar scores detailed in Panel B. The LM test results show that the random effect model is preferable to the pooled OLS model (Malik & Kashiramka, 2024). Conversely, Hausman shows that, for overall ESG disclosure, the fixed-effect model is more appropriate than the random-effect model.

Table 5. 3: Pairwise Correlation Matrix

	ROA	TQ	ESG	Env	Soc	Gov	Age	Size	Growth	DE	NED
ROA	1.000										
TQ	0.2578*	1.000									
ESG	0.012	-0.052	1.000								
Env	0.008	-0.054	0.9563*	1.000							
Soc	0.039	-0.028	0.9687*	0.7097*	1.000						
Gov	-0.015	-0.0727*	0.8956*	0.7684*	0.7382*	1.000					
Age	-0.053	0.012	0.1430*	0.1621*	0.1413*	0.0865*	1.000				
Size	0.0785*	-0.2362*	0.4425*	0.4475*	0.3936*	0.4079*	-0.029	1.000			
Growth	0.1011*	0.041	0.1074*	0.1022*	0.1068*	0.1177*	-0.039	0.0830*	1.000		
DE	-0.2870*	-0.1522*	-0.068	-0.055	-0.0782*	-0.058	-0.0745*	0.1519*	0.004	1.000	
NED	-0.1400*	-0.1936*	0.021	0.008	-0.005	0.0714*	0.053	0.047	-0.048	-0.113	1.000

* Represent $p > 0.05$

Overall, the aggregate ESG score shows a small ($\beta = -0.0189$) and a statistically insignificant relationship with ROA (Paridhi & Ritika, 2025), suggesting that the combined effect of overall ESG factors on profitability in the cement industry is not straightforward. The lack of significance may reflect the heterogeneous nature of ESG practices, in which the individual pillars (environmental, social, and governance) may vary in importance and influence across industries and corporate strategies.

While the environmental disclosure has a statistically significant negative impact on ROA (with $\beta = -0.0501$) in the robust fixed effects model. This finding indicates that companies with stronger environmental practices tend to experience lower profitability, likely due to the high costs of implementing sustainable environmental practices in cement production. Cement manufacturing is resource-intensive, requiring substantial energy and raw materials, and making efforts to reduce CO₂ emissions or invest in cleaner technologies can lead to higher operating costs (Wang et al., 2023). These additional costs may offset potential long-term gains from environmental improvements, particularly in an industry like cement, where margins can be tight.

Conversely, the social dimension significantly impacts profitability in all model specifications ($\beta = 0.0431$) in the robust fixed effects models. This suggests that stakeholders view companies prioritising social issues favorably, enhancing their market position and corporate performance (Al Amosh et al., 2023). This also aligns with the concept of value creation, which posits that focusing on corporate social responsibility can boost a company's profitability (Malik & Kashiramka, 2024).

Additionally, no connection is found between the governance disclosure and financial outcomes. This finding invites further discussion. While governance factors such as board composition, transparency, and shareholder rights are integral to corporate sustainability, their direct influence on financial performance may be subtler or more indirect in the cement industry. Governance mechanisms might be less impactful in the short term, or their effects could be mediated by other factors, such as environmental or social issues, which tend to dominate public and investor attention (Goel, 2018). Additionally, it is possible that governance in the cement industry is perceived as relatively standard and does not differentiate companies in the same way environmental or social issues do. This highlights a potential gap in ESG strategy. While good governance is critical for long-term corporate health, it may not have an immediate or noticeable impact on profitability in specific sectors. Further research could explore how governance-related factors interact with other ESG pillars to affect performance.

The results also reveal that the national economy variable has a substantial and positive influence on the performance of the cement industries. For the control

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variables, leverage shows a significant negative relation with profitability, suggesting that higher leverage can increase the financial risk and cost of economic distress, thereby reducing profitability, as the trade-off theory outlines (Kraus & Litzenberger, 1973). On the other hand, company size and growth are positively associated with accounting performance.

Table 5. 4: Main analysis results

	Panel A				Panel B			
ROA	(1) Pooled OLS	(2) Fixed effect	(3) Random effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed effect	(7) Random effect	(8) Robust FE
ESG	-0.0189 (-1.10)	0.000745 (0.11)	0.000642 (0.09)	0.000745 (0.10)				
Env					-0.0448 (-1.58)	-0.0501*** (-3.85)	-0.0402*** (-3.16)	-0.0501** (-2.02)
Soc					0.0512* (1.95)	0.0431*** (3.45)	0.0393*** (3.16)	0.0431** (2.16)
Gov					-0.0313* (-1.75)	0.00216 (0.27)	-0.00280 (-0.35)	0.00216 (0.23)
NED	-0.0226 (-1.48)	0.0896** (2.49)	-0.00760 (-0.59)	0.0896** (2.02)	-0.0209 (-1.39)	0.118*** (3.24)	-0.00404 (-0.31)	0.118*** (2.68)
Age	-0.00627 (-0.55)	0.0178 (1.22)	0.00771 (0.76)	0.0178 (1.63)	-0.00634 (-0.55)	0.0186 (1.29)	0.00916 (0.90)	0.0186* (1.71)
Size	0.0169* (1.90)	0.00248 (0.28)	0.0102 (1.52)	0.00248 (0.16)	0.0187** (2.04)	0.00185 (0.21)	0.0114* (1.71)	0.00185 (0.12)
Growth	0.0277*** (2.71)	0.0276*** (5.31)	0.0272*** (5.24)	0.0276*** (3.64)	0.0283*** (2.82)	0.0281*** (5.44)	0.0275*** (5.32)	0.0281*** (3.72)
DE	-0.0289*** (-4.52)	-0.0110*** (-4.43)	-0.0127*** (-5.26)	-0.0110** (-2.50)	-0.0285*** (-4.50)	-0.0104*** (-4.15)	-0.0126*** (-5.13)	-0.0104** (-2.41)
_cons	0.0349 (0.46)	-0.368** (-2.43)	-0.00496 (-0.06)	-0.368* (-1.79)	0.0116 (0.15)	-0.487*** (-3.18)	-0.0336 (-0.42)	-0.487** (-2.45)
N	770	770	770	770	770	770	770	770
R2	0.1596	0.1140	0.1137	0.1140	0.1703	0.1346	0.1183	0.1183
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

ESG (in Panel A) and its pillar scores (in Panel B) as the explanatory variables and ROA as the explained variable. The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

5.5.2 Moderating role of NED

The results for the moderating impact of NED are depicted in Table 5.5. These models introduce the interaction variable (NED*Env, NED*Soc, and NED*Gov). The findings of the impact of individual pillars of ESG and NED on profitability are similar to those discussed above. Regarding NED, the findings show a positive relationship between NED and ROA. This means that improvement in national economic development may enhance the profitability of the cement firms. This result is similar to the findings of Hwang et al. (2024). The moderating role of NED, including the interaction of NED and Env, is presented in Panel A. The result shows that the interaction of NED and Env has a significantly positive impact on ROA. This suggests that investments in ecological footprint issues can improve profitability in more economically developed countries. The explanation could be the environmental regulation in developed nations, which compels companies to invest in environmentally friendly technologies to avoid fines and benefit from incentives, which reduces operational costs. Findings are supported by a market-oriented approach and institutional theory as discussed since institutional and market forces are preponderant in the relationship between corporate performance and firms' ESG, the fragility of the institutional environment, which includes the low performance of regulatory oversight bodies and high level of business corruption, in addition to the small capital markets in emerging countries, are drivers of poor corporate performance in sustainability (Campbell, 2006; Sharfman & Fernando, 2008).

Specifically, the case of social disclosure shows weak and non-significant positive associations with ROA. This suggests that variations in national economic development do not significantly moderate the impact of social responsibility disclosures on the financial performance of firms in the global cement industry (Ioannou & Serafeim, 2012; Margolis et al., 2009). These findings imply that while social disclosures may influence firm performance, a country's economic development level does not appear to enhance or diminish this relationship within the cement sector systematically. It may indicate that social initiatives are perceived more as standard compliance or reputational tools rather than strategic financial drivers (Chih et al., 2008), regardless of the country's economic maturity.

One possible explanation for corporate governance mechanisms is that governance mechanisms such as board structure, transparency, and audit quality may be driven more by global standards or internal corporate governance frameworks than country-specific institutional maturity. This aligns with the observation that governance practices are often standardized across multinational corporations, especially in capital-intensive industries like cement, reducing the variability that NED might introduce. Furthermore, in sectors where regulatory compliance is relatively uniform

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or where governance practices are already institutionalized, the incremental influence of national economic development may be marginal. Prior literature also reports similar findings—for instance, Garg & Gupta (2021) and Goel (2018) found no significant link between governance disclosures and financial performance. These insights point to a potential disconnect between governance as a structural foundation for long-term sustainability and its immediate financial implications, particularly in industries less subject to frequent shifts in governance-related expectations.

Table 5.5: Moderating effect of NED results on the ESG pillars

	Panel A				Panel B				Panel C			
ROA	(1) Pooled OLS	(2) Fixed Effect	(3) Random Effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed Effect	(7) Random Effect	(8) Robust FE	(9) Pooled OLS	(10) Fixed Effect	(11) Random Effect	(12) Robust FE
Env	-0.114 (-0.77)	-0.201** (-2.57)	-0.134* (-1.77)	-0.201*** (-2.88)	-0.0447 (-1.57)	-0.0519*** (-3.96)	-0.0408*** (-3.19)	-0.0519** (-2.14)	-0.0448 (-1.57)	-0.0507*** (-3.88)	-0.0401*** (-3.15)	-0.0507** (-2.08)
Soc	0.0514* (1.95)	0.0438*** (3.51)	0.0395*** (3.18)	0.0438** (2.23)	0.0329 (0.21)	-0.0295 (-0.45)	0.00623 (0.10)	-0.0295 (-0.39)	0.0513* (1.92)	0.0444*** (3.49)	0.0387*** (3.07)	0.0444** (2.28)
Gov	-0.0305* (-1.68)	0.00401 (0.49)	-0.00172 (-0.21)	0.00401 (0.42)	-0.0311* (-1.72)	0.00320 (0.39)	-0.00234 (-0.29)	0.00320 (0.34)	-0.0325 (-0.22)	-0.0315 (-0.52)	0.0148 (0.25)	-0.0315 (-0.49)
NED_E	0.0159 (0.47)	0.0341* (1.95)	0.0214 (1.26)	0.0341** (2.11)								
NED_S					0.00420 (0.12)	0.0169 (1.13)	0.00767 (0.53)	0.0169 (1.06)				
NED_G									0.000264 (0.01)	0.00761 (0.57)	-0.00397 (-0.30)	0.00761 (0.55)
NED	-0.0233 (-1.37)	0.125*** (3.41)	-0.00603 (-0.46)	0.125*** (2.82)	-0.0216 (-1.26)	0.121*** (3.32)	-0.00480 (-0.36)	0.121*** (2.76)	-0.0209 (-1.20)	0.122*** (3.28)	-0.00335 (-0.26)	0.122*** (2.78)
Age	-0.00612 (-0.53)	0.0196 (1.36)	0.0100 (0.98)	0.0196* (1.79)	-0.00624 (-0.54)	0.0192 (1.33)	0.00961 (0.94)	0.0192* (1.79)	-0.00633 (-0.55)	0.0190 (1.31)	0.00906 (0.89)	0.0190* (1.77)
Size	0.0180* (1.91)	0.00183 (0.21)	0.0112* (1.68)	0.00183 (0.12)	0.0185* (1.96)	0.00171 (0.19)	0.0113* (1.68)	0.00171 (0.11)	0.0187** (2.02)	0.00187 (0.21)	0.0113* (1.69)	0.00187 (0.12)
Growth	0.0279*** (2.82)	0.0276*** (5.36)	0.0272*** (5.28)	0.0276*** (3.70)	0.0282*** (2.85)	0.0278*** (5.39)	0.0274*** (5.30)	0.0278*** (3.72)	0.0283*** (2.83)	0.0280*** (5.41)	0.0275*** (5.33)	0.0280*** (3.72)
DE	-0.029*** (-4.54)	-0.010*** (-4.07)	-0.013*** (-5.10)	-0.0102** (-2.36)	-0.029*** (-4.55)	-0.0103*** (-4.14)	-0.013*** (-5.13)	-0.0103** (-2.39)	-0.029*** (-4.54)	-0.010*** (-4.14)	-0.013*** (-5.11)	-0.0104** (-2.39)
_cons	0.0288 (0.31)	-0.517*** (-3.36)	-0.0248 (-0.31)	-0.517** (-2.56)	0.0168 (0.18)	-0.501*** (-3.26)	-0.0299 (-0.37)	-0.501** (-2.51)	0.0119 (0.13)	-0.503*** (-3.22)	-0.0359 (-0.45)	-0.503** (-2.50)
N	770	770	770	770	770	770	770	770	770	770	770	770
R2	0.1710	0.1394	0.1209	0.1394	0.1704	0.1362	0.1189	0.1362	0.1703	0.1350	0.1184	0.1350
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Env (in Panel A), Soc (in Panel B), and Gov (in Panel C) as the explanatory variables and ROA as the explained variable. The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

5.6. Additional Analysis

After conducting the primary analysis, we carried out additional tests. The first examined the lagging effects of the primary analysis over the following three years. Previous studies suggest that integrating ESG practices can create unique intangible assets, such as the ability to leverage advanced technologies to minimise environmental impact (Behl et al., 2022; Teece, 1980). Although these intangible assets may initially seem costly, they are anticipated to provide lasting economic benefits for all stakeholders (Freeman, 1984). Consequently, we investigated whether and to what extent ESG practices can enhance long-term profitability (up to 3 years), while accounting for the contingent impact of national economic development.

Table 5.6 illustrates the effects of individual pillars on $ROA_{t+1,2,3}$, respectively. In the first two years, both the Env and Soc scores significantly impact ROA, with the environmental score still showing the inverse relationship in the long term, which may be due to the heavy reliance on natural resources and energy, while the Soc score exhibits a positive influence, which stems from the improved reputation and operational efficiency over time. These results suggest that each ESG factor exerts a different temperate impact on ROA.

Tables 5.7, 5.8, and 5.9 display the moderating effects of NED on the association between $ROA_{t+1,2,3}$ and ESG's pillars. NED's consistent positive moderating role is evident, particularly with the environmental pillar, where the effect on ROA extends into the next year ($t+1$). However, the social pillar shows a significant moderating impact only in the subsequent year but not in the contemporary timeframe. Meanwhile, the governance pillar does not exhibit a significant concurrent effect.

These findings suggest that a country's economic development stage shapes the influence of ESG factors on performance. The results also indicate that in more economically developed countries, investing in ESG initiatives tends to be more profitable (Inoue & Lee, 2011). This may be due to the greater availability of resources, infrastructure, and regulatory frameworks that support ESG integration; such investments are more effective and rewarding in these environments, which is a concern within the cement industry.

Table 5.6: Lagging analysis results with ROA_{t+1} , ROA_{t+2} , and ROA_{t+3}

	Panel A: ROA_{t+1}				Panel B: ROA_{t+2}				Panel C: ROA_{t+3}			
	(1) Pooled OLS	(2) Fixed Effect	(3) Random Effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed Effect	(7) Random Effect	(8) Robust FE	(9) Pooled OLS	(10) Fixed Effect	(11) Random Effect	(12) Robust FE
Env	-0.0383 (-1.33)	-0.0457*** (-3.26)	-0.0321** (-2.34)	-0.0457* (-1.97)	-0.0348 (-1.24)	-0.0350** (-2.04)	-0.0217 (-1.31)	-0.0350* (-1.68)	-0.0229 (-0.92)	-0.0111 (-0.57)	-0.00316 (-0.17)	-0.0111 (-0.60)
Soc	0.0513** (2.00)	0.0584*** (4.44)	0.0497*** (3.81)	0.0584*** (3.01)	0.0471* (1.73)	0.0629*** (3.85)	0.0544*** (3.39)	0.0629*** (2.78)	0.0172 (0.71)	0.0225 (1.20)	0.0223 (1.22)	0.0225 (1.23)
Gov	-0.0304 (-1.65)	0.00503 (0.58)	-0.00294 (-0.34)	0.00503 (0.53)	-0.0259 (-1.41)	0.00174 (0.18)	-0.00655 (-0.68)	0.00174 (0.18)	-0.0124 (-0.54)	0.000348 (0.03)	-0.0070 (-0.61)	0.000348 (0.02)
NED	-0.0193 (-1.32)	0.156*** (3.91)	-0.00294 (-0.23)	0.156*** (3.37)	-0.0197 (-1.34)	0.113** (2.53)	-0.00920 (-0.72)	0.113** (2.00)	-0.0206 (-1.43)	0.00750 (0.15)	-0.0170 (-1.38)	0.00750 (0.12)
Age	-0.00751 (-0.66)	0.0151 (0.95)	0.00504 (0.49)	0.0151 (1.19)	-0.00892 (-0.79)	0.00924 (0.49)	-0.00188 (-0.18)	0.00924 (0.63)	-0.00894 (-0.82)	0.00385 (0.18)	-0.0065 (-0.61)	0.00385 (0.30)
Size	0.0163 (1.61)	-0.026*** (-2.72)	-0.00442 (-0.63)	-0.0264** (-2.33)	0.0148 (1.37)	-0.047*** (-4.26)	-0.015** (-2.01)	-0.047*** (-3.67)	0.0174 (1.65)	0.045*** (3.50)	-0.0094 (-1.19)	0.0453** (-2.33)
Growth	0.0315*** (2.79)	0.0305*** (5.62)	0.0285*** (5.23)	0.0305*** (3.55)	0.0109 (0.98)	0.0154** (2.34)	0.0115* (1.75)	0.0154** (2.37)	0.00126 (0.12)	0.000425 (0.06)	-0.0047 (-0.67)	0.000425 (0.05)
DE	-0.027*** (-4.56)	-0.0063** (-2.35)	0.0092*** (3.49)	-0.0063** (-2.09)	0.025*** (4.19)	-0.0013 (-0.41)	-0.0050* (-1.66)	-0.00127 (-0.60)	0.022*** (3.54)	0.0073** (2.20)	0.0022 (0.70)	0.0073 (1.56)
_cons	0.0248 (0.29)	-0.395** (-2.34)	0.106 (1.30)	-0.395* (-1.89)	0.0410 (0.45)	-0.0169 (-0.09)	0.237*** (2.77)	-0.0169 (-0.07)	0.0129 (0.15)	0.419* (1.90)	0.215** (2.45)	0.419 (1.48)
N	700	700	700	700	630	630	630	630	560	560	560	560
R2	0.1628	0.1399	0.1124	0.1399	0.1357	0.0920	0.0679	0.0920	0.1171	0.0568	0.0389	0.0568
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

Table 5.7: The moderating effect of NED on ESG pillars and ROA_{t+1}

	Panel A				Panel B				Panel C			
	(1) Pooled OLS	(2) Fixed Effect	(3) Random Effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed Effect	(7) Random Effect	(8) Robust FE	(9) Pooled OLS	(10) Fixed Effect	(11) Random Effect	(12) Robust FE
Env	-0.135 (-0.91)	-0.257*** (-2.98)	-0.178** (-2.14)	-0.257*** (-3.14)	-0.0378 (-1.33)	-0.0491*** (-3.49)	-0.0336** (-2.45)	-0.0491** (-2.11)	-0.0380 (-1.33)	-0.0467*** (-3.32)	-0.0321** (-2.34)	-0.0467** (-2.04)
Soc	0.0517** (2.02)	0.0586*** (4.48)	0.0494*** (3.80)	0.0586*** (3.04)	-0.0159 (-0.11)	-0.108 (-1.51)	-0.0683 (-0.97)	-0.108 (-1.56)	0.0520* (1.98)	0.0611*** (4.57)	0.0499*** (3.79)	0.0611*** (3.04)
Gov	-0.0291 (-1.55)	0.00765 (0.88)	-0.00123 (-0.14)	0.00765 (0.79)	-0.0295 (-1.57)	0.00744 (0.86)	-0.00135 (-0.16)	0.00744 (0.78)	-0.0654 (-0.44)	-0.0709 (-1.06)	-0.0103 (-0.16)	-0.0709 (-1.04)
NED_E	0.0220 (0.64)	0.0479** (2.48)	0.0332* (1.77)	0.0479** (2.54)								
NED_S					0.0154	0.0385**	0.0272*	0.0385**				

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	Panel A				Panel B				Panel C			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ROA _{t+1}	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE
					(0.44)	(2.37)	(1.70)	(2.23)				
NED_G									0.00791	0.0172	0.00168	0.0172
									(0.24)	(1.15)	(0.12)	(1.19)
NED	-0.0227	0.163***	-0.00656	0.163***	-0.0221	0.162***	-0.00652	0.162***	-0.0209	0.165***	-0.00289	0.165***
	(-1.35)	(4.09)	(-0.50)	(3.43)	(-1.30)	(4.06)	(-0.50)	(3.41)	(-1.20)	(4.06)	(-0.22)	(3.40)
Age	-0.00725	0.0183	0.00679	0.0183	-0.00717	0.0181	0.00679	0.0181	-0.00728	0.0164	0.00528	0.0164
	(-0.63)	(1.15)	(0.65)	(1.50)	(-0.63)	(1.13)	(0.65)	(1.47)	(-0.65)	(1.02)	(0.51)	(1.35)
Size	0.0152	0.0266***	-0.00511	0.0266**	0.0154	-0.0267***	-0.00510	-0.0267**	0.0160	-0.0265***	-0.00454	-0.0265**
	(1.44)	(-2.76)	(-0.72)	(-2.39)	(1.46)	(-2.77)	(-0.72)	(-2.37)	(1.55)	(-2.73)	(-0.64)	(-2.35)
Growth	0.0307***	0.0299***	0.0281***	0.0299***	0.0309***	0.0300***	0.0282***	0.0300***	0.0313***	0.0302***	0.0285***	0.0302***
	(2.78)	(5.54)	(5.18)	(3.51)	(2.80)	(5.54)	(5.18)	(3.51)	(2.79)	(5.57)	(5.23)	(3.52)
DE	0.0275***	0.00581**	0.00892***	0.00581*	0.0275***	-0.00607**	0.00908***	-0.00607**	0.0273***	-0.00621**	0.00916***	0.00621**
	(-4.61)	(-2.16)	(-3.39)	(-1.94)	(-4.63)	(-2.27)	(-3.45)	(-2.02)	(-4.61)	(-2.31)	(-3.47)	(-2.05)
_cons	0.0496	-0.428**	0.125	-0.428**	0.0445	-0.421**	0.125	-0.421*	0.0341	-0.433**	0.106	-0.433*
	(0.46)	(-2.54)	(1.51)	(-2.00)	(0.41)	(-2.50)	(1.51)	(-1.96)	(0.33)	(-2.52)	(1.29)	(-1.94)
N	700	700	700	700	700	700	700	700	700	700	700	700
R2	0.1641	0.1485	0.1179	0.1485	0.1636	0.1477	0.1175	0.1477	0.1630	0.1418	0.1126	0.1418
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

Table 5. 8: Moderating effect of NED results on ESG pillars and ROA_{t+2}

	Panel A				Panel B				Panel C			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ROA _{t+2}	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE
Env	-0.195	-0.200*	-0.153	-0.200*	-0.0340	-0.0384**	-0.0237	-0.0384*	-0.0341	-0.0359**	-0.0218	-0.0359*
	(-1.22)	(-1.72)	(-1.42)	(-1.84)	(-1.27)	(-2.21)	(-1.42)	(-1.78)	(-1.28)	(-2.08)	(-1.31)	(-1.72)
Soc	0.0496*	0.0634***	0.0546***	0.0634***	-0.103	-0.0539	-0.0416	-0.0539	0.0499*	0.0646***	0.0549***	0.0646***
	(1.83)	(3.89)	(3.41)	(2.84)	(-0.64)	(-0.55)	(-0.45)	(-0.57)	(1.77)	(3.90)	(3.40)	(2.74)
Gov	-0.0242	0.00354	-0.00523	0.00354	-0.0244	0.00305	-0.00561	0.00305	-0.154	-0.0525	-0.0272	-0.0525
	(-1.29)	(0.36)	(-0.54)	(0.36)	(-1.31)	(0.31)	(-0.58)	(0.31)	(-0.96)	(-0.60)	(-0.33)	(-0.60)

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	Panel A				Panel B				Panel C			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ROA _{t+2}	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE
NED_E	0.0364 (1.01)	0.0368 (1.43)	0.0294 (1.23)	0.0368 (1.57)								
NED_S					0.0345 (0.92)	0.0271 (1.21)	0.0222 (1.05)	0.0271 (1.12)				
NED_G									0.0290 (0.80)	0.0122 (0.62)	0.00465 (0.25)	0.0122 (0.62)
NED	-0.0246 (-1.49)	0.118*** (2.64)	-0.0123 (-0.93)	0.118** (2.06)	-0.0251 (-1.51)	0.118*** (2.63)	-0.0119 (-0.90)	0.118** (2.04)	-0.0247 (-1.46)	0.118*** (2.60)	-0.00969 (-0.74)	0.118* (1.96)
Age	-0.00837 (-0.74)	0.0112 (0.60)	0.000504 (-0.05)	0.0112 (0.81)	-0.00804 (-0.72)	0.0102 (0.54)	0.000793 (-0.07)	0.0102 (0.73)	-0.00796 (-0.72)	0.00969 (0.52)	-0.00159 (-0.15)	0.00969 (0.68)
Size	0.0128 (1.14)	-0.047*** (-4.23)	-0.0156** (-2.06)	-0.047*** (-3.74)	0.0129 (1.15)	-0.0470*** (-4.25)	-0.0156** (-2.06)	-0.047*** (-3.73)	0.0137 (1.25)	-0.0469*** (-4.24)	-0.015** (-2.02)	-0.047*** (-3.68)
Growth	0.0104 (0.93)	0.0153** (2.32)	0.0115* (1.75)	0.0153** (2.35)	0.0103 (0.92)	0.0152** (2.32)	0.0114* (1.74)	0.0152** (2.34)	0.0106 (0.95)	0.0153** (2.33)	0.0115* (1.75)	0.0153** (2.35)
DE	-0.026*** (-4.28)	-0.00075 (-0.24)	-0.0047 (-1.55)	-0.00075 (-0.34)	-0.026*** (-4.30)	-0.00104 (-0.33)	-0.00486 (-1.62)	-0.00104 (-0.48)	-0.026*** (-4.30)	-0.00119 (-0.38)	-0.0050* (-1.65)	-0.00119 (-0.55)
_cons	0.0792 (0.72)	-0.0430 (-0.22)	0.252*** (2.91)	-0.0430 (-0.18)	0.0807 (0.73)	-0.0380 (-0.20)	0.251*** (2.89)	-0.0380 (-0.15)	0.0716 (0.68)	-0.0422 (-0.22)	0.239*** (2.78)	-0.0422 (-0.16)
N	630	630	630	630	630	630	630	630	630	630	630	630
R2	0.1391	0.0954	0.0702	0.0954	0.1392	0.0944	0.0694	0.0944	0.1384	0.0926	0.0679	0.0926
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

Table 5.9: The moderating effect of NED results on ESG pillars and ROA_{t+3}

	Panel A				Panel B				Panel C			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ROA _{t+3}	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE
Env	-0.154 (-1.00)	0.0763 (0.54)	0.0388 (0.31)	0.0763 (0.68)	-0.0228 (-0.95)	-0.00842 (-0.43)	-0.00243 (-0.13)	-0.00842 (-0.41)	-0.0227 (-0.97)	-0.00866 (-0.45)	-0.00228 (-0.12)	-0.00866 (-0.45)
Soc	0.0210 (0.85)	0.0217 (1.15)	0.0219 (1.19)	0.0217 (1.18)	-0.133 (-0.84)	0.112 (0.92)	0.0538 (0.48)	0.112 (1.03)	0.0212 (0.85)	0.0194 (1.03)	0.0208 (1.13)	0.0194 (1.03)

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	Panel A				Panel B				Panel C			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
ROA _{t+3}	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE	Pooled OLS	Fixed Effect	Random Effect	Robust FE
Gov	-0.0117 (-0.51)	-0.00076 (-0.06)	-0.00744 (-0.64)	-0.00076 (-0.05)	-0.0119 (-0.53)	-0.000511 (-0.04)	-0.00722 (-0.63)	-0.00051 (-0.03)	-0.174 (-0.98)	0.162 (1.45)	0.0876 (0.85)	0.162 (1.50)
NED_E	0.0294 (0.87)	-0.0193 (-0.62)	-0.00931 (-0.33)	-0.0193 (-0.83)								
NED_S					0.0350 (0.95)	-0.0207 (-0.74)	-0.00731 (-0.29)	-0.0207 (-0.81)				
NED_G									0.0367 (0.90)	-0.0369 (-1.46)	-0.0216 (-0.93)	-0.0369 (-1.44)
NED	-0.0241 (-1.53)	0.00548 (0.11)	-0.0161 (-1.26)	0.00548 (0.09)	-0.0254 (-1.60)	0.00445 (0.09)	-0.0162 (-1.27)	0.00445 (0.07)	-0.0262 (-1.63)	-0.00198 (-0.04)	-0.0144 (-1.13)	-0.00198 (-0.03)
Age	-0.00848 (-0.78)	0.00229 (0.11)	-0.00692 (-0.64)	0.00229 (0.17)	-0.00811 (-0.75)	0.00244 (0.11)	-0.00686 (-0.64)	0.00244 (0.18)	-0.00771 (-0.73)	0.00254 (0.12)	-0.00760 (-0.71)	0.00254 (0.19)
Size	0.0158 (1.44)	0.0454*** (-3.50)	-0.00939 (-1.18)	-0.0454** (-2.32)	0.0155 (1.42)	-0.0456*** (-3.51)	-0.00943 (-1.18)	-0.0456** (-2.33)	0.0158 (1.47)	-0.0460*** (-3.55)	-0.00912 (-1.15)	-0.0460** (-2.35)
Growth	0.000849 (0.08)	0.000616 (0.09)	-0.00462 (-0.66)	0.000616 (0.07)	0.000417 (0.04)	0.000822 (0.12)	-0.00458 (-0.66)	0.000822 (0.09)	0.000803 (0.08)	0.000870 (0.12)	-0.00464 (-0.67)	0.000870 (0.10)
DE	-0.0219*** (-3.61)	0.00701** (2.11)	0.00218 (0.69)	0.00701 (1.46)	-0.0221*** (-3.64)	0.00716** (2.16)	0.00224 (0.71)	0.00716 (1.52)	-0.0223*** (-3.66)	0.00685** (2.07)	0.00209 (0.66)	0.00685 (1.42)
_cons	0.0421 (0.41)	0.431* (1.95)	0.211** (2.36)	0.431 (1.50)	0.0498 (0.48)	0.437** (1.97)	0.212** (2.38)	0.437 (1.52)	0.0497 (0.48)	0.468** (2.10)	0.203** (2.28)	0.468 (1.62)
N	560	560	560	560	560	560	560	560	560	560	560	560
R2	0.1193	0.0575	0.0397	0.0575	0.1206	0.0579	0.0397	0.0579	0.1214	0.0610	0.0423	0.0610
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

5.6.1 Impact of ESG and its pillars on Market performance

The second analysis proposed replacing the accounting performance (ROA) measurement of corporate performance with the market performance measurement (Tobin's Q). Panel A of Table 5.10. presents the results of the impact of ESG on market performance, while Panel B focuses on the individual pillar. The LM test indicates that the random effect model is more suitable than the pooled OLS model

for analyzing the impact on Tobin's Q. However, since the Hausman test is statistically significant, the fixed effect model is preferred over the random effect model. The impact of overall ESG disclosure on Tobin's Q is positive and essential, aligning with stakeholder theory. These findings suggest stakeholders value transparency and strong ESG performance, which helps build trust (Eccles et al., 2014). The results also indicate a positive relationship between ESG and market performance, as investors tend to factor in companies that actively address social and environmental issues, consistent with previous research (Ademi & Klungseth, 2022; Atan et al., 2018; Boulhaga et al., 2023). Additionally, two control variables, leverage and size, negatively impact Tobin's Q.

Table 5.11 shows that the Env and Gov pillars have no significant effect on Tobin's Q, whereas social factors positively affect investor sentiment in the cement industry. While Env harms market performance, Gov has a positive effect. The moderating effect of NED remains insignificant, indicating that investment in ESG pillars does not affect asset market value in the presence of country development. However, national economic development significantly increased Tobin's Q for the cement industry.

Table 5.10: Main analysis results with ESG and its pillar scores as the explanatory variables and TQ as the explained variable.

TQ	Panel A				Panel B			
	(1) Pooled OLS	(2) Fixed effect	(3) Random effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed effect	(7) Random effect	(8) Robust FE
ESG	0.163 (1.44)	0.169*** (3.46)	0.184*** (3.77)	0.169*** (2.68)				
Env					-0.109 (-0.60)	-0.168* (-1.80)	-0.0464 (-0.50)	-0.168 (-1.46)
Soc					0.339* (1.90)	0.243*** (2.74)	0.199** (2.23)	0.243** (2.15)
Gov					-0.100 (-0.97)	0.0649 (1.13)	0.0167 (0.29)	0.0649 (0.74)
NED	-0.227** (-2.28)	1.358*** (5.34)	-0.0776 (-0.88)	1.358*** (2.70)	-0.218** (-2.21)	1.497*** (5.78)	-0.0638 (-0.72)	1.497*** (2.89)
Age	-0.0566 (-0.69)	-0.0871 (-0.83)	-0.0192 (-0.27)	-0.0871 (-0.68)	-0.0582 (-0.71)	-0.0813 (-0.77)	-0.0153 (-0.21)	-0.0813 (-0.65)
Size	-0.177*** (-2.90)	-0.462*** (-7.30)	-0.281*** (-6.04)	-0.462*** (-3.44)	-0.167*** (-2.68)	-0.466*** (-7.35)	-0.277*** (-5.90)	-0.466*** (-3.50)

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	Panel A				Panel B			
TQ	(1) Pooled OLS	(2) Fixed effect	(3) Random effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed effect	(7) Random effect	(8) Robust FE
Growth	0.109* (1.75)	0.0971*** (2.66)	0.0856** (2.31)	0.0971* (1.80)	0.110* (1.75)	0.0982*** (2.70)	0.0846** (2.29)	0.0982* (1.76)
DE	-0.181*** (-4.20)	-0.0662*** (-3.81)	-0.0808*** (-4.68)	-0.0662 (-1.57)	-0.180*** (-4.16)	-0.0629*** (-3.56)	-0.0812*** (-4.63)	-0.0629 (-1.48)
_cons	2.795*** (4.47)	-1.565 (-1.47)	2.876*** (5.27)	-1.565 (-0.79)	2.672*** (4.12)	-2.145** (-1.97)	2.773*** (5.02)	-2.145 (-1.04)
N	755	755	755	755	755	755	755	755
R2	0.2234	0.1701	0.1706	0.1701	0.2770	0.1791	0.1318	0.1791
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

Table 5.11: The moderating effect of NED results on ESG pillars and TQ

	Panel A				Panel B				Panel C			
TQ	(1) Pooled OLS	(2) Fixed effect	(3) Random effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed effect	(7) Random effect	(8) Robust FE	(9) Pooled OLS	(10) Fixed effect	(11) Random effect	(12) Robust FE
Env	0.0281 (0.02)	-0.247 (-0.43)	0.342 (0.61)	-0.247 (-0.35)	-0.106 (-0.60)	-0.174* (-1.85)	-0.0461 (-0.50)	-0.174 (-1.51)	-0.104 (-0.59)	-0.167* (-1.78)	-0.0441 (-0.48)	-0.167 (-1.46)
Soc	0.339* (1.90)	0.243*** (2.74)	0.198** (2.22)	0.243** (2.17)	0.0146 (0.01)	-0.0418 (-0.09)	0.240 (0.51)	-0.0418 (-0.06)	0.353* (1.95)	0.239*** (2.65)	0.181** (2.00)	0.239** (2.21)
Gov	-0.102 (-0.96)	0.0659 (1.14)	0.0126 (0.22)	0.0659 (0.73)	-0.0958 (-0.89)	0.0691 (1.20)	0.0165 (0.28)	0.0691 (0.78)	-0.821 (-0.75)	0.149 (0.34)	0.544 (1.28)	0.149 (0.20)
NED_E	-0.0313 (-0.11)	0.0180 (0.14)	-0.0886 (-0.70)	0.0180 (0.11)								
NED_S					0.0743 (0.27)	0.0663 (0.61)	-0.00964 (-0.09)	0.0663 (0.44)				
NED_G									0.163 (0.65)	-0.0191 (-0.20)	-0.119 (-1.25)	-0.0191 (-0.11)
NED	-0.213* (-1.84)	1.500*** (5.77)	-0.0505 (-0.56)	1.500*** (2.93)	-0.232** (-2.01)	1.506*** (5.80)	-0.0594 (-0.65)	1.506*** (2.93)	-0.252** (-2.10)	1.489*** (5.67)	-0.0480 (-0.54)	1.489*** (2.97)
Age	-0.0587 (-0.72)	-0.0801 (-0.76)	-0.0200 (-0.27)	-0.0801 (-0.63)	-0.0560 (-0.70)	-0.0758 (-0.72)	-0.0159 (-0.22)	-0.0758 (-0.59)	-0.0521 (-0.65)	-0.0831 (-0.79)	-0.0252 (-0.35)	-0.0831 (-0.64)
Size	-0.165** (-2.52)	-0.466*** (-7.35)	-0.277*** (-5.87)	-0.466*** (-3.50)	-0.171** (-2.61)	-0.467*** (-7.36)	-0.278*** (-5.89)	-0.467*** (-3.50)	-0.173*** (-2.76)	-0.466*** (-7.35)	-0.277*** (-5.91)	-0.466*** (-3.50)

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	Panel A				Panel B				Panel C			
TQ	(1) Pooled OLS	(2) Fixed effect	(3) Random effect	(4) Robust FE	(5) Pooled OLS	(6) Fixed effect	(7) Random effect	(8) Robust FE	(9) Pooled OLS	(10) Fixed effect	(11) Random effect	(12) Robust FE
Growth	0.111 [*] (1.80)	0.0979 ^{***} (2.69)	0.0858 ^{**} (2.32)	0.0979 [*] (1.77)	0.108 [*] (1.76)	0.0972 ^{***} (2.67)	0.0849 ^{**} (2.29)	0.0972 [*] (1.75)	0.106 [*] (1.75)	0.0985 ^{***} (2.70)	0.0863 ^{**} (2.33)	0.0985 [*] (1.78)
DE	-0.180 ^{***} (-4.15)	-0.0628 ^{***} (-3.54)	-0.0814 ^{***} (-4.64)	-0.0628 (-1.47)	-0.181 ^{***} (-4.20)	-0.0627 ^{***} (-3.54)	-0.0810 ^{***} (-4.62)	-0.0627 (-1.47)	-0.182 ^{***} (-4.20)	-0.0629 ^{***} (-3.56)	-0.0810 ^{***} (-4.62)	-0.0629 (-1.48)
_cons	2.637 ^{***} (3.30)	-2.157 ^{**} (-1.98)	2.718 ^{***} (4.86)	-2.157 (-1.06)	2.767 ^{***} (3.43)	-2.184 ^{**} (-2.01)	2.762 ^{***} (4.93)	-2.184 (-1.07)	2.866 ^{***} (3.71)	-2.108 [*] (-1.91)	2.719 ^{***} (4.91)	-2.108 (-1.05)
N	755	755	755	755	755	755	755	755	755	755	755	755
R ²	0.2771	0.1791	0.1325	0.1791	0.2774	0.1795	0.1321	0.1795	0.2788	0.1791	0.1342	0.1791
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

The table below presents panel data analysis using Pooled OLS, fixed effect, and random test. ***, **, and * denoted statistical significance at the 1%, 5%, and 10% levels, respectively. The definitions of all variables are defined as per Table 5.1. The first row displayed the estimated coefficients, with the t-value for statistical significance shown in parentheses.

5.7. Discussions

In light of the varied findings on the relationship between ESG and corporate performance and the requirement for more empirical evidence within the global cement industry, this study primarily examines the impact of ESG disclosure on ROA. Our primary analysis, complemented by additional analyses, used TQ as an alternative measure, and we also explored the lagging effects of individual ESG dimensions on ROA. The results support our initial hypotheses, showing that environmental and social dimensions significantly influence ROA while governance does not. Furthermore, our findings confirm that NED moderates only the Environmental dimensions of global cement firms.

The findings of our study indicate significant effects of the environmental and social dimensions on financial performance, which align with previous research showing the precise impact of these dimensions on company performance (Alareeni & Hamdan, 2020). For instance, based on the trade-off theory, Behl et al. (2022) suggest that these dimensions have a negative impact. Lee & Isa (2020) find a positive link between individual ESG pillars and financial performance, supporting the stakeholder theory. These two perspectives- stakeholder theory and trade-off theory- may not be mutually exclusive; they might simultaneously influence firm performance. Our supplementary analysis using lagged ROA further confirms the significant direct effects of the Env and Soc pillars. Regarding governance dimensions, our findings resonate with (Alahdal et al., 2020), who reported a positive, insignificant impact on corporate performance assessed by ROA and TQ. Additional lagged ROA revealed that governance practices have a sustained positive effect on ROA over the subsequent three years.

The results also suggest that the effects of ESG activities, whether positive or negative, can persist over time but with varying intensities. For instance, environmental activities, particularly those tied to profit metrics, tend to have immediate adverse effects due to operational costs, which can quickly affect a firm's profitability (Yenidogan et al., 2021). However, this negative impact may diminish over time, as evidenced by a reduction of the β coefficient from -0.0501 to -0.0350 over the next two years. Conversely, social activities positively affect a firm's profitability, increasing from 0.043 to 0.0629. These activities involve building community relationships and enhancing organisational culture, which typically requires time to influence financial performance. This is because they are linked to creating a solid brand image (Wood, 2000) and ensuring stakeholders' satisfaction (Radu, 2012).

Interestingly, the result exhibits a different pattern when using TQ to measure market performance. The overall ESG impact and the social pillar show a significant positive effect aligned with stakeholder theory, while the environment and governance pillars do not. These findings suggest that while certain ESG dimensions contribute positively to firm performance in specific contexts, their influence may vary depending on the measurement used, reflecting the complex and multifaceted nature of ESG impacts in the global cement industry.

Focusing on the influence of economies, this study, grounded in a market-oriented perspective, posited that cement firms could boost profitability by adopting environmental practices in countries with higher economic development, as indicated by GDP per capita, with this positive effect lasting up to a year. The institutional theory reveals the proactive behaviour of firms toward environmental issues. It addresses the impact of the context in which organisations are embedded and their need for social, institutional, and economic legitimacy (Meyer & Rowan, 1977). In particular, studies using the institutional difference hypothesis (IDH) suggest that strategic opinions and decisions regarding sustainability can vary across levels of economic and institutional development (Garcia & Orsato, 2020).

Applying the institutional difference hypothesis in the study, it is evident that institutional frameworks and regulatory enforcement are weak in developing economies, which may not align with sustainable and socially conscious practices that affect a firm's financial performance. According to IDH, firms operating in such environments are more inclined to prioritize capital accumulation over recognizing the strategic benefit of ESG investments (Frynas, 2005; Ofori & Hinson, 2007). Furthermore, these firms experience minimal external pressure to engage in ESG initiatives, whether from government or nongovernmental agencies, unlike developed nations (Amao, 2008; Blowfield & Frynas, 2005). Additionally, the prevalence of

corruption and informal payments in emerging economies (Ahunwan, 2002), further disincentivises compliance with laws and regulations. This reality contrasts sharply with the Beyond Compliance Theory, which posits that corporations voluntarily adopt sustainability initiatives that exceed legal requirements (Berchicci & King, 2007).

Finally, factors such as widespread poverty, low educational level, inadequate housing, and insufficient health care services often take precedence, reducing social awareness and demands for sustainable improvements in the products and services firms offer. Hence, corporations operate in environments where institutional voids, such as a lack of stringent environmental regulations and customer awareness, shape their strategic priorities. Moreover, Customers in these economies focus more on affordability and practicality (Miao & Wei, 2016), reflecting institutional constraints prioritizing short-term economic needs over long-term sustainability goals. However, in developed economies, stronger institutional frameworks and proactive government and social pressures create a favorable environment for sustainability. Initiatives, such as environmental sustainability campaigns, subsidies, and regulatory incentives, encourage firms to actively engage in and advance ecological practices, which can lead to improved financial outcomes. This contrast underscores the pivotal role of institutional strength in shaping the adoption of ecological and social practices within the cement industry across different economic contexts.

It is important to note that these research findings on the positive moderating role of NED align with some previous research (Hwang et al., 2024), which is based on the hospitality industry, but contradicts the conclusion of Ghoul et al. (2017), who found that CSR contributes more to value enhancement in countries with weaker infrastructures. This discrepancy could be due to the differences in the sample used. While Ghoul et al. (2017) examined the entire economy from 2003 to 2010; our study focused mainly on cement firms from 2013 to 2023. Given the recent surge in the importance of the global corporate landscape, the financial implications of ESG practices today may differ from those of the past. Additionally, they only used CSR measurements as the variables (Doukas & Zhang, 2024), whereas our study utilized ESG scores, which could account for the differing results.

5.8. Contribution of the Study

Our study offers a distinct perspective from previous empirical literature; for instance, a study examines firms across various industries within G20 countries, emphasising the firm size and media coverage as moderators in the ESG–firm performance relationship (Bissoondoyal-Bheenick et al., 2023). In contrast, we focus specifically on the global cement industry, a sector with significant environmental impact. We introduce national economic development (NED) as a moderating variable to examine how varying levels of economic development influence the effectiveness of ESG

strategies across countries. Additionally, our research also incorporates lagged effects to investigate the temporal dynamics of ESG investments, providing insights into how the financial implications of such initiatives evolve within the cement industry. These distinctions underscore the unique contributions of our study to advancing understanding of ESG practices within a specific industry context and across varying economic conditions. The study significantly contributes to academic literature and practical policy discussions concerning ESG practices, focusing on the global cement industry.

5.8.1 Theoretical and Empirical Contributions

Theoretically, this research enriches the discourse on the ESG–corporate performance relationship by integrating multiple conceptual frameworks, including stakeholder theory, trade-off theory, institutional theory, and the institutional difference hypothesis (IDH). It proposes that stakeholder and trade-off theories can coexist in explaining firm performance, particularly in environmentally sensitive sectors like cement. The study extends institutional theory and the IDH by demonstrating how national economic development levels moderate the effectiveness of ESG strategies, providing empirical evidence that firms in developed economies benefit more from ESG investments due to stronger regulatory environments and heightened stakeholder expectations. Additionally, it challenges the assumptions of Beyond Compliance Theory, suggesting that weak enforcement mechanisms and institutional voids in emerging economies diminish firms' incentives to voluntarily exceed compliance standards (Alm El-Din et al., 2022), thereby adding depth to the ESG discourse in developing regions (Amaeshi et al., 2008).

Empirically, this study is among the first to conduct a longitudinal analysis of the impacts of ESG disclosure on both accounting-based (ROA) and market-based (Tobin's Q) performance metrics within the global cement industry, a sector often underrepresented in ESG research despite its significant environmental impact. The inclusion of lagged effects reveals the temporal dynamics of ESG's financial implications, indicating that the benefits and drawbacks of ESG investments manifest differently over time and across ESG dimensions. By disaggregating ESG into its environmental, social, and governance pillars, the study uncovers nuanced effects: the social dimension consistently enhances both accounting and market performance; the environmental pillar shows an initial negative impact on ROA that diminishes over time; and governance exhibits a delayed but positive impact on accounting performance, though its effect on market performance remains insignificant.

5.8.2 Practical and Policy Implications

The findings offer valuable insights for policymakers, corporate managers, and investors. Policymakers in emerging economies should develop targeted regulatory frameworks and support mechanisms that promote ESG adoption despite uncertain short-term returns. In addition to tax incentives, offering subsidies, green financing, and capacity-building initiatives can help, especially for small and family firms, to recognise the long-term value of ESG integration. Continuous enhancement and broader application of standardised ESG reporting frameworks, such as expanding India's Business Responsibility and Sustainability Reporting (BRSR) framework, introduced by the Securities and Exchange Board of India (SEBI) for mid-sized and unlisted firms, are essential for transparency and comparability. Facilitating multi-stakeholder platforms and strengthening enforcement to ensure data integrity may foster knowledge exchange, innovation, and accountability. Such a comprehensive ecosystem of incentives, capacity building, reporting, and collaboration can accelerate sustainable business practices, advancing economic growth and social welfare in emerging markets.

For corporate managers in emerging economies, integrating ESG considerations into business strategies is essential for aligning sustainability with profitability goals. Understanding that the financial benefits of ESG initiatives are influenced by national economic development can guide managers in formulating context-sensitive sustainability strategies. While environmental initiatives may entail initial costs, they can yield long-term profitability, particularly in regions with supportive regulatory frameworks and heightened stakeholder expectations. For instance, adopting eco-friendly strategies can enhance resource efficiency and reduce costs, providing a competitive advantage. Aligning environmental strategies with national economic contexts is crucial to optimize returns. Social initiatives, such as enhancing employee well-being and engaging with communities, consistently improve accounting and market performance metrics. Investing in employee well-being and community engagement strengthens the bonds among a company, its workforce, and surrounding communities, leading to greater employee engagement and a sense of purpose. This underscores the role of social responsibility in bolstering corporate reputation and operational efficiency. Although the governance pillar's immediate impact on market performance may be limited, its sustained positive effect on accounting performance suggests that robust internal controls and ethical leadership are crucial for long-term financial health. Strong governance practices, including transparency and accountability, can increase investor confidence and potentially lead to more favourable financing terms. Building on these findings, family firms should take specific actions: prioritize phased investments in cleaner technologies with government support to manage costs; actively engage in community development and

employee well-being programs to strengthen local reputation and stakeholder trust; voluntarily adopt global ESG standards in less developed contexts to attract sustainability-focused investors; and embed ESG metrics into strategic and succession planning to ensure long-term, intergenerational sustainability. Integrating ESG considerations into corporate strategies not only addresses sustainability concerns but also aligns with profitability goals, enabling firms to navigate the complexities of sustainable development effectively and enhance stakeholder value.

For investors, evaluating ESG disclosures is crucial in capital allocation decisions. By assessing the economic context in which firms operate, investors can better gauge the long-term value and risks associated with ESG investments. Studies have shown a positive association between overall ESG scores and market valuation metrics, such as Tobin's Q, indicating that the market values transparency and sustainability efforts, especially when companies actively address social issues. These findings advocate for a proactive, long-term approach to embedding ESG practices, enabling firms to navigate the complexities of sustainable development effectively and enhance stakeholder value.

5.9. Conclusion and Future Research Directions of the Study

As sustainable development gains increasing global attention, understanding how ESG initiatives translate into financial outcomes becomes crucial, especially in high-impact sectors like cement. This study investigates the influence of National Economic Development (NED) on the relationship between ESG disclosures and corporate performance in the global cement industry across 29 countries between 2013 and 2023. Anchored in the Institutional Difference Hypothesis (IDH) and market orientation theory, the analysis provides nuanced insights into how ESG impacts vary across economic and institutional contexts. The findings reveal that the environmental and social dimensions of ESG significantly affect financial performance, particularly return on assets (ROA), while governance shows no immediate effect. Lagged analyses indicate a delayed but positive influence of governance practices, suggesting that such effects manifest over time. The study also highlights that environmental practices, although initially associated with reduced profitability, are consistent with trade-off theory and tend to yield diminishing negative effects over time. In contrast, social initiatives produce consistently positive effects, aligning with stakeholder theory. When considering market performance through Tobin's Q, the social pillar and overall ESG disclosure positively influence valuation, underscoring investor sensitivity to ESG transparency and accountability.

A key contribution of this study lies in confirming the positive moderating effect of NED on the ESG-performance relationship, particularly for environmental disclosure. In more developed economies, stronger regulatory enforcement, institutional stability,

and greater stakeholder awareness enhance the financial returns of ESG engagement. Conversely, in emerging markets, institutional voids and resource constraints weaken this relationship, limiting the strategic value of ESG investments. While this research advances understanding in the cement sector, certain limitations remain. The industry-specific focus, reliance on a single ESG database (Refinitiv Eikon), and the exclusion of alternative ESG weighting schemes and country-income-based subsample analysis constrain the broader applicability and depth of the findings.

To address these limitations, future research should triangulate ESG metrics across multiple databases to improve robustness, expand the sample to include SMEs, and account for institutional and cultural heterogeneity in cross-country analyses. Furthermore, investigating how low-carbon technologies, innovation strategies, and public policy interact with ESG initiatives could yield richer insights into the mechanisms shaping financial outcomes.

In further analysis, it becomes increasingly important to explore how ESG performance influences not only firm profitability and market valuation but also corporate financial policies, particularly dividend decisions. While ESG is traditionally examined through the lenses of sustainability or operational outcomes, its intersection with payout behaviour remains under-researched. Accordingly, the next phase of this thesis adopts a meta-analytic approach to systematically assess the global relationship between ESG disclosures and dividend policy. This approach enables a deeper investigation into whether ESG-active firms follow more conservative dividend strategies to fund sustainability investments, or whether ESG performance signals financial strength, supporting higher payouts. Through this lens, the research contributes to a more comprehensive understanding of ESG's role in shaping long-term value distribution and strategic financial decisions.

Table 5.12: Summaries of firm distribution across the world Cement industry

Country	Observations	Percent
Argentina	22	2.86
Belgium	11	1.43
Cayman Islands	22	2.86
China	88	11.43
Colombia	22	2.86
Denmark	11	1.43
France	11	1.43
India	154	20
Indonesia	33	4.29
Ireland	11	1.43
Italy	11	1.43
Malaysia	33	4.29

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Country	Observations	Percent
Mexico	22	2.86
Morocco	22	2.86
Netherlands	11	1.43
Nigeria	11	1.43
Oman	11	1.43
Pakistan	11	1.43
Peru	22	2.86
Qatar	22	2.86
Saudi Arabia	44	5.71
South Africa	11	1.43
Switzerland	11	1.43
Taiwan	11	1.43
Taiwan Province of China	22	2.86
Thailand	11	1.43
Turkey	33	4.29
United Arab Emirates	55	7.14
United States	11	1.43

Source: Authors' Own Estimations

CHAPTER 6

A META-ANALYTIC EXAMINATION OF THE RELATIONSHIP BETWEEN ESG DISCLOSURE AND DIVIDEND POLICY

6.1. Introduction

The corporate landscape has witnessed a profound transformation, evolving from a narrow focus on profit maximization to a broader, more responsible framework emphasizing ESG considerations (Rastogi & Singh, 2025). The corporate paradigm, which was historically rooted in shareholder value maximization, has gradually evolved to include corporate governance concepts and, more recently, a stakeholder-oriented strategy (Adnan & Tandigalla, 2017). A greater understanding of the interdependence of activities and their broader societal and environmental effects is reflected in this progression.

ESG initiatives have been increasingly prominent in the worldwide discussion on sustainable development, particularly over the past decade, as they have shaped narratives surrounding climate change, ethical governance, and social equity (Margolis et al., 2009; Margolis & Walsh, 2003; Orlitzky et al., 2003; Teng et al., 2021; van Beurden & Gössling, 2008). Although academics have studied the relationship between financial performance and corporate social responsibility (CSR) since the 1970s, empirical studies demonstrating a positive association between ESG performance and firm value have increased dramatically (Friede et al., 2015; Margolis & Walsh, 2003; Orlitzky et al., 2003). This expanding body of research highlights the strategic relevance of ESG practices for shareholders and a broad array of stakeholders, including investors, regulators, employees, and suppliers (Zhao & Murrell, 2016).

In response, ESG frameworks have evolved to operationalize stakeholder theory more systematically, providing corporations with structured approaches to integrate sustainability into governance and decision-making. These frameworks highlight the necessity for corporations to address ESG issues systematically. Since enterprises must align their activities with the principles of ESG to improve resilience, reduce risks, and support sustainable development, this move significantly impacts corporate strategy. As, Phillips et al. (2003) argue that corporations, being artificial legal constructs, carry fiduciary responsibilities to shareholders and a wider network of stakeholders. In this context, ESG performance is not merely a reputational tool but a vital mechanism for sustainable value creation and responsible corporate stewardship.

From a financial policy perspective, firms responsive to ESG-related risks and stakeholder expectations may be more inclined to adopt transparent and stable dividend distribution practices as a signal of sound financial health and governance commitment (Cheung et al., 2018). Given that dividend policy remains a cornerstone of shareholder compensation and an indicator of financial robustness (Booth & Zhou, 2017; Denis & Osobov, 2008), understanding its interplay with ESG disclosures is crucial. This evolving landscape prompts a deeper investigation into how firms reconcile ESG commitments with financial payout strategies, a topic that remains underexplored despite its growing practical relevance.

Corporate investment priorities have evolved in recent years due to the growing emphasis on environmental and social externalities (Zhang et al., 2024). Consequently, corporations are investing increasingly in ESG-aligned initiatives, driven by shifting investor expectations, evolving regulatory landscapes, and growing market incentives (Chau et al., 2025). While such commitments can enhance long-term resilience and reputational capital, they also introduce financial trade-offs, particularly in how firms allocate discretionary cash flows. Balancing these competing priorities is a growing challenge, as ESG investments often require upfront capital that might otherwise be distributed as dividends. This tension creates a strategic dilemma for corporate decision-makers, who must weigh immediate shareholder returns against long-term sustainability goals (Zahid et al., 2023). Understanding how firms navigate this trade-off is essential to evaluating the financial implications of ESG performance and its influence on payout policy.

Building on the evolving landscape, Eccles & Krzus (2010) and Grewatsch & Kleindienst (2017) emphasize that ESG performance encompasses a wide range of organizational practices, including integrated sustainability accounting, triple bottom line (TBL) reporting, and corporate social responsibility (CSR). These practices are typically evaluated across three dimensions, environmental responsibility, social engagement, and corporate governance, each contributing to a holistic understanding of corporate accountability. *Environmental disclosures*, for instance, reflect a firm's ecological impact and include information on emissions, hazardous waste management, and climate-related strategies (Luo et al., 2012; Matsumura et al., 2014). By improving transparency and reducing information asymmetry, such disclosures not only strengthen investor trust but also support the development of collective knowledge essential to tackling global environmental challenges (Aggarwal & Dow, 2012; Stern, 2008).

Social disclosures evaluate how well a company performs in areas including worker safety, diversity, human rights, and consumer protection. Businesses that provide more extensive social disclosures tend to attract a broader range of investors,

consistent with the growing demand for moral and socially conscious investing. (El Ghoul et al., 2011). However, most prior research has employed aggregated social performance measures with a limited focus on disaggregate or domain-specific indicators. *Governance disclosures*, meanwhile, capture aspects of corporate leadership, board effectiveness, conflict-of-interest management, and executive compensation. This dimension indicates a firm's adherence to sound governance principles that promote long-term shareholder value (Aly et al., 2024). In mature capital markets, governance metrics are vital in mitigating agency conflicts and aligning managerial actions with shareholders' interests. ESG initiatives, by enhancing transparency and accountability, benefit investors through reliable information, reduce information asymmetry, improve capital allocation efficiency, have more accurate earnings forecasts, and have greater access to debt financing (Donghui et al., 2025).

Despite the growing body of literature examining the financial implications of ESG performance, the specific relationship between ESG disclosures and corporate dividend policy remains insufficiently explored. While it is posited that ESG initiatives may enhance firm transparency and capital efficiency by positively influencing investor confidence, there is limited empirical consensus on whether ESG activities directly influence dividend payout decisions (Barros et al., 2020; Jory et al., 2017). Furthermore, the existing studies report mixed findings, varying significantly across countries and industries. (Ananzeh et al., 2024; Chen et al., 2024; Rastogi & Singh, 2025; Rojo-Suárez et al., 2024). For instance, studies from Latin America indicate a negative correlation between ESG performance and dividend policy (Rojo-Suárez et al., 2024). Despite positive associations being reported in Europe (Bilyay-Erdogan et al., 2023), the United States (Tsang et al., 2024), and India (Rastogi & Singh, 2025). These variations highlight the significance of institutional and contextual elements in modifying the ESG–dividend link.

Given the fragmented and equivocal nature of the existing literature, this study aims to address a significant research gap, the absence of a systematic and quantitative evaluation of the relationship between ESG disclosures and dividend policy (Salvi et al., 2024). The study employs two complementary methods: a literature review to examine earlier research's development, breadth, and theoretical underpinnings (Li et al., 2025), and a meta-analysis to statistically synthesize empirical findings and evaluate the strength and direction of the ESG–dividend relationship. This two-pronged approach offers a solid basis for reconciling contradictory empirical findings and generating conclusions based on evidence for further research and application.

Additionally, this study stands apart from the others since it examines dividend policy as the outcome variable rather than a byproduct of more general financial performance indicators. This distinction is important because, due to their strategy inclination toward risk reduction or reinvestment, major ESG companies may not necessarily pay out high dividends while reporting better financial success. By

including moderating variables, such as firm-level characteristics and nation-specific legal frameworks, the study also looks at potential variations in the ESG-dividend relationship.

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The primary goal of this study is to critically analyze the relationship between a company's dividend policy and ESG disclosures by carefully synthesizing the corpus of available empirical data. The study specifically seeks to:

1. I identify theoretical and methodological gaps within the current ESG–dividend policy relationship literature.
2. Evaluate the strength and direction of the relationship using meta-analytic techniques.
3. Explore the role of moderating variables, including country-level governance indicators and firm-specific attributes.

To guide this investigation, the research questions and methodological approach are systematically outlined in Table 6.1. This structured presentation enhances transparency and ensures a clear alignment between the study's objectives and its specific lines of inquiry. By employing meta-analysis, this study leverages the statistical power gained from synthesizing findings across 55 empirical studies published between 1991 and 2024 (Glass, 1976). This quantitative integration enables a more precise and generalizable understanding of the ESG–dividend policy nexus across heterogeneous institutional and geographic contexts. The hypothesized relationships and moderating pathways that form the basis of the research model are visually summarized in Figure 6.1, offering a conceptual roadmap for the subsequent empirical analysis.

6.1.1 Purpose and Contribution of the Study

The widely popular axiom "doing well by doing good" encapsulates the fundamental philosophy of ESG-driven strategies, suggesting that sustainable business practices can simultaneously advocate social welfare and enhance firm value (Ferrell et al., 2016; Lins et al., 2017). While several meta-analyses have investigated the impact of ESG on corporate financial performance (e.g., (Friede et al., 2015; Khan, 2022; Khaw et al., 2024)) and firm risk (Singhania & Gupta, 2024). There remains a relative scarcity of research examining its influence on specific financial policy decisions, such as dividend distributions. Furthermore, prior studies have been predominantly diversified worldwide, with sufficient attention to regional and categorical variations in ESG effects.

Hence, this study makes a novel contribution to the literature by generalizing the association between ESG and dividend policy and integrating aggregate and disaggregated ESG scores, including individual E, S, and G dimensions. It also

explores the moderating role of categorical variables (e.g., dividend, profitability, firm size, and profitability) and cross-country factors (e.g., nationality and legal origin). To the best of our knowledge, this is the first meta-analytic investigation to comprehensively evaluate the ESG–dividend policy linkage while accounting for such moderators. In doing so, this research enriches academic knowledge and has practical implications for managerial practices and policymaking. The findings will inform corporate governance frameworks, sustainability reporting standards, and investor decision-making processes. Ultimately, this study provides a timely and rigorous assessment of how ESG disclosures influence one of the most critical financial decisions firms face i.e., dividend policy. By addressing this important relationship, the research aims to contribute to a deeper understanding of the role of ESG in shaping corporate financial strategies and enhancing stakeholder value.

Although interest in ESG has grown rapidly, the literature on its impact on dividend policy remains inconclusive, with findings varying across regions, periods, and methodological designs. Individual studies suffer from contextual fragmentation, inconsistent variable measurement, and limited generalizability. This paper fills this critical gap by being the first to conduct a meta-analysis that systematically quantifies the ESG–dividend relationship and unpacks its conditional nature. Unlike prior work, our study not only synthesizes the evidence but also identifies key moderators, such as firm size, legal environment, and national development status, that help explain heterogeneity in results. In doing so, we offer theoretical refinement and empirical clarity, moving beyond mere correlation to inform a more structured understanding of ESG’s influence on dividend behavior. This makes our study a timely and necessary contribution to ESG and corporate finance scholarship.

Table 6.1: Research Questions and Objectives

S.No.	Research Questions	Objectives of the study	Methodology Description
1	What are the past studies' characteristics and theoretical perspectives on the connection between ESG and dividend policy?	To analyze the characteristics and theoretical perspective of the previous studies that examine the association between ESG and dividend policies, identifying key methodologies and theoretical frameworks applied in the existing literature.	Literature Review
2	How does ESG disclosure impact dividend policy overall?	To integrate the dispensed findings from 35 research articles into a comprehensive framework to determine the extent and nature of the impact of ESG (overall, including E, S, and G) on dividend policies (categorized as dividend payout ratio and dividend yield)	Meta-analysis correlation effect size
3	Do the different dimensions of ESG, i.e., environmental,	To find the impact of individual ESG dimensions on dividend policies.	Meta-analysis correlation effect size

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S.No.	Research Questions	Objectives of the study	Methodology Description
4	social, governance, and overall ESG, affect dividend policy? Are there any binary variables that moderated this association? Type of Dividend policy variables Firm size Nationality Profitability Publication Quality Legal environment	To examine and understand the variables that may moderate the association. Do different measures of the dependent variable (dividend policy) produce varying effects? Do firm size measurements differentially impact the relationship? Are there variations in effects among studies conducted in developed countries, developing countries, and all over the world? Do profitability measurements vary the effect of ESG? Does article publication quality affect the relationship? To what extent does the legal environment of a nation shape the outcomes?	Sub-group analysis
5	What are the broader implications of the research?	To provide policy recommendations and identify key actions relevant stakeholders should take to further the research.	Integrate the study's findings to ascertain the meta-analysis results and determine the need for intervention.
6	What are the identified research gaps for further research in this field?	To summarize the findings from the study, identify gaps and potential directions for future analysis.	Comprehensive assessment of the literature.

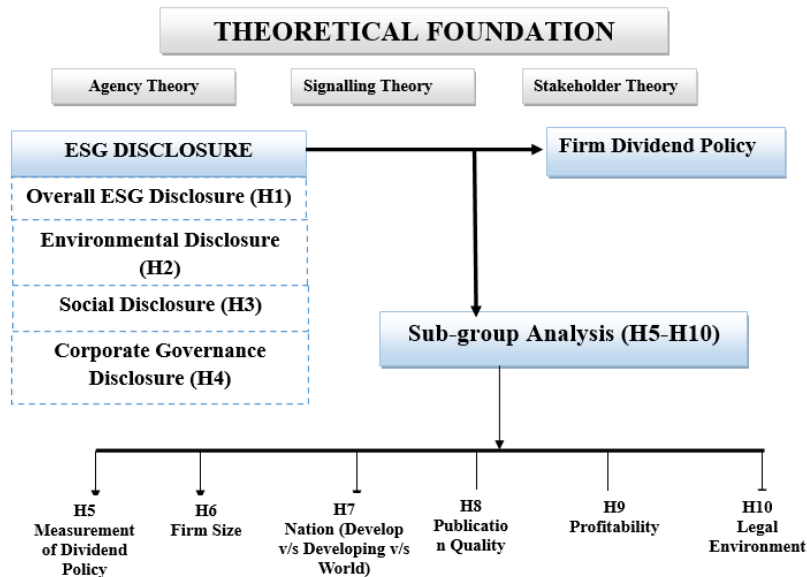


Figure 6.1: Theoretical Conceptual Framework
Source: Authors' own compilation

6.2 Theoretical Framework

To understand how ESG disclosures influence corporate dividend policy, we draw on multiple theoretical lenses (Salvi et al., 2024). These include the agency and bird-in-the-hand theories (Lintner, 1962; Gordon, 1963) Jensen, 1986; Jensen & Meckling, 1976), life-cycle theory (Barros et al., 2023; Deangelo et al., 2006; Fama & French, 2001; Mueller, 1972), signalling theory (Fama & French, 2001; Stephen A. Ross, 1977), and, among others, the stakeholders' theory (Freeman, 1984). As shown in Table 6.7, agency, signalling, and stakeholder theories are the most commonly used (as shown in Figure 6.1) because they improve the understanding of how ESG disclosures can help alleviate agency conflicts through improved transparency and accountability (Hampl & Vágnerová Linnertová, 2025).

6.2.1 Agency Theory

Agency theory emphasises the conflict of interest between managers and shareholders, often due to asymmetric information and misaligned incentives (Jensen & Meckling, 1976). Dividend policy is traditionally viewed as a tool to reduce agency costs by limiting managerial discretion over excess cash flows. ESG activities, while potentially value-enhancing, can be used opportunistically to build managerial reputation or expand control, leading to agency concerns (Benlemlih, 2019; Dimitropoulos et al., 2019).

From one perspective, ESG investments may exacerbate agency problems. Managers might pursue ESG projects to enhance their reputation or expand their control over corporate resources, particularly in firms with weak shareholder protections or dispersed ownership (Dimitropoulos & Koronios, 2021; Ellili, 2022). In such cases, dividend payouts serve a disciplining role, limiting excess cash and reducing the likelihood of ESG overinvestment. This rationale underpins the free cash flow hypothesis (Jensen, 1986) which posits that firms with higher ESG scores, indicative of excess cash and stronger oversight, are more likely to pay dividends to deter managerial opportunism. Conversely, ESG disclosures may act as a substitute for dividends by reducing information asymmetry and increasing transparency, thereby aligning managerial behaviour with shareholder interests without requiring high dividend payouts (Grewal et al., 2016; Ioannou & Serafeim, 2019). This aligns with the substitution hypothesis, which suggests that firms with strong ESG transparency rely less on dividend signalling because sustainability commitments themselves convey credibility and stakeholder alignment (Lloyd et al., 1985).

The literature has discussed two opposing viewpoints on dividends and ESG (Ananzeh, Khalifeh, et al., 2024). According to the substitution hypothesis, companies

that perform well on ESG metrics indicate transparency and alignment with shareholder interests by paying dividends less frequently. (Ellili, 2022; Lloyd et al., 1985). On the other hand, the complementary hypothesis posits that more ESG commitments improve enterprises' capacity to pay dividends by lowering risk and capital restrictions (Badru & Qasem, 2021; Cheung et al., 2018; El Ghouli et al., 2011). In order to deter management opportunism and reassure investors, companies with high ESG scores are more likely to pay out dividends, according to the free cash flow hypothesis (Jensen, 1986).

Additionally, different legal and institutional environments have distinct perspectives on ESG and dividend policy from an agency-theory standpoint. Controlling owners may use ESG investment for personal gain in less robust investor protection frameworks, thereby lowering dividend payments. Maquieira et al. (2024) state that ESG expenditure may protect socioemotional wealth at the expense of shareholder profitability in family-owned businesses, which makes it especially pertinent (Jensen, 1986; Shleifer & Vishny, 1997). In contrast, companies balance dividend payments with ESG investments in nations with better investor protections to satisfy shareholder interests and reduce agency risks (Barnea & Rubin, 2010; Benlemlih, 2019).

Strong ESG participation improves transparency and lowers costs, according to empirical evidence that suggests companies with high ESG ratings typically pay higher dividends (Ni & Zhang, 2019; Saeed & Zamir, 2021). However, ESG disclosures can replace dividend policy in some emerging countries, allowing companies to address agency concerns and lessen the need for large dividend payouts (Cui et al., 2018). These conflicting results suggest that firm-specific and institutional variables influence the ESG-dividend link, underscoring the need for further study of governance and regulatory frameworks. Therefore, agency theory offers a solid foundation for examining the relationship between ESG and dividends.

6.2.2 Signalling Theory

Signaling theory (Spence, 2002) posits that firms use observable actions, such as dividend payments, to convey information about their financial health and future prospects, particularly under conditions of asymmetric information (Bhattacharya, 1979; Hampl & Vágnerová Linnertová, 2025). Dividend increases are often interpreted by investors as signals of managerial confidence in future earnings, positively influencing stock prices (Miller & Rock, 1985). Conversely, dividend reductions may be perceived as signals of financial distress, triggering adverse market reactions (Brav et al., 2005). Within this framework, ESG disclosures can serve as complementary non-financial signals. Firms that voluntarily report robust ESG

performance reduce information asymmetry, build trust, and demonstrate a commitment to long-term value creation and ethical conduct (Pérez, 2015). When ESG disclosures accompany stable or increasing dividends, the signalling effect is amplified, conveying both financial strength (Verga Matos et al., 2020) and sustainability orientation (Handjinicolaou & Kalay, 1984).

This dual signalling aligns with stakeholder expectations and reinforces investor confidence. Companies maintaining dividend payments while improving ESG transparency offer assurance that sustainability investments do not compromise shareholder returns (Baker & Kapoor, 2015). Hence, this supports the complementary hypothesis, which suggests that ESG activities and dividends can jointly serve as reinforcing signals of sound governance and forward-looking strategy (Saeed & Zamir, 2021). However, some firms may strategically reduce dividend payouts while increasing ESG disclosures, relying on ESG communication to maintain investor confidence (Seth & Mahenthiran, 2022). This substitution hypothesis implies that firms may view ESG disclosures as an alternative to dividends in signalling quality, particularly when internal financial constraints limit cash distributions (Zahid et al., 2023).

Signalling theory also connects to capital structure considerations. Enhanced ESG transparency may reduce perceived risk, lowering the firm's cost of capital and increasing its financial flexibility (Barnett, 2007; Friedman, 2007). In such cases, firms may simultaneously invest in sustainability and maintain dividends. However, in capital-constrained or highly regulated sectors, ESG may take precedence over payouts (Barnea & Rubin, 2010; Benlemlih, 2019). Overall, signalling theory provides a robust framework to interpret how ESG disclosures interact with dividend policy as instruments to manage market perceptions, reassure stakeholders, and reinforce corporate reputation. The interplay between financial and non-financial signalling mechanisms can thus be context-dependent, shaped by investor expectations, capital structure, and industry-specific considerations (Cui et al., 2018; Ross, 1977).

6.2.3 Stakeholder Theory

Stakeholder theory argues that firms should consider the interests of all stakeholders, not just shareholders, in their strategic and financial decision-making (Freeman, 1984, 2010). This includes employees, customers, suppliers, creditors, communities, and the environment. ESG frameworks inherently align with stakeholder theory, as they advocate responsible practices that balance financial performance with social responsibility. This theory provides an important lens to analyze the ESG–dividend relationship, emphasising that firms may face trade-offs between distributing profits

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to shareholders and reinvesting in initiatives that generate long-term stakeholder value (Fernando & Lawrence, 2014). In this context, dividend policy reflects how firms balance short-term shareholder interests with long-term sustainability objectives. Some firms may reduce dividends to fund ESG commitments (Verga Matos et al., 2020), while others maintain or increase payouts to signal continued financial strength and stakeholder trust (Benlemlih, 2019).

According to critics, stakeholder theory is unclear on prioritising competing interests, which might increase agency costs and decision-making complexity (Jensen, 2002). However, proponents argue that fair allocation of corporate value among stakeholders promotes legitimacy, reputational capital, and long-term firm viability (Gallo et al., 2004; Samet & Jarboui, 2017). ESG initiatives, such as community engagement or employee welfare programs, are often viewed as tools to strengthen these stakeholder relationships.

Empirical studies show that ESG performance may improve access to capital and reduce financing costs, creating room for both sustainable investments and shareholder returns (Linh et al., 2023). However, the literature also reveals mixed results. Some research suggests that high ESG scores are associated with higher dividends (Benlemlih, 2019), while others highlight a reallocation of resources away from dividends towards stakeholder-focused investments (Dhaliwal et al., 2010; El Ghouli et al., 2011; Ould Daoud Ellili, 2020). This duality underscores the contextual nature of ESG–dividend interactions. For instance, in industries facing high stakeholder scrutiny or environmental risks, firms may prioritise ESG reinvestment over short-term payouts. Conversely, in sectors with strong profitability and stakeholder alignment, ESG and dividends may coexist without conflict (Attig et al., 2013; Menz, 2010; Oikonomou et al., 2014). Additionally, dividend policy reflects underlying stakeholder contracts, both explicit (e.g., salaries, contracts) and implicit (e.g., job security, community investment) (Kalay, 1982). A stakeholder-oriented firm might moderate dividends to honour implicit commitments to employees or the public, especially during periods of economic or reputational risk (DeAngelo, 1991; DeAngelo & DeAngelo, 1990). Nonetheless, many managers are reluctant to reduce dividends, and instead use CSR and ESG programs to manage stakeholder perceptions (Brav et al., 2005). Finally, stakeholder theory suggests that corporate governance structures (such as diverse boards) can influence the alignment of ESG and dividend policies. For example, female directors are often more stakeholder-sensitive, potentially supporting decisions that integrate ESG goals with financial policy (Perrault, 2015). This interplay reinforces the evolving role of dividend policy as both a financial and strategic tool in stakeholder-oriented firms (Guthrie et al., 2006; Harrison & Wicks, 2013; Cornell & Shapiro, 2021). This theory underscores a

comprehensive framework for understanding how firms mediate between ESG priorities and shareholder returns. It underscores that dividend decisions are not solely financial but are embedded in broader ethical, social, and governance responsibilities.

6.3 Hypothesis Foundation

Theoretically, the agency, signalling, and stakeholder theories, which describe how ESG practices impact corporate payout decisions, can support the link between dividend policy structure and ESG disclosures (H1-H4). According to this study, the composite ESG disclosure, which includes several sustainability aspects, engages various stakeholder groups and has a distinct effect on dividend payment patterns. More precisely, dividend policy will probably be more directly and significantly impacted by each ESG component. The following study develops a non-directional hypothesis as the first stage of a meta-analysis to investigate this association.

H1: There is a significant relationship between ESG and dividend payout ratio.

Environmental disclosures that highlight a company's dedication to sustainability are significant in shaping dividend policy. Businesses can attract investors by lowering capital costs and increasing dividend payouts by voluntarily disclosing environmentally sensitive information. By committing to sustainability practices, companies may lower their perceived financial and regulatory risks, strengthen stakeholder relationships, and justify stable or higher dividend payouts. This makes it consistent with signalling and stakeholder theories, as transparent environmental reporting can boost investor confidence, mitigate informational asymmetry, and signal long-term corporate stability. Environmental disclosure, however, may also financially strain businesses, adversely influencing dividend policy.

According to agency theory, management opportunism may lead to excessive expenditure on environmental projects that do not always serve shareholders' interests, diverting funds from dividend payments. Overall, conflicting findings were found in the empirical research. Therefore, the following non-directional hypothesis was developed to investigate how environmental disclosure affected the dividend policy:

H2: There is a significant relationship between Environmental performance and dividend payout ratio.

Corporate financial decisions, including dividend policy, are significantly influenced by social activities. Elkington's triple bottom line strategy strongly emphasizes how businesses affect stakeholders on a social, environmental, and financial level. The stakeholder idea states that businesses that put social responsibility first are more

likely to continue paying dividends and other financially sound practices. Strong social performance may imply long-term sustainability, lower agency conflicts, and boost investor trust, resulting in regular or increased dividend payments. Additionally, socially conscious businesses could have easier access to funding and fewer capital limitations, allowing them to continue paying dividends. Payout policies may differ due to companies that make significant investments in social initiatives reallocating dividend income to long-term stakeholder-focused programs.

Hence, to analyze the overall impact of social disclosure, we formed the given hypothesis:

H3: There is a significant relationship between social performance and dividend payout ratio.

In order to influence dividend policy, corporate governance is crucial since it reduces agency issues and boosts investor trust. Robust corporate governance structures restrict executive latitude and guarantee the effective allocation of company assets, including dividends. Poor governance arrangements can result in inconsistent dividend policies since they are associated with more significant agency costs, worse financial performance, and mismatched managerial incentives. Transparent governance procedures raise the possibility of consistent or increased dividend payments by demonstrating financial stability and dedication to shareholder value. Conversely, when governance practices align with the interests of wider stakeholders, companies with sound governance may prioritize reinvesting in long-term growth over increasing dividend payments.

There are conflicting empirical results on governance and dividends. While some point to a favorable influence because of improved investor protection and less information asymmetry, others show a neutral or negative impact since strong governance may encourage reinvestment rather than quick payments. Thus, the following was the research hypothesis:

H4: There is a significant relationship between corporate governance and dividend payout ratio.

To investigate possible causes of heterogeneity in meta-analysis, we also used subgroup analysis in our study (H5–H10) (Donegan et al., 2015; Esteves et al., 2017; Majumder et al., 2017). to answer RQ4 and find a consistent result for each particular category in the literature. We performed a subgroup study based on several measures utilized for dividend policy factors, as well as business size, nation, profitability, legal status, and publishing quality.

Measures of Dividend Policy

The parameters used to evaluate dividend policy can significantly influence the observed relationship between ESG performance and dividend behavior. In empirical research, the most commonly used indicators are the dividend payout ratio (dividends as a percentage of net income) and dividend yield (dividends relative to market price per share). Some studies also employ alternative measures, such as the ratio of dividends to total sales or to total assets.

According to meta-analytic methodology (Hunter & Schmidt, 2004), variation in the operationalization of dependent variables can introduce systematic heterogeneity in effect sizes. While the dividend payout ratio may reflect internal financial decision-making, dividend yield incorporates market perception and may respond differently to ESG signals. As such, the relationship between ESG disclosure and dividend policy may depend on which dividend metric is used. Empirical evidence remains mixed. For instance, Salama et al. (2011) and Sharfman & Fernando (2008) found a negative association between environmental disclosure and dividend policy, whereas (Bouslah et al., 2013) reported both positive and negative relationships across different samples. These inconsistencies underscore the need to examine whether the dividend measurement approach moderates the ESG–dividend link.

H5: The relationship between ESG disclosure and dividend policy differs significantly across the different measures of dividend policy used in the underlying studies.

Firm Size

Using subgroup analysis, we aimed to ascertain whether incorporating additional firm-level characteristics into the ESG disclosure–dividend model could help reduce heterogeneity across studies. Among these, firm size emerged as a critical moderating variable. As documented in prior research, firm size is commonly operationalised using the logarithm of total assets, total revenues, or market capitalisation (Amiraslani et al., 2023; Lins et al., 2017).

According to stakeholder theory (Freeman, 1984), larger firms are more visible, face heightened scrutiny from diverse stakeholders, and are likelier to engage in ESG disclosure and adopt structured dividend policies. These firms may use ESG reporting and stable dividend payouts as signalling mechanisms to enhance legitimacy, manage reputational risk, and meet stakeholder expectations. Empirical studies further support that larger firms tend to have more extensive ESG disclosures and greater financial flexibility to manage dividend policies (Lins et al., 2017). Based on this rationale, we propose the following hypothesis:

H6: Firm size moderates the relationship between ESG disclosures and dividend policy.

Developed vs. Developing vs. Global Nations.

The relationship between ESG disclosure and dividend policy may vary across national contexts due to differences in institutional structures, regulatory environments, and stakeholder expectations. According to institutional theory, corporate behaviour is shaped by the formal and informal rules of the environment in which firms operate (North, 1991). Factors such as political systems, legal enforcement, cultural norms, and civil society pressure differ substantially between developed and developing economies, potentially influencing how ESG disclosures are implemented and how they relate to financial policies such as dividends.

While numerous studies have examined the ESG–dividend relationship in developing economies (Almulhim et al., 2024; Linh et al., 2023; Oh & Park, 2021; Rastogi & Singh, 2025a; Seth & Mahenthiran, 2022) the majority of the literature has focused on firms from developed nations (Barros et al., 2020; Chen et al., 2024; Sun et al., 2023; Verga Matos et al., 2020). These differences in national and institutional settings raise questions about whether the reported ESG–dividend relationship is consistent across different levels of economic development.

To examine this contextual variation, the studies included in the meta-analysis are classified into three categories based on the geographic and economic characteristics of their samples: developed-country samples, developing-country samples, and global/mixed-country samples. Developed-country samples comprise studies whose firms are drawn primarily from economies classified as developed, whereas developing-country samples comprise studies focused primarily on developing economies. Global/mixed-country samples refer to studies that combine firms from multiple countries and do not fall exclusively within either the developed- or developing-country category. Thus, “global/mixed-country” does not represent a separate level of economic development; rather, it identifies studies with geographically heterogeneous samples spanning multiple countries or economic settings.

H7: Economic development status moderates the relationship between ESG and dividend policy.

Publication Quality

Publication quality was assessed based on the journal’s classification in the Australian Business Deans Council (ABDC) journal list. Articles published in journals rated A*,

A, or B were categorised as high- to mid-quality publications, while all others were grouped separately. This classification allows us to assess whether methodological rigour and peer-review standards influence the observed relationship between ESG disclosures and dividend policy.

According to meta-analytic theory (Hunter & Schmidt, 2004), studies published in higher-quality journals typically undergo more rigorous peer-review processes and demonstrate stronger research designs, reducing the risk of publication bias, selective reporting, or p-hacking. These factors may lead to more accurate and conservative estimates of effect sizes. As a result, the observed ESG–dividend relationship may vary based on publication quality, with more robust findings expected from higher-tier journals. Previous meta-analyses (e.g., Cheung & Slavin, 2011) have also found that publication outlet quality can influence the strength and direction of reported results. Therefore, we propose the following hypothesis:

H8: Quality of publication moderates the relationship between ESG and dividend policy.

Profitability

Profitability, commonly measured using indicators such as Return on Equity (ROE), Return on Investment (ROI), and Return on Assets (ROA), represents a firm's financial strength and operational efficiency. These metrics are frequently employed in ESG and dividend policy research to capture firm-level financial performance.

According to agency theory, profitable firms are more likely to pay dividends to reduce free cash flow and signal financial discipline, thereby lowering agency costs between managers and shareholders. Similarly, signalling theory suggests that dividend payments signal financial health and prospects. Firms with higher profitability are also better positioned to invest in ESG initiatives without compromising shareholder returns, potentially strengthening the observed ESG–dividend link. In contrast, firms with lower profitability may face trade-offs between maintaining dividend payments and funding ESG-related expenditures. Empirical studies (e.g., Bouslah et al., 2013; Hussain et al., 2018) have demonstrated that profitability influences dividend policy and conditions the extent and effectiveness of ESG disclosures. Therefore, profitability may be a significant moderating factor in the ESG–dividend relationship.

In light of this, we put out the following hypothesis:

H9: Firm profitability moderates the relationship between ESG disclosures and dividend policy.

Legal Environment

The legal environment plays a critical role in shaping corporate disclosure practices and dividend policy, particularly in the context of ESG. According to institutional theory, organisational behaviour is influenced by formal structures such as legal systems, which create norms and incentives for compliance. ESG disclosures, in particular, are closely tied to the strength of a country's legal institutions, investor protection mechanisms, and regulatory enforcement (Liang & Renneboog, 2017).

As introduced by La Porta et al. (2000) and Shleifer & Vishny (1997), legal origin theory classifies countries into common law and civil law systems. Common law countries typically offer stronger investor protections and greater enforcement of shareholder rights, thereby promoting transparent corporate governance and more disciplined dividend policies. Civil law systems, by contrast, tend to provide weaker legal protections, granting managers more discretion in ESG disclosures and financial policy decisions.

Empirical evidence (e.g., Aguilera et al., 2006)) indicates that legal frameworks can significantly affect how ESG activities are perceived and implemented. In some common law countries, ESG may be viewed as non-essential or resource-draining if it conflicts with short-term shareholder returns. This legal-institutional variation will likely moderate the observed relationship between ESG disclosures and dividend policy outcomes.

To investigate this, we classified studies based on the country's legal system in which the firm operates, common law, civil law, or global, using the framework established by Shleifer & Vishny (1998). Based on this institutional perspective, we propose the following hypothesis:

H10: The legal framework moderates the relationship between ESG disclosures and dividend policy.

6.4. Data and Methodology

6.4.1 Research Method

To address *RQ1*, we reviewed the articles detailed in Table 6.7. The literature analysed for this study was sourced from WoS and Scopus, as both databases ensure rigorous peer-review standards and systematic indexing protocols, which are critical for maintaining the quality and credibility of the literature essential to research (Falagas et al., 2008; Mongeon & Paul-Hus, 2016). While Google Scholar database aggregates a wide range of academic and grey literature, including theses, dissertations, and conference papers, it lacks a standardised vetting process. This lack of quality controls may compromise the sources' academic rigor and reliability, making them less suitable for the literature review.

We employed the meta-analysis approach to address RQ2, RQ3, and RQ4. Following the principles outlined by Hunter and Schmidt (2004), this quantitative and systematic method enabled a rigorous synthesis of prior empirical findings and facilitated the derivation of generalizable conclusions (Cooper, 1989). Meta-analysis is particularly well-suited for examining correlational and causal relationships across diverse study contexts. This study allowed us to estimate the overall influence of ESG (independent variable) on dividend policy (dependent variable).

Effect sizes were computed using Comprehensive Meta-Analysis (CMA) software, a widely adopted tool for synthesising quantitative research and testing for heterogeneity (Singhania & Gupta, 2024). While standardised procedures were followed for effect size conversion, we acknowledge the potential for bias introduced by variations in model specifications across primary studies. For instance, inconsistencies in control variables, endogeneity treatment, or sample selection may contribute to divergent results, leading to biases such as omitted-variable bias or overestimated effect sizes. Although subgroup analyses were conducted to enhance robustness, such methodological differences are an inherent limitation of meta-analytic synthesis.

To explore sources of heterogeneity, we performed subgroup (univariate) analyses, which classified studies according to key attributes (Donegan et al., 2015; Stanley & Jarrell, 1989). This approach enables a more nuanced interpretation by identifying how specific study characteristics—such as firm-level, regional, or methodological factors—influence the ESG–dividend policy relationship. Subgroup analysis thus enhances interpretability and reveals patterns that may be obscured in aggregate findings.

6.4.2 Research Process

Search Process

All pertinent information was taken from Web of Science (WoS), Scopus, and Google Scholar to guarantee thorough coverage of every facet of the meta-analysis and related moderation analysis (Falagas et al., 2008). Among the primary collections of WoS are the Social Science Citation Index (SSCI), the Arts and Humanities Citation Index (A&HCI), and the Science Citation Index Expanded (SCIE) (Mongeon & Paul-Hus, 2016). Scopus is acknowledged as the world's most significant database of peer-reviewed abstracts and citations (Burnham, 2006). Dissertations, theses, e-books, journals, and other aggregated databases were among the many resources made available through the integration of Google Scholar, renowned for its extensive coverage of academic resources. (Halevi et al., 2017). To ensure comprehensive coverage in the meta-analysis, the study used all three datasets. Additionally, a particular search for unpublished studies was conducted on Google Scholar.

Additionally, cross-references to earlier narrative assessments were considered. As shown in Table 6.2, a predetermined keyword string was used for the first search.

Table 6.2: Predetermined Keywords

("ESG" OR "environ* soci* govern*" OR "Corporate Environmental Performance" OR "Corporate social performance" OR "Corporate Ethical Governance Performance" OR "Sustainable Finance") AND ("Dividend Policy" OR "Dividend Payout" OR "Dividend Distribution" OR "Dividend Yield")

Eligibility Criteria

After preliminary screening, 42 studies were identified in Scopus, 22 in WoS, and 84 in Google Scholar. To select relevant research and exclude irrelevant research, the title, abstract, and conclusion were examined. Duplicate articles were removed and retracted. After removing duplicates, the pertinent counts from Google Scholar, Scopus, and WoS were 20, 27, and 40, respectively. Following Table 6.3, the selection criteria for assessing primary studies were established. After their separate papers' reviews, the two authors discussed their differing opinions. We examined the literature using the PRISMA framework (Figure 6.2) (Preferred Reporting Items for Systematic Reviews and Meta-analysis) (Moher et al., 2009). As a result, we selected 52 studies that fulfilled the following requirements: First, the paper demonstrated a direct correlation between firm dividend and ESG performance or disclosure constructs; second, it concentrated on quantitative analysis, eliminating only descriptive papers; and third, papers that displayed the effect size (correlation coefficient) or pertinent statistic (t-statistics or beta coefficient) were readily converted to effect size. Papers with imprecisely specified variables were eliminated. Ultimately, 35 papers that qualified the screening requirements and had 55 correlation coefficients were included.

Table 6.3: Inclusion and Exclusion Criteria

A. Inclusion criteria

Empirical articles that examine the relationship between ESG and dividend policy were considered in the analysis.

ESG was considered the independent variable, while dividend policy variables were treated as the dependent variable.

Research that addresses at least one aspect of dividend policy was included.

Only those empirical papers that reported correlation coefficients and/or regression between the key variables of interest were considered.

Effect sizes were also derived from various sources, including conference papers, journal articles, doctoral dissertations, master's theses, and unpublished research papers submitted on Google Scholar.

No restrictions were imposed on the geographical location, research discipline, and period.

B. Exclusion Criteria

Research published in languages other than English

Research that reported statistical measures other than correlation or regression coefficients was not considered.

Qualitative primary studies were not included in the analysis.

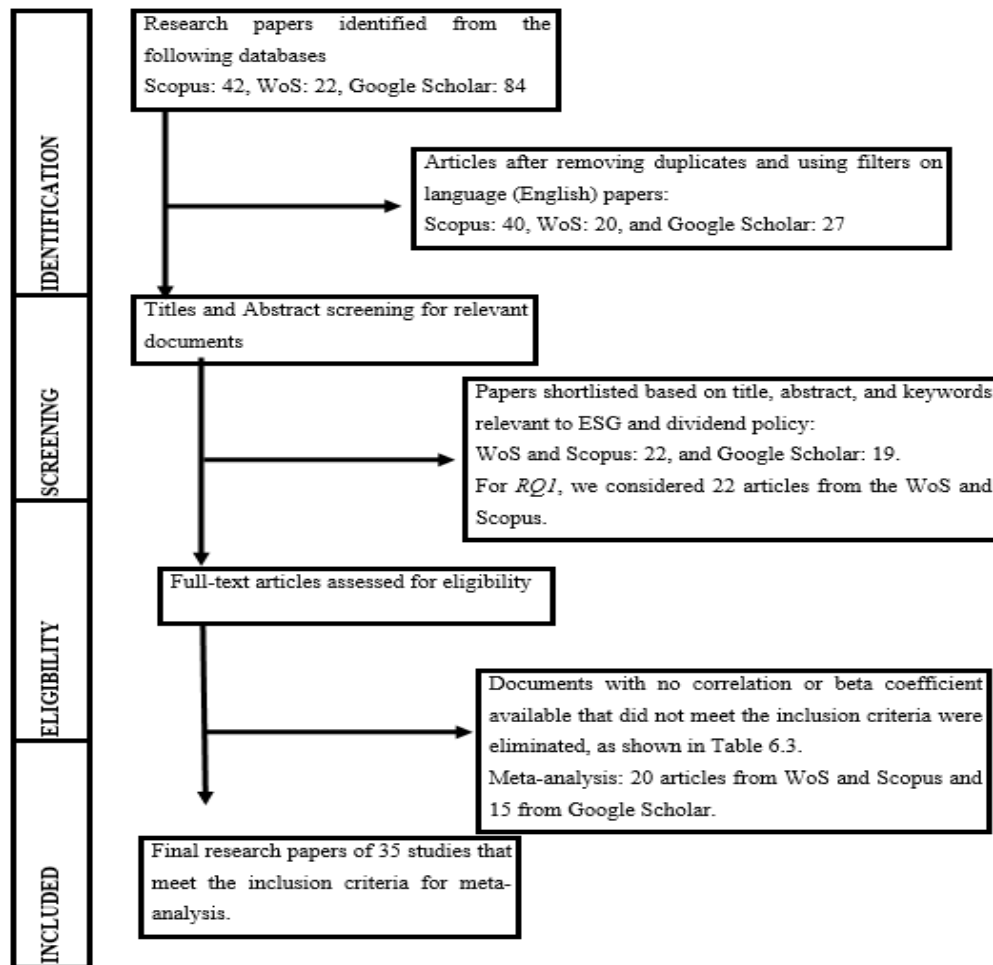


Figure 6.2: PRISMA Framework

Source: Authors' Own Compilation

6.5. Characteristics of the Included Study

In response to *RQ1*, the studies included 22 articles from WoS and Scopus in this review. The reviewed articles were published between 2020 and 2024, reflecting the growing academic interest in ESG and its impact on financial decision-making, including dividend policy. Moreover, this period aligns with the increased global emphasis on sustainability, with the introduction of mandatory non-financial reporting in various countries and the global shift towards responsible investing. The timeframe ensures the analysis captures the most recent trends, methodological advancements, and evolving market dynamics in ESG-dividend interactions. Furthermore, the years of data included in the studies, ranging from 1991 to 2024, provide longitudinal perspectives on the divided interactions. The dataset sizes vary significantly, ranging

from tiny sample sizes (181 firm-year observations in China) to large-scale datasets with over 2,57,000 firm-year observations from global countries.

The study geographically covers diverse regions, including the United States. (Barros et al., 2023; Sun et al., 2023; Tsang et al., 2023), Europe (Bilyay-Erdogan et al., 2023; Hampl & Vágnerová Linnertová, 2025; Salvi et al., 2024; Verga Matos et al., 2020), South Korea(Oh & Park, 2021), India (Pinto et al., 2024; Seth & Mahenthiran, 2022), China (Niccolo et al., 2020), UAE(Ellili, 2022), Saudi Arabia (Almulhim et al., 2024), Vietnam (Linh et al., 2023), BRICS nations (Dua & Sharma, 2024), and broader global samples (Ananzeh, Al Shbail, et al., 2024a; Ananzeh, Khalifeh, et al., 2024; Chen et al., 2024; Maquieira et al., 2024; Matuszewska-Pierzynka et al., 2023), representing developed, developing, and least-developed economies. Most studies utilise Thomson Reuters (known as Refinitiv Eikon), Bloomberg, MSCI ESG STATS, and other country-specific databases, including Korea Corporate Governance Service (KCGS and Prowess, to assess ESG scores, incorporating environmental, social, and governance pillars, as well as ESG controversy in some cases. The studies employ various dividend policy measures, including Dividend Payout Ratio, Dividend Yield, Dividend to Total Assets, Total Assets, Dividend Dummy Variables, and Dividend Payout.

In terms of methodologies, the articles employed a variety of econometric and statistical methods to examine the association between ESG and dividend policy. The predominant methodologies include Pooled Ordinary Least Squares (OLS) regression, Panel regression including fixed effects model and random effect models, generalized method of moments (GMM), Logit and Probit Regression, and difference-in-difference (DiD) analysis. These methods were chosen based on the nature of the dataset, the research question, and the need to control endogeneity, heterogeneity, and sample selection bias. Pooled OLS and Panel regression analysis were frequently used to examine cross-sectional and time-series variations in ESG and dividend policy relationships, while fixed and random effect models helped control for unobserved heterogeneity across firms and countries. Difference-in-difference analysis was applied in studies focusing on the impact of policy changes or regulatory shifts in ESG disclosure. GMM and instrumental variable (IV) techniques were employed to address endogeneity concerns arising from potential reverse causality between ESG performance and dividend payouts. Logit and Probit regression models were used in studies examining binary outcomes, such as whether firms pay dividends. The methodology choice reflects the ESG dataset's diverse nature, variations in disclosure frameworks across countries, and the need for robust empirical strategies to establish causal relationships. These approaches ensure the reliability and validity of the findings by minimizing biases and enhancing the generalizability of results across different economies.

6.6. Meta-Analysis Findings

Table 6.4 summarizes the meta-analysis findings for 55 associations related to RQ2. The second column reports the number of observed studies (K), while the third column reports the mean correlation coefficient. The fourth column indicates the statistical significance, as reflected in the p-value. Additionally, the fifth column provides the 95% confidence interval, including both lower and upper bounds, which illustrates the strength and direction of the association between the dependent and independent variables.

The effect size was determined by converting beta values into a correlation coefficient (r) using the formula given by $r = \beta + 0.05r^9$, recently employed by Singhania & Gupta (2024). If the beta value was positive, r was set to 1; otherwise, it was set to 0. Table 6.7 summarises the overall studies, categorising disclosures into environmental, social, and governance dimensions. The association between ESG and a firm's dividend policy was examined, revealing a significant positive correlation, with an effect size of 0.11.

The 95% confidence interval indicated that the true relationship lies between 0.07 and 0.15. To ensure robust results and account for publication bias, the fail-safe N exceeded the critical value. This model's fail-safe number was 693, surpassing the critical threshold. This suggests that 693 additional studies with null results would be required to render the effect size insignificant. Similarly, the fail-safe number exceeded the critical values across all models, reinforcing the reliability of the findings.

The critical value was determined using Rosenthal's formula, $NR > 5k + 10$, where NR is a fail-safe number and k represents the number of studies included. In this study, the critical value was calculated accordingly. Additionally, the heterogeneity test (Q-test) revealed significant heterogeneity among the included studies, as supported by a high I^2 value of 98.90%. Given this, the fixed-effects model was deemed inappropriate, and the random-effects model was applied, yielding an overall effect size of 0.11 for Hypothesis 1. This estimate serves as a robust and reliable benchmark for future empirical research. Graphical tools, including forest plots, were employed to visually assess heterogeneity patterns. While the random-effects model and subgroup analyses addressed much of the between-study variance, the persistently

⁹ This method is based on the empirical findings of Peterson & Brown (2005), who analyzed over 1,500 paired beta and correlation coefficients from published behavioral research and found that this linear adjustment yielded a robust and practical approximation. Their study demonstrated that this conversion preserves internal consistency in effect size estimation, particularly when standardized coefficients are reported but zero-order correlations are unavailable. This approach is especially useful in ESG research contexts, where full statistical descriptors are often omitted, and ensures broader inclusion of relevant studies while minimizing bias due to missing data. For binary coding of extremes, if the standardized beta was positive, r was assigned a value of 1; otherwise, it was set to 0.

high I^2 suggests that the residual heterogeneity likely reflects meaningful contextual differences rather than methodological shortcomings. Specifically, unaccounted variation may stem from industry-specific ESG practices (e.g., financial vs. manufacturing sectors), temporal shifts in ESG norms (e.g., pre- vs. post-SDG adoption), and geographic differences in ESG maturity (e.g., Europe vs. Asia). Furthermore, part of this residual heterogeneity may also arise from variations in ESG scoring systems used across primary studies. Different data providers, such as Refinitiv, MSCI, and Bloomberg, employ distinct methodologies for assessing ESG performance, which may affect the comparability of results and contribute to measurement-based divergence. Rather than undermining generalizability, such variation highlights the nuanced and evolving nature of ESG–dividend interactions and underscores the importance of continued moderator-based exploration to produce more context-sensitive insights.

Analysis of RQ3: Disaggregating ESG into specific categories demonstrated the dividend policy's positive, significant impact. The meta-analysis findings indicated that environmental disclosures had an effect size of 0.10, social disclosures of 0.11, and governance disclosures of 0.12, all statistically significant at $p < 0.01$. Among these dimensions, governance exerted the most decisive influence on dividend policy. This suggests that a 1% increase in governance disclosure would correspond to a 12% increase in dividend payout structure, highlighting the critical role of corporate governance transparency in shaping dividend decisions. A stronger corporate governance framework enhances investors' confidence by ensuring ethical practices and reducing agency conflicts, which can influence dividend distribution.

The findings align with stakeholder, agency, and signalling theories, complementing theories that suggest investing in ESG practices tends to yield higher dividend payout ratios. Consequently, H1, H2, H3, and H4 are supported, as the results indicated positive and significant relationships. While some correlations have been reported as negative, these were likely attributed to sampling errors rather than a significant negative association. Overall, most of the studies reported a positive association between ESG and the payout ratio. However, given that sampling and measurement errors in ESG disclosures do not always fully account for the variance in correlations across studies, proper contingencies and moderating factors are likely to be present.

Empirical results provide support for our hypotheses. Figure 6.3, which presents the random-effects forest plot summary, illustrates the distribution of effect sizes. The X-axis represents our correlations, and the results indicate a positive overall effect size of ESG disclosures on dividend policy. Notably, most study circles in the forest plot do not intersect the vertical line, reinforcing the robustness of the findings.

Table 6.4: Meta-analysis Results

Hypothesis	K	Effect Size	p-value	95% CI		Fail-Safe N	Critical Value	I ² (%)
				Low	High			
ESG and Dividend Policy Relationship	55	0.11	0.000	0.07	0.15	697	285	98.90%
Environmental dimension and dividend policy relationship	37	0.10	0.000	0.05	0.15	430	195	98.80%
Social dimension and dividend policy relationship	36	0.11	0.000	0.06	0.15	724	190	98.33%
Governance dimension and dividend policy relationship	37	0.12	0.004	0.03	0.20	815	195	98.35%

Note: K = Number of studies; Effect Size = Mean correlation coefficient; CI = Confidence Interval; I² = Heterogeneity statistic. All effect sizes are based on a random effects model.

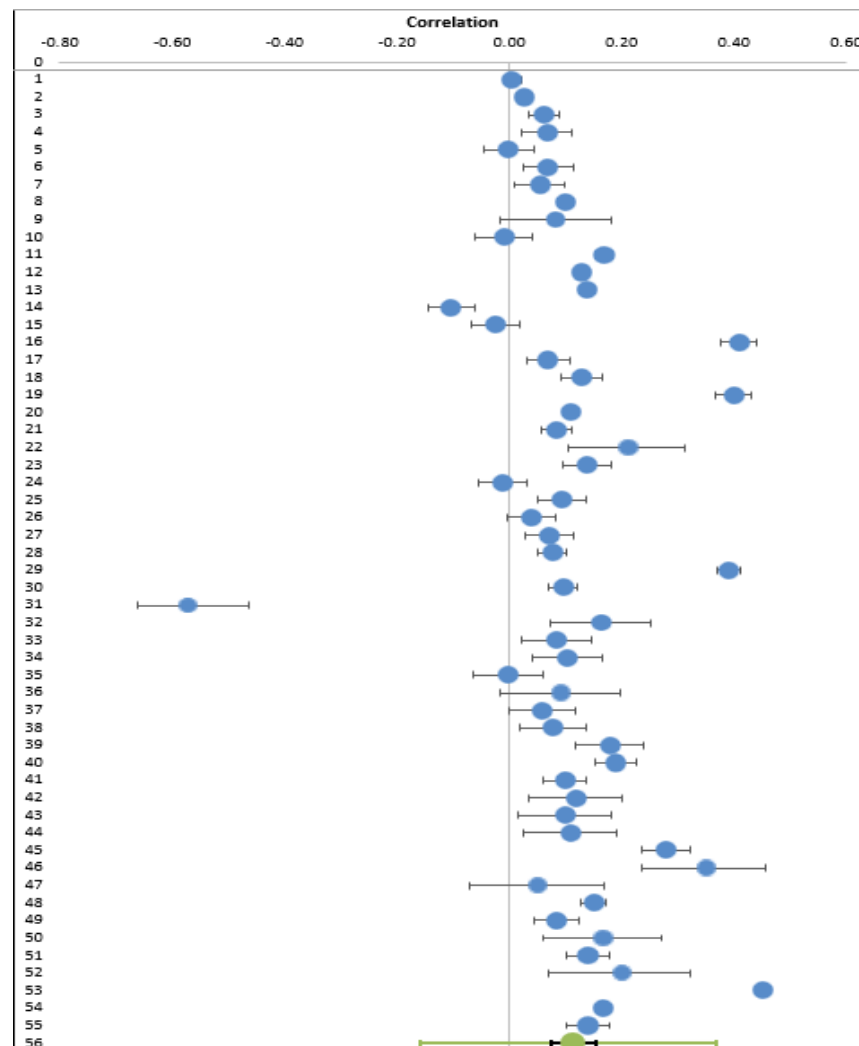


Figure 6.3: Forest plot analysis of connection between ESG disclosure and Dividend Policy
Source: Authors' own estimation

6.7. Sub-group analysis results

Response to RQ4: To address RQ4, we employed random-effects weighting within and between subgroups at the 95% confidence level (H5–H10). The outcomes of the subgroup analysis for various independent variables are presented in Table 6.5.

H5: The subgroup analysis revealed a significant positive correlation between ESG disclosures and the dividend payout ratio, with an effect size of 0.113 ($p = 0.000$), dividend yield (0.136, $p = 0.000$), and other measures (0.099, $p = 0.029$). Among these, the strongest correlation is observed for dividend yield, followed by dividend payout ratio. This suggests that ESG disclosures contribute to better dividend policies, regardless of whether the dividend payout ratio, dividend yield, or alternative metrics, such as dividends relative to total assets or total sales, are used to measure the dividend variable. The consistency in significance across different dividend metrics reinforces the robustness of the relationship between the two variables.

Our findings align with Ananzeh, Al Shbail, et al. (2024), who assert that enhanced sustainable disclosure positively influences dividend policies. This aligns with the argument that integrating ESG initiatives into corporate strategy meets stakeholder expectations. Ananzeh, Khalifeh, et al. (2024) further suggest that ESG investment signals corporate stability and long-term value creation, boosting investor confidence and supporting higher dividend pay-outs. Moreover, high ESG performance reduces perceived risk among investors and creditors, potentially lowering the cost of capital and freeing financial resources for dividend distribution (Friedman, 2007; Zahid et al., 2023). Additionally, strong ESG practices enhance a company's reputation and stakeholder goodwill, contributing to long-term resilience and dividend sustainability (Benlemlih, 2019).

H6: Large firms often possess competitive advantages regarding financial resources and stakeholder trust. Our analysis divided studies by firm size metrics, with most utilising the logarithm of total assets, while others employed market capitalisation, total sales, or the number of employees.

The results indicate a significant positive relationship between ESG disclosures and dividend policy when firm size is measured by total assets ($\beta = 0.104$, $p < 0.01$) and market capitalisation ($\beta = 0.206$, $p < 0.01$). However, when firm size is assessed using total sales ($\beta = 0.083$, $p > 0.01$), the moderating effect becomes statistically insignificant. These findings suggest that ESG disclosures positively influence dividend policies, particularly in firms with substantial assets and market capitalization, but not necessarily in firms with high sales volumes. Consequently, H6 cannot be rejected.

H7.: Our analysis revealed significant differences in the relationship between ESG and dividend policy across developed, developing, and global samples. Developed-market firms exhibited a stronger correlation ($r = 0.148$, $p < 0.01$) than firms from developing economies ($r = 0.105$, $p < 0.01$). The global-level sample showed a comparatively weaker effect, possibly due to the broader diversity of firms included in the studies.

These findings align with our expectation that the regulatory environment, investor expectations, and governance structures in developed economies strengthen the nexus between ESG disclosure and dividend policy. Hence, we confirm that classifying firms into developed, developing, and global-level samples moderates this relationship, supporting H7.

H8. The studies categorised under A*, A, and B-ranked journals, as well as those from lower-ranked publications, showed a significant positive correlation between ESG disclosures and dividend policy. The effect size was stronger in high-ranked publications ($r = 0.186$, $p < 0.01$) than in lower-ranked publications ($r = 0.093$, $p < 0.01$).

This indicates that studies published in the high-ranked journals (A*, A, and B) reported stronger effect sizes than those in lower-ranked journals. This is possible due to more rigorous methodologies, larger datasets, and better-controlled analyses. The comparatively weaker effect sizes in lower-ranked journals may indicate methodological limitations, smaller sample sizes, or differences in regional focus. Therefore, although the ESG-dividend policy relationship holds across different publication-quality levels, we find strong evidence supporting H8.

H9: Firm profitability was another moderating variable analyzed using three commonly used financial metrics: return on assets (ROA), return on equity (ROE), and return on investment (ROI). Our findings indicate a significant positive relationship between ESG disclosures and dividend policy across all profitability measures, though with varying effect sizes.

ROA showed the weakest correlation ($r = 0.122$, $p < 0.01$), while ROE ($r = 0.135$, $p < 0.01$) and ROI ($r = 0.164$, $p < 0.01$) exhibited more potent effects. This is likely because short-term asset efficiency is less critical in determining how ESG factors into dividend decisions. Hence, these results suggest that firms with higher profitability, particularly in terms of return on equity and investment, tend to experience a more pronounced ESG impact on dividend policy. Hence, H9 is supported.

H10: The legal framework in which a firm operates significantly affects the relationship between ESG and dividends. Our analysis revealed a stronger positive effect in common law countries ($r = 0.211$, $p < 0.01$), indicating that firms operating in these jurisdictions experience a greater impact of ESG disclosures on dividend policies. In contrast, civil law countries exhibited a lower, yet still significant, effect ($r = 0.071$, $p < 0.01$), suggesting a comparatively weaker ESG-dividend policy nexus.

These findings support the notion that stronger investor protection and transparency requirements inherent in common law systems enhance the positive influence of ESG disclosures on dividend policy. Therefore, we confirm that the legal system is a moderating factor in this relationship, supporting H10.

Table 6.5: Sub-group analysis

Variables	Subgroup Analysis	K	Estimated Coefficient	CI 95%		z-value	P-value
				Upper	Lower		
Study Focus	Dividend Payout Ratio	28	0.113	0.076	0.150	5.949	0.000
	Dividend Yield	9	0.136	0.067	0.203	3856	0.000
	Others	18	0.099	0.010	0.187	2.179	0.029
Firm size	Total Assets	48	0.104	0.080	0.129	8.397	0.000
	Total Sales	1	0.083	-0.016	0.181	1.637	0.102
	Market Capitalisation	6	0.206	0.029	0.370	2.271	0.023
Nationality	Develop	20	0.148	0.070	0.225	3.687	0.000
	Developing	26	0.105	0.073	0.138	6.353	0.000
	World	9	0.074	0.025	0.123	2.953	0.003
Publication Quality	A*, A, and B	12	0.186	0.123	0.249	5.647	0.000
	Below B	43	0.093	0.047	0.138	3.940	0.000
	ROA	40	0.122	0.081	0.163	5.786	0.000
Profitability	ROE	11	0.135	0.052	0.216	3.170	0.002
	ROI	1	0.164	0.074	0.252	3.538	0.000
	Common Law	11	0.211	0.087	0.328	3.311	0.001
Legal Status	Civil Law	19	0.071	0.020	0.123	2.698	0.007
	Both	25	0.103	0.069	0.137	5.896	0.000

Note: K = Number of studies; CI = Confidence Interval; z-value = Standard normal deviate; p-value = Significance level. The estimates are derived from random-effects subgroup meta-analysis.

6.8 Implications for the study

This study provides meaningful implications for key stakeholders, including firms, managers, investors, and regulators, based on the findings of RQ5. The results indicate that integrating ESG initiatives into business strategy enhances financial stability, mitigates risk, and strengthens the firm's reputation (Friede et al., 2015). Investors increasingly perceive companies with transparent ESG disclosures as lower-risk entities, thereby reducing capital costs and enabling more stable, sustainable

dividend payouts. Moreover, robust ESG reporting serves as a strategic differentiator in the market, attracting socially responsible investors and consumers (Dhaliwal et al., 2010).

From a managerial perspective, the results underscore the importance of aligning financial objectives with ESG goals. ESG efforts should be viewed as value-creating initiatives rather than mere compliance obligations. They can foster investor trust, reduce operational uncertainties, and ensure long-term shareholder value (Eccles et al., 2014; Fatemi et al., 2018). Managers are encouraged to integrate ESG performance indicators into executive remuneration structures and corporate governance systems to promote sustainability-aligned decision-making. The meta-analytic findings suggest that firms with stronger ESG performance are better positioned to deliver consistent dividends while managing investment risks effectively (Flammer, 2015). Companies that exhibit better environmental, social, and governance (ESG) performance tend to become more financially stable and pay dividends regularly. This illustrates how important ESG considerations are when choosing investments, which makes ESG-focused businesses valuable additions to a variety of investment portfolios. Furthermore, institutional investors and shareholder activists may use these findings to advocate for greater accountability and transparency in corporate ESG reporting, which would ultimately result in the development of long-term value.

For regulators and policymakers, the findings emphasise the need for standardised ESG disclosure frameworks that improve transparency and comparability in financial policy, particularly dividend distributions. Currently, heterogeneity in ESG reporting practices limits stakeholders' ability to interpret sustainability performance consistently. Regulatory developments such as the European Union's Corporate Sustainability Reporting Directive (CSRD), which mandates ESG reporting under the European Sustainability Reporting Standards (ESRS), and the U.S. Securities and Exchange Commission's (SEC) proposed ESG disclosure rules (European Union, 2022; U.S. Securities and Exchange Commission, 2023), which require firms to disclose climate-related risks and board-level oversight, serve as pioneering examples of formalising ESG metrics in financial reporting. Adoption of such frameworks can mitigate greenwashing, foster investor protection, and enhance the credibility of ESG-financial linkages across markets. Specifically, regulators could promote consistency by mandating third-party audits of ESG reports to ensure the accuracy and reliability of disclosures. This would help strengthen investor confidence, align reported ESG data with actual performance, and deter superficial or misleading claims. For example, the European Union's Corporate Sustainability Reporting Directive (CSRD) requires companies to have their sustainability reports assured by independent

auditors to ensure compliance with the European Sustainability Reporting Standards (ESRS). This approach enhances transparency and comparability across firms. A similar model could be adopted by regulators in other jurisdictions to enforce credibility and harmonise ESG reporting standards globally.

Policymakers in developing and emerging economies may consider adapting these global frameworks to local contexts, thereby facilitating international alignment and improving firm accountability. Harmonisation across jurisdictions would also allow better evaluation of ESG-dividend relationships and reduce ambiguity in investor interpretation. Overall, this research supports a paradigm shift in corporate financial strategy, where ESG considerations are central to dividend policy and broader governance frameworks. Strengthening ESG regulations, aligning financial and sustainability objectives, and enhancing transparency in disclosures can collectively help build a more robust, ethical, and resilient global financial ecosystem.

6.9. Discussion and Conclusion

Despite a substantial body of research recognising ESG's impact on corporate risk and financial performance, by 2025, relatively limited attention had been paid to the global implications of ESG for dividend policy. This study aimed to systematically assess the characteristics, theoretical foundations, and empirical relationships between ESG disclosures and dividend policy by synthesising findings from 55 empirical studies with observations spanning 1991 to 2024. By consolidating fragmented and often contradictory findings, the meta-analysis provided a comprehensive understanding of this relationship across diverse institutional and geographic contexts.

2 The meta-analytic results reveal a significant positive association between ESG disclosures and dividend policy, suggesting that greater ESG transparency is associated with more stable and generous dividend distributions. Among the three ESG pillars, corporate governance disclosures showed the strongest correlation with dividend decisions, emphasising the crucial role of governance in mitigating agency conflicts and reinforcing investor confidence. Furthermore, ESG engagement was found to enhance financial efficiency, lower the cost of capital, and improve overall corporate resilience, thereby supporting a firm's ability to maintain dividend commitments. The analysis also underscored the importance of contextual variables, identifying five categorical moderators, including firm size, economic development status, profitability, legal environment, and publication quality, that shape the ESG-dividend link.

Subgroup analysis deepened this understanding by revealing nuanced differences across measurement metrics and national contexts. For instance, ESG disclosures had

a stronger influence on dividend policy when measured through payout ratio or yield, and the effect was more pronounced in firms with larger total assets or market capitalisation. Firms in developed economies displayed a more robust ESG–dividend relationship compared to their developing counterparts, likely due to stronger institutional frameworks, governance structures, and stakeholder expectations. Studies conducted at the global level exhibited a comparatively weaker association, potentially due to heterogeneity in firm characteristics and disclosure standards. Legal origin also emerged as a relevant moderator, with common law jurisdictions exhibiting stronger ESG-dividend links than civil law countries. These results underscore the importance of institutional and macro-level factors in shaping the financial implications of ESG strategies.

However, this study has several limitations. One key constraint lies in the differences between the inclusion criteria for systematic literature reviews (SLRs) and meta-analyses. While the SLR included only peer-reviewed papers from Web of Science and Scopus to maintain quality standards, this exclusionary approach may have omitted relevant findings from credible but unindexed sources. To compensate for this, Google Scholar was incorporated in the meta-analysis phase to include a broader range of studies, particularly from emerging markets and specialised research domains, thereby improving generalizability. However, this approach introduced potential heterogeneity due to differences in methodology, publication standards, and data quality across databases.

Another limitation is the study’s focus on aggregated findings, which may mask variations at the temporal, industry, or firm level. The ESG-dividend relationship may differ across sectors due to unique regulatory requirements, capital structures, or stakeholder pressures, factors that are not fully captured by data limitations. While this study incorporated several key moderators, variables such as board composition, ownership structure, and macroeconomic volatility were not included due to inconsistent reporting in the literature. Including these in future research may yield deeper insights.

Despite these limitations, this study makes a significant contribution by providing a consolidated, statistically rigorous evaluation of the ESG–dividend policy nexus. It advances current understanding by identifying contextual and firm-specific moderators and offering empirical clarity where previous research produced fragmented results. Future studies are encouraged to expand upon these findings by incorporating more diverse moderators, conducting sector-specific meta-analyses, and employing advanced econometric approaches to further disentangle the complexities of ESG-related financial behaviour in a rapidly evolving global corporate landscape.

6.9.1 Scope for Future Research (*Response to RQ5*)

Building on the insights from the comprehensive literature review and meta-analysis of the ESG–dividend policy relationship, several promising directions for future investigation emerge. One particularly compelling avenue is to explore how a firm's ownership structure, specifically whether it is publicly listed or privately held, modulates this relationship. Public and private firms operate under differing regulatory frameworks, capital market accessibilities, and stakeholder pressures, which can result in divergent ESG strategies and dividend distribution behaviours. Analysing these distinctions could provide valuable perspectives for both scholars and practitioners on how organisational form shapes financial and sustainability outcomes.

In addition, future research should further investigate how contextual factors such as regional and cultural norms, industry-specific characteristics, evolving regulatory mandates, and temporal shifts in ESG reporting affect dividend decisions. For instance, the ESG–dividend linkage may manifest differently across environmentally sensitive industries and service-oriented sectors, or vary over time as sustainability frameworks and investor activism mature. Similarly, institutional pressures across jurisdictions—shaped by legal systems, enforcement strength, and market sophistication—can influence how firms balance stakeholder demands with shareholder returns.

The research agenda should also incorporate macroeconomic conditions, ownership concentration, board composition, and executive incentives to develop a more holistic understanding of the ESG–dividend interface. As shown in Table 6.6, these unexplored or under-researched areas offer fertile ground for advancing theoretical models and informing evidence-based policymaking. Ultimately, expanding the scope of ESG-dividend research across these dimensions can foster more nuanced and contextually grounded insights, thereby enriching academic discourse and guiding practical reforms in corporate governance and financial strategy.

In line with this objective, the subsequent chapter delves deeper into sector-specific insights by examining how ESG disclosures influence dividend policy within the global hospitality industry—an increasingly sustainability-conscious sector facing unique operational and reputational challenges. This focused analysis aims to illustrate how industry context shapes the ESG–dividend dynamic and adds granularity to the broader patterns observed in the preceding meta-analytic study.

Table 6.6: Future Research Direction

Research Area	Description
Industry-Specific Dynamics	Conduct sectoral analyses to determine how industry characteristics affect the ESG-dividend link. Specific industries may have unique ESG considerations that influence their dividend policies.
Investor Protection and Regulatory Environment	Explore how country-level investor protection laws and regulatory enforcement impact the relationship between ESG performance and dividend payouts. Robust legal frameworks may alter how ESG disclosures influence dividend decisions.
Ownership Structure and Governance	Examine the moderating roles of various ownership structures, such as family, institutional, and concentrated ownership, on the ESG-dividend nexus. Understanding how these governance factors influence corporate decisions can provide insights into dividend policies.
Corporate Life Cycle Stages	Assess how different stages of a firm's life cycle (e.g., growth, maturity) moderate the ESG-dividend relationship. Firms at varying life cycle stages may prioritise ESG initiatives and dividend distributions differently.
Company Structure	Examine how the distinction between private and public corporations affects the relationship between ESG and dividend policy. Public companies could be subject to more regulations and scrutiny, which could impact their dividend policies and ESG activities differently from private companies.
Geographical and Cultural Factors	Investigate how regional and cultural differences impact the ESG-dividend relationship. Variations in cultural values and regional norms may lead to differing investor expectations and corporate behaviours regarding ESG and dividends.
Temporal Changes and Trends	Analyze how the ESG-dividend relationship evolves, considering changes in societal expectations, regulatory developments, and market conditions.
Methodological Approaches	Develop and apply advanced econometric models and machine learning techniques to better capture the complexities of the ESG-dividend relationship and address potential endogeneity issues.

Table 6.7: Literature Review Description (WoS and Scopus)

Authors	Theories	Firm-year observation	Year	Countries	ESG description	Methodology	Dividend Policy Variables
(Ananzeh, Al Shbail, et al., 2024)	Agency theory and Substitution theory	16467	2010-2020	Global: 57 countries	Thomson Reuters database: ESG and E, S, and G pillar	Pooled ordinary least squares (OLS) regression	Dividend Payout Ratio and Dividend Yield
(Oh & Park, 2021)	Agency Theory and Signalling Theory	4718	2011-2018	South Korea	Korea Corporate Governance Service (KCGS): ESG and E, S and G pillar	Pooled ordinary least squares (OLS) regression	Dividend
(Chen et al., 2024)	Agency theory,	257,338	1996 to 2019	Global: 73 countries	Mandatory ESG reporting	difference-in-differences analysis	Dividend Payout Ratio

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Authors	Theories	Firm-year observation	Year	Countries	ESG description	Methodology	Dividend Policy Variables
(Verga Matos et al., 2020)	Agency theory and signaling theory	1914	2000-2019	Europe countries	Thomson Reuters: ESG and E, S and G Pillars	Logit Regression	Dividend aid or not and DPS regular, Payout range 2% and Dividend Yield range 2%
(Rastogi & Singh, 2025)	Stakeholder Theory	390	2016-2020	India	ESG and E, S and G Pillar	Panel Fixed Effect Regression	Equity Dividend-net worth
(Bilyay-Erdogan et al., 2023)	Agency Theory, Stakeholder Theory, Free Cash Flow theory, and Signalling Theory	19692	2002-2019	European Countries	ESG and E, S, G, and ESG controversy score	Panel Fixed Effect Regression	Dividend Payout Ratio, Dividend to sales, Dividend to assets, and Dividend Dummy
(Matuszewska-Pierzynka et al., 2023)	Agency Theory, Signalling Theory, and Stakeholder Theory	1511	2012–2021	Global Data: 188 countries	Thomson Reuter ESG and E, S, G, and ESG controversy score	Logit Regression	Dividend Payout Ratio, binary variable
(Ananzeh, Khalifeh, et al., 2024)	Agency Theory and Signalling Theory	16464	2010-2020	Global: 53 nations	ESG rating score, Thomson Reuters, E, S, and G scores	Pooled Ordinary Least Squares (OLS)	Dividend Payout Ratio and Dividend Yield
(Tsang et al., 2024)	Agency Theory	74,370	2000-2018	US	Thomson Reuters Data, ESG	Difference in Difference Model	Dividend to Total sales and Divide to Total assets
(Zahid et al., 2023)	Agency theory, signaling Theory, and Stakeholders Theory	2057	2010-19	Western Europe	Thomson Reuters ESG and E, S, and G pillar	Panel Regression analysis	Dividend Payout to Dividend Growth
(Barros et al., 2023)	Signaling Theory and Agency Theory	2567	2002-2021	US	Thomson Reuters: ESG, E, S and G and ESG controversy	Logistic Regression	Dividend dummy, DPS regular, Dividend Payout Ratio 2%, DY range 2% and Payout<0% and Payout > 100%
(Sun et al., 2023)	Stakeholder Theory, Signalling Theory, Free Cash Flow Theory	42,246	1991-2016	US	MSCI ESG STATS (formerly known as KLD)	Panel regression analysis	Dividend Payout Dummy
(Hampl & Vágnerová Linnertová, 2025)	Agency Theory, Stakeholder theory, signaling Theory	5230	2014-2023	European Nation	Fixed effect regression and GMM-SYS analysis	ESG, E, S, and G	Dividend Payout Ratio
(Ellili, 2022)	Agency and Signalling Theory	330	2010-2020	UAE	Panel data Regression	Bloomberg	Dividend Payout Ratio
(Pinto et al.,	Stakeholder	330	2010-	India	Panel Data	Prowess ESG,	Equity

Chapter 6

Authors	Theories	Firm-year observation	Year	Countries	ESG description	Methodology	Dividend Policy Variables
2024)	Theory and		2019		Regression	E < S and G	Dividend
(Linh et al., 2023)	Signaling Theory, Stakeholder Theory and Agency-cost theory, Life Cycle Theory, and Legitimacy Theory	2060	2011-2021	Vietnam	Panel regression	ESG score	Dividend Payers, Payout ratio, and dividend scaled by total assets
(Salvi et al., 2024)	Bird in Hand Theory, agency theory, Signalling Theory, Stakeholder Theory	3207	2018-2022	European Nation	Pooled Ordinary Least Square	Refinitiv Eikon ESG and E, S and G	Dividend Yield and Dividend Payout
(Niccolo et al., 2020)	Signaling Theory	181	Cross-sectional	China	OLS regression	Thomson Reuters Eikon database ESG, E, S, and G	Dividend Payout
(Seth & Mahenthiran, 2022)	Signaling Theory, Transaction Cost Theory, Agency Theory, Stakeholder Theory, and Resource Based Theory	460	2009-2012	India	Pooled OLS Regression	Bloomberg Database	Dividend Payout Ratio
(Maquieira et al., 2024)	Agency and Signalling Theory	584	2015-2021	Global	GMM-Sys and IV25, and Heckman	Thomson Reuters Eikon ESG and E, S and G	Dividend Payment
(Almulhim et al., 2024)	Stakeholder Theory, Agency Theory, and Legitimacy Theory	332	2013-2022	Saudi Arabia	Fixed Effect Regression	Bloomberg Database	Dividend Yield
(Dua & Sharma, 2024)	Agency Theory and Signalling Theory	1125	2015-2020	BRICS Nations	Pooled Ordinary Least Square	Bloomberg Database, ESG scores	Dividend paid to total assets and Cash dividend to net income

CHAPTER 7

ESG AND DIVIDEND POLICY: INSIGHTS FROM GLOBAL HOSPITALITY FIRMS

7.1. Introduction

In recent years, companies have increasingly acknowledged the strategic significance of sustainability initiatives, driven by rising consumer demands and heightened regulatory pressures (Bilyay-Erdogan et al. 2023). These initiatives have progressed from merely ethical considerations to essential elements of firms' strategies, impacting long-term sustainability, stakeholder trust, and investor perception. Consequently, many corporations have adopted sustainability as a core management standard (Hunt et al., 2020; Park & Jang, 2021). Corporate sustainability is a comprehensive concept that integrates social, cultural, economic, ethical, and environmental elements (Lankoski, 2016). It is commonly assessed by using ESG disclosures (Giese et al., 2019; Widyawati, 2020). The growing field of corporate sustainability has made these disclosures a focus as more businesses include ESG considerations in their strategic frameworks. ESG focuses on a wide range of aspects under three pillars: Environmental (environmental innovation, emissions, resource use), Social Responsibility (product responsibility, human rights, workforce, community), and Corporate Governance (CSR strategy, shareholders, management).

The importance of ESG disclosure became even more evident during the COVID-19 pandemic, as businesses faced heightened uncertainty and increased scrutiny from investors and stakeholders. The pandemic underscores the need for corporations to enhance their non-financial communication, particularly regarding their resilience, risk management, and social initiatives. Transparent and high-quality non-financial initiatives played a crucial role in building trust, as stakeholders sought greater assurance about companies' long-term sustainability and ability to navigate crises effectively (Savio et al., 2023). Moreover, global initiatives like the Paris Accord and the United Nations Sustainable Development Goals (SDGs) continue to propel corporate sustainability agenda. The Global Reporting Initiative (GRI), established in 2001, marked a transformative milestone by promoting standardised sustainability reporting among worldwide listed firms. As a result, ESG practices are now essential for establishing contemporary strategies and fostering resilience in an increasingly complex global economy.

Over the past two decades, various research studies have explored the extent of ESG/ CSR disclosure and its impact on firm profitability, yielding mixed findings (Friede et al., 2015). This inconsistency in outcomes has driven researchers to examine the

effect of ESG on other important financial decisions, such as dividend distribution, cost of capital, and corporate cash holdings, as a result of the inconsistent findings (see El Ghouli et al., 2011, among others). Academic interest in the role of dividend policy in corporate finance remains high. A dividend policy pertains to the strategic decision-making process concerning the distribution of earnings to shareholders over a given period (Ellili, 2022). Its effect on shareholder wealth has been much discussed in theoretical and empirical research, with studies emphasising its significance as a key determinant of corporate governance (Narang et al., 2024) and financial health (Tripathy et al., 2021). Following the 2008 financial crisis, several businesses experienced insolvency and financial difficulties, which heightened interest in the dividend policy's function in preserving corporate stability (Kilincarslan, 2021). Furthermore, the pandemic highlighted the need for a dividend policy, as firms worldwide faced unprecedented financial challenges. In this unstable climate, firms were forced to manage dividend payouts carefully, balancing short-term liquidity needs with the need to maintain long-term success. Effective dividend management in an unpredictable economy underscores the broader strategic significance of dividend policy in satisfying shareholders, promoting financial resilience, and safeguarding business viability.

Since dividend policy is one of a corporation's most important financial decisions (Ananzeh et al., 2024), research has examined how ESG rating affect dividend policy across various industries and regions, identifying trade-offs and synergies. Recent studies indicate that firms with higher sustainable operations are more likely to pay higher dividends (Benlemlih, 2019; Cheung et al., 2018; Rakotomavo, 2012; Samet & Jarboui, 2017), as our meta-analysis also revealed. A study by Barros et al. (2023) on a high-tech company in the US indicates that ESG measures often lead to higher dividend pay-outs, thereby aligning sustainability objectives with shareholder expectations. Another study on the largest non-financial global companies revealed that consistent dividends and ESG rankings are positively correlated (Ellili, 2022). On the other hand, oil and gas firms in Latin America experience reduced dividend growth due to capital-intensive ESG investments (Linh et al., 2023). These findings indicate the complex interplay between dividend and sustainability policies, highlighting the necessity to explore this relationship further (Verga Matos et al., 2020; Zahid et al., 2023).

Despite extensive research across various industries and regions, the interactions between ESG and dividend policy in the global hospitality industry remain unexplored. Hospitality firms, which play a crucial role in economic development and enhance societal well-being, are projected to grow at a compound annual growth rate (CAGR) of 6.8% from 2023 to 2024 (Global Hospitality Market Report, 2024). This

sector is uniquely positioned due to its dependence on natural resources, social interactions, and its sensitivity to cultural influences (Kallmuenzer et al., 2021; Olorunsola et al., 2024). Furthermore, investors are an essential stakeholder group for these companies, and their expectations significantly impact company strategies (Liu et al., 2022). Since dividend policies promote loyalty and trust while signalling financial stability and profitability, they are essential for meeting investor expectations.

This study attempts to answer one of the central research questions: How do ESG activities affect dividend policies in the global hospitality industry? It further explores the three ESG pillars—environmental, social, and governance—and their impact on dividend policies. Rather than investigating only whether firms pay dividends, the study also examines the stability of dividend amounts, considering whether they are relatively high or low. By focusing on these areas, we contribute to the growing body of research on corporate finance and ESG, providing valuable insights into how hospitality firms worldwide integrate sustainability practices into dividend strategies to promote long-term value creation. Additionally, we investigate the role of ESG controversies in shaping dividend policies and whether the absence of such controversies strengthens the relationship between ESG and dividend policies.

We utilise comprehensive data from Refinitiv Eikon to analyse dividend policy across a significant period of listed hospitality firms' history, from 2004 to 2023. Various dimensions of dividend policies are assessed to gain a holistic understanding. First, to examine whether a firm pays a dividend, the study uses a dummy variable equal to 1 if the firm pays a dividend in year t . Second, to explore the stability of dividend policies, the analysis includes variables such as dividend per share (DPS), regular payout ratio, and regular dividend yield. Finally, dividends paid to shareholders are evaluated using three metrics: DPS (cash dividend per share), Payout ratio (DPS as a percentage of earnings per share), and dividend yield (dividends as a percentage of the firm's stock price).

This article aims to delve into our understanding of the firm's dividend behaviour, specifically in hospitality, to help overcome some of the above research gaps. Findings reveal a positive relationship between ESG scores and firms' dividend payout. However, dividend stability variables such as DPS regular, Payout range 2%, and DY range 2% have a negative influence, indicating that a more substantial ESG commitment often prioritises reinvesting profits into sustainability initiatives over regular dividend distributions. This fundamental result is robust to various alternative approaches. For instance, the environmental and governance pillars also reveal the same results, while social initiatives show no direct impact. Notably, ESG controversies do not alter these findings, underscoring the robustness of our results.

This study contributed to the literature by focusing on underexamined global hospitality sectors, as past studies have largely focused on developed markets. It highlights sustainability's role in shaping dividend policy alongside other corporate strategies and provides insights into the limited impact of ESG controversy factors on dividend behaviour. These findings offer valuable implications to executives, shareholders, and policymakers in understanding ESG-dividend dynamics in a sector uniquely positioned at the intersection of sustainability and shareholder wealth.

7.2. Theoretical Background

Numerous studies have thoroughly examined the relationship between corporate sustainability and firm performance, as highlighted in reviews by Friede et al. (2015), Lu et al. (2014), Orlitzky et al. (2003), and Van Beurden & Gössling (2008). The majority concludes that sustainability practices positively impact financial performance, thereby serving as a value driver for shareholders (Chen et al., 2017; Velte, 2017) primarily due to increased reputation (Fatemi et al., 2018), stronger stakeholder relationships (Clarkson et al., 2008), and reduced risk premiums (Godfrey et al., 2009). Notably, the findings of Malik & Kashiramka (2024) analyse the impact on financial performance, market valuation, and cost of financing, highlighting industry-specific variations and the differential influence of ESG factors. They revealed that companies with higher ESG performance tend to have more favourable credit assessments and market valuations. In contrast, Wang et al. (2011) emphasised the challenges firms face in adopting sustainability initiatives. They noted that while such initiatives offer significant benefits, implementation costs and resource constraints often hinder their adoption. Lee & Isa (2020) assert that a firm's primary obligation is to maximise shareholder profits while investing in ESG initiatives, which may increase costs and potentially diminish profitability (Qureshi et al., 2021).

Some studies have examined the effects of ESG initiatives on various corporate characteristics, including the cost of capital, debt maturity, and capital structure, as evidenced by Apergis et al. (2022); Khanchel & Lassoued (2022); Li et al. (2024); Madyan & Widuri (2023). Some studies, moreover, explore the influence of board diversity, an essential element of the corporation (Mallidis et al., 2024; Sundarassen et al., 2024). Hence, the effect of ESG initiatives on dividend policy presents another valuable area for exploration. Past studies have yielded inconsistent findings in this domain, as few examine how a company's commitment to ESG goals influences corporate dividend payouts. The literature lacks a clear consensus about the nature of the connection between sustainability disclosure and dividend payouts. While most of the studies identify a favourable association between the two, others represent contrasting findings (Ballesteros et al., 2017; Brockman & Unlu, 2011; Cheung et al., 2018; Hussainey & Walker, 2009; Trihermanto & Nainggolan, 2018; Giriati, 2016; Healy & Palepu, 2001; Saeed & Zamir, 2021).

Motivated by agency theory, dividend distribution results from adequate investor protection that reduces the divergence between shareholders and managers (Jensen, 2005; Jensen & Meckling, 1976). For instance, if managers often overinvest when they can access surplus cash flow and viable investment opportunities with a positive net present value (NPV), then this behaviour leads firms to grow beyond their optimal size, as managers may prioritise expanding the assets they control to increase their authority and potential compensation, consistent with empire-building theories. Beyond financial objectives, this tendency may also extend to investments in environmental and social performance (Barnea & Rubin, 2010), motivated by managers' desire to enhance their reputation as socially responsible stakeholders, potentially at the expense of shareholder value. According to Brown et al. (2006), excessive corporate philanthropy may diverge from value-maximising goals and is linked to agency expenses. By limiting managerial discretion over excess funds, dividend policy serves as a mechanism to reduce agency problems within this framework. Hence, businesses can lower the risk of inefficient resource allocation by distributing excess cash to shareholders. To reduce agency conflicts and align managerial actions with stakeholder interests, companies with outstanding ESG performance may increase dividend payouts. Additionally, increasing transparency reduces knowledge asymmetry between managers and shareholders, lowering transaction costs (Ballesteros et al., 2017). This increased transparency strengthens the company's financial ability to pay enormous dividends and builds stakeholder trust. Taken together, these observations demonstrate that dividend policy is shaped by transparent communication and sustainable practices.

Signalling theory is another framework for analysing the connection between dividend policy and ESG initiatives (Benartzi et al., 1997; Miller & Rock, 1985). According to this view, a company's dividend policy communicates to investors that the company is doing well (Stephen A. Ross, 1977). An increase in dividend payments is seen as an indication that managers expect future earnings to rise. As shareholders are integral to the border stakeholders' ecosystem, aligning ESG activities with stakeholder expectations becomes particularly relevant. High scores across ESG dimensions reflect a firm's commitment to addressing the rights and expectations of shareholders and stakeholders (Benlemlih, 2019). Consequently, a combination of high dividend payouts and robust ESG performance signals to the market that the firm is achieving stakeholder inclusivity without compromising its cash flows or financial returns. Empirical research provides evidence of this positive relationship. For instance, Bilyay-Erdogan et al. (2023) documented that firms with superior ESG profiles paid higher dividends based on nonfinancial listed companies in 21 European countries from 2002 to 2019. Furthermore, they investigate potential mechanisms by which ESG performance positively impacts dividend payouts, presenting new evidence that

"earnings" and "risk" are the primary channels through which ESG enhances corporate dividends. Ellili (2022) also finds a positive association between board independence mediating this relationship in UAE-listed companies. Oh, & Park (2021) highlight the influence of corporate sustainable management (CSM) on dividend policy and show a positive association: firms with robust CSM practices pay higher dividends. Some other studies examining the impact of non-financial voluntary disclosure on dividends, include Brockman & Unlu (2011), Cheung et al. (2018), Cuadrado-Ballesteros et al. (2016), Hussainey & Walker (2009) and Koo et al. (2017). These studies posit that high-quality disclosures provide shareholders with transparent and reliable information about the firm's cash flows, fostering trust and encouraging dividend distributions.

In contrast, some studies underscore the negative relationship between ESG activities and dividend payout policies. Niccolo et al. (2020) study, based on OLS analysis, showed that ESG practices negatively affected dividend payout, indicating that companies frequently have to choose between sustainability and dividend payment investments. This can be explained by the trade-off theory (Friedman, 2007), as increased allocation of resources to ESG initiatives may reduce the availability of resources for dividend payouts (Lanis & Richardson, 2018). The trade-off arises from resource constraints, and these ESG practices often require significant capital that could otherwise be distributed as dividends. Moreover, if these strategies are not effectively implemented, they lead to value destruction rather than value creation (Clarkson et al., 2011), further determining the firm's ability to reward shareholders. Similarly, Ni & Zhang (2019) show that required CSR disclosures lower dividend payments, especially for companies with less robust corporate governance systems. In these situations, shareholders frequently find it impossible to protect themselves from stakeholder pressure that prioritises sustainability investments over dividends. To bolster this viewpoint, Saeed & Zamir (2021) observed analogous results in their analysis across several Asian countries from 2010–2018. Their findings revealed that CSR disclosures negatively impact dividend payout decisions, particularly in firms with substantial institutional ownership. Kim & Jeon (2015) examined the dividend policies of multinational enterprise subsidiaries in Korea Composite Stock Index-listed companies between 2000 and 2010, finding that dividend policies were primarily driven by remittance requirements from parent companies, with minimal influence from local CSR or sustainability initiatives.

The worldwide hospitality sector is the cornerstone of global economies, offering personalised experiences and fostering human connections. As a result, society and markets increasingly recognise the importance of ESG activities, rewarding the firms that actively engage in these initiatives (Hwang et al., 2024). Over the past decade,

several studies have focused on companies within the hospitality industry, examining various aspects of their operations. These studies include financial resilience with the key drivers such as profitability, leverage, tangibility, and liquidity histories as their financial health (Tascón et al., 2024), the impact of CSR decoupling on firm value (Wang et al., 2024), firm performance influenced by the investor perceived reputation (Liu et al., 2022), value creation (Navarro-Meneses, 2021; Nicolau & Sharma, 2022), firm-specific factors influence profitability (Soni et al., 2022), employees' behaviour (Ghosh, 2022), stock return (Sokhanvar, 2022) and financial reporting (Poretti et al., 2023). This research adds to the ongoing disclosure by examining the dividend policies of worldwide hospitality firms within the context of industry-specific characteristics. This industry, known for its significant resource consumption and considerable environmental footprint, faces heightened stakeholder pressure to prioritise sustainability initiatives. This pressure is amplified by the industry's direct engagement with customers, necessitating ongoing capital investment to ensure long-term growth and competitiveness (Ozdemir et al., 2024).

Despite extensive research on the influence of ESG initiatives on dividend policy, the findings remain inconclusive. The observed relationship appears to be influenced by various contextual and firm-specific factors, leading to mixed findings across studies. This highlight required further empirical investigation to clarify the relationship, particularly within a global context, where the research has been scant.

7.3. Methodology

7.3.1 Data and Research Design

The hospitality sector is selected for this study because it is a service-intensive industry with substantial environmental, social, and stakeholder-related implications. Hospitality firms, including hotels, restaurants, and related businesses, interact extensively with employees, customers, local communities, suppliers, and other stakeholders. Their operations may therefore involve issues such as energy and water consumption, waste management, employee welfare, customer safety, community engagement, and corporate governance. These characteristics make the hospitality sector particularly relevant for examining whether ESG disclosure is associated with firms' dividend policies. In addition, the sector comprises firms operating across diverse institutional and regulatory environments, providing an appropriate setting for examining the ESG–dividend relationship in an international context.

The study uses ESG and financial data for publicly listed global hospitality firms obtained from the Refinitiv global database, which provides extensive and comparable ESG and financial information across countries. The study period covers

2004–2023. The starting year was determined primarily by the availability of sufficiently consistent and comparable firm-level ESG and financial data in the Refinitiv database, while 2023 represents the latest year for which the required data were available when the dataset was constructed. The resulting twenty-year period provides a sufficiently broad time horizon to capture the evolution of ESG disclosure and dividend practices in the hospitality sector across different economic and institutional conditions. The period also encompasses the increasing institutionalisation of ESG-related practices and reporting, as well as significant changes in the global business environment, thereby providing an appropriate basis for examining the ESG–dividend relationship over time.

The collected firms are based on the North American Industry Classification System (NAICS), which includes hotels (excluding casino hotels) and motels, casino hotels, casinos except casino hotels, full-service restaurants, limited-service restaurants, and snack and non-alcoholic beverage bars, following Hwang et al. (2024) study. Initially, the sample included 1401 corporations across countries. However, limiting the dataset to firms with complete financial metrics and ESG data reduced the sample size to 918 observations from unique firms, as shown in Table 7.1. Align with recent studies on dividend policy (Barros et al., 2023; Barros, Guedes, et al., 2022), we employ measures that capture the decision to pay dividends and its stability. This research utilises measures that reflect the decision to distribute dividends and the consistency of that distribution. The core variable, Dividend policy, is represented as a binary, where we consider one value if a firm pays a dividend and zero if it does not.

Following prior literature, we also include firm size, cash ratio, sales growth, return on assets (ROA), and leverage as company-specific control variables (Benlemlih, 2019; Ellili, 2022; Saeed & Zamir, 2021). We incorporate additional macroeconomic variables from the World Bank database, including GDP per capita growth and inflation, to account for the country-level differences. Moreover, institutional variables at the country level are used as additional controls, including a legal system indicator (i.e., common law vs. civil law). Since dividend policies have been shown to vary across the legal systems, as given by (La Porta et al., 2000), common law countries typically offer more robust investor protection, leading to higher dividend payments than civil law countries. Definitions of all variables are given in Table 7.2.

Table 7.1: Sample distribution across countries

Countries	Freq.	Per cent	Cum.	Countries	Freq.	Per cent	Cum.
Australia	56	6.1	6.10	Malaysia	30	3.27	40.74
Austria	3	0.33	6.43	Malta	11	1.2	41.94
Bahamas	1	0.11	6.54	Mexico	6	0.65	42.59
Brazil	1	0.11	6.64	Netherlands	5	0.54	43.14

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Countries	Freq.	Per cent	Cum.	Countries	Freq.	Per cent	Cum.
Cambodia	3	0.33	6.97	New Zealand	19	2.07	45.21
Canada	14	1.53	8.50	Philippines	13	1.42	46.62
China	23	2.51	11.00	Saudi Arabia	3	0.33	46.95
Finland	1	0.11	11.11	Singapore	13	1.42	48.37
France	33	3.59	14.71	South Africa	21	2.29	50.65
Germany	9	0.98	15.69	Spain	10	1.09	51.74
Gibraltar	6	0.65	16.34	Sri Lanka	3	0.33	52.07
Greece	16	1.74	18.08	Sweden	11	1.2	53.27
Hong Kong SAR, China	72	7.84	25.93	Switzerland	2	0.22	53.49
India	13	1.42	27.34	Taiwan	10	1.09	54.58
Ireland	4	0.44	27.78	Thailand	15	1.63	56.21
Isle of Man	9	0.98	28.76	United Kingdom	133	14.49	70.70
Japan	49	5.34	34.10	United States	264	28.76	99.46
Korea, Rep.	9	0.98	35.08	Uruguay	5	0.54	100.00
Macau	22	2.4	37.47	Total	918	100	

Table 7.2: Variables Description

Variables	Description
Dependent Variables	
Dividend Policy	
Dividend Payout	Binary variable, 1: if the firms pay dividends in year t, and otherwise zero
DPS regular	Binary variable, 1: if the DPS in year t is the same as in year t-1, and otherwise zero
Payout range 2 %	Binary variable, 1: if the Payout in year t is in the 2 % range from year t-1, and otherwise zero, ^b
DY range 2 %	Binary variable, 1: if the Dividend Yield – DY (DPS/stock price) is in the 2 % range from the previous year, otherwise zero, ^b
Independent Variables	
Sustainability	
ESG combined score	weighted average of environmental, social, and governance scores, ranging from 0 to 100%
Environmental Score	Captures 68 indicators, categorised into three subcategories: 28 indicators for emissions, 20 indicators for environmental innovation, and 20 indicators for resource use, ranging from 0 to 100%.
Social score	Consists of 62 indicators: 30 indicators for the workforce, 14 indicators for the community, 10 indicators for product responsibility, and eight indicators for human rights, ranging from 0 to 100%.
Governance Score	Includes 56 indicators: 35 for management, 12 for shareholders, and nine for CSR strategy, ranging from 0 to 100%.
ESG controversy score	This includes the news controversies faced by the media.

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Variables	Description
Firm-level Controls	
Firm-size	Natural logarithm of the book value of total assets ^a
Cash Ratio	The ratio of cash and cash equivalents to total assets is ^a
Sales growth	Rate of change in net sales of company i from year t-2 to t-1 ^a
ROA	Net income scaled by the book value of total assets, ^a
Leverage	The ratio of the Total Debt to Common Equity is ^a
Country-level Controls	
GDP per capita growth	Annual percentage growth rate of GDP per capita
Inflation	Annual consumer price index
Common law	Binary variable, 1: if a common law country and otherwise zero

^a Winsorized at the top and bottom 1.0 percentiles to reduce outliers.

^b 2 % range allows a deviation from – 2 % to +2 % from the central point.

7.3.2 Methodology Used

The main aim of the analysis is to explore how sustainability, specifically the incorporation of ESG factors, influences dividend policy decisions in the hospitality industry. Specifically, the extent to which firms engage in dividend distribution, and whether the stability of these payments is shaped by their adherence to ESG practices. Given that the dependent variable Y is binary, as discussed above and in other research on dividend policy (Barros et al., 2021), we have employed a logistic regression model. This method offers the advantage of predicting the probability of specific outcomes for the dependent variables, whereas linear probability models estimate around the dependent variables' means. The following logit model is applied in the analysis:

$$y_{it} = ESG_{it} + Controls_{it}\beta + \delta_t + \varepsilon_{it}$$

Where the subscripts i refer to companies at time t , the coefficients are estimated with unbiased standard errors under heteroscedasticity. δ_t is the year fixed effect specification.

7.4. Univariate Results

The descriptive statistics in Table 7.3 indicate vital insights. Approximately 83.1 % of sample firms pay dividends, as noted in the average dividend payout, though the stability in dividend payout is less, with only 17% of firms making consistent payouts. ESG performance shows moderate variability, with overall ESG scores averaging 45.85, and the governance and social components (49.38 and 49.34, respectively) showing greater consistency than environmental performance (43.27). Even most firms in the hospitality sector have low ESG controversies, as indicated by a mean

of 90.72. Firm-specific variables exhibit wide variation in size, sales growth, leverage, and ROA. Macroeconomic conditions, such as inflation and GDP growth, also exhibit notable differences across countries. Lastly, 76% of firms are in common law countries, indicating that most operate in legal environments with stronger investor protections.

Table 7.3: Descriptive Statistics

Variable	N	mean	p50	Std. Dev.	p25	p75
Dependent Variable						
Dividend	918	0.8312	1.0000	0.3748	1.0000	1.0000
DPS regular	918	0.1688	0.0000	0.3748	0.0000	0.0000
Payout range 2%	918	0.2309	0.0000	0.4217	0.0000	0.0000
DY range 2%	918	0.1786	0.0000	0.3833	0.0000	0.0000
Independent Variables						
ESG	918	45.8513	45.1905	19.1372	32.0025	59.7775
Env	918	42.3733	43.4466	28.1972	16.5719	67.1416
Soc	918	49.3418	50.2194	24.0705	30.9698	67.5235
Gov	918	49.3778	50.0000	21.0006	32.2496	65.5350
Controversies score	918	90.7217	100.0000	23.0271	100.0000	100.0000
Firm-level controls						
Firm Size	918	9.4584	9.4813	0.5490	9.1027	9.8609
Sales growth	918	0.1378	0.0703	0.3291	-0.0159	0.1874
Cash ratio	918	0.0993	0.0680	0.0972	0.0318	0.1324
Leverage	918	1.6174	0.8037	2.7773	0.3394	1.6745
ROA	918	0.0887	0.0671	0.0740	0.0366	0.1206
Country-level controls						
Inflation	918	2.6755	2.1301	2.1416	1.2616	3.5214
GDP per Capita growth	918	1.6410	1.7498	3.2192	0.8095	2.4386
Common law	918	0.7625	1.0000	0.4258	1.0000	1.0000

Table 7.4 presents the correlation matrix, which shows a notable positive relationship among dividend policy variables, ESG factors, and firm-level factors. Dividend-related variables exhibit a strong positive relationship, highlighting the interconnectedness among different aspects of dividend policy. Regarding sustainability variables, the combined ESG positively correlates with its subcomponents, including Env, Soc, and Gov, with correlations of 0.818, 0.860, and 0.611, respectively. In contrast, the ESG controversy score shows only weak correlations with most variables, suggesting that ESG controversies are not strongly associated with overall ESG performance. Notably, ROA is positively correlated with dividends and negatively correlated with leverage, suggesting that more profitable firms tend to have lower leverage in the hospitality industry. The table shows no

concerns regarding multicollinearity; still, we do diagnostic tests, such as calculating VIF scores, as described in Table 7.4.

7.5. Multivariate Regression

7.5.1 Results on ESG performance

ESG disclosure is increasingly seen as a significant determinant of dividend behaviour, though its effect varies across models. Table 7.5 presents the nuanced relationship between ESG performance and dividend policies, controlling for firm- and country-specific variables. We look at both the decision to pay dividends and its stability. In Column 1, we initially regress the impact of firm- and country-level characteristics on firms' dividend payouts. While Column 2 displays the findings by ESG score impact. There is a significant positive association between ESG performance and dividend payout ratio, in line with the prior literature (Benlemlih, 2019; Cheung et al., 2018; Ellili, 2022). This impact is also economically sizable: one standard deviation increases in ESG performance (19.14) enhances the dividend payout ratio by 0.268 (0.014×19.14). ESG activities are positive NPV projects, expected to augment earnings and dividend payouts (Badru & Qasem, 2021). Higher ESG performance is viewed as a signal of firms' more substantial commitment to society, which is likely to enhance their corporate image and reputation in the capital markets (Benlemlih, 2019), making them sustainable companies, ultimately leading to better financial performance as well as higher dividend payouts (Ellili, 2022), as pointed out by signalling theory (Stephen A. Ross, 1977).

Conversely, in Model 4 (DPS regular), Model 6 (Payout range 2%), and Model 8 (DY range 2%), the ESG factors exhibit negatively affect regular dividend payments, implying that companies with higher ESG commitment may prefer reinvesting profits into sustainability initiatives rather than distributing them to shareholder regularly, resulted in a trade-off between reinvestment and dividend distribution. However, this reinvestment could align with long-term shareholder interests if it leads to sustainable growth, a better reputation, and higher future profits.

Regarding the control variables, firm size, ROA, and leverage positively affect the dividend payout ratio, which indicates that larger hospitality firms are more inclined to pay dividends (Bahreini & Adaoglu, 2018; Redding, 1997). Sales growth plays a dual role, negatively affecting dividend payment, as shown in Table, implying that fast-growing hospitality firms reinvest earnings to support expansion. However, other models of sales growth positively influence payout strategies, as these firms may balance growth ambitions and shareholder returns.

Table 7.4: Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	VIF
(1) Dividend	1.000																	
(2) DPS regular	-0.876*	1.000																
(3) Payout range 2%	-0.712*	0.823*	1.000															
(4) DY range 2%	-0.845*	0.853*	0.709*	1.000														
(5) ESG	0.076*	-0.071*	-0.073*	-0.078*	1.000													1.22
(6) Env	0.099*	-0.090*	-0.094*	-0.102*	0.818*	1.000												1.39
(7) Soc	0.027	-0.022	-0.042	-0.026	0.860*	0.745*	1.000											1.24
(8) Gov	0.099*	-0.094*	-0.073*	-0.103*	0.611*	0.325*	0.361*	1.000										1.06
(9) Controversies score	-0.001	-0.006	0.004	-0.001	0.013	-0.246*	-0.258*	-0.067*	1.000									1.17
(10) Firm Size	0.085*	-0.059	-0.052	-0.063	0.377*	0.495*	0.396*	0.159*	-0.262*	1.000								1.45
(11) Sales growth	-0.246*	0.236*	0.208*	0.214*	-0.040	-0.011	-0.058	-0.041	0.028	-0.061	1.000							1.23
(12) Cash ratio	0.077*	-0.091*	-0.083*	-0.035	-0.176*	-0.146*	-0.164*	-0.105*	0.052	-0.089*	0.027	1.000						1.35
(13) Leverage	-0.063	0.062	0.054	0.043	0.025	0.049	0.043	0.048	-0.066*	0.138*	0.081*	-0.152*	1.000					1.07
(14) ROA	0.196*	-0.185*	-0.149*	-0.132*	-0.078*	-0.092*	-0.035	0.048	-0.128*	-0.211*	-0.045	0.410*	-0.152*	1.000				1.33
(15) Inflation	-0.189*	0.206*	0.117*	0.166*	0.058	0.079*	0.017	0.053	-0.009	-0.077*	0.355*	-0.060	0.144*	-0.028	1.000			1.21
(16) GDP	-0.063	0.099*	0.100*	0.089*	-0.020	-0.002	-0.058	-0.013	0.049	0.027	0.280*	0.041	0.004	0.008	0.176*	1.000		1.11
(17) Common law	-0.004	-0.004	-0.057	-0.044	-0.401	-0.116	-0.429	-0.598	0.000	-0.189	-0.534	0.000	-0.141	-0.208	-0.010	-0.654	1.000	1.11

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Macroeconomic Factors, such as inflation, tend to decrease dividend payments but positively influence regular payouts in Model 3 through Model 8, revealing that hospitality firms adjust to inflation by stabilising regular payouts over time. The legal environment of a country (proxied with common law vs. civil law), reflected by the standard law variable, negatively influences initial dividend payments but positively affects regular payments, suggesting that while standard law systems may not encourage immediate dividend payments, they foster long-term payout stability. Overall, the results indicate that sustainability, firm characteristics, and macroeconomic factors play significant roles in shaping dividend policies within the hospitality sector. Firms with more robust ESG profiles tend to have complex dividend strategies that balance shareholder returns and reinvestment into sustainability and growth initiatives.

Table 7. 5: ESG Disclosures and Dividend Policy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dividend	Dividend	DPS regular	DPS regular	Payout Range 2%	Payout Range 2%	DY range 2%	DY range 2%
ESG		0.014** (0.006)		-0.015** (0.007)		-0.013** (0.005)		-0.010* (0.006)
Firm Size	0.584*** (0.190)	0.354* (0.209)	-0.416** (0.190)	-0.177 (0.206)	-0.317* (0.163)	-0.102 (0.180)	-0.425** (0.177)	-0.262 (0.198)
Sales Growth	-1.171*** (0.285)	-1.138*** (0.289)	1.000*** (0.268)	0.964*** (0.271)	1.025*** (0.264)	0.994*** (0.269)	0.935*** (0.251)	0.906*** (0.253)
Cash ratio	-0.457 (1.209)	0.176 (1.222)	-0.448 (1.287)	-1.155 (1.299)	-0.995 (1.026)	-1.616 (1.031)	1.230 (1.074)	0.757 (1.114)
Leverage	-0.028 (0.027)	-0.019 (0.028)	0.020 (0.028)	0.011 (0.030)	0.018 (0.025)	0.009 (0.027)	0.020 (0.027)	0.014 (0.027)
ROA	11.934*** (2.722)	11.292*** (2.740)	-10.519*** (2.605)	-9.885*** (2.617)	-5.711*** (1.836)	-5.057*** (1.837)	-7.276*** (2.042)	-6.764*** (2.061)
Inflation	-0.091* (0.047)	-0.094** (0.047)	0.126*** (0.046)	0.129*** (0.046)	0.011 (0.043)	0.011 (0.043)	0.113** (0.044)	0.115*** (0.044)
GDP per capita Growth	-0.011 (0.033)	-0.007 (0.033)	0.054* (0.028)	0.050* (0.029)	0.054** (0.026)	0.051* (0.027)	0.041 (0.026)	0.038 (0.026)
Common law	-0.717*** (0.248)	-0.723*** (0.254)	0.658*** (0.251)	0.652** (0.256)	0.313 (0.209)	0.309 (0.212)	0.410* (0.230)	0.407* (0.234)
Constant	48.290	97.420* (0.033)	-20.523	-70.834	-40.479	-85.772* (0.027)	34.958	0.227

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dividend	Dividend	DPS regular	DPS regular	Payout Range 2%	Payout Range 2%	DY range 2%	DY range 2%
	(50.026)	(57.357)	(47.536)	(54.148)	(41.754)	(46.620)	(45.230)	(53.715)
Observations	918	918	918	918	918	918	918	918
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R²	0.142	0.149	0.131	0.138	0.071	0.078	0.082	0.085
Wald Chi²	78.385	76.600	73.963	72.405	51.633	54.611	57.815	57.734

Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.

7.5.2 Results on the Pillars

Next, we focused on each component of the ESG pillars. The results reveal (as shown in Tables 7.6, 7.7 and 7.8) a conflicting impact as optimisation may yield component spillover effects. For instance, the environmental pillar positively and significantly affects overall dividend payout, indicating that firms with higher environmental scores tend to pay higher dividends in the same year. However, it negatively affects dividend stability measures. The governance pillar results also align with the environmental results, which ensure accountability, transparency, and effective management, which provides fair distribution of profits among shareholders.

Conversely, the social component has no significant influence on the dividend payout variables across all models, suggesting that, in the hospitality sector, social initiatives such as employee well-being or community engagement may not directly influence dividend payout. Social performance can enhance a reputation, improving financial performance and profitability. However, firms might focus on reinvesting profits to improve social outcomes rather than paying dividends immediately. This analysis highlights that environmental and governance pillars influence dividend strategies, but their effects on regular dividend policies differ and align with the study (Verga Matos et al., 2020).

7.6 Additional Analysis

We further examine the role of ESG controversies on dividend behaviour. As shown in Table 7.9, we include the independent ESG controversy, which ranges from 0 to 100, to measure the degree of exposure to negative ESG-related news that may affect a firm's sustainability profile. Our results reveal that the controversies do not significantly affect dividend policy, consistent with the social score. However, while the coefficients for dividend payout are positive and those for stability are negatively associated, the presence or absence of ESG controversies alone does not drive these relationships.

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Meanwhile, the binary variable Controversies (absent) captures whether firms are free from any news that could threaten their ESG standing. We examine whether the absence of controversies strengthens the relationship between ESG performance and dividend policies. The results reveal that the interaction term was not statistically significant across all dividend-related metrics (given in Table 7.10), indicating that the absence of controversies does not significantly influence the dividend policy in conjunction with ESG scores. These findings reinforce our primary results, suggesting that the broader ESG disclosure of hospitality firms, rather than the lack of controversies alone, is more central to understanding the impact on dividend policy. Thus, the robustness check confirms that the significant relationship observed between ESG and dividend policy is independent of the firm's controversy status, underscoring the stability and validity of our finding.

Table 7.6: Environmental Disclosures & Dividend Policy

	(1) Dividend	(2) DPS regular	(3) Payout Range 2%	(4) DY range 2%
Env	0.014*** (0.005)	-0.014*** (0.005)	-0.012*** (0.004)	-0.012*** (0.004)
Firm Size	0.220 (0.220)	-0.036 (0.217)	0.015 (0.191)	-0.109 (0.208)
Sales Growth	-1.165*** (0.281)	0.993*** (0.266)	1.016*** (0.262)	0.926*** (0.247)
Cash ratio	0.213 (1.189)	-1.184 (1.258)	-1.606 (1.012)	0.628 (1.086)
Leverage	-0.017 (0.028)	0.009 (0.029)	0.008 (0.027)	0.012 (0.027)
ROA	11.485*** (2.755)	-10.092*** (2.646)	-5.122*** (1.853)	-6.751*** (2.073)
Inflation	-0.110** (0.047)	0.146*** (0.046)	0.023 (0.043)	0.127*** (0.044)
GDP per capita Growth	-0.008 (0.034)	0.051* (0.029)	0.050* (0.027)	0.037 (0.026)
Common law	-0.686*** (0.256)	0.617** (0.256)	0.279 (0.213)	0.380 (0.234)
Constant	99.552* (55.777)	-72.216 (52.577)	-85.908* (44.931)	-8.896 (51.721)
Observations	918	918	918	918
Year FE	Yes	Yes	Yes	Yes
Pseudo R ²	0.156	0.145	0.082	0.092
Wald Chi ²	78.653	74.265	56.809	59.307

Table 7.7: Social Disclosures & Dividend Policy

	(1) Dividend	(2) DPS regular	(3) Payout Range 2%	(4) DY range 2%
Soc	-0.000 (0.005)	-0.000 (0.005)	-0.003 (0.004)	0.003 (0.005)
Firm Size	0.589*** (0.217)	-0.416* (0.214)	-0.244 (0.187)	-0.476** (0.203)
Sales Growth	-1.172*** (0.285)	1.000*** (0.268)	1.015*** (0.265)	0.943*** (0.251)
Cash ratio	-0.469 (1.237)	-0.450 (1.309)	-1.177 (1.041)	1.365 (1.113)
Leverage	-0.028 (0.027)	0.020 (0.028)	0.016 (0.025)	0.021 (0.027)
ROA	11.952*** (2.770)	-10.516*** (2.635)	-5.445*** (1.867)	-7.471*** (2.082)
Inflation	-0.091* (0.047)	0.126*** (0.046)	0.010 (0.043)	0.114** (0.044)
GDP per capita Growth	-0.011 (0.033)	0.054* (0.028)	0.052* (0.027)	0.043* (0.026)
Common law	-0.717*** (0.249)	0.658*** (0.251)	0.320 (0.209)	0.407* (0.231)
Constant	47.294 (56.065)	-20.661 (52.385)	-54.703 (45.483)	45.308 (51.312)
Observations	918	918	918	918
Year FE	Yes	Yes	Yes	Yes
Pseudo R ²	0.142	0.131	0.072	0.082
Wald Chi ²	78.826	74.520	52.069	59.372

Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.

Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.

Chapter 7

Table 7. 8: Governance Disclosures & Dividend Policy					Table 7.9: ESG Controversies & Dividend Policy				
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)
	Dividend	DPS regular	Payout Range 2%	DY range 2%		Dividend	DPS regular	Payout Range 2%	DY range 2%
Gov	0.013** (0.005)	-0.012** (0.005)	-0.008* (0.004)	-0.011** (0.005)	ESG_C_	0.007 (0.005)	-0.007 (0.005)	-0.004 (0.004)	-0.005 (0.004)
Firm Size	0.468** (0.189)	-0.305 (0.190)	-0.246 (0.165)	-0.326* (0.179)	Firm Size	0.660*** (0.200)	-0.492** (0.197)	-0.370** (0.173)	-0.485*** (0.184)
Sales Growth	-1.138*** (0.287)	0.964*** (0.268)	1.001*** (0.266)	0.896*** (0.253)	Sales Growth	-1.168*** (0.293)	0.996*** (0.274)	1.024*** (0.270)	0.930*** (0.256)
Cash ratio	0.026 (1.218)	-0.952 (1.297)	-1.322 (1.017)	0.802 (1.082)	Cash ratio	-0.514 (1.229)	-0.395 (1.308)	-0.952 (1.037)	1.304 (1.085)
Leverage	-0.026 (0.029)	0.018 (0.029)	0.017 (0.026)	0.019 (0.028)	Leverage	-0.027 (0.027)	0.019 (0.028)	0.017 (0.025)	0.020 (0.027)
ROA	11.313*** (2.763)	-9.878*** (2.643)	-5.204*** (1.848)	-6.599*** (2.077)	ROA	12.363*** (2.769)	-10.963*** (2.663)	-6.017*** (1.881)	-7.613*** (2.092)
Inflation	-0.092** (0.047)	0.128*** (0.046)	0.011 (0.043)	0.115*** (0.045)	Inflation	-0.087* (0.047)	0.122*** (0.046)	0.008 (0.043)	0.111** (0.045)
GDP per capita Growth	-0.006 (0.034)	0.051* (0.029)	0.053** (0.027)	0.039 (0.027)	GDP per capita Growth	-0.015 (0.033)	0.059** (0.029)	0.057** (0.027)	0.045* (0.026)
Common law	-0.745*** (0.253)	0.669*** (0.255)	0.318 (0.210)	0.420* (0.234)	Common law	-0.670*** (0.250)	0.612** (0.251)	0.281 (0.209)	0.375 (0.231)
Constant	82.998 (53.672)	-52.236 (51.114)	-60.107 (43.916)	8.896 (49.143)	Constant	47.956 (49.913)	-19.829 (47.573)	-40.335 (41.866)	35.563 (45.301)
Observations	918	918	918	918	Observations	918	918	918	918
Year FE	Yes	Yes	Yes	Yes	Year FE	Yes	Yes	Yes	Yes
Pseudo R²	0.151	0.139	0.075	0.088	Pseudo R²	0.145	0.133	0.073	0.083
Wald Chi²	77.788	75.342	54.744	62.340	Wald Chi²	79.165	74.945	51.365	58.468
Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.					Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.				

Table 7.8: Absent from Controversies and Dividend Policy

	(1)	(2)	(3)	(4)
	Dividend	DPS regular	Payout Range 2%	DY range 2%
main				
ESG	0.012 (0.008)	-0.011 (0.008)	-0.010 (0.006)	-0.005 (0.008)
ESG*Controversies (absent)	0.002 (0.005)	-0.004 (0.005)	-0.003 (0.004)	-0.005 (0.005)

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	(1)	(2)	(3)	(4)
	Dividend	DPS regular	Payout Range 2%	DY range 2%
Firm Size	0.377* (0.216)	-0.228 (0.215)	-0.138 (0.190)	-0.328 (0.206)
Sales Growth	-1.140*** (0.288)	0.970*** (0.270)	0.997*** (0.270)	0.914*** (0.253)
Cash ratio	0.153 (1.229)	-1.108 (1.312)	-1.581 (1.040)	0.835 (1.124)
Leverage	-0.019 (0.028)	0.012 (0.030)	0.010 (0.027)	0.015 (0.028)
ROA	11.405*** (2.785)	-10.134*** (2.680)	-5.224*** (1.880)	-7.073*** (2.122)
Inflation	-0.093** (0.047)	0.127*** (0.046)	0.010 (0.043)	0.112** (0.044)
GDP per capita	-0.008 (0.033)	0.052* (0.029)	0.052* (0.027)	0.040 (0.026)
Growth	-0.711*** (0.254)	0.627** (0.254)	0.292 (0.211)	0.376 (0.236)
Common law	95.584* (57.914)	-66.948 (54.601)	-83.554* (46.885)	4.714 (54.162)
Constant	918	918	918	918
Observations	Yes	Yes	Yes	Yes
Year FE	0.149	0.139	0.078	0.087
Pseudo R ²	76.924	72.899	54.712	58.729
Wald Chi ²				

Robust standard errors are in parentheses, and * represents $p < 0.1$, ** represents $p < 0.05$, and *** represents $p < 0.01$.

7.7. Discussion and Contribution

Our findings contribute to the ongoing debate on the interplay between ESG performance and dividend policy by offering a focused analysis of the hospitality sector. The result indicates that ESG performance positively influences dividend payouts, consistent with prior literature suggesting that higher ESG performers tend to reward shareholders with elevated dividends (Barros et al., 2023). This positive relationship reflects the signalling and agency theories, which suggest that dividend payments signal a firm's financial health and commitment to long-term sustainability, reassuring investors about its governance quality and prospects. In the hospitality sector, where firms face heightened scrutiny regarding sustainability, the dividend payout mechanism serves as a dual mechanism to enhance corporate transparency and investor trust while signalling robust ESG commitments.

However, our study also highlighted an inverse relationship between ESG and dividend stability across the hospitality sector, which might explain that strong ESG initiatives prioritise reinvesting profits into sustainability projects rather than maintaining dividend payout consistency. This behaviour can be explained by the

pecking order theory (Myers, 1984), in which firms prefer internal financing over external debt or equity to fund their growth. By reinvesting earnings into ESG initiatives, firms aim to drive sustainable growth while minimising dependency on external funding sources. These emphasise that dividend policy is inherently complex and benefits from industry-specific analysis rather than a generalised approach, further enriching the discourse on ESG performance and dividend behaviour.

Our contribution to the literature is twofold. First, we add to the understanding of managerial reputational incentives in shaping strategic decisions within the hospitality sector, emphasising that managers may pursue higher dividends to enhance transparency and investor trust. This approach aligns with the potential for higher ESG ratings, which reflect positively on the shareholders and increase market trust and credibility. These findings build upon the existing literature suggesting that dividend payment transparency can limit managerial extraction and encourage discipline (Koo et al., 2017; Smith & Pennathur, 2017). Moreover, higher ESG yields various benefits for managers, including better access to capital (Kotsantonis et al., 2016) and the potential enhancement in executive compensation (Maas, 2018). However, there remains a threshold beyond which additional ESG-driven dividends may not yield incremental ESG benefits. Furthermore, our findings imply that maintaining a stable dividend policy can be critical to balancing investor expectations with sustainable growth, a tension particularly relevant in sectors such as hospitality, where direct reinvestment may be prioritised over dividends.

Second, our analysis indicates that social responsibility has a limited impact on dividend policy within the hospitality sector, consistent with the idea that firms prioritise reinvesting in social contributions, such as employee welfare and community engagement, rather than immediate dividend distribution. This contrasts with dividend signalling and agency theories, which may hold differently across sectors. Our study highlights that while hospitality sector firms face unique challenges in implementing sustainability-driven strategies, firms that balance dividend payouts with reinvestments in sustainability initiatives are likely better positioned for stable growth and investor trust, thereby refining the dividend decision framework in industry-specific contexts.

The COVID-19 pandemic has underscored hospitality's firm fragility and highlighted its susceptibility to external shocks (Filimonau, 2021; Tascón et al., 2024). The hospitality and tourism (H&T) industry was among the industry's most negatively impacted by coronavirus disease 2019 (COVID-19) (Wang et al., 2024). While most analyses have focused on the socio-economic impact of the pandemic, there has been limited exploration of its sustainability implications for hospitality firms. These emerging challenges and solutions emphasise the need for more in-depth research on

hospitality firms across diverse geographic and institutional settings, which would develop sector-specific approaches to enhance the sector's resilience and sustainability.

7.8. Conclusion, limitations, and Further Research

This research examines the impact of corporate ESG disclosure on hospitality firms' dividend policy using a 918-dataset of companies across 37 countries. The findings reveal that firms with higher ESG performance will likely pay higher dividends. At the same time, those with more substantial ESG commitments often prioritise reinvesting profits into sustainability initiatives, which can reduce dividend stability, as hospitality firms might prefer internal financing over external debt or equity to fund their growth. This provides a dual perspective on ESG disclosures, emphasising their role as markers of corporate transparency and as determinants of dividend policy. Furthermore, the study explores the role of ESG controversies and demonstrates their limited influence on dividend behaviour. It offers robust insights into the interaction between ESG and dividend strategies in an industry uniquely challenged by sustainability and financial pressures.

The findings have significant implications for policymakers, investors, and managers seeking to balance stakeholder expectations with long-term sustainability goals. This study highlights the need for regulatory frameworks that help firms balance their priorities. Policymakers could offer fiscal incentives for reinvestments in ESG initiatives to support long-term sustainability while minimising short-term impacts on shareholders' returns. The role of ESG as a signal mechanism suggests that it can encourage firms to use dividend policies to demonstrate financial health and governance quality, thereby boosting investment confidence. Furthermore, investors seeking returns can strategically allocate their portfolios to firms that are actively engaged in ESG practices, thereby fostering a more sustainable investment landscape.

Despite its contributions, the study has certain limitations. Focusing exclusively on the hospitality sector may limit the generalizability of the findings to other industries with differing operational dynamics and sustainability challenges. Additionally, the reliance on secondary data constrains the depth of insights into how corporations execute ESG activities. Future research could incorporate primary data collection to capture a more nuanced understanding of corporate ESG practices. Furthermore, the role of institutional investors and other stakeholder pressures in shaping ESG-driven dividend policies can provide new insights across diverse contexts.

CHAPTER 8

CONCLUSION AND FUTURE RESEARCH

8.1. Introduction

This chapter provides a comprehensive synthesis of the key findings, theoretical insights, and practical implications of the thesis, with particular reference to the empirical objectives delineated in Chapter 1. It consolidates the outcomes of the six interrelated studies and situates them within the broader discourse on ESG disclosures and corporate financial performance. Additionally, the chapter critically reflects on the study's methodological and conceptual contributions, identifies inherent limitations, and proposes future avenues for scholarly exploration.

In pursuit of the research objectives articulated in the introductory chapter, this thesis has adopted a multidimensional perspective to examine the influence of ESG disclosures on corporate performance. This study advances a holistic understanding of how ESG components interact with firm-level and contextual factors to shape financial outcomes. The organization of this chapter is as follows: Section 7.2 revisits the primary research questions and presents a consolidated account of how each was addressed throughout the thesis. Section 7.3 discusses the theoretical contributions and practical implications for researchers, practitioners, and policymakers. Section 7.4 outlines the limitations encountered during the research process, particularly regarding ESG data standardization, industry-specific challenges, and cross-national comparability. Section 7.5 proposes directions for future research, emphasizing the need for more nuanced, context-sensitive, and causality-oriented investigations. Finally, Section 7.6 offers concluding remarks, summarizing the principal contributions and takeaways of the thesis.

8.2. Research Questions Revisited

Building upon the research concerns introduced in Chapter 1, this section revisits the core research questions that guided the empirical investigations throughout the thesis. The study was conceptualized in response to the growing academic and policy interest in ESG practices as an integral part of sustainable business strategy and financial outcomes. Despite this increasing relevance, the existing literature remains fragmented, largely dominated by studies from developed economies, focused predominantly on aggregate financial metrics, and often less focused on contextual nuances such as sectoral sensitivity, national development level, and economic decision-making policies like dividend distribution.

Addressing these gaps, this thesis posed a series of interrelated research questions designed to explore the multifaceted influence of ESG disclosures on corporate performance across operational, financial, market-based, and dividend-related outcomes. The questions also investigated whether these relationships vary across industries and institutional contexts. Each research question was explored through a dedicated empirical chapter using appropriate quantitative methodologies, ranging from quantile regression and panel GMM to meta-analysis and logistic models, ensuring methodological rigor and context-specific insight.

The following subsections provide a concise overview of each research question and explain how the respective chapters of the thesis addressed them through empirical analysis, contributing to a more comprehensive and contextualized understanding of ESG-performance linkages.

6 8.2.1. What are the key trends, theoretical foundations, and gaps in the existing literature on ESG and corporate performance across industries and regions?

This research question was addressed through a comprehensive bibliometric and thematic literature review, supported by the TCCM (Theory–Context–Characteristics–Methodology) framework. The objective was to systematically map the intellectual landscape of ESG–corporate performance research and uncover dominant patterns, underexplored areas, and evolving theoretical perspectives. The review encompassed a wide range of peer-reviewed journal articles covering developed and emerging economies across multiple industries.

3 The analysis revealed that much of the extant literature is heavily concentrated in developed economies such as the United States, the United Kingdom, and Western Europe, where robust regulatory environments, ESG rating systems, and investor activism have accelerated the integration of sustainability into corporate strategy. Stakeholder, shareholder, and agency theories emerged as dominant frameworks explaining the ESG-performance nexus. However, the over-reliance on single-theory perspectives and financial performance indicators (such as ROA and ROE) limits the depth and generalizability of findings.

3 The review also highlighted significant gaps. ESG–dividend policy linkages remain underexplored, particularly in specific sector perspectives. Sectoral differences, especially between environmentally sensitive (e.g., cement, oil, mining) and non-sensitive (e.g., IT, finance, hospitality) industries, are inadequately addressed, despite evident variations in ESG materiality. Furthermore, the use of ESG as an aggregated construct often overlooks the differential effects of the environmental (E), social (S),

and governance (G) pillars. Methodologically, most studies relied on linear panel models with limited use of causal inference techniques or robustness tests.

In response, this thesis proposed a multi-theoretical, multi-method, and cross-sectoral research agenda. By identifying these theoretical, contextual, and methodological blind spots, we provided the conceptual foundation for the following empirical inquiries. The following research question builds on these insights by empirically analyzing the impact of ESG on multiple dimensions of corporate performance in the Indian and global context.

8.2.2 How do ESG factors influence operational, financial, and market-based performance in Indian-listed companies?

This research question was explored through an empirical investigation focused on the Indian corporate sector, a rapidly evolving emerging economy with growing regulatory emphasis on ESG, exemplified by the SEBI-mandated Business Responsibility and Sustainability Reporting (BRSR) framework. Recognizing the contextual gap identified, this phase aimed to examine the heterogeneous effects of ESG disclosures on corporate performance metrics in a localized setting.

The study employed the Method of Moments Quantile Regression (MMQR) technique to capture the nuanced nature of corporate performance. This method allowed for assessing how ESG affects performance across different quantiles of firm performance distribution, moving beyond average effects and providing insight into performance heterogeneity. Specifically, the analysis evaluated the impact of overall ESG scores as well as individual environmental (E), social (S), and governance (G) dimensions on Return on Assets (ROA), Return on Capital Employed (ROCE), and Tobin's Q as proxies for operational, financial, and market performance, respectively.

The results revealed a significant positive association between ESG disclosure and corporate performance across all three dimensions. Notably, the effect of ESG was more pronounced at the higher quantiles, suggesting that well-performing firms derive greater benefits from ESG engagement. Among the sub-components, environmental and governance disclosures were found to have stronger and more consistent effects, indicating their salience in the Indian context. Social disclosures, while positive, showed more variability in impact across quantiles.

These findings contribute to stakeholder and legitimacy theories by highlighting the role of ESG as a strategic differentiator, especially for firms already operating at higher efficiency levels. The study also supports the argument that ESG adoption is not only a regulatory compliance measure but a driver of firm competitiveness and long-term value creation.

Hence, we first empirical layer of the thesis by validating the ESG-performance linkage in India. The following research question extends this analysis by examining whether these relationships differ across industries with varying levels of environmental sensitivity within the same national context.

8.2.3 Is there any significant variations in the ESG-performance relationship between India's environmentally sensitive and non-sensitive industries?

Building upon the insights gained in RQ2 regarding the positive association between ESG disclosure and corporate performance in Indian-listed firms, RQ3 delves deeper into sectoral differentiation within the Indian context. Recognizing that the ESG-performance nexus may not be homogenous across industries, this research question investigates whether the strength and direction of ESG impacts vary based on a firm's exposure to environmental sensitivity.

To address this, industries were categorized into two groups: Environmentally Sensitive Industries (SI), such as cement, energy, and chemicals, and Non-Sensitive Industries (NSI), such as IT, services, and consumer goods. The analysis employed System Generalized Method of Moments (System-GMM) estimation to control for endogeneity, firm-specific heterogeneity, and potential autocorrelation in dynamic panel settings. This robust methodological approach allowed for a more accurate estimation of causal relationships over time.

The findings reveal a significant divergence in ESG-performance linkages between SI and NSI sectors. In non-sensitive industries (NSI), ESG disclosure maintained a positive and vital influence on firm performance across accounting and market-based indicators, affirming that ESG is a reputational and strategic asset. Conversely, in sensitive industries (SI), the relationship was weaker or even harmful, particularly for environmental and governance components. This contrast is likely driven by the increased regulatory burdens, higher compliance costs, and reputational risks in environmentally intensive sectors, where ESG investments may not immediately translate into financial returns. The results underscore the inapplicability of a "one-size-fits-all" approach to ESG strategy. Instead, ESG frameworks must be tailored to industry-specific realities, regulatory exposure, and operational challenges. This sectoral differentiation adds theoretical depth to the institutional and trade-off theories by illustrating how industry context moderates the financial effectiveness of ESG practices.

Having examined intra-national industry variation, the thesis next turns to a global perspective by analyzing the role of macroeconomic conditions, specifically, National Economic Development (NED), in shaping ESG impacts on corporate performance in a high-emission sector: the cement industry.

8.2.4 How do ESG practices impact corporate performance in the global cement industry, and how does national economic development moderate this relationship?

Following the sectoral differentiation within the Indian context (RQ3), RQ4 expands the scope by exploring the cross-national implications of ESG on corporate performance within a single high-impact industry, the global cement sector. The cement industry presents a particularly compelling case due to its carbon intensity, extensive regulatory scrutiny, and the strategic imperative for sustainability in developed and developing economies.

This research question investigates explicitly the moderating role of National Economic Development (NED) in the ESG-performance relationship. Using a panel regression model with firm-level data from cement companies operating across different countries, the analysis examines how macroeconomic context, proxied by indicators such as GDP per capita and institutional quality, shapes the ability of firms to convert ESG investments into financial outcomes.

The findings reveal a contextually contingent relationship: cement firms in developed economies experience a positive and significant association between ESG disclosures and performance outcomes (e.g., ROA, Tobin's Q). In contrast, firms in developing economies face muted or insignificant ESG benefits, suggesting that institutional infrastructure, market maturity, and enforcement mechanisms play a crucial role in amplifying or constraining the impact of ESG efforts. These results contribute to the Institutional Difference Hypothesis (IDH) and extend institutional theory by showing that the effectiveness of ESG strategies is deeply embedded in national-level economic and regulatory contexts. While ESG initiatives may signal long-term value orientation and risk mitigation, their translation into measurable performance gains requires supportive monetary conditions and institutional robustness.

This global-level analysis complements the findings from India and provides a nuanced understanding of how ESG operates across industries, geographic and developmental divides. It highlights that ESG adoption cannot be divorced from macroeconomic realities, and underscores the need for context-sensitive ESG frameworks and cross-country benchmarking tools. Transitioning from this global sectoral analysis, the thesis follows shifts in focus to an important yet underexplored aspect of financial policy, dividend distribution, through a comprehensive synthesis of empirical findings via a meta-analysis in RQ5.

8.2.5 What do global empirical studies reveal about the ESG–dividend policy relationship, and what insights emerge from a meta-analysis of this literature?

Building upon the global exploration of ESG-performance dynamics in the cement industry, RQ5 shifts attention from performance outcomes to corporate financial

policy, specifically, the relationship between ESG disclosures and dividend policy. Despite its strategic relevance, the ESG–dividend nexus remains underexamined in theoretical and empirical domains. Dividend decisions serve as financial instruments and signals of governance quality, economic stability, and managerial intent, particularly in the context of rising stakeholder expectations for sustainable corporate behavior.

The thesis adopts a meta-analytic methodology to address this gap, systematically aggregating 55 effect sizes from 35 peer-reviewed studies across diverse sectors and geographies. This approach enables a quantitative synthesis of fragmented empirical evidence, allowing for the identification of generalizable patterns, sources of heterogeneity, and theoretically relevant moderators.

The meta-analysis reveals a significant positive association between ESG disclosures and dividend payouts. Among the ESG dimensions, governance exerts the most decisive influence, underscoring its role in reinforcing shareholder rights, accountability, and transparency. Subgroup analyses further demonstrate that the ESG–dividend link is moderated by firm size, profitability, and country-level factors, offering support for both agency theory (i.e., reducing free cash flow problems through dividend payouts) and signaling theory (i.e., using dividends to convey stability and long-term ESG commitment).

By integrating theoretical frameworks with empirical synthesis, this study advances the conceptualisation of ESG as a governance mechanism and a financial signalling tool. It also contributes to the literature by developing a cohesive, evidence-based foundation for further academic inquiry into sustainable economic policy. Importantly, the findings of this meta-analysis serve as a conceptual and methodological bridge to the subsequent empirical investigation, a firm-level analysis of how ESG performance affects dividend behaviour in one of the most service-intensive global industries: hospitality, as explored in RQ6.

8.2.6. How do ESG disclosures influence dividend payout and stability in the global hospitality sector?

Extending the theoretical and empirical insights from the meta-analysis, RQ6 undertakes an industry-specific deep dive into the global hospitality sector. This service-oriented, asset-light, and sustainability-sensitive domain has seen rising ESG scrutiny, especially post-COVID-19. While previous chapters identified the general patterns and ESG–dividend policy relationship, this research question narrows the analytical lens to examine firm-level ESG influence on two key aspects of dividend policy: payout propensity and stability.

To explore this question, the study employs a logistic panel regression framework, wherein ESG disclosures (aggregate and dimensional—E, S, and G) are modeled as predictors of dividend distribution likelihood and consistency. The empirical analysis draws on a global sample of hospitality firms, making this one of the first sector-focused studies to systematically link ESG practices with financial policy execution in the hospitality domain.

The findings reveal a dual dynamic. First, stronger ESG performance is associated with a higher likelihood of dividend payout, reinforcing the argument that sustainability leadership enhances investor trust, reduces perceived risk, and signals governance quality. However, the study also uncovers a negative association with dividend stability, suggesting that firms engaged in ambitious ESG strategies may prioritize reinvestment into long-term sustainability projects over maintaining consistent dividend flows. This trade-off is particularly salient in the hospitality sector, where firms face volatile demand cycles, capital intensity, and high exposure to ESG-related reputational risks.

Theoretically, the results align with pecking order theory, which posits a preference for internal financing in ESG-intensive contexts, and stakeholder theory, where managerial decisions must balance shareholder expectations and broader social commitments. Practically, the findings caution investors and managers to recognize the intertemporal trade-offs embedded in ESG-financial linkages, especially in dynamic service sectors. Together, RQ6 completes the empirical journey of the thesis, from bibliometric synthesis and national panel studies to global sectoral insights and financial behavior analyses. The answers to these research questions offer a coherent, evidence-driven understanding of how ESG disclosures shape firm performance, policy decisions, and strategic trajectories in both developed and emerging market contexts, setting the stage for the following section on the research's theoretical, managerial, and policy implications.

8.3. Research Contribution: Theoretical Implications

This thesis makes several notable contributions to the theoretical understanding of the relationship between ESG disclosures and corporate performance. The findings from six distinct yet interlinked empirical studies deepen and expand the existing literature, especially by integrating theoretical perspectives, contextualizing ESG dynamics in emerging markets, and extending ESG inquiry into underexplored domains such as financial policy and sectoral sensitivity.

A primary theoretical contribution of this research is its effort to integrate multiple, complementary theoretical frameworks to explain the ESG–corporate performance

nexus. While previous studies have often relied on a singular lens, such as stakeholder theory or trade-off theory, this thesis adopts a multidimensional perspective, synthesizing stakeholder theory, agency theory, signaling theory, pecking order theory, institutional theory, and the institutional difference hypothesis. Through this integration, it becomes evident that ESG disclosures serve not only to align firm interests with those of stakeholders, but also to reduce information asymmetries, mitigate agency costs, and signal transparency and trustworthiness to the market. For instance, applying signaling and pecking order theories in dividend-related contexts provides new insights into how firms balance reputational signaling with reinvestment priorities. Furthermore, institutional theory and the institutional difference hypothesis help explain how ESG's effectiveness is moderated by national economic development and institutional strength, particularly when comparing developed and emerging economies.

A second key theoretical contribution lies in contextualizing ESG practices within the emerging market landscape, explicitly focusing on India. Existing ESG research remains heavily skewed toward developed countries, where mature regulatory frameworks, stakeholder activism, and standardized ESG metrics are more prevalent. This thesis extends the discourse by demonstrating how ESG operates under institutional voids and evolving governance norms, revealing that different constraints and motivations shape ESG strategies in India. By showing that governance scores in Indian firms play a disproportionately strong role in performance outcomes due to relatively weaker external enforcement mechanisms, this research enriches institutional theory with localized evidence. It challenges assumptions about the universality of ESG impacts.

Moreover, the thesis advances theory by unpacking the sectoral heterogeneity in ESG-performance relationships. By differentiating between environmentally sensitive industries and non-sensitive ones, the research shows that ESG is not a one-size-fits-all strategy. ESG initiatives often serve as compliance mechanisms in high-emission sectors, potentially limiting short-term financial returns. In contrast, ESG operates more as a reputational or strategic asset in service-based industries, offering intangible advantages like stakeholder loyalty and brand value. This differentiation supports the theoretical argument that material ESG issues vary by sector and that any general ESG framework must be adapted to industry-specific conditions. As such, this work contributes toward a sector-specific refinement of ESG theory, resonating with evolving frameworks.

Another significant theoretical insight is the extension of ESG discourse into the domain of corporate financial policy, particularly dividend behavior. Despite their shared reliance on signaling and governance mechanisms, ESG and dividend policy

have rarely been linked in the existing literature. This thesis addresses that gap through meta-analytic synthesis and sector-specific analysis, finding that ESG transparency enhances the likelihood of dividend payouts, consistent with signaling and agency theories. However, it also reveals a trade-off: high ESG investment may reduce dividend stability, as resources are diverted to sustainability initiatives. These findings introduce important theoretical nuance to the financial dimensions of ESG, underscoring the need to consider whether firms engage in ESG and how such engagement influences capital allocation and investor relations over time.

Finally, this thesis contributes to the broader conceptualization of ESG as a dynamic strategic capability. Rather than treating ESG as a compliance-oriented reporting practice, the research frames ESG as a resource-based and market-oriented capability contributing to competitive advantage. Through evidence across quantiles, industries, and national boundaries, the studies collectively demonstrate that ESG's performance benefits are most pronounced when embedded into core governance and investment structures. This aligns with the resource-based view (RBV) and dynamic capability theories, reinforcing that firms must continually adapt their ESG strategies to internal and external pressures to maintain long-term value.

Together, these theoretical contributions position the thesis as a foundational work that bridges gaps between traditional corporate finance, governance, sustainability, and institutional theory. By offering a theoretically integrated, empirically grounded, and contextually diverse examination of ESG-performance linkages, the research advances both the scope and depth of ESG scholarship in meaningful and lasting ways.

8.4. Practical and Policy Implications

The findings of this thesis offer important practical implications for corporate managers, investors, civil society, policymakers, and regulators by providing evidence-based insights into how ESG disclosures shape firm behaviour, financial outcomes, and stakeholder relationships across institutional and sectoral contexts. The multi-sectoral and cross-country nature of the analysis allows these implications to be tailored to diverse governance environments and stakeholder expectations.

For **corporate managers**, the findings from the Indian firm-level analysis indicate that ESG disclosure is positively associated with operational, financial, and market-based performance, particularly at higher levels of firm performance. This suggests that managers should consider ESG disclosure as part of broader strategic and operational decision-making rather than treating it solely as a reporting requirement. In particular, the effects observed for E, S and G dimensions indicate that managers

may need to give greater attention to the dimensions individually when developing ESG strategies.

However, the findings from the comparison between environmentally sensitive and non-sensitive industries demonstrate that ESG does not produce uniform performance outcomes across sectors. The positive ESG–performance relationship is more evident in non-sensitive industries, whereas the relationship is weaker in environmentally sensitive industries. Therefore, managers in environmentally sensitive industries should recognise that ESG investments may involve greater implementation costs and may not translate into immediate financial benefits. ESG initiatives in such industries should consequently be evaluated in relation to the firm's environmental exposure, regulatory requirements, and longer-term performance objectives rather than through a uniform expectation of short-term financial gains.

The findings from the global cement industry further demonstrate that the relationship between ESG and corporate performance varies with national economic conditions. This implies that managers operating across countries should consider the institutional and economic environment in which ESG initiatives are implemented rather than assuming that the financial implications of ESG will be identical across markets.

The findings on dividend policy provide an additional managerial implication. The meta-analysis indicates a positive overall association between ESG disclosure and dividend policy, while the hospitality-sector analysis shows that stronger ESG performance is associated with a greater likelihood of dividend payment but a negative association with dividend stability. Managers should therefore recognise that ESG engagement and dividend decisions may involve competing demands for financial resources. Where ESG investments require substantial internal funds, firms may need to communicate clearly with shareholders regarding the relationship between sustainability investments, dividend payments, and longer-term corporate objectives.

From an **investor**, results provide investors with evidence that ESG information can be relevant to the assessment of corporate financial outcomes, but its interpretation should be context-specific. The Indian analysis shows a positive association between ESG disclosure and several measures of corporate performance, while the sectoral analysis demonstrates that this association differs between environmentally sensitive and non-sensitive industries.

Accordingly, investors should avoid interpreting an aggregate ESG score in isolation. The evidence that individual ESG dimensions can exhibit different relationships with corporate performance suggests that investors may benefit from examining the environmental, social, and governance components separately. Similarly, the findings

from the global cement analysis indicate that national economic conditions can influence the ESG–performance relationship, suggesting that cross-country ESG comparisons should take institutional and economic context into consideration.

The findings concerning dividend policy also provide a specific financial consideration for investors. The meta-analysis identifies a positive ESG–dividend relationship, whereas the hospitality-sector evidence indicates that ESG performance may be associated with a higher probability of paying dividends but lower dividend stability. Thus, ESG performance and dividend payment should not necessarily be interpreted as equivalent indicators of stable future dividend streams. Investors assessing dividend-oriented firms may need to distinguish between the likelihood of dividend payment and the stability of those payments.

The findings also carry important implications for **civil society and stakeholder groups**, including consumers, employees, non-governmental organisations (NGOs), and advocacy groups. By demonstrating that ESG disclosures influence corporate performance and financial decision-making, this thesis reinforces the role of civil society in shaping corporate accountability through stakeholder pressure, public scrutiny, and ethical consumption choices. Transparent and credible ESG reporting enables civil society actors to more effectively evaluate corporate conduct, engage in informed dialogue with companies, and advocate for responsible business practices. Moreover, in service-oriented industries where reputation and trust are central, civil society engagement can amplify the effectiveness of ESG initiatives by reinforcing market-based incentives for sustainable behaviour. These findings highlight the importance of stakeholder activism and societal expectations as complementary governance mechanisms alongside formal regulation.

For **policymakers**, the results provide strong empirical support for strengthening ESG disclosure mandates and developing sector-specific regulatory guidance. The observed heterogeneity in ESG–performance relationships across industries and economic contexts indicates that standardised, one-size-fits-all disclosure frameworks may be insufficient. Instead, policymakers should promote materiality-based, sector-sensitive ESG reporting requirements that better reflect industry-specific risks and sustainability challenges. In emerging economies such as India, regulatory authorities, including SEBI and the Ministry of Corporate Affairs, can leverage these insights to refine the Business Responsibility and Sustainability Reporting (BRSR) framework, improving data consistency, comparability, and decision usefulness for market participants.

Finally, for **regulators and international standard-setting bodies**, thesis provide support for a context-sensitive approach to ESG disclosure policy. The Indian firm-

level analyses demonstrate a positive association between ESG disclosure and corporate performance, but the sectoral analysis shows that the strength of this relationship varies according to environmental sensitivity. This suggests that policymakers should recognise differences in sectoral ESG materiality when developing or implementing disclosure frameworks.

The evidence from environmentally sensitive and non-sensitive industries is particularly relevant. Since the financial association of ESG disclosure differs across these sectors, regulatory and reporting frameworks may benefit from greater emphasis on sector-relevant ESG information rather than relying exclusively on identical disclosure expectations across all industries. Such an approach would improve the relevance of ESG information while retaining comparability in core disclosure requirements.

The cross-country findings from the cement industry further indicate that national economic conditions influence the ESG–corporate performance relationship. Therefore, policymakers should interpret international ESG evidence in light of differences in institutional and economic development rather than assuming that policies or expected outcomes observed in developed economies will necessarily produce the same effects in developing economies.

Finally, the findings on dividend policy suggest that ESG disclosure has implications beyond sustainability reporting and may be associated with firms' financial distribution decisions. This provides a basis for policymakers and regulators to consider the usefulness of ESG information to investors alongside conventional financial disclosures. However, the evidence does not imply that ESG disclosure should be used to prescribe particular dividend outcomes. Rather, improved ESG information can enable market participants to better understand the relationship between sustainability-related decisions and corporate financial policies.

Taken together, the findings do not support a one-size-fits-all interpretation of ESG. The evidence indicates that the financial implications of ESG disclosure vary across performance levels, industry characteristics, national economic contexts, and financial-policy outcomes. The principal implication of the thesis is therefore the need for a context-sensitive approach to ESG decision-making and disclosure. Corporate managers, investors, and policymakers should consider the specific industry, institutional environment, and financial outcome under examination when interpreting the economic implications of ESG disclosure.

8.5. Limitations and Future Research Directions

While this thesis makes significant contributions to the ESG–corporate performance literature through its multi-method and cross-contextual approach, it has limitations.

When interpreting the findings, these limitations should be acknowledged and offer valuable pathways for future research.

First, the measurement and comparability of ESG disclosures remain a critical constraint. This study relies on ESG scores from secondary databases, such as Refinitiv, which, despite being widely used, are subject to variation in rating methodologies, data completeness, and subjective weighting of ESG pillars. Such inconsistencies may introduce measurement bias and limit the generalizability of the findings. Additionally, ESG disclosures often represent voluntary reporting practices, and the quality, depth, and assurance of such disclosures can vary substantially across firms, especially in emerging markets. Future studies could address this by incorporating text analytics, content analysis, or Natural Language Processing (NLP) techniques to capture the semantic richness of ESG narratives in annual and sustainability reports.

Second, although this thesis attempts to capture both sectoral and national heterogeneity by focusing on environmentally sensitive versus non-sensitive industries and developed versus developing countries, the findings are still bounded by the choice of industries and regions examined. For instance, the global cement and hospitality sectors were selected for their distinctive sustainability challenges. Still, these choices may not fully reflect ESG dynamics in other industries such as technology, healthcare, or retail. Moreover, the Indian context, while valuable for studying emerging market dynamics, may differ significantly from other developing countries in terms of institutional maturity, capital market behavior, and regulatory stringency. Future research should expand the sectoral scope and include comparative analyses across emerging and frontier economies.

Third, the study is constrained by the availability of longitudinal firm-level data, particularly in emerging markets. While panel data methods such as MMQR and System-GMM were employed to address endogeneity and heterogeneity, certain time-varying unobservable factors might still affect the robustness of the results. Moreover, the pandemic period, although briefly acknowledged, introduces shocks that may distort the normal ESG-performance relationship. Future studies could employ Difference-in-Differences (DiD) or Propensity Score Matching (PSM) techniques to isolate the impact of such exogenous shocks, including regulatory transitions and ESG-related controversies.

Fourth, the meta-analysis included in this thesis, while rigorous and comprehensive, is limited by publication bias and the availability of quantitative effect sizes in prior studies. Despite robustness tests and subgroup analyses, the diversity in research design, regional focus, and ESG definitions across studies may reduce comparability.

Future meta-analytic efforts could incorporate grey literature or unpublished datasets to reduce the publication bias and capture a broader empirical base.

Fifth, while this study explores the ESG–dividend policy link in depth, other financial policies, such as capital structure, investment efficiency, or cost of capital, remain underexplored in ESG research. There is also a need to analyze how ESG factors interact with firm behavior in areas such as M&A strategy, innovation, tax avoidance, or risk management. These domains present fertile ground for future empirical and theoretical contributions.

Moreover, the empirical study periods include the COVID-19 pandemic, which constituted a major external shock to corporate operations, financial performance, and dividend decisions. The baseline models were designed to examine the broader ESG–performance and ESG–dividend relationships rather than to estimate the independent effect of the pandemic. Consequently, the pandemic was not introduced as a separate explanatory variable in the baseline specifications. This represents a limitation because the magnitude and direction of the ESG–corporate outcome relationship may have differed during the pandemic from those observed under relatively normal operating conditions. Future research could explicitly model the pandemic using period-specific indicators, interaction terms, or pre-pandemic, pandemic, and post-pandemic subsample analyses to examine whether the observed relationships changed across these periods.

Finally, theoretical integration remains a continuing challenge. While this thesis adopts a multi-theoretical lens, combining stakeholder, agency, signaling, pecking order, and institutional theories, future research could explore additional perspectives such as stewardship theory, dynamic capabilities, or behavioral finance to understand managerial motivations and investor reactions to ESG initiatives. A deeper exploration of cultural, political, and psychological moderators may further enrich the ESG–performance discourse.

Given these limitations, this thesis calls for a more interdisciplinary, context-sensitive, and methodologically diverse research agenda. As ESG becomes increasingly institutionalized in corporate reporting and investment decisions, future research should continue refining our understanding of its value, effectiveness, and long-term implications for firms, economies, and societies.

8.6 Concluding Remarks

This thesis investigates the complex, multi-dimensional relationship between ESG disclosures and corporate performance through a structured, multi-method, and cross-contextual lens. In response to rising global expectations for corporate sustainability

and transparency, this research sought to move beyond generic claims and deliver rigorous, sector-specific, and context-sensitive evidence. Across six empirical investigations and one integrative bibliometric review, the study has successfully unpacked the heterogeneity in ESG's impact in financial and non-financial performance outcomes and across geographies, sectors, and firm-level characteristics.

The research began by identifying gaps in the extant ESG literature using the TCCM (Theory–Context–Characteristics–Methodology) framework, which guided the development of a holistic and interdisciplinary thesis design. Empirical studies were conducted across various levels of analysis: from firm-level quantile regressions in India to sectoral insights in environmentally sensitive industries, cross-country comparisons moderated by national economic development in the cement sector, and industry-specific dividend dynamics in the global hospitality sector. These were complemented by a comprehensive meta-analysis of the ESG–dividend policy relationship, offering theoretical advancement and empirical synthesis.

The findings consistently suggest that ESG disclosures are more than symbolic gestures; they serve as strategic levers influencing profitability, market valuation, operating efficiency, and dividend behavior. However, this influence is far from uniform. ESG impact depends on factors such as firm size, sectoral environmental sensitivity, economic development level, and even the specific ESG pillar in focus. This underlines the fallacy of applying a “one-size-fits-all” approach to ESG strategy and highlights the need for tailored, data-driven decision-making frameworks.

From a theoretical standpoint, the thesis reinforces the necessity of multi-theoretical integration. Stakeholder, signaling, agency, institutional, and pecking order theories are complementary in explaining ESG's diverse influences on corporate behavior and financial outcomes. The empirical chapters illustrate that these theories are not mutually exclusive but intersect in meaningful ways that enhance our understanding of ESG dynamics in different institutional and industrial environments.

Practically, the thesis offers actionable insights for corporate managers, investors, and policymakers. For corporate leaders, it emphasizes that ESG investments must be aligned with industry risk profiles and financial goals to avoid unintended consequences such as dividend instability or over-compliance costs. For investors, it confirms that ESG signals, particularly those related to governance and transparency, can inform reliable assessments of firm value and financial policy behavior. For regulators, especially in emerging markets like India, the research underscores the importance of crafting ESG disclosure mandates sensitive to industry conditions and institutional capabilities.

Ultimately, this thesis bridges the gap between sustainability imperatives and financial pragmatism in corporate strategy. It calls for a reconceptualization of ESG

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not merely as a compliance exercise or reputational buffer, but as an integrated performance driver that interacts dynamically with contextual, institutional, and policy factors. Addressing long-standing and emerging questions in ESG research, this study offers a foundational platform for scholars, practitioners, and institutions committed to advancing responsible and resilient business practices in the 21st century.

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ORIGINAL PAPER



Exploring the connection between environmental, social, and governance (ESG) disclosure and dividend policy: a meta-analytic approach

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Abstract

Through an extensive review of literature and meta-analysis, this study examines the connection between corporate Environmental, Social, and Governance (ESG) disclosures and dividend policy, an area marked by growing interest yet inconclusive empirical evidence. To the best of our knowledge, this is the first meta-analytic investigation to systematically quantify the ESG–dividend nexus, integrating both aggregated ESG scores and disaggregated dimensions (E, S, and G). Drawing on agency, signaling, and stakeholder theories, the research synthesizes findings from 35 peer-reviewed studies published up to 2024, encompassing 55 effect sizes. The results reveal a positive and statistically significant association between ESG disclosures and dividend payouts across all dimensions. To address inconsistencies in the prior literature, the study further employs subgroup analyses to identify critical moderating factors, such as firm characteristics and national economic development, which help explain substantial heterogeneity across studies. These insights contribute to a more nuanced understanding of the ESG–dividend relationship and highlight the contextual dependencies of sustainability-financial linkages. The findings offer actionable implications for policymakers, investors, and corporate managers seeking to integrate ESG objectives with financial strategies, particularly dividend policy, in a way that balances stakeholder expectations and shareholder value.

Keywords ESG disclosure · Firm dividend policy · Meta-analysis · Subgroup-analysis

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Does National Economic Development (NED) influence ESG on corporate performance? Evidence from the global cement industry

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Abstract

Purpose – Cement, a critical material in construction, is known for its energy-intensive production process, which substantially contributes to industrial emissions. In response to the growing global emphasis on sustainability, this study explores the association between environmental, social and governance (ESG) dimensions and corporate performance within the global cement industry. It specifically examines the moderating role of national economic development in shaping this relationship. While ESG adoption is widespread among corporations and nations, its impact on firm performance may vary depending on the economic contexts in which firms operate.

Design/methodology/approach – The study utilizes a balanced panel dataset of 770 firm-year observations from cement companies across multiple countries for the period 2013–2023. It employs panel regression models along with the system generalized method of moments (GMM) to ensure robustness and address potential endogeneity issues.

Findings – Grounded in the institutional difference hypothesis (IDH) and market orientation theory, the findings reveal that firms operating in more economically developed countries are better equipped to transform ESG initiatives, especially environmental and social dimensions, into superior corporate performance. The results also highlight a distinction between the short-term and long-term effects of ESG disclosures on financial outcomes.

Practical implications – This study offers actionable insights for managers, policymakers and investors by showing that the success of ESG initiatives is context-dependent. It emphasizes the need for customized sustainability strategies aligned with a country's level of economic development.

Originality/value – The paper uniquely integrates economic context and temporal dynamics to examine ESG impacts in the high-emission cement sector, providing novel contributions to sustainability and performance literature.

Keywords ESG, Corporate performance, Global cement industry, National economic development (NED), Institutional difference hypothesis (IDH), Market orientation framework

Paper type Research paper

1. Introduction

The growing emphasis on sustainability transcends national boundaries, with global leaders convening to discuss these critical issues and develop inclusive agendas that all sovereign states can follow. For instance, in 2015, the United Nations adopted the Sustainable Development Goals (SDGs) to outline a 15-year world initiative to eradicate destitution, protect the environment, and improve human life and prospects worldwide (UN, 2020). In this global effort toward sustainability, the cement industry has emerged as a key player in both environmental and economic transparency. As a foundational sector for infrastructure development, it has significantly contributed to both global Gross Domestic Product (GDP)

JEL Classification — M14, L25, Q01, O47

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Does ESG impact corporate performance in environmentally sensitive and non-sensitive industries? A dynamic panel approach

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Abstract

Purpose – This study explores how aggregate ESG disclosure, along with its three individual dimensions – environmental, social and corporate governance – affects corporate performance by categorizing corporations into environmental sensitivity industries (SI), characterized by business activities with significant socioenvironmental landscapes and more likely to damage social and environmental factors and non-environmental sensitivity industries (NSI) in India.

Design/methodology/approach – This research employs a system-generalized method of moments (GMM) technique to analyze 605 Indian firms listed on the National Stock Exchange (NSE) from 2015 to 2023. The methodology ensures robust and endogeneity-resistant results, reliably assessing the relationship between the variables.

Findings – The study indicates that ESG factors influence corporate outcomes differently across industries, and simply following sustainability – is somewhat naïve. In SI industries, ESG efforts show an insignificant association and implementing effective systems for corporate governance reduces profitability due to challenges and scrutiny from stakeholders. Conversely, NSI corporations benefit significantly from ESG practices, enhancing long-term value and investor appeal.

Originality/value – The research offers novelty and contributes to the existing literature by providing robust empirical evidence on the diverse impact of ESG (and its dimensions). It underscores the necessity for concerned companies, especially in emerging economies, to customize sustainable strategies that align with their unique operational contexts. The findings provide valuable insights for managers seeking to effectively manage ESG implementation and its financial effects, enhancing strategic approaches to sustainability in different industry contexts.

Keywords ESG disclosure, Environmental disclosure, Social disclosure, Corporate governance disclosure, Corporate performance, Environmental sensitivity, System-generalized method of moments (GMM), Indian firms

Paper type Research paper

1. Introduction

In recent years, sustainability has become integral to corporate strategy, emphasizing long-term viability and financial market resilience (Aras *et al.*, 2018). This shift stems from corporations' concerns about economic stability, investor confidence, and competitive advantage. Thus, sustainability has emerged as a critical factor for organizational success and growth, focusing on waste management, carbon footprint reduction, and operational efficiency (Eccles and Serafeim, 2013). This transition is fueled by growing stakeholder awareness (Maji and Lohia, 2023), prompting firms to consider environmental and social responsibility alongside profit maximization (Arianpoor *et al.*, 2023; Khandelwal *et al.*, 2023). As social and climate change gain prominence (Ge *et al.*, 2016; Quang *et al.*, 2022), they converge environmental stewardship, social responsibility, and corporate governance

JEL Classification — M14, L25, Q01

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Unveiling the Alliance between Environmental, Social, and Governance (ESG) and Corporate Performance

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Abstract: Corporations pursue Environmental, Social, and Governance (ESG) initiatives to improve their performance and demonstrate their adherence to market standards. Despite the extensive literature, there is a significant lack of in-depth assessment concerning the present state of ESG and corporate performance, and the unexplored avenues for future investigation. To address this, our study reviewed 495 Scopus-indexed articles on the alliance between ESG and corporate performance in two stages. Initially, bibliometric analysis was employed to identify key articles, authors, affiliations, countries, and journals in the field followed by intellectual structure. Subsequently, a focused analysis was conducted on 218 curated articles (out of 495) to delineate research streams and offer investigative pathways using the Theory-Context-Characteristics-Methodology (TCCM) framework. Our research structured the existing literature into three prominent streams: 1) CSR, ESG, and financial performance: Effect on firm value and ownership; (2) Corporate Responsibility, Stakeholder engagement, regulators, and financial performance: Insights from a diverse perspective; and (3) Unravelling strategic insights and risk management dynamics. Furthermore, we conduct the Theory-Context-Characteristics-Methodology (TCCM) framework, which serves as a structured approach for identifying and presenting potential directions for future research within this domain. Ultimately, this study endeavors valuable theoretical and managerial insights, with conclusion remarks of the study.

Keywords: ESG, Corporate Performance, Bibliometric Analysis, TCCM Framework, Hybrid Review, Thematic Analysis

JEL Classification Number: M14, L25, Q01

1. Introduction

Sustainable development has become the guiding light amidst the rising tides of climate change, illuminating the path toward a better world. Henceforth, ESG concerns serve as the cornerstone of sustainable development, primarily fostering a harmonious existence between humans and the environment (Sultana et al., 2018; Wan and Dawod, 2022). ESG personifies the essence of sustainable development seamlessly merging economic progress, environmental preservation, and social equity. This integrated approach provides a viable means to address the multifaceted challenges posed by recessions global warming and pandemics (Cardillo et al., 2023).

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