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Field Lab Esg and Firm Performance: Qualitative Implications for Corporate Strategy - Integrating Esg Insights into Practice

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Abstract

This study examines the relationship between Environmental, Social, and Governance (ESG) performance and firm performance. Using a mixed-methods approach, it analyses STOXX 600 firms (2019–2023) through quantitative metrics (ROA, TQ) and industry experts through qualitative interviews. Quantitative results reveal significant impacts of environmental metrics on market valuation, while qualitative findings highlight industry expert insights. The research bridges theoretical frameworks and practical insights, emphasizing long-term strategies and stakeholder engagement to overcome challenges. This work offers actionable recommendations for firms seeking to enhance financial resilience and competitiveness through ESG integration.

Keywords

Corporate Governance, Corporate Strategy, Empirical Analysis, ESG Dimensions, ESG Integration, ESG Metrics, ESG Strategies, External Drivers, Financial Impacts, Financial Performance, Practical Implications, Quantitative Finance, Stakeholder Engagement, Stakeholder Perspectives, Sustainable Finance, Value Creation.

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List of Abbreviations

CSDDD	Corporate Sustainability Due Diligence Directive
CSP	Corporate Social Performance
CSR	Corporate Social Responsibility
CSRD	Corporate Sustainability Reporting Directive
ESG	Environmental, Social, and Governance
EU	European Union
GHG	Scope 2 Greenhouse Gas
GICS	Global Industry Classification Standard
GRI	Global Reporting Initiative
OSPI	Organizational Sustainability Performance Index
ROA	Return on Assets
SASB	Sustainability Accounting Standards Board
SBSC	Stakeholder-Based Sustainable Balanced Scorecard
SDGs	Sustainable Development Goals
SFAP	Sustainable Finance Action Plan
SFDR	Sustainable Finance Disclosure Regulation
STOXX 600	STOXX 600 Europe Index
TBL	Triple Bottom Line
TQ	Tobin's Q
UN	United Nations
VIF	Variance Inflation Factor

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1 Group Part: Introduction

1.1 Problem Definition and Objective

The global landscape is characterised by significant challenges, embodied by the pressing issues of climate crises and social inequalities. Businesses are confronted with escalating expectations to not merely achieve economic prosperity, but also demonstrate sustainable and conscious behaviour and thus change the norms of organisational operations (Jacobsen, Korsgaard, and Günzel-Jensen 2020). Investors, consumers, and regulatory authorities are placing ever higher expectations on companies, pressing them to answer a crucial question: Can economic success be aligned with ecological and social responsibility?

The growing wave of regulatory requirements is one of the driving forces behind this shift. Initiatives such as the Corporate Sustainability Reporting Directive (CSRD) and the EU Taxonomy are compelling companies to disclose their sustainability strategies and their outcomes. These regulations, impacting around 50,000 companies across the EU, aim to set new standards for transparency and accountability (European Comission 2024b). Businesses are now mandated to measure their environmental and social impacts while demonstrating how sustainability is integrated into their core strategies. This escalating pressure highlights the reality that Environmental, Social and Governance (ESG) is no longer a secondary concern but a fundamental challenge to corporate competitiveness (Zumente and Bistrova 2021).

In this evolving context, the correlation between ESG performance and financial performance has been the centre of extensive debate. Some contend that organisations prioritising sustainability can gain long-term advantages like improved efficiency, reduced risks and enhanced customer trust. Conversely, others argue that focusing on ESG initiatives is resource-intensive and may undermine profitability (Chams, García-Blandón, and Hassan 2021). Whether sustainability serves as a driver of success raises the research question*: How do Environmental, Social, and*

Governance factors influence firm performance? And what are the key drivers and barriers mediating their effective integration into corporate strategies?

1.2 Course of the Investigation

This thesis is structured in four parts to comprehensively address the research question. The first part entails a literature review that examines existing concepts and regulations pertaining to sustainability and firm performance. The review establishes a common understanding for the reader by exploring the general relationship between sustainability and organisational outcomes. It also delves into specific theoretical frameworks, such as Michael Porter's Shared Value concept, to provide insights into the potential direction of the study's findings. Additionally, the literature review investigates the regulatory landscape in Europe, analysing the connections between major sustainability-related agreements and key policy initiatives. This contextual analysis highlights the escalating regulatory pressures that companies face in relation to sustainability and reporting requirements.

The second part of the paper sets out the methodology and results, employing a mixed method approach to leverage abundance of quantitative data while integrating a robust qualitative analysis. Firstly, the quantitative approach is presented. Data generation and analysis will be discussed as part of the methodology, followed by the presentation of results. In the second part of the research, the focus will be on verifying the fulfilment of Guba’s criteria for trustworthy and qualitative research and ensuring scientific robustness through the Gioia method. The thesis presents the research findings in a comprehensive, objective and systematic manner.

In the third part, both practical and theoretical implications derived from the results are identified, instances of new insights or notable differences are also discussed. In the fourth part areas of convergence and divergence between the quantitative and qualitative data are highlighted.

In addition, the limitations of the study are discussed and recommendations for future research are provided in this section, which contribute to a deeper understanding of the relationship between ESG performance and financial outcomes and encourage further research in this area. Lastly, the thesis will be concluded.

2 Group Part: Theoretical Background

The following section presents the theoretical foundations that serve as a framework for understanding sustainability and ESG criteria and demonstrate their relevance for firm performance. In addition to a detailed consideration of ESG factors, the link to companies' financial performance is examined. Finally, central theories and concepts such as stakeholder theory, the triple bottom line principle, and the shared value approach are presented to comprehensively analyse how sustainability is strategically anchored into the corporate context. Additionally, sustainability regulations are discussed to highlight their role in shaping corporate strategies and ensuring compliance with evolving environmental, social and governance standards.

2.1 Sustainability

Sustainability usually refers to a challenge for all of society, which also has a particular impact on our economy and the corresponding companies. It is about being able to cover the needs of today’s generation without jeopardising the ability of future generations to meet their own needs (White 2013). When talking about companies, the term “corporate sustainability” is of central importance. This concept describes how a company can meet the demands of different stakeholders without endangering long-term economic prospects. It can be described as a balancing act, on the one hand, the needs of employees, customers and other stakeholders must be considered.

On the other hand, the company must ensure its future viability and profitability. (Hermundsdottir and Aspelund 2021) emphasise that this ability to balance different interests is at

the heart of sustainable and economically successful corporate management. A distinction must be made between corporate and economic sustainability in a business. Economic sustainability goes beyond pure stakeholder orientation. It arises when a company implements sustainable practices that contribute to risk minimisation, open up new market opportunities, and improve the corporate image and customer relationships (Boons et al. 2013). Sustainable investments are an essential component of economic sustainability. These include environmentally friendly products and services, that also enable new business models. A distinction is made between process and management innovations (Hermundsdottir and Aspelund 2021). Process innovations aim to reduce resource consumption and emissions. Management innovations concern the entirety of company processes and can include redesigning operational and product processes.

2.2 Environmental, Social and Governance

As discussed, sustainability is becoming increasingly important in today's business world and represents a holistic approach for companies that combines ESG aspects. While sustainability is broad, the concept of ESG provides a more concrete framework for evaluating and implementing sustainable practices. ESG is integrated into companies' strategic decision-making and enables sustainability performance to be systematically measured and improved. This makes ESG-oriented companies particularly attractive to socially responsible investors and stakeholders (Zhan 2023).

The environmental component **E** concerns an organisation’s impact on the living environment, including carbon emissions, climate change, and resource consumption. The social component **S** addresses a company's social impact, including fair labour practices, diversity, and respect for human rights. The governance component **G** describes the distribution of power and decision-making structures within a company, including business ethics, accountability, and anti-corruption. These three dimensions each emphasise different aspects of corporate responsibility

and form a comprehensive framework that serves as a basis for evaluation by investors and stakeholders (Gherghina 2024a). An important aspect to be aware of is that these dimensions are significantly broader than the examples given here, as they encompass many other factors and are constantly evolving with changing business landscapes and stakeholder expectations

ESG has become a core metric seen not only as an ethical obligation but more and more as a strategic advantage that contributes to risk minimisation, long-term stability, and positive corporate development. Accordingly, ESG can reduce information asymmetries between management and investors by clearly communicating a company's quality and long-term goals (Huang 2022a). In addition, it is shown that companies that incorporate ESG into their strategic decisions can achieve competitive advantages through risk mitigation, brand strengthening, and investment promotion (Gherghina 2024a; Xue, Jin, and Zhang 2024).

2.2.1 Driver and Benefits of ESG Implementation

The motivation to implement ESG strategies is often based on ethical and economic considerations. De Silva Lokuwaduge, Smark, and Mir (2022) emphasise that ESG is closely linked to socially responsible investment and animates companies to commit to the Social Development Goals (SDGs). This highlights how ESG cannot be seen as a single metric, but as an evolving process that aims to empower companies to operate more responsibly while fostering their economic stability and growth. Huang (2022) adds that ESG activities become particularly attractive when the expected benefits exceed the costs, creating an additional incentive for implementation.

Empirical studies also confirm that ESG strategies can lead to outperformance compared to traditional approaches in certain cases. For example, Bekaert, Rothenberg, and Noguer (2023) show that ESG strategies based on ESG momentum enable “alpha generation”, meaning a first mover advantage, where ESG portfolios can outperform the market and generate additional returns.

The strategic focus on sustainability as a performance parameter reflects the findings of De Silva Lokuwaduge, Smark, and Mir (2022) which emphasise that a commitment to ESG helps to mitigate risks and build long-term competitiveness.

2.2.2 Stakeholder Value and Corporate Financial Stability

An ESG-oriented strategy can offer operational advantages as well as supporting long-term stability and value creation by promoting the strategic alignment of companies with the Sustainable Development Goals (SDGs). Therefore, linking ESG to the SDGs creates a comprehensive perspective that integrates social and economic dimensions of sustainability (De Silva Lokuwaduge, Smark, and Mir 2022). Huang (2022) adds that stakeholder theory identifies specific interest groups addressed by ESG strategies and whose needs can contribute to corporate stability. This perspective demonstrates how ESG strengthens long-term value creation and social license to act by making companies accountable for the communities in which they operate.

In addition, numerous studies demonstrate the positive financial relevance of ESG and its impact on financial metrics. For example, Gubareva et al. (2023) show a significant, although economically moderate, positive relationship between ESG performance and firm performance. Companies with a strong ESG orientation are characterised by a lower volatility of their share prices and a more stable price development in times of crisis (Moalla and Dammak 2023). Bonacorsi et al. (2024) also argue that strong ESG performance can lower credit risks, particularly when companies adhere to rigorous issuance and data security standards. This, in turn, leads to positive risk assessments from capital markets. Furthermore, ESG promotes investor confidence, which, according to Huang (2022), can further reduce the risk of corporate collapse.

2.2.3 Long-Term Strategic Value of ESG Practices

Apart from the short-term financial benefits, ESG initiatives are also essential to the long-term stability and transparency of a company. A strong ESG commitment not only strengthens the corporate image but also reduces legal risks and mitigates the risk of corporate ruin, as Huang (2022) notes. These transparency requirements meet the expectations of institutional investors, rating agencies and consumers, who increasingly demand transparent ESG reporting and comprehensive sustainability information (Veltri et al. 2023). In addition, a strong ESG orientation facilitates access to capital, as investors prefer companies with high ESG performance, which is also reflected in their market valuation (Gherghina 2024).

Consequently, ESG is now a mandatory element of corporate governance and has transformed from an ethical duty to a strategic advantage. With ESG, businesses can respond to the growing requirements of investors and stakeholders while minimising financial risks. Combining ethical objectives with financial benefits makes ESG a key tool for long-term stability and competitiveness. By taking environmental, social and governance aspects into account, companies can not only improve their market position but also secure their long-term success.

2.3 Firm Performance

While the long-term strategic benefits of ESG initiatives have been discussed, the following section will examine their direct impact on firm performance. It highlights the key metrics used to analyse the relationship between ESG performance and firm performance. Specifically, it discusses Tobin's Q (TQ) and Return on Assets (ROA), which serve as critical indicators of market valuation and operational efficiency, respectively. By integrating these metrics into a broader evaluative framework, this section aims to provide insights into how ESG initiatives influence firm performance and long-term financial success across diverse industries.

2.3.1 ESG's Role in Financial Performance

The integration of ESG principles into corporate strategy has become a fundamental aspect of modern business and academic discussions. As companies seek to align their operations with the SDGs, the influence of ESG performance on financial outcomes has become a central focus of academic and practical investigation. This relationship is inherently multifaceted, integrating elements such as operational efficiency, market valuation, and stakeholder engagement (Mervelskemper and Streit 2017). Studies highlight that businesses prioritising sustainability often realise tangible benefits, including cost reductions, enhanced reputations, and greater long-term profitability (OECD 2020). As aforementioned, critical metrics such as ROA and TQ provide valuable insights into these effects, capturing both internal operational efficiency and external market dynamics.

ROA is widely regarded as a fundamental metric for assessing profitability, reflecting a firm's ability to generate earnings relative to its assets. ESG initiatives, particularly in the environmental dimension, contribute to resource optimisation, energy efficiency, and cost savings, which directly enhance ROA (Li, Tang, and Li 2024). For instance, investments in renewable energy technologies or circular economy practices often lead to reduced operating expenses, resulting in improved asset utilisation. Similarly, TQ, a market-based measure, captures investor sentiment and long-term value creation (Gregory, Tharyan, and Whittaker 2014). These two metrics, ROA and TQ, are among the most frequently used dependent variables in research on the relationship between ESG and firm performance, as they provide complementary perspectives on operational profitability and market-based valuation (Buallay 2019).

High-performing ESG firms often experience higher market valuations as they are perceived as lower-risk, future-oriented entities. However, methodological inconsistencies, such as

variations in calculating ROA or the numerator used (e.g., net income vs. EBIT), pose challenges in cross-comparing firms (Jewell and Mankin 2012). While both metrics provide valuable insights, their applicability varies across industries, underscoring the need for sector-specific analyses.

2.3.2 Sectoral Variations in ESG Performance

Building on the established link between ESG performance and financial outcomes, it is essential to recognise that these effects vary significantly across different sectors, reflecting industry-specific challenges and opportunities. Sectors with significant impact, such as energy, manufacturing, and transportation, gain considerable advantages from environmental initiatives. In these industries, efforts to reduce emissions, optimise resource use, and comply with regulatory standards often translate into measurable financial gains. For instance, energy firms adopting renewable technologies or carbon offsetting programs report lower operational costs and improved regulatory compliance, which enhances both ROA and market valuations (Zhao et al. 2018). Similarly, in the manufacturing sector, sustainable supply chain practices have been linked to cost reductions and enhanced customer loyalty, reinforcing financial stability (T. Yu et al. 2023).

Conversely, in industries such as finance, technology, and healthcare, the social and governance dimensions of ESG play a more prominent role. Robust governance practices such as board diversity, transparency, and accountability - enhance investor confidence and mitigate risk, contributing to favourable market valuations (Luo and Tang 2023). In finance, for instance, strong governance reduces exposure to regulatory penalties and reputational risks, while in healthcare, workforce development initiatives improve productivity and innovation (Luo and Tang 2023). These findings align with sector-specific studies, which highlighted that banks with strong ESG scores benefit from greater financial stability, particularly when governance practices align with investor priorities (Bruno and Lagasio 2021).

Despite these positive outcomes, the relationship between ESG performance and firm success is not without complexities. For example, while high ESG scores generally correlate with improved financial performance, some studies suggest that the benefits are more pronounced in mature markets and high-impact sectors (Tahmid et al. 2022). Firms operating in low-impact industries or emerging markets often face difficulties translating ESG investments into immediate financial gains, as in emerging economies (Garcia and Orsato 2020).

2.3.3 Long-Term Implications in Measuring ESG Impact

Beyond short-term financial metrics, ESG performance has significant implications for a firm's long-term stability and strategic positioning. Companies with robust ESG frameworks are better equipped to navigate market disruptions, regulatory changes, and shifting consumer preferences. This resilience is particularly evident during economic downturns or crises. Studies show that high ESG performers experience less volatility in earnings and share prices, demonstrating their ability to withstand market shocks. Additionally, these firms often benefit from lower capital costs due to reduced perceived risks, as investors increasingly prioritize sustainability in their portfolios.

The governance dimension plays a crucial role in supporting long-term value creation. Companies with transparent governance practices and diverse leadership teams are more likely to attract institutional investors, who view these traits as indicators of reliability and ethical behaviour (Erhemjamts and Huang 2017). Similarly, social initiatives, such as community engagement and employee welfare programs, enhance stakeholder trust and brand loyalty, providing a competitive advantage in highly competitive markets. Environmental efforts, while often associated with high upfront costs, yield substantial long-term returns through efficiency gains and enhanced regulatory compliance (Ellen Pei-yi Yu, Guo, and Luu 2018).

However, the long-term impact of ESG is not consistent. Research indicates that the benefits of ESG investments depend on various factors, including firm size, industry, and geographic location. Larger firms often achieve higher ESG scores due to their greater resources and visibility, whereas smaller firms may face challenges in implementing comprehensive sustainability programs (Taliento, Favino, and Netti 2019). Regional differences also play a significant role, with European firms benefiting from stringent regulations and supportive frameworks such as the EU Taxonomy, which standardises sustainability reporting and incentivises green investments (Beerbaum Dr. 2021).

2.3.4 Methodological Challenges in Measuring ESG Impact

Despite growing evidence of ESG's financial importance, differences in methods create significant challenges for its measurement and understanding. The lack of standardised ESG metrics and reporting frameworks makes it harder to compare companies and industries, reducing the reliability of ESG data. Firms often use different approaches to calculate key metrics like ROA and TQ, leading to inconsistent results (Mooij 2017). For example, some companies use net income in their ROA calculations, while others use EBIT, resulting in varying views of profitability. Additionally, ESG performance is shaped by external factors like regulatory changes, market trends, and stakeholder expectations, making it difficult to separate the financial effects of ESG initiatives (Wong, Teh, and Tan 2023). Identifying these effects requires advanced analytical tools and high-quality data. The risk of greenwashing adds another challenge, as firms may overstate their ESG efforts to attract investors, further complicating the assessment process (Ellen Pei-yi Yu, Luu, and Chen 2020). While these challenges, advancements in ESG reporting and analytics are gradually addressing these issues. Standardised frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), are promoting greater transparency

and consistency in ESG disclosures (OECD 2020). Additionally, emerging technologies, such as artificial intelligence and blockchain, are enhancing the accuracy and reliability of ESG data, enabling more robust analyses of its financial implications (Raza et al. 2022).

2.3.5 The Evolving Landscape of ESG and Firm Performance

Expanding on the methodological challenges discussed earlier, the relationship between ESG performance and firm financial outcomes is multi-dimensional and dynamic, reflecting the evolving priorities of investors, regulators, and stakeholders. While ESG initiatives offer clear benefits in terms of operational efficiency, risk management, and market valuation, their impact varies across industries and geographies, highlighting the importance of context-specific strategies (Berg, Kölbel, and Rigobon 2022). The increasing adoption of standardised reporting frameworks and advanced analytics tools is addressing some of the methodological challenges, creating opportunities for more reliable and actionable insights.

As ESG continues to reshape the corporate landscape, its integration into business strategy will become a critical determinant of firm success. Companies that proactively embrace sustainability are not only enhancing their immediate financial performance but also positioning themselves for long-term resilience and growth. By balancing short-term gains with strategic investments in ESG dimensions, firms can explore new possibilities and build a sustainable foundation for future success (Giese et al. 2019).

2.4 Theories and Concepts

Building on the discussion of ESG and firm performance, the following section examines key theoretical frameworks and regulatory approaches that define the link between ESG performance and financial outcomes. It explores stakeholder management theories, the triple bottom line, the concept of shared value and regulations governing ESG disclosure and corporate responsibility.

2.4.1 Stakeholder Theory

The stakeholder theory proposes that the relationships between a company and its stakeholders, rather than the company alone, should be the focus of analysis. This theory broadens the perspective on organisations, emphasising their role in a broader social context and their interactions with various stakeholders (Edward Freeman and Phillips 2002; Hannan and Freeman 1984). It points out that an organisation's purpose is to create value for all parties involved, not solely for shareholders, and suggests that organisations must balance and manage the diverse interests of these groups to sustain long-term success. In publicly traded companies, this balance is particularly relevant, as stakeholder demands increasingly encompass ESG considerations, which impact firm performance and shareholder value (Donaldson and Preston 1995). Shareholder value prioritizes maximizing financial returns for shareholders, viewing them as the primary beneficiaries of a firm's success (Friedman 1970).

Stakeholder theory highlights the importance of managing synergies and conflicts between stakeholder groups, which is especially relevant in the public sector where investor and regulatory scrutiny often shape corporate strategies (Berman et al. 1999). Hörisch, Freeman, and Schaltegger, 2014, build on this by suggesting that sustainability should be established as a core, shared value among stakeholders, allowing companies to align corporate and stakeholder goals effectively. This shared commitment to sustainability can drive collective efforts that, when successfully implemented, support both financial performance and long-term success.

In Europe, stakeholder theory has been closely linked to improved stock market performance through robust sustainability practices. Studies show that companies with strong stakeholder engagement and sustainability initiatives often achieve superior financial outcomes, particularly in publicly traded firms (Clark, Feiner, and Viehs 2014). These findings underscore

the financial advantages of aligning corporate strategies with stakeholder expectations for sustainability. Furthermore, consistent corporate social responsibility (CSR) efforts over time have been shown to enhance the positive relationship between corporate social performance (CSP) and financial performance (Wang and Choi 2013). This insight is particularly pertinent for publicly traded companies in Europe, where expectations from regulators and investors around CSR practices continue to grow more stringent. Stakeholder-driven compliance has also been identified as critical for improving environmental performance. Clear strategic environmental goals and active engagement with stakeholders help companies align corporate objectives with environmental expectations. Research highlights how stakeholder interaction, facilitated through feedback loops, significantly enhances environmental outcomes and business performance (Schaltegger et al. 2014).

Contradicting, an analysis of the impact of environmentally sensitive disclosures on financial performance among European firms found no statistically significant evidence supporting a direct positive correlation. This suggests that while transparency in environmental reporting is a commendable practice, its direct financial benefits may be less conclusive or context-dependent, warranting further investigation (Dragomir 2010). Expanding on this perspective, research into CSR disclosures in Mediterranean countries highlights the variability in the relationship between CSR practices and stock performance. While CSR initiatives can align with stakeholder interests, their impact on firm performance, whether operational, financial, or market-based, requires a nuanced understanding. These findings underscore the importance of tailoring internal practices to better align with the expectations of regulators and stakeholders, ultimately contributing to sustainable development (Buallay et al. 2020). In conclusion, stakeholder theory provides a robust framework for examining how alignment with stakeholder interests, particularly through ESG practices, contributes to both financial performance and sustainable development. By fostering

effective stakeholder engagement and embedding sustainability as a core value, firms can navigate complex regulatory, and investor demands while creating long-term value for all stakeholders.

2.4.2 Triple Bottom Line

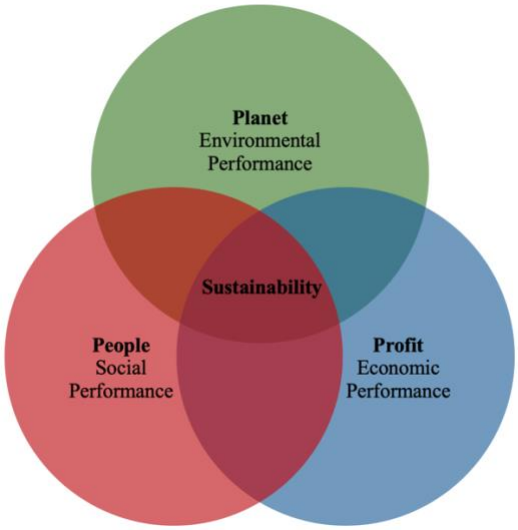

Figure 1: *Triple Bottom Line*

While stakeholder theory emphasises the importance of balancing diverse interests, the triple bottom line (TBL) provides a framework for operationalising this balance across different outcomes. The framework, introduced by Elkington (1998), serves as a foundational model for evaluating sustainability in business by integrating three independent dimensions: social, environmental, and economic. The framework emphasises that firm performance should be evaluated holistically, considering social justice, economic prosperity, and environmental quality. (Elkington 1998). Known as the "three Ps": People, Planet, and Profit, the TBL encourages businesses to adopt a balanced approach, demonstrating that long-term success depends on managing these dimensions collaboratively to achieve sustainable outcomes (Gimenez, Sierra, and Rodon 2012). Elkington's (1998) hypothesis that TBL could drive both social and economic benefits has been empirically supported, research indicates that environmental strategies can

enhance outcomes across all three dimensions while the positive financial impact is still to be achieved (Gimenez, Sierra, and Rodon 2012).

Within the TBL framework, the economic dimension addresses a company's financial health and its role in supporting broader economic sustainability (Elkington 1998). Hollos, Blome, and Foerstl 2012 analyse sustainable supplier cooperation in Western European firms, showing that TBL practices in the economic dimension, such as responsible supply chain collaboration, contribute to positive financial performance for green initiatives. Gimenez, Sierra, and Rodon (2012) further support this by examining sustainable operations within firms, highlighting that economic considerations within TBL can enhance profitability and support long-term success. Similarly, Hourneaux Jr, Gabriel, and Gallardo-Vázquez 2018 analyse sustainable performance measurement and metrics within industrial companies, supporting the importance of financial indicators within TBL frameworks for achieving corporate value creation. Onyali (2014) evaluates labour relations under TBL, demonstrating that improved social practices positively affect corporate sustainability. Additionally, he finds that TBL accounting practices help companies by systematically addressing and balancing economic, social, and environmental objectives, thereby enhancing overall sustainability efforts. Spangenberg (2005) connects sustainable economic growth to long-term viability, emphasising that achieving true sustainability requires economic strategies that promote intergenerational equity. While not explicitly addressing the TBL framework, his focus on sustainable economic practices aligns with the broader goals of TBL in supporting long-term and equitable resource use.

The social dimension of TBL, which covers stakeholder engagement, labour practices, and community involvement, is crucial for sustainable business models (Elkington, 1998). Onyali (2014) evaluates labour relations under TBL, demonstrating that improved social practices positively affect corporate sustainability. Goel (2010) supports this finding, highlighting that

neglecting social responsibilities can negatively impact overall business performance. In the context of SMEs, (Muñoz-Pascual2019) identify that social practices drive sustainable innovation, linking the importance of social responsibility to innovation outcomes and establishing a connection between TBL's social dimension and corporate adaptability.

The environmental dimension of TBL focuses on resource efficiency, emissions reduction, and climate commitment (Goel 2010). Hollos, Blome, and Foerstl (2012) examine the impact of sustainable supplier cooperation on firm performance, finding that collaborative environmental practices with suppliers contribute positively to the environmental dimension of TBL by enhancing resource efficiency and reducing emissions. Ekwueme et. al. (2013) further demonstrate the influence of transparent environmental disclosures, noting a positive relationship between environmental transparency and corporate outcomes. (Goel 2010) extends this discussion, linking responsible environmental practices to financial benefits and suggesting that effective environmental management reinforces the economic dimension of TBL.

Arowoshegbe et. al. (2018) further integrate TBL's application across sectors, emphasising the alignment required among all three dimensions. Their work aligns with Hussain et al. (2018), who investigate how corporate governance structures that incorporate TBL principles can enhance sustainability performance. Svensson et al. (2018) add to this by examining the direct and mediating effects among the three TBL dimensions, providing insights into how economic, social, and environmental factors are interrelated in sustainable practices. Together, these studies emphasise the need for cohesive integration of all dimensions within TBL, as isolated emphasis on any single dimension may weaken the overall sustainability impact.

Norman and MacDonald 2004) provide a critical perspective, arguing that TBL often lacks specific standards and accountability measures, which complicates the measurement of interdependent outcomes. Their critique highlights the challenge of implementing TBL cohesively,

noting that it often serves more as a conceptual framework than an actionable model. Similarly, Hubbard (2009) addresses the complexity of measuring sustainable performance within TBL, proposing a Stakeholder-Based Sustainable Balanced Scorecard (SBSC) as an alternative. Hubbard suggests that TBL could be strengthened by adopting a structured framework, such as the Organisational Sustainability Performance Index (OSPI), which helps make sustainable performance metrics more accessible and actionable for stakeholders. Together, these critiques emphasise the need for further research, especially into specific ESG factors, to provide measurable and standardised outcomes within the TBL structure.

2.4.3 Shared Value

Extending the principles of the triple bottom line, the concept of shared value reimagines the relationship between societal progress and corporate profitability as mutually reinforcing rather than distinct goals. The concept, introduced by Porter and Kramer 2011, redefines business strategy by emphasising that companies can generate both economic and social value. This approach suggests that firms can address societal challenges while enhancing profitability. Unlike traditional CSR, which often operates on the boundary of core business activities, shared value embeds social objectives into the company's strategic framework, making it a driver of innovation and growth. Porter and Kramer (2019) expand on this idea by detailing strategies for creating shared value, including reconceiving products and markets, redefining productivity in the value chain, and fostering local cluster development. These practices demonstrate how aligning company success with social progress can enhance long-term firm performance.

McDonald and Gandz (1992) emphasise the role of aligning corporate culture with shared societal values, illustrating how this alignment can strengthen stakeholder relationships and improve organisational coherence. The benefits of shared value extend beyond internal operations,

fostering trust with external partners and supporting sustainable business growth. This perspective is reinforced by empirical evidence from Min, Kim, and Ha (2015) who show that integrating ESG factors into business practices can boost financial performance. These findings highlight that shared value strategies have practical implications for firm profitability and resilience.

The application of shared value in the European context is supported by regulatory frameworks such as the European Green Deal and the EU Sustainable Finance Disclosure Regulation (SFDR). The Green Deal encourages firms to adopt sustainability practices that align with shared value principles, fostering environmental and economic objectives that enhance competitiveness and resilience.

Practical applications of shared value can be seen in Horizon 2020 projects funded by the European Commission. These projects showcase how firms in industries such as renewable energy and sustainable manufacturing implement shared value principles to achieve both financial success and positive societal impact. Additionally, industry-specific reports on the circular economy provide examples of how shared value approaches have led to improved firm performance through innovative, sustainable practices (Horizon Europe - European Commission 2024).

However, not all scholars view shared value without critique. Dembek, Singh, and Bhakoo (2016) question whether shared value is more than a management trend, pointing out challenges in defining and measuring it effectively. This critique is confirmed by Beschorner and Hajduk (2017), who argue that implementing shared value can be difficult, with some firms adopting it superficially without integrating it into core operations. Such critiques emphasise the importance of strong commitment and clear strategies to ensure that shared value initiatives lead to meaningful outcomes. Crane et al. (2014) contribute to this critical discussion, suggesting that shared value can sometimes serve as a superficial approach to traditional profit-driven practices without meaningful operational change. This highlights the importance of firms authentically adopting shared value

principles, moving beyond compliance or reputation management to generate significant economic and social benefits.

Despite these critiques, shared value remains a promising framework for aligning firm objectives with societal needs. Porter and Kramer (2011) cite examples such as Nestlé and Unilever, which have embedded shared value into their business models, resulting in positive economic outcomes and community benefits. These real-world cases, combined with the influence of EU policies and practical examples from Horizon 2020 projects, demonstrate that when shared value is genuinely integrated into corporate strategy, it can lead to enhanced firm performance and sustainable growth.

2.5 Sustainability Regulations

Building on the foundational understanding of sustainability, ESG dimensions, and their implications for firm performance outlined in the previous sections, this part of the review focuses on the evolution and role of sustainability regulations as critical mechanisms for operationalising and institutionalising sustainability objectives in both corporate and global contexts.

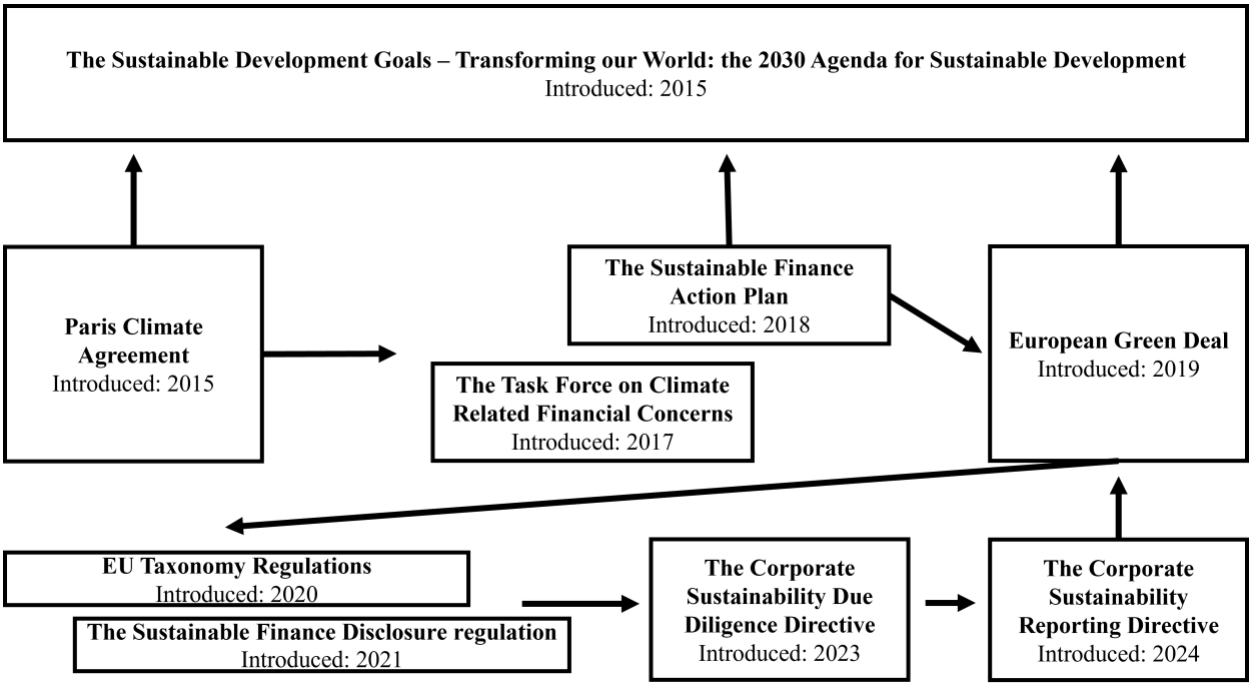

Figure 2: *Overview Sustainability Regulations and Their Connections*

Upon examining the entirety of the regulatory landscape, it becomes evident that the path toward sustainable development is guided by an intricate web of regulations and standards, as shown in Graphic 1. Thereby Graphic 1 illustrates the origin, orientation, and interconnection of various regulations. In general, they follow a top-down approach, with the SDGs serving as the overarching global framework at the top. At the same time, the regulations at the lower levels are crucial for effectively achieving the higher-level goals. Building on pioneering global initiatives such as the Sustainable Development Goals and the Paris Climate Agreement, the European Union (EU) has established concrete frameworks, including the European Green Deal and the Sustainable Finance Action Plan, to embed sustainability into financial and corporate sectors. These regulatory measures, including the EU Taxonomy for classifying sustainable activities, the Sustainable Finance Disclosure Regulation for disclosing environmental, social, and governance factors, the Corporate Sustainability Due Diligence Directive for corporate due diligence along supply chains, and the Corporate Sustainability Reporting Directive for extended reporting, aim to promote

greater transparency and accountability among companies while providing investors with a sound foundation for sustainable investment decisions. In the following section, these regulations will be examined in greater detail, with a focus on how they are interconnected.

2.5.1 The Sustainable Development Goals

The SDGs are widely known as a framework for promoting development around the world and were introduced by the United Nations (UN) in 2015 to support both advancement and environmental preservation efforts simultaneously (United Nations 2024a). These goals form the foundation for various international agreements and regulatory measures aimed at sustainable development. They address an array of issues such as poverty alleviation and climate change mitigation. In conjunction with the 2030 Agenda unanimously adopted by all UN member nations in 2015, they provide a blueprint for ensuring peace, prosperity, and safeguarding the environment for future generations. Each country in the United Nations has agreed to utilise this framework to assess advancements in key areas. However fulfilling these objectives requires more than just regulatory measures and government initiatives, it requires the proactive engagement of corporations, whose strategic actions are essential for driving meaningful progress toward sustainable development (Kormaníková and Šenková 2024). Therefore, the SDG's also offer businesses an opportunity to embed sustainability into their operational strategies directly. Nonetheless, adequate regulatory support remains equally essential to ensure the successful achievement of these goals (Gomez-Echeverri 2018).

2.5.2 The Paris Climate Agreement

Building on the SDGs, one regulation that further supports these objectives is the Paris Climate Agreement, which is often cited as the successor model of the Kyoto Protocol an older agreement form 1997 (United Nations 2024b). However, it is based on a more flexible approach in which all

countries set their own climate targets and rely on regular reporting obligations and collective reviews instead of enforceable targets. This adaptability, along with its country-specific climate goals framework, promotes accountability and transparency without strict mandates, like those in the Kyoto agreement. By aligning with the SDGs, the Paris Agreement ensures that climate goals are integrated into broader sustainable development efforts. This approach encourages evaluation and maintains a sense of urgency among nations to achieve their objectives effectively. Additionally, nations have pledged to tackle issues related to climate adaptation, support for climate initiatives, and sharing technology for development purposes. The primary objectives involve ensuring that global warming remains below the 2°C limit and backing climate adjustment efforts while transitioning from national initiatives to a unified global endeavour to enhance climate resilience and allocate financial flows towards sustainable endeavours (United Nations 2024b; Cara A. Horowitz 2016).

2.5.3 The Task Force on Climate Related Financial Concerns

To further operationalise the climate goals set out in the Paris Agreement, climate-related financial concerns led to the establishment of the Task Force on Climate-Related Financial Disclosure. Formed in 2017, this initiative marked a shift towards analysing the implications of climate risks beyond their environmental effects. It brought attention to both the physical and the transitional risks associated with climate change, providing valuable insights for investors. This strategy enabled businesses to incorporate these risks into their financial statements, thus aligning corporate financial disclosures with the broader climate and sustainability goals set forth in the SDGs and the Paris Agreement, offering investors an understanding of a company's ability to withstand climate challenges (TCFD 2024; O'Dwyer and Unerman 2020).

2.5.4 The European Green Deal & The Sustainable Finance Action Plan

Building on the Paris Agreement and the SDGs, in 2019, the EU unveiled the European Green Deal, a sustainability initiative that aligns with the EU's commitments under the Paris Agreement and the UN Sustainable Development Goals. Notably, this ambitious plan sets the goal of achieving carbon neutrality across Europe by the year 2050. What makes the Green Deal stand out is that it goes beyond just addressing environmental concerns, it also seeks to actively steer investments towards sustainable goods and services (European Comission 2021). A key component of this effort is the Sustainable Finance Action Plan (SFAP), which directly builds on the goals of the Green Deal by aiming to direct capital flows towards sustainable economic activities, to mitigate the financial risks posed by climate change and environmental degradation, and promote transparency as well as long-term thinking in financial decision-making (Busch 2023).

2.5.5 The Corporate Sustainability Due Diligence Directive

In 2023, as part of the EU's continued efforts to achieve the sustainability goals outlined in the European Green Deal and the SDGs, the Corporate Sustainability Due Diligence Directive (CSDDD) was introduced to further extend the responsibility of companies along the supply chain. Since most companies are directly responsible for their social and environmental impacts that go beyond their business model, the directive requires EU-based individuals and corporations with > 1000 employees and a turnover > 450 million euros as well as companies from third countries operating in the European market > 450 million euros to identify, prevent, and mitigate negative impacts on human rights and the environment along their supply chains (European Comission 2024a).

2.5.6 The Corporate Sustainability Reporting Directive

The introduction in 2024 of the Corporate Sustainability Reporting Directive (CSRD) marked another crucial step in the EU's regulatory evolution, building upon previous regulations like the SFDR, the EU Taxonomy, and the CSDDD to further align corporate practices with the Green Deal and the SDGs. On the one hand, it replaced the Non-Financial Reporting Directive, and on the other hand, it required a broader range of companies to disclose their activities in alignment with the EU taxonomy. In general, this policy introduced several new reporting requirements. Firstly, companies now need to report according to double materiality, which states that companies need to report financial and environmental impacts. Secondly, the CSRD established a more standardised approach, requiring companies to report according to European reporting standards, thereby enhancing comparability. Furthermore, the sustainability report is now at the same level as the financial reporting. This means that it is part of the management report, is subject to legal requirements, and must be audited by an external accountant. In doing so, it is forecasted that around 50,000 companies in the EU will have to publish a sustainability report for the reporting year 2025, further enhancing transparency and aligning corporate reporting with the sustainability goals of the SFDR, EU Taxonomy, and the broader Green Deal (European Comission 2024c; Gnändiger 2024). In other words, it can be said that the CSRD establishes the foundation for the SFDR and the EU Taxonomy, as only through transparent reporting investors can effectively compare companies and channel capital flows into sustainable business models.

2.5.7 Other Standards

To promote consistency, in reporting practices and standards compliance the CSRD is in line with established benchmarks like the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). This alignment helps create an approach for sustainability

reporting on a scale, making ESG performance more transparent across markets worldwide (GRI 2024; SASB 2024). By incorporating these frameworks, the EU enables a transparent sharing of sustainability information thus encouraging corporate responsibility and integration of ESG factors, in financial markets.

The SFDR and EU Taxonomy regulations, alongside the CSDDD and CSRD showcase the EUs dedication to fostering practices in finance and the corporate landscape over the long-term period. These directives aim to encourage decision making within corporate sectors while aligning with the objectives of the European Green Deal, the Paris Climate Agreement and the 2030 Agenda. They signify a strategy that underscores sustainability as a fundamental element of financial planning and corporate oversight reinforcing the EUs prominent position, in driving the global shift towards a sustainable economy (Max 2024).

3 Quantitative and Qualitative Analysis: Methodology and Findings

The aim of this chapter is to highlight the theoretical foundations discussed in the previous section with empirical evidence. It describes the methods used to collect and process the data from the interviews and the Bloomberg dataset and explains how both contribute to the analysis. Additionally explains the structure of the analysis and the steps taken to develop the model based on these data sources. Ultimately, the findings are presented and analysed.

3.1 Group Part: Empirical Context

To comprehensively examine how ESG performance affects the financial performance of companies, a dual-dimensional empirical context was created that includes different companies and data sources. The research combines in-depth analysis of ESG attributes using Bloomberg data and interviews with representatives of different companies. This approach provides a more detailed

multiperspective view of the relationship between ESG factors and financial performance, and an understanding of how different stakeholders respond to companies' sustainability actions.

The analysis of the Bloomberg dataset provides an unbiased foundation for quantifying the relationship between ESG metrics and financial performance, enabling well-founded conclusions about their impact. Complementing this, the quantitative framework, with the interviews add a qualitative dimension, revealing the strategies and challenges companies face when embedding ESG practices into their business models. This combined approach ensures a holistic understanding of the connection between ESG factors and firm performance. This multidimensional approach illustrates the complex correlation between ESG performance and financial results and provides the foundation for discussing both quantitative and qualitative results.

3.2 Group Part: Research Design

Given that this thesis examines the extent to which ESG performance influences the financial outcomes of publicly listed companies, a mixed-methods research design is particularly suitable. The introduction of the CSRD in 2024 mandates that large companies in the EU report their ESG data in a standardised and comprehensive manner. However, as this regulatory requirement has only recently been enacted, available quantitative ESG data remains limited, which constrains the validity of purely quantitative analyses. A mixed-methods approach offers a clear advantage here by allowing quantitative data to be supplemented with qualitative insights, enabling a more comprehensive understanding of ESG performance and its contextual factors (Creswell and Plano Clark 2011).

The quantitative analysis will utilise ESG and financial data for the period from 2019 to 2023, examining the influence of ESG indicators (e.g., Scope 2 emissions, women on the board, and EU Taxonomy-compliant revenue) on the financial performance measures ROA and TQ.

Multiple linear regression analyses will be conducted to identify the strength and direction of the relationships between ESG metrics and financial outcomes.

In parallel, the qualitative analysis uses interviews to gain deeper insights into the strategic and cultural underpinnings of ESG practices, which may not be fully captured through quantitative data alone. Aligned with the theory of the "social construction of reality," the qualitative data is generated through interaction between interviewer and interviewee, fostering a shared understanding of ESG practices that reflects both individual and collective perspectives (Berger and Luckmann 1966). Using the Gioia methodology, qualitative data will be systematically coded and abstracted to generalisable insights, capturing subjective meanings and perspectives that quantitative methods alone may not reveal (Gioia, Corley, and Hamilton 2013).

The integration of quantitative and qualitative data in mixed-methods research enhances the validity of a study by providing context and depth to quantitative findings. This approach offers a comprehensive understanding of complex phenomena, such as the influence of ESG performance on firm performance. According to Creswell and Plano Clark (2011), combining quantitative and qualitative methods allows researchers to offset the limitations inherent in each approach, leading to more robust and credible results. Similarly, Yin (2009) emphasises that integrating multiple sources of evidence strengthens the construct validity of a study, as it enables the validation of findings across different methods. Therefore, employing a mixed-methods design provides a solid empirical foundation for addressing research questions related to ESG performance and corporate financial outcomes (Creswell and Plano Clark 2011; Yin 2009).

3.3 Max Hawerkamp and Max Knaust: Quantitative Methodology

This section outlines the methodology and decision-making process behind the quantitative research. It covers the development of hypotheses, the sample selection criteria, and the

identification of dependent, independent, and control variables. Additionally, it details the data cleaning process, the quantitative framework used for analysis, ethical considerations, and the study's limitations. Each topic is addressed to ensure transparency, rigour, and a comprehensive understanding of the research approach.

3.3.1 Hypotheses

The relationship between ESG factors and firm performance has been a key focus in recent academic research. However, findings remain mixed, with some studies reporting positive correlations, while others find no significant effects or even negative outcomes in certain contexts. These inconsistencies highlight the need for a systematic evaluation of how the specific ESG dimensions impact firm profitability and market valuation.

Building on existing literature and theoretical frameworks such as stakeholder theory, this study proposes a comprehensive set of hypotheses to address these gaps. The hypotheses are categorised into three ESG dimensions, each of which is evaluated using two key financial performance metrics: profitability, represented ROA, and market valuation, proxied by TQ. For each hypothesis, the null hypothesis (H0) assumes no relationship, while the alternative hypothesis (H1) suggests a significant relationship between ESG factors and financial performance.

Environmental Hypotheses:

Environmental factors such as sustainable investments and emissions reductions are increasingly recognised as drivers of financial performance. These factors align with growing regulatory pressures, such as the EU Taxonomy, which incentivises firms to prioritise sustainability. The hypotheses in this area are as follows:

- **H1a$_0$**: *Firms that exhibit a positive change in the proportion of investments aligned with the EU Taxonomy are NOT associated with increased profitability.*

- **H1b$_0$**: *Firms that exhibit a positive change in the proportion of investments aligned with the EU Taxonomy are NOT associated with superior corporate financial performance.*
- **H2a$_0$**: *Firms that exhibit a reduction in Scope 2 greenhouse gas emissions are NOT associated with higher profitability.*
- **H2b$_0$**: *Firms that exhibit a reduction in Scope 2 greenhouse gas emissions are NOT associated with superior corporate financial performance.*

Social Hypotheses:

Social factors, including workforce stability and employee development, are crucial for fostering innovation and productivity. Firms that prioritise human capital investment tend to achieve better financial outcomes. The hypotheses in this category are as follows:

- **H3a$_0$**: *Firms that exhibit reduced employee turnover rates are NOT associated with higher profitability.*
- **H3b$_0$**: *Firms that exhibit reduced employee turnover rates are NOT associated with superior corporate financial performance.*
- **H4a$_0$**: *Firms that exhibit a positive change in the average number of training hours per employee are NOT associated with higher profitability.*
- **H4b$_0$**: *Firms that exhibit a positive change in the average number of training hours per employee are NOT associated with superior corporate financial performance.*

Governance Hypotheses:

Governance factors, such as board diversity and engagement, play a critical role in enhancing decision-making and corporate oversight. Prior research suggests that diverse boards foster creativity and improve corporate reputation. The hypotheses propose that:

- **H5a$_0$**: *Firms that exhibit a positive change in board meeting attendance rates are NOT associated with higher profitability.*

- **H5b$_0$**: *Firms that exhibit a positive change in board meeting attendance rates are NOT associated with superior corporate financial performance.*
- **H6a$_0$**: *Firms that exhibit a positive change in the proportion of women on the board are NOT associated with higher profitability.*
- **H6b$_0$**: *Firms that exhibit a positive change in the proportion of women on the board are NOT associated with superior corporate financial performance.*

This comprehensive hypothesis framework enables a detailed examination of the unique contributions of ESG factors to firm performance. By empirically testing these hypotheses, the study aims to discover the financial materiality of ESG practices, bridging gaps in existing literature and offering actionable insights for firms and policymakers.

3.3.2 Sample Selection

Building on this hypothesis framework, the next step involves defining the sample and dataset used to empirically test these relationships. This study examines the relationship between ESG performance metrics and firm performance using a comprehensive dataset sourced from the Bloomberg database. The dataset covers the years 2019 to 2023, uniting financial and ESG data for 600 companies listed in the STOXX Europe 600 Index (STOXX 600). A five-year observation period was chosen as it balances capturing recent ESG trends with providing enough data points for robust analysis. Previous research has highlighted that shorter time intervals, such as five years, provide clearer insights into dynamic changes and trends, as they avoid the statistical noise of very short periods while mitigating the risks of including outdated or irrelevant data from longer periods. Furthermore, relevant studies examining similar hypotheses have also adopted a five-year time frame, reinforcing its appropriateness for capturing meaningful relationships and trends. The COVID-19 pandemic in 2020 significantly impacted financial markets and corporate operations,

creating atypical fluctuations in financial and ESG metrics. By selecting a timeframe that includes both pre- and post-pandemic years, the study ensures that the dataset captures these disruptions while reflecting relatively stable market dynamics in the years before and after the pandemic.

The STOXX 600 was selected for its representativeness and wide applicability. It includes companies from 11 GICS sectors, spanning diverse industries and geographic regions, making it particularly suitable for analysing cross-sectoral ESG impacts. Previous studies frequently employ the STOXX 600 due to its comprehensive coverage of European markets and its ability to represent the financial and ESG characteristics of leading corporations across the region. Initially, a combination of alternative indices from major European economic countries, such as the DAX, MDAX, CAC, OMX, PSI, ATX, AEX, IBEX, BEL, OBX, and WIG, were considered. However, these indices presented challenges such as insufficient ESG data availability over the observation period. Additionally, a limited number of company samples, fewer than 200 firms with complete data, restricted a potential analysis further. These limitations made the STOXX 600 a more robust and reliable choice for this study.

The focus on European companies was motivated by the region's leadership in ESG standardisation, exemplified by regulations like the EU Taxonomy for Sustainable Activities and the Non-Financial Reporting Directive. These frameworks ensure consistency in ESG disclosures, enabling cross-company comparability within the European Economic Area. Including non-European companies, such as those from the US or Asia, would introduce variability due to differing regulatory standards and investor behaviours, which could confound the analysis.

To ensure broad applicability, the study includes companies from all 11 GICS sectors. This sectoral diversity allows the analysis to capture variations in how ESG factors influence financial performance across industries with differing operational contexts and sustainability priorities. For instance, technology and healthcare sectors may emphasise innovation and employee well-being,

while industrial and consumer goods sectors may focus on supply chain sustainability and carbon footprint reduction. By including all sectors, the study avoids biasing results toward specific industries and ensures a more comprehensive understanding of ESG dynamics.

The dataset utilised in this study is well-balanced, with most entities providing complete observations across the entire study period. This consistency enhances the reliability of the statistical analyses and minimises potential biases. Missing data, a common challenge in ESG research, particularly for metrics not yet subject to mandatory reporting, was addressed by adjusting the period for variables with limited publicly available information. The selection of the STOXX 600 dataset further mitigates these challenges, leveraging the E as a geographical focus known for its high-quality and comprehensive ESG disclosures. This robust data foundation reinforces the study's objective of generating reliable and generalisable insights into the financial relevance of ESG performance.

3.3.3 Variable Description

Variable	Proxy	Formula	Reference
Independent Variable			
Environmental Dimension	EU Taxonomy Capex/Revenue	Bloomberg Download	TEG Final Report on the EU Taxonomy (2020)
Environmental Dimension	Scope 1/2 CO2 Emissions	Bloomberg Download	Griffin et al (2017), Velte (2020)
Social Dimension	Employee Turnover	Bloomberg Download	Tracey & Hinkin (2008)
Social Dimension	Average Employee Training Hours	Bloomberg Download	Riley et al (2016)
Economic Dimension	Percentage of Woman of Board	Bloomberg Download	Lückerath-Rovers (2011)
Economic Dimension	Board Meeting Attandence	Bloomberg Download	Brick & Chidambaran (2010)
Dependent Variables			
Profitability	Return on Assets (ROA)	Net Income/Total Assets	Buallay (2018), Velte (2017), Griffin & Mahon (1997)
Market Performance	Tobin's Q (TQ)	Total Market Value/Total Asset Value	Buallay (2018), Velte (2017), Griffin & Mahon (1997)
Control Variables			
Firm Size	Total Assets (SIZE)	Log of Total Assets	Velte (2017), López, Garcia, and Rodriguez (2007), Buallay (2018), Wagner (2010)
Financial Leverage	Debt to Assets Ratio	Total Debt/Total Assets	Bai et al. (2004), Kao et al. (2018)
Market Capitalisation	Market Cap	Company's Δ in MCAP	

Table 1: *Variable Operationalisation*

Building on the established dataset, the next step involves defining the variables utilised in the analysis. This section details the methodology for identifying the independent, dependent, and control variables central to the study. The variables can be observed in Table 1. To address the research questions, the analysis incorporates a range of financial ratios and performance metrics to generate quantitative estimates. Additionally, the rationale behind the selection of specific indicators is explained, along with their sources, ensuring transparency and alignment with the research objectives.

3.3.3.1 Dependent Variables

The dependent variables of this study - ROA and TQ - offer a robust framework for assessing the financial implications of ESG performance. These metrics complement each other by capturing both internal operational efficiency and external market valuation, providing a dual perspective on the financial outcomes of sustainability initiatives. Their calculation and methodological application are carefully aligned with the study's dataset and research objectives. ROA is widely regarded as a cornerstone of financial analysis, measuring a firm's profitability by evaluating how effectively it converts its assets into net income. The metric is calculated using the formula:

$$ROA = \frac{Net\ Income}{Total\ Assets} \quad (1)$$

This calculation ensures a stable representation of financial performance over time by directly linking income generation to asset utilisation. While the formula may seem straightforward, various methods exist for calculating ROA, which primarily differ in the choice of the numerator (e.g., net income, EBIT) and denominator (e.g., total assets, average total assets). For this study, the widely used calculation of "Net Income / Total Assets" is adopted due to its simplicity, widespread application in financial research, and compatibility with the available dataset. Using total assets as the denominator offers a clear and consistent measure of a firm's performance without requiring adjustments to the numerator, ensuring alignment with readily available financial data.

It is also important to consider industry-specific variations in ROA calculation. For example, financial institutions often adjust the denominator to account for risk-weighted assets, reflecting their unique focus on credit exposure and financial leverage. In contrast, industrial firms may favour average total assets as a denominator to mitigate the impact of short-term fluctuations in asset values. These differences highlight the need for contextual understanding when comparing

ROA across sectors. However, the standard calculation is employed in this study to maintain consistency across the dataset and ensure comparability.

In this study, ROA is derived using data spanning from 2019 to 2023, depending on the availability of independent variable data for the underlying year. The use of total assets as the denominator minimises distortions caused by short-term fluctuations, providing a reliable measure of operational efficiency. The enduring relevance of ROA in financial research and practice is well-documented, with over 90% of financial analysts considering it a primary indicator of operational efficiency. In the context of ESG performance, ROA offers insights into how initiatives such as waste reduction, energy efficiency, or board diversity affect a firm's ability to generate profits from its resources. For example, a firm implementing energy-efficient technologies may reduce operational costs, thereby enhancing profitability as reflected in an improved ROA. TQ, conceptualised by Nobel laureate James Tobin, provides a market-based measure of a firm's valuation relative to the replacement cost of its assets. It is calculated as:

$$Tobin's\ Q = \frac{Total\ Market\ Capitalization}{Total\ Asset\ Value} \quad (2)$$

While the original TQ formula includes detailed components such as replacement costs, this study uses the approximation, which leverages readily available financial data to ensure compatibility with the dataset and enable efficient computation. The variable is calculated using data spanning from 2019 to 2023, depending on the availability of independent variable data for the underlying year.

This study employs TQ to capture the market's perception of long-term value creation and strategic positioning. A TQ value greater than 1 indicates that the market values the firm's assets more highly than their replacement cost, reflecting strong investor confidence. This metric is particularly suited to assess the market-level impact of ESG initiatives, which are often associated

with enhanced investor sentiment and reduced risk perception.

The combined use of ROA and TQ provides a holistic view of financial performance, addressing both immediate operational outcomes and long-term market perceptions. ROA reflects efficiency gains derived from ESG initiatives, while TQ captures the broader implications for investor confidence and market valuation. Together, these metrics align with the study's aim to explore the financial impacts of ESG performance from both internal and external perspectives.

To enhance the reliability of these variables, the calculations account for the availability of data over the specified periods, ensuring consistency with the study's independent variables. Additionally, the integration of ROA and TQ offers a methodological advantage, balancing operational and market-based assessments to provide robust and generalisable insights into the financial relevance of ESG performance.

By incorporating these dependent variables, the study establishes a solid foundation for analysing how sustainability efforts shape both a firm's internal efficiency and its external valuation. This dual focus provides a comprehensive framework to understand the operational and market-level impacts of ESG initiatives. It offers critical insights for stakeholders navigating the intersection of sustainability and financial performance, addressing both immediate and long-term outcomes. This approach underscores the importance of ESG in fostering resilience and competitive advantage in today's business landscape.

3.3.3.2 Independent variables

The independent variables investigated in this study were selected based on their relevance to the ESG dimensions, as well as their potential to impact firm performance and valuation. The following variables have been analysed in alignment with previous academic research and established regulatory frameworks

For the environmental dimension, key metrics include EU Taxonomy Revenue, and Scope 2 Greenhouse Gas (GHG) emissions. The EU Taxonomy Revenue variable is used to evaluate a company's revenue of environmentally sustainable activities. As defined by the European Commission, the EU Taxonomy provides a standardised classification system for sustainable economic activities. This metric reflects the firm's commitment to environmental sustainability through its strategic capital allocation decisions. Revenue derived from EU Taxonomy-aligned activities serves as a measure of a firm's ability to integrate sustainability into its core business operations. This metric highlights how the company's revenue streams are aligned with the transition to a low-carbon economy, as mandated by the EU Taxonomy. Scope 2 CO2 Emissions are a crucial component of environmental performance. Companies with lower Scope 2 emissions, which represent indirect CO2 emissions from purchased electricity and energy, demonstrate improved energy efficiency and adherence to global sustainability goals (Griffin, Lont, and Sun 2017). Reducing Scope 2 emissions is often linked to cost savings and enhanced reputation, as discussed in studies on corporate carbon performance.

The social dimension is represented by employee turnover and average employee training hours, metrics that reflect a company’s commitment to human capital development and employee welfare. Employee turnover rates are examined as an indicator of workforce stability and organisational health. High employee turnover often points to underlying operational inefficiencies, diminished worker satisfaction, or weak management practices, which negatively impacts firm performance. Conversely, low turnover supports operational continuity and reduces recruitment costs, enhancing overall productivity. The average number of training hours provided to employees serves as a proxy for a firm's commitment to human capital development. Companies that prioritise employee training tend to stimulate innovation, enhance workforce capabilities, and

achieve greater productivity. Prior research has identified employee training as a crucial determinant of operational and financial performance.

The governance dimension includes the percentage of women on the board and board meeting attendance rates, indicators of corporate accountability and inclusiveness. The percentage of women on the board is a key governance metric that reflects board diversity. Existing research indicates that greater female representation on corporate boards is linked to enhanced decision-making, more diverse perspectives, and improved corporate reputation. This study explores the impact of board gender composition on firm valuation and ESG performance. Prior studies have found that a more gender-diverse board can positively influence firm performance through improved monitoring, increased creativity and innovation, and better alignment with societal expectations. The frequency of board members' attendance at meetings serves as an indicator of the board's engagement and effectiveness in carrying out its governance oversight responsibilities. Higher attendance rates suggest more active monitoring and decision-making, which can contribute to enhanced risk management and strategic alignment within the organisation.

These independent variables collectively address the environmental, social, and governance dimensions of corporate performance. Their inclusion is supported by robust theoretical and empirical frameworks, ensuring that the study captures the multifaceted nature of ESG factors and their potential impact on firm performance.

3.3.3.3 Control Variables

To ensure a robust analysis and accurately isolate the impact of ESG performance on financial outcomes, control variables were included to account for potential confounding factors. These variables address firm-specific and sector-specific characteristics, enabling a clearer understanding of ESG's unique contribution. Firm-specific characteristics such as market capitalisation, financial

leverage, and total assets were carefully considered. Market capitalisation, a widely used measure of firm size, was included because larger firms often have more resources to allocate to ESG initiatives and face greater public and regulatory scrutiny, which can amplify the visibility and impact of their efforts. Controlling for market capitalisation ensures that any observed relationship between ESG performance and financial outcomes is not simply driven by firm size.

Financial leverage, measured by the debt-to-equity ratio, was also incorporated. Highly leveraged firms may prioritise debt obligations over ESG investments, limiting their ability to fully engage in sustainability initiatives. Additionally, leverage introduces variations in financial risk, which can significantly influence profitability. By accounting for this variable, the analysis ensures comparability among firms with differing capital structures.

Total assets, used as a proxy for operational capacity, were transformed into their natural logarithm to address issues of skewness and heteroscedasticity in the data. This transformation stabilises variance, normalises the data distribution, and prevents large firms from disproportionately influencing the results. The logarithmic transformation also facilitates interpretation, highlighting percentage changes rather than absolute differences in firm size.

Sector-specific characteristics were included to reflect the diverse dynamics of ESG impacts across industries. Interaction terms from the 11 MSCI Global Industry Classification Standard (GICS) sectors were applied to capture industry-specific effects. ESG initiatives often vary in their financial impact depending on the sector; for example, environmental efforts may yield greater benefits in energy-intensive industries, while social programs may be more impactful in consumer-facing sectors. These interaction terms ensure the analysis captures these nuanced variations.

Sector dummy variables were also incorporated to control for fixed effects tied to industry-specific profitability trends. Metrics such as ROA can differ significantly across industries due to

structural factors. Including sector dummies ensures that these differences are accounted for, allowing a more accurate assessment of ESG's influence. The inclusion of these control variables aligns with established methodologies in ESG research, ensuring the analysis accounts for critical firm- and sector-level factors. By mitigating bias and addressing potential confounding influences, these variables provide a robust foundation for understanding the relationship between ESG performance and financial outcomes.

3.3.4 Data Cleaning and Data Curation

Once the variables were defined, rigorous data-cleaning procedures were employed to ensure the reliability and validity of the dataset, as outlined below. Companies with missing or incomplete data for key variables were excluded to minimise bias and maintain consistency. Handling missing or incomplete data is crucial for maintaining the integrity of regression models. Missing values in key variables can reduce sample size, impair the statistical power of the analysis, and potentially introduce biases, particularly if the missing data is not randomly distributed (Little and Rubin 2019). Outliers, defined as values falling outside the 2.5th and 97.5th percentiles, were identified and removed following established recommendations to reduce distortions caused by extreme values. Removing outliers through percentile thresholds has been shown to significantly enhance the accuracy and reliability of data analyses. These procedures were implemented using SPSS syntax coding to ensure consistency and reproducibility across all data preparation steps.

To capture changes over time, the dataset was structured to reflect variations in variables between 2019 and 2023, or between 2021 and 2023, depending on data availability. Percentage changes between the selected years were calculated to represent the temporal evolution of the variables. Using percentage changes, rather than absolute changes, ensures a focus on relative effects rather than size-driven absolute differences, which larger firms naturally exhibit even when

the relative impact on performance remains constant. Percentage-based metrics effectively eliminate scaling issues, making them particularly relevant in contexts where performance differences need to be standardised. While percentage changes were used to normalise firm performance metrics, other transformations such as scaling or winsorization were considered. Winsorizing, for example, adjusts extreme values to predefined limits, but this approach was deemed less suitable as it reduces variability within the dataset, potentially fading out meaningful differences. While firm size was included as a control variable, this approach prevented absolute size differences from exerting undue influence on the analysis, ensuring a fair comparison across firms of varying sizes.

Independent variables were transformed into binary dummy variables to enhance interpretability. Positive changes in ESG performance metrics compared to the previous year were coded as "1," while negative or no changes were coded as "0". This transformation simplifies the statistical modelling process and aligns with best practices in research, facilitating clearer analysis of the evolution in ESG performance across the selected timeframe.

Industry-specific dummy variables were introduced to control for variations across sectors, ensuring that structural differences between industries did not bias the results. Sectoral differences can significantly influence ESG impacts due to varying regulatory pressures, operational structures, and stakeholder expectations. For instance, energy-intensive sectors like Utilities or Industrials may experience stronger financial effects from environmental metrics, while service-oriented sectors like Consumer Goods may benefit more from social initiatives like employee engagement programs. These dummies were created as binary variables, indicating whether a company belongs to a specific industry (e.g., Materials) by assigning a value of "1" for the relevant industry and "0" otherwise. Each company had one industry dummy variable equal to "1," corresponding to its respective industry, while the rest were set to "0." This approach enabled proper classification and

controlled for sector-specific variations. One industry was excluded as the reference category in the regression analysis to avoid multicollinearity, a standard practice in regression modelling.

For the control variable Total Assets, a logarithmic transformation was applied to normalise the variable and account for its skewed distribution, which is a widely recognised method for handling skewed data in regression analysis. Logarithmic transformations effectively moderate extreme values without distorting the integrity of the dataset, allowing for more reliable regression results. To provide a robust dataset and regression models, diagnostic tests were conducted to assess multicollinearity, heteroscedasticity, and normality of residuals. For instance, Variance Inflation Factor (VIF) values below 5 indicated acceptable levels of multicollinearity, ensuring that independent variables were not excessively correlated. All data transformations, dummy variable creation, and robustness checks were conducted using SPSS syntax coding, ensuring a standardised and reproducible workflow throughout the data preparation and analysis phases.

3.3.5 Quantitative Framework

Multiple linear regression is applied to estimate the relationship between ESG factors and company performance quantitatively. This section introduces the statistical method and describes how multiple linear regression is implemented in this research. Furthermore, various steps to ensure data preparation and the robustness of the regression models are explained.

3.3.5.1 Multiple Linear Regression

Multiple linear regression is a robust statistical methodology for examining the relationship between a dependent variable and multiple independent variables. This approach allows for the quantification of how changes in independent variables influence the dependent variable while controlling for potential confounding factors. As highlighted by, multiple linear regression is

particularly effective for analysing cross-sectional datasets or aggregated data, where time-series effects are not explicitly modelled.

One of the primary advantages of multiple linear regression is its simplicity and interpretability. The method provides direct insights into how each independent variable contributes to the dependent variable, holding other variables constant. This makes it highly applicable for exploring the relationship between ESG factors and company performance. Additionally, multiple linear regression is computationally efficient, widely supported by statistical software, and has a straightforward implementation process, making it accessible and reliable for researchers.

Another significant benefit is its flexibility, allowing for the inclusion of control variables to account for extraneous influences. In this study, control variables such as Total Assets (log-transformed), Market Capitalisation, and Financial Leverage are included to ensure that the observed relationships are not confounded by firm size or other external factors. By applying the natural logarithm to Total Assets, the variable is normalised, addressing skewness in the distribution. Despite its simplicity, multiple linear regression is built on several critical assumptions, including linearity, independence of residuals, homoscedasticity (constant variance of residuals), and the absence of multicollinearity between independent variables. These assumptions are crucial for producing unbiased and valid estimates:

- **Linearity:** It assumes a linear relationship between the dependent and independent variables, which can be validated through scatterplots.
- **Independence of residuals:** Residuals should not be correlated, which can be tested using the Durbin-Watson statistic.
- **Homoscedasticity:** The variance of errors should remain constant across all levels of the independent variables, assessable through residual plots.

- **No multicollinearity:** Independent variables should not be excessively correlated, as this can distort coefficient estimates. The VIF is used to test for multicollinearity, where values above 5 or 10 may indicate a problem.

While these assumptions are essential, the method is generally robust, and potential violations can be addressed with diagnostic tools and remedial measures, such as robust standard errors or transformations of variables.

3.3.5.2 Regression Models

Building on this foundation, the study specifies multiple regression models to test the relationships between ESG factors and financial performance. The two primary dependent variables are ROA, representing profitability, and TQ, a measure of firm performance. The independent variables capture key changes in ESG factors, categorised into Environmental, Social, and Governance dimensions. Control variables are incorporated to account for external factors that might influence the results.

H	Model	Regression Model
$H1a_0$	1	$ROA_{it} = \beta 0 + \beta 1 EU\_Tax\_Capex_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H1b_0$	1.1	$TQ_{it} = \beta 0 + \beta 1 EU\_Tax\_Capex_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H2a_0$	2	$ROA_{it} = \beta 0 + \beta 1 GHG\_Scope2_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H2b_0$	2.1	$TQ_{it} = \beta 0 + \beta 1 GHG\_Scope2_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H3a_0$	3	$ROA_{it} = \beta 0 + \beta 1 EmployeeTurnover_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H3b_0$	3.1	$TQ_{it} = \beta 0 + \beta 1 EmployeeTurnover_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H4a_0$	4	$ROA_{it} = \beta 0 + \beta 1 EmployeeTraining_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H4b_0$	4.1	$TQ_{it} = \beta 0 + \beta 1 EmployeeTraining_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H5a_0$	5	$ROA_{it} = \beta 0 + \beta 1 BoardAttendance_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H5b_0$	5.1	$TQ_{it} = \beta 0 + \beta 1 BoardAttendance_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H6a_0$	6	$ROA_{it} = \beta 0 + \beta 1 WomenOnBoard_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$
$H6b_0$	6.1	$TQ_{it} = \beta 0 + \beta 1 WomenOnBoard_{it} + \beta 2 ControlVars_{it} + \epsilon_{it}$

Table 2: *Regression Models*

Table 2 provides an overview of the regression models designed to test the hypotheses. Each model corresponds to a specific hypothesis and incorporates changes in ESG factors as independent variables while controlling for firm-specific characteristics. The models are grouped into three categories:

1. **Environmental Factors (H1 and H2)**:
    - Models 1 and 1.1 focus on changes in EU Taxonomy Revenue and their impact on ROA and TQ.
    - Models 2 and 2.1 assess the influence of reductions in Scope 2 GHG emissions.
2. **Social Factors (H3 and H4)**:
    - Models 3 and 3.1 analyse the relationship between changes in employee turnover and performance.
    - Models 4 and 4.1 evaluate the impact of employee training.
3. **Governance Factors (H5 and H6)**:
    - Models 5 and 5.1 measure the effect of board attendance on ROA and TQ.
    - Models 6 and 6.1 investigate the influence of women on the board.

3.4 Max Knaust - Impact of ESG Dimensions on TQ and ROA: Empirical Insights

This chapter presents the statistical results of the regression analyses, providing an interpretation of the findings in the context of the research hypotheses and existing literature. The models outlined in the previous section form the basis for these quantitative results, offering insights into the relationships between ESG dimensions and firm performance, measured through ROA and TQ. Section 8.1 focuses on the detailed outcomes of the regression analyses, systematically examining the correlations between ESG dimensions and firm performance. Specifically, Section 8.1.1 explores the relationship between environmental factors and firm performance, Section 8.1.2

investigates the influence of social factors, and Section 8.1.3 evaluates the impact of governance factors. Each section discusses the statistical significance of the findings while accounting for control variables, industry-specific effects, and implications for market valuation and operational profitability.

To ensure the reliability and robustness of the regression analyses, diagnostic metrics were thoroughly evaluated. The Durbin-Watson statistic, with observed values within the acceptable range of 1.5 to 2.5, indicated no substantial autocorrelation across the models. Similarly, VIF values, all below 2, confirmed the absence of multicollinearity, ensuring the validity of the estimated coefficients. These diagnostics apply to all subsequent regression models, providing a strong foundation for the analysis. Additionally, R^2 values exceeding 0.1 (10%) were considered acceptable, while R^2 values surpassing 0.5 were regarded as strong and indicative of a well-fitting model, aligning with prior research on firm performance and ESG metrics. Such levels reflect the inherent complexity of financial performance analysis, where firm-specific and industry-specific factors often account for significant unexplained variance.

It is also noteworthy that while a p-value < 0.05 is traditionally used as the threshold for statistical significance, this study adopts a more inclusive approach, rejecting hypotheses at a 90% confidence level ($p < 0.10$). This approach aligns with the exploratory nature of ESG research, acknowledging the multifaceted and evolving nature of these dimensions. Together, these considerations emphasise the robustness of the regression models and provide a strong foundation for the interpretations and insights presented in this chapter.

3.4.1 Regression Analysis

H	Model	Hypotheses	Results
$H1a_0$	1	Firms that exhibit a positive change in the **proportion of revenue aligned with the EU Taxonomy** are NOT associated with increased **profitability**.	Failed to reject
$H1b_0$	1.1	Firms that exhibit a positive change in the **proportion of revenue aligned with the EU Taxonomy** are NOT associated with superior **corporate market performance**.	Rejected
$H2a_0$	2	Firms that exhibit a reduction in **Scope 2 greenhouse gas emissions** are NOT associated with higher **profitability**.	Failed to reject
$H2b_0$	2.1	Firms that exhibit a reduction in **Scope 2 greenhouse gas emissions** are NOT associated with superior **corporate market performance**.	Rejected
$H3a_0$	3	Firms that exhibit reduced **employee turnover** rates are NOT associated with higher **profitability**.	Failed to reject
$H3b_0$	3.1	Firms that exhibit reduced **employee turnover** rates are NOT associated with superior **corporate performance**.	Rejected
$H4a_0$	4	Firms that exhibit a positive change in the **average number of training hours per employee** are NOT associated with higher **profitability**.	Failed to reject
$H4b_0$	4.1	Firms that exhibit a positive change in the **average number of training hours per employee** are NOT associated with superior **corporate performance**.	Failed to reject
$H5a_0$	5	Firms that exhibit a positive change in **board meeting attendance** rates are NOT associated with higher **profitability**.	Failed to reject
$H5b_0$	5.1	Firms that exhibit a positive change in **board meeting attendance** rates are NOT associated with superior **corporate performance**.	Rejected
$H6a_0$	6	Firms that exhibit a positive change in the **proportion of women on the board** are NOT associated with higher **profitability**.	Failed to reject
$H6b_0$	6.1	Firms that exhibit a positive change in the **proportion of women on the board** are NOT associated with superior **corporate performance**.	Failed to reject

Table 3: *Hypotheses Testing Results*

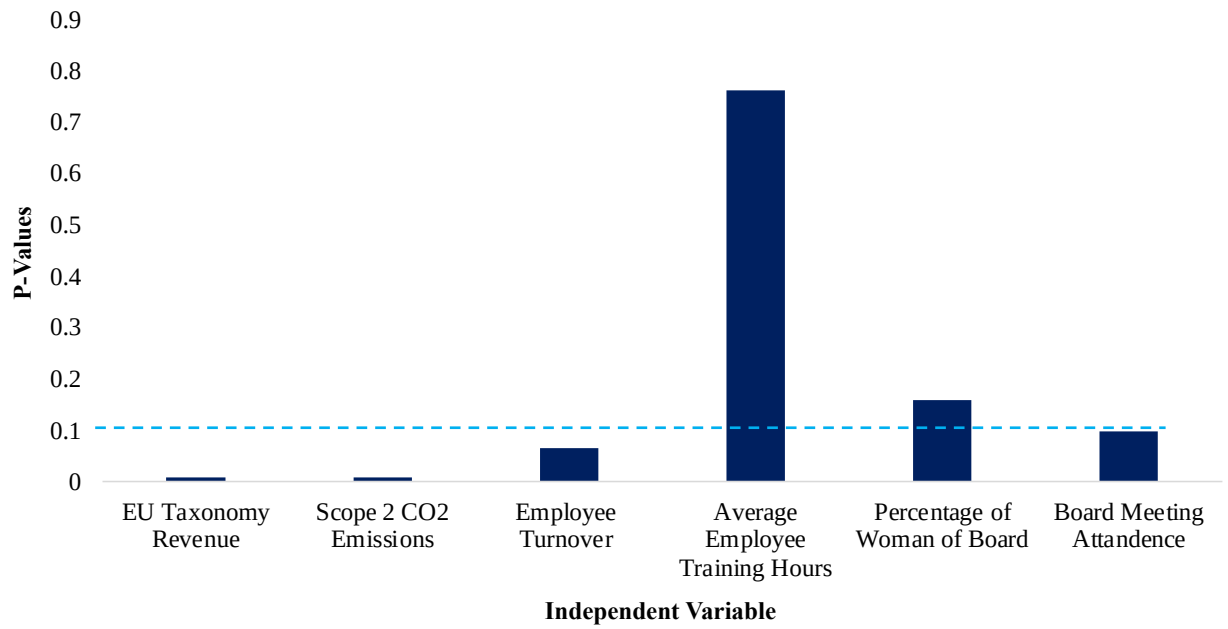

Figure 3: *P-Values for Independent Variables against TQ*

Building on the methodology outlined in the previous section, this chapter presents the findings of the quantitative analysis, detailing how environmental, social, and governance factors influence firm performance, with a particular focus on the relationships between independent variables and firm outcomes such as ROA and TQ. The regression analysis findings are summarised in Table 3: Hypothesis Testing and Results and Figure 3: P-Values for Independent Variables against TQ, which provide a concise visual overview of the significance levels for the tested relationships. Along with the detailed presentation of the significance overview of all run models, additional statistical outputs and robustness checks can be found in Appendix A to further highlight transparency and methodological rigour. Together, these components provide a comprehensive foundation for interpreting the results and support the written explanation of the findings to follow.

3.4.2 Correlation between Environmental Factors and Firm Performance

This section examines the relationship between environmental factors, specifically changes in EU Taxonomy-aligned revenues and reductions in GHG emissions, and their influence on firm performance. The analysis focuses on how these factors impact operational efficiency, represented by ROA, and market valuation, captured through TQ, providing insights into the financial implications of environmental sustainability initiatives.

3.4.2.1 EU Taxonomy Revenue Increase and Firm Performance

The first set of regression models investigates the relationship between changes in EU Taxonomy revenue increase and firm performance. These analyses aim to capture both the operational implications of sustainability-aligned revenue streams on profitability and their perceived strategic value in the market. The regression model analysing the impact of EU Taxonomy revenue changes on ROA shows, Durbin-Watson = 1.909 and VIF < 2 for the whole model aligns with our expectations. Further, the model demonstrated moderate explanatory power, with $R^2 = 0.261$ and

adjusted $R^2 = 0.205$. This indicates that the predictors explain approximately 20.5% of the variation in ROA. Although the overall model was statistically significant ($F = 4.731$, $p < 0.001$), the coefficient for EU Taxonomy revenue changes was not statistically significant ($B = -0.171$, $SE = 0.594$, $t = -0.287$, $p = 0.774$), suggesting that alignment with the EU Taxonomy does not exert a measurable impact on profitability. This aligns with prior research suggesting that the benefits of sustainability-aligned strategies often materialise over the long term rather than in immediate financial outcomes. This leads to the following conclusion: fail to reject the null hypothesis.

The TQ regression model exhibited stronger explanatory power, with $R^2 = 0.581$ and adjusted $R^2 = 0.553$, indicating that over 55% of the variation in market valuation is explained by the predictors. The overall model was highly significant ($F = 20.421$, $p < 0.001$). Further, Durbin-Watson = 2.002 and VIF < 2 for the whole model align with our expectations. Unlike the ROA results, the independent variable EU Taxonomy revenue changes were a significant positive predictor of TQ ($B = 4.319$, $SE = 1.658$, $t = 2.604$, $p = 0.010$). This leads to reject the null hypothesis.

The control variables market capitalisation growth remained the strongest predictor of TQ ($B = 34.226$, $SE = 2.385$, $t = 14.352$, $p < 0.001$), further reinforcing its central role in shaping market perceptions. Industry-specific effects were notable; the utilities sector ($B = 7.036$, $SE = 3.065$, $t = 2.295$, $p = 0.023$) and communications sector ($B = 12.979$, $SE = 3.303$, $t = 3.930$, $p < 0.001$) exhibited significant positive effects on TQ, reflecting the relatively high investor confidence in these industries' adaptability to sustainability demands.

3.4.2.2 GHG Reduction and Firm Performance

The second set of regression models evaluates the relationship between GHG reductions and firm performance. These analyses highlight the financial implications of corporate environmental

initiatives aimed at reducing emissions. The regression model for ROA shows a Durbin-Watson = 2.090 and VIF < 2 for the whole model aligning with our expectations, further with $R^2 = 0.232$ and adjusted $R^2 = 0.196$ the models display a modest explanatory factor. The overall model was statistically significant ($F = 6.409$, $p < 0.001$), however, GHG was not statistically significant ($B = 0.232$, $SE = 0.500$, $t = 0.464$, $p = 0.643$), suggesting that emissions reductions do not have a measurable impact on profitability. This leads to the following conclusion: fail to reject the null hypothesis.

The TQ regression model demonstrated stronger explanatory power, with $R^2 = 0.342$ and adjusted $R^2 = 0.314$. The model was statistically significant overall ($F = 12.176$, $p < 0.001$), confirming its robustness through Durbin-Watson = 1.917 and VIF < 2 for the whole model. GHG reductions emerged as a significant positive predictor of TQ ($B = 7.469$, $SE = 1.888$, $t = 3.955$, $p < 0.001$), indicating that investors reward firms for proactive environmental responsibility. This leads to reject the null hypothesis. Control variables reveal, market capitalisation growth again demonstrated the strongest effect ($B = 16.635$, $SE = 1.462$, $t = 11.379$, $p < 0.001$), while industry-specific effects were less pronounced compared to the ROA model. However, technology ($B = -10.436$, $SE = 4.245$, $t = -2.549$, $p = 0.014$) showed statistical significance.

3.4.3 Correlation Between Social Factors and Firm Performance

This section examines the relationship between social factors, including employee turnover reduction and increased representation of women on boards, and firm performance, as measured by ROA and TQ, to assess their operational and market valuation implications.

3.4.3.1 Employment Turnover Reduction and Firm Performance

The regression model assessing the relationship between employee turnover reduction and ROA demonstrated moderate explanatory power ($R^2 = 0.240$, adjusted $R^2 = 0.197$) and Durbin-Watson

= 2.043 and VIF < 2 for the whole model, which aligns with our expectations. This indicates that the predictors explain approximately 19.7% of the variation in ROA. The model was statistically significant overall ($F = 5.526$, $p < 0.001$), however, the coefficient for employee turnover reduction was not statistically significant ($B = -0.191$, $SE = 0.470$, $t = -0.407$, $p = 0.684$), suggesting that workforce stability does not have a direct impact on profitability. This leads to the following conclusion: fail to reject the null hypothesis.

TQ regression model showed stronger explanatory power, with $R^2 = 0.341$ and adjusted $R^2 = 0.306$, indicating that approximately 30.6% of the variance in market valuation is explained by the predictors. The overall model was statistically significant ($F = 9.770$, $p < 0.001$). With Durbin-Watson = 2.045 and VIF < 2 for the whole model aligns with our expectations. Unlike the ROA model, employee turnover reduction approached significance as a positive predictor of TQ ($B = 3.343$, $SE = 1.802$, $t = 1.855$, $p = 0.065$). This leads to the following conclusion: reject the null hypothesis. This finding suggests that stability in the workforce may be valued by investors as a signal of effective management and long-term organisational health.

The control variable market capitalisation growth remained having the strongest positive effect on TQ ($B = 15.343$, $SE = 1.532$, $t = 10.015$, $p < 0.001$), highlighting its central importance in driving market perceptions of firm value. Industry-specific effects were less pronounced compared to the ROA model, though challenges in the real estate sector persisted ($B = -3.868$, $SE = 3.870$, $t = -0.999$, $p = 0.318$).

3.4.3.2 Women on Boards Increase and Firm Performance

The model analysing the impact of increased representation of women on boards on ROA displayed lower explanatory power compared to other models, with $R^2 = 0.160$ and adjusted $R^2 = 0.129$. This suggests that board-level gender diversity accounts for only a small proportion of the variation in

profitability, which is consistent with research indicating that governance-related changes often influence strategic outcomes rather than operational metrics. The overall model was statistically significant ($F = 5.209$, $p < 0.001$), confirming the collective relevance of the predictors.

The coefficient for women on board increase was not statistically significant ($B = 0.425$, $SE = 0.408$, $t = 1.041$, $p = 0.298$), indicating that gender diversity does not exert an immediate impact on profitability, we fail to reject the null hypothesis.

The TQ model demonstrated stronger explanatory power, with $R^2 = 0.335$ and adjusted $R^2 = 0.313$. This highlights that governance measures, such as board diversity, may hold more relevance for market valuation than operational performance. The overall model was statistically significant ($F = 15.1759$, $p < 0.001$). However, the coefficient for women on board increase was not significant ($B = 2.186$, $SE = 1.550$, $t = 1.411$, $p = 0.159$), indicating that while investors may value governance improvements, the direct impact of board diversity on TQ remains limited. This leads to the following conclusion: fail to reject the null hypothesis.

3.4.4 Correlation Between Governance Factors and Firm Performance

This section evaluates the relationship between governance factors and firm performance, specifically focusing on the impact of increased average employee training hours and board meeting attendance rates on ROA and TQ, to explore their influence on both operational efficiency and market valuation.

3.4.4.1 Average Employee Training Hours Increase and Firm Performance

The regression model investigating the impact of average employee training hours on ROA demonstrated modest explanatory power, with an R^2 of 0.214 and an adjusted R^2 of 0.157. This indicates that approximately 15.7% of the variation in ROA can be attributed to the predictors included in the model. The model was statistically significant overall ($F = 3.787$, $p < 0.001$),

however the coefficient for average employee training hours was negative but not statistically significant (B = -0.593, SE = 0.543, t = -1.093, p = 0.276). This finding suggests that training investments, while important for long-term capacity building, do not yield immediate improvements in profitability, we fail to reject the null hypothesis.

The corresponding regression model for TQ demonstrated stronger explanatory power, with an R^2 of 0.377 and an adjusted R^2 of 0.337. The model was statistically significant overall (F = 9.305, $p < 0.001$), confirming the relevance of governance factors in explaining variations in market valuation. However, the coefficient for average employee training hours remained insignificant (B = -0.566, SE = 1.873, t = -0.302, p = 0.763). This suggests that, while training initiatives may not directly influence investor perceptions in the short term, we fail to reject the null hypothesis.

3.4.4.2 Board Meeting Attendance and Firm Performance

The second governance factor analysed was board meeting attendance rates. For ROA, the model explained 17.1% of the variance (R^2 = 0.171, adjusted R^2 = 0.136), with the overall model statistically significant (F = 4.909, $p < 0.001$). While the coefficient for board meeting attendance was positive, it was not statistically significant (B = 0.351, SE = 0.425, t = 0.824, p = 0.410). This finding suggests that the frequency of board meetings may not directly translate into operational performance improvements. This leads to the following conclusion: fail to reject the null hypothesis.

The regression model evaluating the relationship board meeting attendance and TQ demonstrated moderate explanatory power, with R^2 = 0.312 and R^2 adjusted = 0.285, indicating that approximately 28.5% of the variation in TQ percentage change is explained by the predictors. The overall model was statistically significant (F = 11.805, $p < 0.001$), underscoring the relevance of the included variables in explaining variations in market valuation. The governance variable,

board meeting attendance increase, approached statistical significance (B = 2.580, SE = 1.556, t = 1.659, p = 0.098), indicating that increased board engagement may contribute positively to market valuation, albeit marginally. This finding aligns with studies that suggest active governance practices enhance investor confidence by signalling robust oversight and accountability mechanisms. This leads to the rejection of the null hypothesis.

Among the predictors, market capitalisation percentage change emerged as the most significant positive determinant of TQ (B = 18.311, SE = 1.575, t = 11.627, $p < 0.001$), highlighting its critical role in influencing market perceptions of firm value. This finding aligns with prior research emphasising the strong influence of firm size and growth dynamics on market valuation metrics. Industry-specific effects revealed mixed results, with most sectors not showing significant impacts on TQ. However, the healthcare industry demonstrated a significant negative relationship (B = −6.888, SE = 3.212, t = −2.144, p = 0.033), suggesting sector-specific challenges in aligning with market expectations during the analysed period.

3.4.5 Bridge to Qualitative Approach

The findings from the quantitative analysis reveal important insights into the relationship between ESG factors and firm performance. Environmental metrics, such as EU Taxonomy-aligned revenues and Scope 2 GHG reductions, demonstrate a significant positive influence on market valuation, reflected in TQ. However, the impact of social and governance factors on firm performance is less pronounced, with mixed or statistically insignificant results. These observations suggest that while ESG factors are becoming integral to market perceptions, the financial materiality of social and governance dimensions may require longer time horizons or additional mechanisms to manifest.

Moreover, the quantitative findings illuminate broad patterns but leave critical questions unanswered, such as why environmental metrics outperform other ESG dimensions in influencing financial outcomes and what organisational strategies or stakeholder dynamics contribute to this disparity. These limitations underscore the need for a deeper exploration of the contextual and process-driven factors shaping ESG integration and its financial implications.

To address these gaps, the research transitions to the qualitative phase, leveraging insights from senior executives and ESG specialists across diverse industries. This shift is designed to complement the statistical robustness of the quantitative analysis with rich, contextual understanding, enabling a more comprehensive examination of ESG's role in shaping financial and strategic outcomes. The qualitative analysis is particularly well-suited to explore themes that quantitative methods cannot fully capture, such as the motivations, challenges, and cultural dynamics support ESG initiatives.

The integration of qualitative insights offers a dual advantage:

1. **Contextual Deepening:** By examining the strategic, organisational, and stakeholder-specific factors influencing ESG implementation, the qualitative analysis seeks to uncover the "how" and "why" behind the observed quantitative trends.
2. **Holistic Understanding:** This phase bridges the empirical focus of the quantitative analysis with a narrative exploration, enriching the research with actionable insights for both academic and practical applications.

In the next section, the qualitative methodology is illustrated and the data collection and analytical framework used to draw significant findings from the expert interviews is described. Through the combination of quantitative and qualitative dimensions, the study delivers an in-depth and comprehensive perspective on the multi-layered relationship between ESG practices and corporate performance. Such an approach to the study warrants that the findings not only

contribute to academic knowledge but also provide practical guidance for organisations grappling with the complexities of sustainability in a competitive global marketplace.

3.5 Leonard Alms and Luisa Kausch: Qualitative Methodology

The qualitative methodology in the following section explores the contextual and organisational dynamics of ESG integration through expert interviews. These interviews provide rich, narrative insights that complement and deepen the findings of the quantitative analysis. By engaging with knowledgeable experts, the study captures nuanced perspectives and real-world applications of ESG principles, enhancing the overall understanding of how these factors are integrated within organisations.

3.5.1 Sampling Approach

As this thesis examines the extent to which ESG factors influence financial performance, it was opted to collect qualitative data in addition to a quantitative analysis. To this end, ten interviews were conducted (see Table 1). The interview sample was strategically selected to maximise the richness and diversity of perspectives. The primary objective was to achieve a broad representation of companies regarding industry, size, and geographic location, thereby incorporating a wide range of viewpoints and minimising potential biases in the collected data.

A particular focus was placed on interviewing ESG specialists to gather qualitative insights into this relatively underexplored topic. The interviewees originated from countries such as Germany, Portugal, and India, representing companies with 20 to 45,000 employees. The industries represented included private equity, real estate, engineering, software, circular economy, wholesaler, telecommunications, construction, and consumer goods.

All interviewees were senior executives. Research suggests that for specific and relatively homogeneous groups, such as senior executives, a focused sample of 10 to 15 interviews is

typically sufficient to yield meaningful insights. Given the diversity among the experts interviewed and the attainment of theoretical saturation (Glaser and Strauss 2017), this sample size is considered adequate to provide relevant results on an aggregate level.

Interviewee	Position	Company	Industry	Country	Number of Employees
A	Senior Partner & Co Founder	A	Privat Equity	Portugal	1 - 99
B	Global Head of Sales Valves	B	Engineering and Construction	India	10.000 - 49.000
C	Senior Sustainability Officer	C	Real Estate	Germany	10.000 - 49.000
D	ISP Account Director	D	Telecommunication	China	> 50.000
E	CFO Sustainability Management	E	Telecommunication	Germany	1.000 – 9.999
F	Vice President Global ESG	F	Powder Metallurgy and Manufacturing	United Kingdom	> 50.000
G	CEO	G	Software Industry	Germany	100 - 999
H	CFO	H	Consumer Goods	Portugal	100 - 999
I	Department Head Waste Management	I	Circular Economy	Portugal	1 - 99
J	Sustainability Manager	J	Wholesaler	Germany	100 - 999

Table 4: *Overview Interview-Partners*

3.5.2 Data Collection Method

Understanding the experiences of professionals working in this field is essential to understanding how ESG contributes to financial performance. Therefore, part of the data collection focuses on qualitative data to gain deeper insights into meanings and relationships. These qualitative, non-numeric data help in understanding complex processes and shed light on the "how" and "why" of

specific phenomena. This approach complements quantitative analyses and contributes to a more comprehensive examination of the research questions (Easterby-Smith and Lyles 2012).

In order to gather targeted and meaningful information, the approach chosen was to conduct interviews. More specifically, a semi-structured interview style was utilised to allow the flow of conversation to remain both conversational and flexible, enabling the interviewees to introduce new and spontaneous information. Since participants were located in different parts of the world, all interviews were conducted via video conferencing using Microsoft Teams. On average, the interviews lasted between 30 and 60 minutes. Most interviews were conducted in English, as the interviewer and interviewees often had different native languages. When possible, interviews were conducted in German to avoid potential language bias. With the consent of the interviewees, most interviews were recorded via Microsoft Teams and subsequently transcribed using Sonix AI software. This ensured that no vital information was lost and that the interviews could be analysed in greater detail in a second phase. One interview with Interviewee G was not recorded, as written responses to the questions were submitted after the interview. Therefore, citations from this interview do not include timestamps.

To gather qualitative data on ESG strategies and their impact on companies' financial performance, an interview guide was developed. This guide is divided into four thematic sections that specifically highlight different dimensions of ESG implementation, strategic motivation and challenges to gain a comprehensive picture of ESG practices in the companies. In the first section, the introduction and contextualisation of the interview took place. The participants were asked to introduce themselves and their role in the company and to briefly describe the company's key areas of activity and industry. Having this basic information contributed to a better understanding of the context of the ESG initiatives and helped to establish a relationship with the participants' specific position and perspective. In the second section, the focus was on strategic motivations and the

general understanding of ESG. This involved examining whether the company's ESG strategies are primarily defined by internal values or by external requirements such as regulatory guidelines and investor expectations. It also examined which stakeholders have the greatest influence on the ESG strategy and what role the Management Board plays in shaping and implementing ESG objectives. This section provided insights into the internal and external drivers of ESG initiatives and made it possible to analyse the motivations and priorities of companies regarding sustainability. The third section focused on the financial dimension of ESG activities. These questions were designed to determine whether ESG initiatives are pursued primarily for financial reasons or whether environmental and social objectives are the primary focus and financial benefits are considered secondary. Participants were asked to identify specific financial metrics (e.g. return on investment, share price) that are used to evaluate the success of ESG measures. This section aimed to clarify how companies view ESG efforts from a financial perspective and whether a direct link is seen between ESG and financial performance. The final section focused on the challenges and prospects of ESG implementation. Here, the participants discussed both internal and external challenges in the implementation of ESG objectives alongside the strategies that have been developed to tackle these issues. Furthermore, they gave an outlook on the future development of ESG importance in their industry and explained strategic measures to meet future ESG requirements. This guided, semi-structured interview approach allowed for an in-depth analysis of ESG strategies and practices and yielded valuable qualitative data that considered both consistency and variability in responses. This semi-structured approach provided a balance between standardisation and flexibility, allowing for both comparability and depth in the participants' statements.

3.5.3 Data Analysis

In the second phase, all transcribed interviews were coded using the Gioia method. Initially, the data were reviewed holistically, then clustered into preliminary concepts through constant

comparison, and finally organised into categories, allowing a theory to emerge from the data structure. We adhered closely to the Gioia method in constructing this data framework, which enabled us to derive structure from the data itself rather than imposing pre-existing concepts. This open approach was essential for understanding the fragmented data in its entirety (Gioia, Corley, and Hamilton 2013). For data analysis, we utilised the MAXQDA software, which facilitated the coding of the transcribed interviews and provided a comprehensive overview of the approximately 300 codes that emerged. Following the Gioia method, we first developed **First-Order Concepts** by grouping statements from the interviews with initial similarities. Subsequently, we formulated **Second-Order Concepts** through a continuous comparison and refinement of the First-Order Concepts. Finally, these Second-Order Concepts were distilled into **Aggregated Dimensions**. The dimensions resulting from the quotations and the underlying process are shown in the following abbreviated diagram (see Figure [3]), the detailed variants with the corresponding quotations can be found in the appendix (Gioia, Corley and Hamilton 2013). Throughout the development of the coding tree, we met regularly as a research team to discuss, refine, and validate the emerging structure. The transcribed interviews are not included in the appendix of this document for confidentiality reasons.

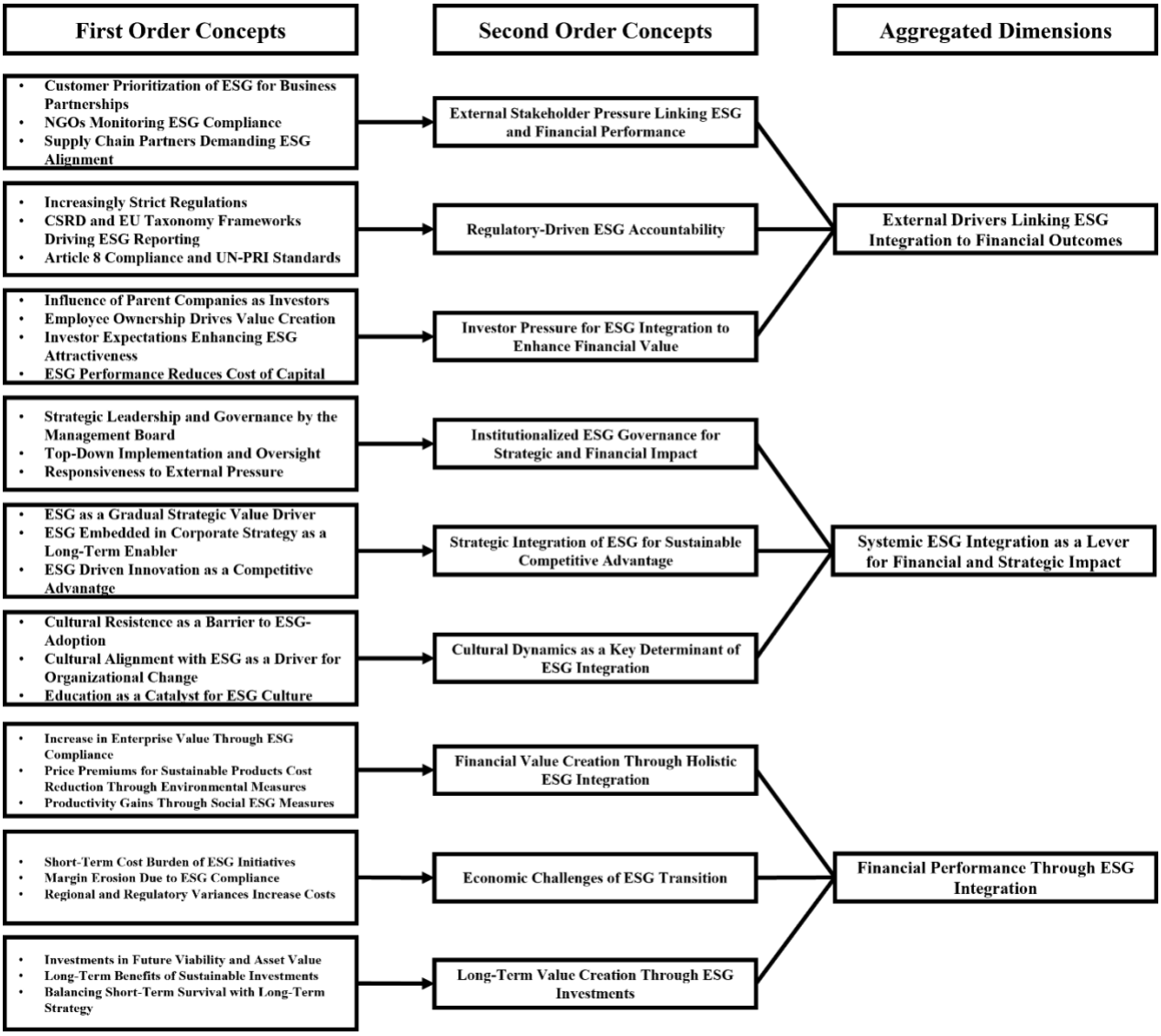

Figure 4: *Data Coding Tree*

3.6 Leonard Alms - Insights from Industry Experts

In this section, the qualitative data collected from the interviews is analysed in depth, focusing on the key themes and insights that emerged. When analysing the interviews, the findings were categorised according to the Gioia method into the following three aggregated dimensions: External Drivers Linking ESG Integration to Financial Outcomes, Systemic ESG Integration as a Lever for Financial and Strategic Impact and Financial Performance Through ESG Integration.

These dimensions are central to understanding the relationship between ESG practices and financial performance.

The central part is structured according to the coding tree. Therefore, the aggregated dimensions represent the main headings, under which the second-order concepts follow as subheadings. This structure ensures a clear and systematic approach to presenting the findings, reflecting the interplay between strategic ESG integration, stakeholder impact and financial performance outcomes.

3.6.1 External Drivers Linking ESG Integration to Financial Outcomes

The first aggregated dimension, External Drivers Linking ESG Integration to Financial Outcomes, focuses on how external forces such as customer demands, regulatory requirements and investor expectations drive the adoption of ESG practices and link these efforts to financial performance. These external pressures compel organisations to prioritise ESG measures, not just as a moral or strategic obligation but as a necessity for maintaining competitiveness, accessing markets and ensuring financial sustainability. This dimension is structured around three key second order concepts*: External Stakeholder Pressure Linking ESG and Financial Performance, Regulatory - Driven ESG Accountability and Investor Pressure for ESG Integration to Enhance Financial Value*.

3.6.1.1 External Stakeholder Pressure Linking ESG and Financial Performance

During the coding of the interviews, it quickly became apparent that ESG is primarily a topic driven by external demands. Three key stakeholder groups were identified as having a significant influence on a company’s ESG initiatives: customers, NGOs and supply chain partners. These groups set high expectations for the implementation of ESG measures, pushing companies to adapt their strategies accordingly.

Customer expectations are a significant external driver, shaping how companies integrate ESG into their business practices. Increasingly, customers demand evidence of ESG compliance as a prerequisite for partnerships, particularly in supply chain relationships. One interviewee described this shift as follows:

> *Now, if you go to customers, customers are also putting in conditions that there should have been […]an ESG-integrated report. You should be taking a lot of actions on many areas. These are part of the pre-qualification requirement before you can get into the business with that company (Interviewee B,05:56).*

This highlights that ESG compliance has become a fundamental aspect of business relationships, directly impacting financial outcomes. Beyond customers, other external stakeholders, such as NGOs and supply chain partners, also play a role in enforcing ESG priorities. For example, NGOs frequently monitor compliance, and supply chain partners demand alignment with ESG principles. These dynamics reinforce the idea that companies cannot ignore ESG expectations if they wish to maintain and expand their market presence. (Interviewee B, 05:56; Interviewee I, 15:04; Interviewee C, 11:41)

3.6.1.2 Regulatory-Driven ESG Accountability

Regulations are a second major driver of ESG integration, particularly as governments and international organisations establish stricter frameworks. For example, the introduction of the CSRD and the EU Taxonomy has significantly increased the pressure on companies to adopt transparent and accountable ESG practices. Interviewee G explained:

> *The introduction of CSRD has made governments the most influential stakeholder on our ESG strategy. […] Public tenders and government initiatives, like the EU's Green Deal*

> *and carbon neutrality goals, place significant emphasis on ESG performance (Interviewee G).*

These regulations compel organisations to adapt quickly, as compliance directly affects their ability to compete in public tenders and access funding (Interviewee A, 34:17). Moreover, regulatory frameworks do not only enforce obligations but also present opportunities for companies that successfully align with ESG expectations. By complying with these regulations, companies can position themselves favourably within their industries and secure long-term financial advantages (Interviewee C, 19:43).

3.6.1.3 Investor Pressure for ESG Integration to Enhance Financial Value

Investors are a critical external driver of ESG adoption, particularly as institutional investors increasingly prioritise sustainability as a criterion for long-term value creation. One interviewee emphasised how investor expectations shape corporate behaviour:

> *For example, the investors are looking at how is your ESG score based on which they will decide whether to keep money in your company or they move it out to other companies. So, it's a very important external drive, which is coming, and that the investors go to companies who are having a positive ESG norms and there is an effort coming to meet that (Interviewee B, 05:56).*

However, the influence of investors is not uniform. While many investors advocate for ESG integration, there remains a segment particularly in Germany - that approaches ESG with scepticism. One interviewee highlighted this divide:

> *If investors aren't interested in that, then it's a matter of fulfilling an obligation and not really that relevant (Interviewee C, 33:13).*

This reflects the cautious stance of some investors who fear that ESG measures could negatively impact financial performance. These investors often demand clear evidence that ESG initiatives lead to financial benefits before supporting them fully. This duality demonstrates that while ESG is increasingly important for investor relations, its financial impact must be carefully communicated to gain broader acceptance (Interviewee A, 08:53).

To sum up it can be said that the dimension External Drivers Linking ESG Integration to Financial Outcomes underscores the pivotal role of external forces in shaping corporate ESG strategies. Customers, regulations and investors collectively drive companies to adopt ESG practices, linking these efforts directly to financial performance. While customers and regulatory frameworks act as clear enforcers of ESG priorities, investor expectations present a more nuanced picture, with varying degrees of support and scepticism. Navigating these external drivers requires organisations to balance immediate compliance with the long-term financial opportunities that ESG integration offers. This alignment is essential for achieving both sustainability and profitability in today's business environment.

3.6.2 Systemic ESG Integration as a Lever for Financial and Strategic Impact

The second aggregated dimension, Systemic ESG Integration as a Lever for Financial and Strategic Impact, dive into the mechanisms through which ESG principles are embedded within organisations to create meaningful financial benefits and foster long-term strategic growth. Unlike fragmented approaches, systemic ESG integration requires organisations to align governance structures, strategic priorities and cultural dynamics. By embedding ESG into their core operational and decision-making processes, companies can leverage sustainability initiatives not only to comply with external demands but also to gain a competitive edge in the market. This dimension comprises three key second order concepts: *Institutionalised ESG Governance for Strategic and*

Financial Impact, Strategic Integration of ESG for Sustainable Competitive Advantage, and Cultural Dynamics as a Key Determinant of ESG Integration.

3.6.2.1 Institutionalised ESG Governance for Strategic and Financial Impact

Governance plays a foundational role in ensuring that ESG principles are not just aspirational but actively integrated into the organisation's operations and strategies. Effective governance provides the framework for accountability, decision-makin and oversight of ESG initiatives. One interviewee illustrated this point by emphasising the structured approach taken within their organisation:

> *We have a sustainability committee which includes not only the board of directors, but also key departments such as controlling, accounting, communications, purchasing, etc. And this committee usually meets three or four times a year and this is where important decisions regarding sustainability strategy are made, and important developments are discussed and approved. And in this respect, the board of directors is constantly checking ESG-relevant topics (Interviewee C, 13:24).*

This example highlights the importance of cross-functional collaboration in embedding ESG into all aspects of the business. By involving diverse departments in sustainability discussions, companies ensure that ESG priorities permeate all levels of the organisation. Beyond internal coordination, governance structures must also respond to external pressures. As the interviewee also noted:

> *These are external factors that play a role and drive it very strongly, and much more strongly than from within, or from the top down (Interviewee C, 10:27).*

This statement underscores the importance of leadership that is both proactive and reactive - proactive in setting the agenda for ESG priorities and reactive in adapting to external forces such as regulatory changes, market demands and stakeholder expectations. Institutionalised governance not only ensures the alignment of ESG goals with organisational objectives but also builds the agility required to navigate evolving business environments (Interviewee A, 15:26; Interviewee E, 09:23).

3.6.2.2 Strategic Integration of ESG for Sustainable Competitive Advantage

Strategic integration transforms ESG from a compliance exercise into a driver of competitive advantage. This involves embedding ESG into the broader corporate strategy, ensuring that sustainability initiatives align with financial and operational goals. It was highlighted during the interviews that ESG initiatives have the potential to significantly enhance financial outcomes, particularly through their impact on enterprise value. One perspective suggested that within three to five years, companies actively integrating ESG measures could achieve higher valuation multiples, potentially increasing from ten times EBITDA to twelve times, due to their enhanced attractiveness in the market. This reflects the role of ESG in not only preserving and enhancing organizational asset value but also fostering market differentiation and competitive advantage (Interviewee A, 32:28). Beyond asset management, ESG-driven innovation has become a critical factor in achieving market differentiation. As another interviewee explained:

> *If the financial market continues to move in this direction, as it has in recent years, that sustainable investments are in demand, then of course we also have a big advantage in that we can offer a relatively broad range of sustainable investments (Interviewee C, 19:43).*

By embedding ESG into their strategic framework, companies not only meet the growing demand for sustainable products and services but also position themselves as leaders in their industries. This strategic alignment enables organisations to capitalise on emerging trends, attract investment, and maintain their competitiveness over the long term (Interviewee F, 22:44; Interviewee A, 34:10).

3.6.2.3 Cultural Dynamics as a Key Determinant of ESG Integration

The success of ESG integration depends not only on governance and strategy but also on the organisational culture. Culture shapes how ESG initiatives are perceived, adopted and implemented across the organization. Resistance to change, lack of awareness and cultural misalignment can hinder ESG efforts. One interviewee highlighted the challenges posed by cultural barriers:

> *Think most probably nowadays, at least in Portugal, the most important barrier is culture. People don't know culture and how they are interlinked. People don't know ESG. They have a vague idea of what ESG is (Interviewee A, 36:09).*

This indicates that education and awareness are critical for building cultural alignment with ESG principles. Another interviewee observed regional differences in cultural engagement, noting:

> *We see a cultural divide, whereas our workforce in Germany seems to be slightly more concerned and engaged with sustainability efforts than our employees in the US (Interviewee G).*

Addressing these cultural divides requires targeted initiatives such as training programs, internal communication campaigns and leadership that champions ESG values. When cultural alignment is achieved, it creates an environment where employees are more likely to support and actively

contribute to sustainability initiatives. This cultural buy-in is essential for the long-term success of ESG integration (Interviewee H, 20:21; Interviewee G; Interviewee J, 21:10).

Overall, the second dimension Systemic ESG Integration as a Lever for Financial and Strategic Impact highlights the interconnectedness of governance, strategy and culture in driving the success of ESG initiatives. Strong governance structures ensure oversight and accountability, while strategic integration embeds ESG into the core of the business, transforming it into a source of competitive advantage. Cultural alignment, meanwhile, ensures that ESG principles are understood and embraced across the organisation, fostering a shared commitment to sustainability. Together, these elements illustrate how ESG can evolve from a compliance requirement into a strategic lever that delivers financial resilience, operational excellence and long-term profitability.

3.6.3 Financial Performance Through ESG Integration

The third aggregated dimension, Financial Performance Through ESG Integration, explores the evolving relationship between ESG practices and financial outcomes. This dimension reflects the contradiction of ESG initiatives: on the one hand, they offer significant opportunities for financial value creation through improved enterprise valuation, operational efficiencies and market positioning. On the other hand, they impose economic challenges, particularly in the short term, as companies adapt to meet evolving sustainability requirements. Ultimately, the ability to navigate these challenges and align ESG strategies with long-term financial objectives determines the success of ESG integration. This dimension is organised around three key second order concepts: *Financial Value Creation Through Holistic ESG Integration, Economic Challenges of ESG Transition and Long-Term Value Creation Through ESG Investments.*

3.6.3.1 Financial Value Creation Through ESG Integration

ESG integration has the potential to create substantial financial value by enhancing enterprise valuation, enabling cost efficiencies and driving revenue growth. Companies that strategically incorporate ESG into their operations are increasingly able to leverage sustainability as a differentiator in competitive markets. One interviewee highlighted the link between ESG compliance and enhanced enterprise value, stating:

> *We believe that in 3 to 5 years' time, the things will be different, and companies that act like this, […] will have maybe a higher multiple […] when we sell them […]. And a higher multiple than maybe we saw by ten in general. And if we are ESG compliant, maybe we sell by 12 times EBITDA Enterprise value (Interviewee A, 32:28).*

This demonstrates how ESG adherence can increase valuation multiples, reflecting investor confidence in the company's future resilience and sustainability-driven growth potential. The financial benefits of ESG integration extend beyond valuation and are often realized through premium pricing. Sustainable product innovations, such as using natural pigments instead of chemical ones, illustrate the financial potential of ESG-driven strategies. In one example, a company initially hesitated due to the 5% increase in production costs. However, after discussions with export partners and buyers, it became clear that a 20% price increase was achievable in target markets such as the US and Europe by effectively communicating the product's sustainable qualities. This highlights how engaging stakeholders and leveraging ESG messaging can uncover profitability opportunities while meeting growing market demand for sustainability (Interviewee A, 20:30). Additionally, ESG integration contributes to operational efficiencies, particularly in areas such as energy use and resource management (Interviewee E,10:57; Interviewee H, 23:29).

Quick wins, such as transitioning from fossil fuels to renewable energy sources, have both environmental and financial benefits. As one interviewee noted:

> *You can implement some quick wins with strong results. For instance, changing from fuel fossil energy to photovoltaic energy. I mean, it's a quick win. Or, for instance water saving […] you know, these types of aspects that are very important and you can measure it (Interviewee A, 16:33).*

This demonstrates the tangible cost-saving opportunities available through ESG initiatives, which simultaneously reduce environmental impact and improve profitability. Overall, these findings illustrate how holistic ESG integration can serve as a strategic lever for financial performance by enhancing valuation, driving revenue and optimizing costs (Interviewee E, 12:38; Interviewee H, 26:18).

3.6.3.2 Economic Challenges of ESG Transition

While the long-term financial benefits of ESG are clear, the transition to sustainability poses significant short-term economic challenges. These challenges often manifest as increased operational costs, reduced profit margins and the complexity of adapting to diverse regulatory environments. One interviewee emphasized the immediate cost implications of implementing ESG initiatives, explaining:

> *So even there are a lot of initiatives taken which have a cost impact on the short-term basis […] there is an investment has to be done, […] where the return of investment may be over a period of seven years, ten years (Interviewee B, 08:14).*

This highlights the financial strain that companies face during the initial stages of ESG integration, particularly when substantial investments are required to meet new standards or adopt sustainable

practices. The economic burden is further exacerbated in competitive industries where price adjustments are limited. Another interviewee elaborated:

> *I know I will have the return, but in the short-term, I have more costs than others. […] Sometimes we lose some profit because we have to reduce a lot of our margins to do some deals (Interviewee H, 28:53).*

This statement reflects the trade-offs businesses must navigate, balancing the costs of sustainability efforts with the need to maintain market competitiveness (Interviewee C, 15:15). Additionally, regional and regulatory variances introduce further complexity. Companies operating in multiple jurisdictions often face differing requirements and compliance costs, which can create additional financial pressures. As one interviewee noted:

> *The competition between producers from Asia to Europe or America they are different. That is our problem. We want to do this. But I know in China they don't do nothing of this. They don't spend €100,000 in certifications of environment. No one cares for social. They don't spend a thing. No one knows what is happening there. So, this is main problem. Okay we know we are in the right way, but the world is not in the same position at this moment. The different regions have different positions in these, so these caused me bigger costs (Interviewee H, 28:53).*

These examples reveal that while ESG adoption is essential for long-term competitiveness, it also brings economic challenges due to global inconsistencies in regulatory frameworks and practices. Companies must carefully balance the financial pressures of implementing ESG measures with the need to align with market demands and prepare for future sustainability standards. Managing this

transition effectively is crucial to maintaining both short-term stability and long-term growth (Interviewee G; Interviewee D, 35:42).

3.6.3.3 Long-Term Value Creation Through ESG Investments

Despite the short-term challenges, ESG integration remains a critical driver of long-term financial value. Investments in sustainable infrastructure, practices and products allow companies to future-proof their operations, align with emerging market trends and strengthen their financial resilience. One interviewee emphasized the importance of ESG for safeguarding asset value and ensuring organizational viability:

> *All measures that are now suitable for securing the assets, i.e., the buildings, in the long term or for ensuring that they perform well, increase the value of these assets and secure our future viability as a company (Interviewee C, 19:43).*

This illustrates how sustainability-focused investments contribute to preserving and enhancing asset value, ensuring the company remains competitive and financially stable in the face of changing environmental and regulatory landscapes (Interviewee C , 15:15; Interviewee E , 22:08). Moreover, ESG integration aligns with broader market trends, such as the growing demand for sustainable investments. Another interviewee noted:

> *We believe that we will have a long-term positive effect on the business. It may not have a short-term effect on the financial performance. Like most clients I mentioned earlier, need your ESG score to be good for even pre-qualifying or able to participate in certain tenders or projects. So, improving your ESG performance will help you to […] address those business opportunities. So always definitely a financial consideration is not definitely the*

> *ideal motive, but on the long term, it will definitely improve the company's image as well as the company's financial performance (Interviewee B, 10:09).*

This reflects how companies that proactively integrate ESG into their strategies are better positioned to attract capital, gain investor confidence, and secure their place in the evolving marketplace (Interviewee A, 34:17, Interviewee G). However, achieving long-term value requires companies to balance short-term operational priorities with forward-looking strategic objectives. As one interviewee stated:

> *We need to focus on our short-term success because if we don't succeed in our short term, we are not survival. But at the same time, if we don't have a long-term strategy for the future, we need to at least look into the next three years or five years (Interviewee D, 23:31).*

This highlights the dual focus required to navigate the immediate challenges of ESG adoption while building a foundation for sustainable growth and profitability over the long term.

Reflecting on the final dimension, Financial Performance Through ESG Integration, underscores the complex and multifaceted relationship between sustainability initiatives and financial outcomes. ESG integration provides significant opportunities for value creation through enhanced enterprise valuation, cost efficiencies and market differentiation. At the same time, the transition to sustainability introduces short-term economic challenges, including increased costs and reduced margins. However, businesses that strategically invest in ESG initiatives and align them with long-term goals are better positioned to achieve financial resilience and capitalize on the growing demand for sustainable practices. By embracing ESG as a strategic priority, companies can navigate the complexities of integration while ensuring both short-term stability and long-term profitability.

3.7 Group Part: Trustworthiness of the Research

Establishing the trustworthiness of this research is crucial for the credibility and reliability of the results. To achieve this, the research was conducted to fulfil Guba's (1981) four criteria for evaluating the trustworthiness of qualitative research. Credibility, the first criterion, is backed by the fact that all interviewees took part voluntarily and have long-standing relationships to the organisations being studied. This relationship allows them to have valuable insights into the business relationships. Moreover, every participant has experienced the shift towards sustainable business practices personally, either as a manager or long-time employee, which enhances the reliability of their statements.

A purposive sampling strategy was used to select participants who were representative of the research topic to ensure that the different perspectives of relevant stakeholders were considered. Data collection was conducted through semi-structured interviews, which allowed participants to provide in-depth insights while focusing on key themes. The qualitative data was analysed using thematic analysis to identify patterns and findings in relation to the research question.

Transferability is the second criterion and involves a detailed description of the research context. As this study examines a topic that is relevant to a wide range of companies and industries, the findings can be applied to other comparable contexts. However, transferability may be limited due to specific characteristics of the sample, such as company size, which could affect the transferability of the results to other settings. The triangulation of data sources, including interviews, Bloomberg data and survey results, increases the resilience of the study and provides a wider perspective. The third criterion, conformity, was achieved through regular discussions with impartial individuals. These discussions brought new perspectives, feedback and insights that helped to refine the study and eliminate potential bias. Ethical considerations were prioritized to

maintain confidentiality, obtain consent from participants and ensure responsible data collection. Lastly, reliability was achieved by carefully documenting the data collection and analysis methods and providing a detailed explanation of the study methodology. Recording and transcribing all interviews also increased the accuracy and transparency of the research process and enhanced the transparency of the study.

Establishing the trustworthiness of quantitative research is fundamental to establishing its credibility and reliability. Included is the assessment of key criteria like internal and external validity, reliability and objectivity. Internal validity defines whether or not changes in the dependent variable result from the independent variable, while external influences are minimised. (Heffner 2017).This was ensured through a careful study design, control of confounding variables and consistent measurement. Common threats include historical events, maturation effects, testing influences and selection bias (Campbell and Stanley 2011).

The external validity evaluates whether the results can be generalised beyond the scope of the study. This depends on how well the sample represents the target population and reflects real-life conditions (Trochim and Donnelly 2008). Having a proper sample, clear definitions of the population and replication of the study strengthen external validity. The reliability measures the consistency of the results under similar conditions.

The results of a trustworthy study are obtained through the use of standardised sampling and well-defined variables (Trochim and Donnelly 2008). Consistency checks such as test-retest and inter-rater reliability are used to ensure data accuracy (Wilson 2010). The objectivity ensures that the results reflect objective data and not the researchers' bias. By using standardised procedures and transparent reporting, researchers maintain neutrality (Payne and Payne 2009). Meeting these criteria increases the trustworthiness of quantitative studies and supports scientifically sound and credible results that make a meaningful contribution to scientific and practical knowledge.

3.8 Max Hawerkamp - Theoretical and Practical Implications for Stakeholders

This research makes a significant contribution to the growing body of literature on the financial implications of ESG factors by addressing a critical gap in prior studies. Existing research has largely focused on aggregated ESG ratings from agencies like EcoVadis, which evaluate broad ESG dimensions but often fail to capture the nuanced dynamics of specific ESG subsectors. Conversely, isolated studies have examined individual factors, such as board diversity or emissions reductions but have not integrated these elements into a broader ESG framework or systematically compared their effects across consistent timeframes. By bridging these gaps, this thesis connects theoretical frameworks like the Triple Bottom Line, Shared Value , and Stakeholder Theory with practical insights, providing a robust understanding of how ESG initiatives impact firm performance across different industries. Furthermore, it situates these findings within the evolving regulatory landscape - including the EU Taxonomy, SFDR and CSRD - highlighting how regulatory pressures shape corporate accountability and sustainability practices. By leveraging disaggregated ESG metrics and consistent timeframes, this study advances both academic understanding and practical relevance, offering actionable recommendations for corporate managers, investors and policymakers.

3.8.1 Theoretical Implications

This research challenges the "one-size-fits-all" approach often employed in ESG analyses by disaggregating ESG dimensions into specific factors, such as EU Taxonomy-aligned revenues, Scope 2 GHG reductions and employee turnover rates. This approach aligns with the Triple Bottom Line framework, which emphasises the interconnectedness of environmental, social and economic dimensions. By revealing the heterogeneity of ESG impacts across sectors and performance

metrics, the study provides a more nuanced understanding of how sustainability initiatives influence firm outcomes.

The significant positive correlation between EU Taxonomy-aligned revenues and TQ underscores the strategic importance of regulatory compliance in driving market valuation. This finding supports Stakeholder Theory Hannan and Freeman 1984 by illustrating how balancing diverse stakeholder interests, including regulatory bodies, investors, and consumers can enhance financial outcomes. The alignment with frameworks like the CSRD, which mandates double materiality reporting, reinforces the critical role of transparent ESG disclosures in fostering stakeholder trust and investor confidence Moreover, this evidence extends Shared Value principles by demonstrating that aligning corporate strategies with societal goals creates mutual economic and social benefits.

The non-significance of social factors, such as employee training hours, highlights the temporal nature of ESG impacts. While environmental initiatives like GHG reductions often yield immediate benefits in market valuation, social and governance factors may require longer observation periods to manifest measurable financial returns. This finding aligns with, who emphasise the need for longitudinal studies to capture delayed effects of ESG practices. Furthermore, the adaptability of the utilities and communications sectors to sustainability demands exemplifies the importance of sectoral contexts in moderating ESG-performance relationships. These insights build on, who emphasize tailored strategies in achieving sustainability outcomes. The study's methodological rigor offers a replicable model for future research, providing a framework to explore the interplay between industry contexts, regulatory frameworks and performance metrics. This approach advances the academic discourse by offering precision in ESG analyses, which has been a long-standing challenge in the field.

3.8.2 Practical Implications

The findings offer actionable insights for corporate managers seeking to align their strategies with sustainability goals. The strong positive correlation between EU Taxonomy-aligned revenues and TQ underscores the strategic value of compliance with regulatory frameworks like the EU Taxonomy and the CSRD. Firms should priorities investments in sustainable products and services that align with these frameworks to gain investor confidence and enhance market valuation. However, the lack of significance for ROA indicates that these benefits are primarily market-driven and may require a long-term perspective to materialise operationally. Environmental responsibility, evidenced by the significant relationship between Scope 2 GHG reductions and TQ, emerges as a critical driver of market valuation. Companies in high-emission sectors, such as materials and real estate, should focus on decarbonisation strategies, such as adopting energy-efficient technologies or collaborating with regulators, to align with the Sustainable Finance Action Plan while improving investor perceptions. These targeted interventions address structural barriers and enhance adaptability to sustainability demands, consistent with findings by Zhao et al. Governance factors, though less consistently significant, reveal opportunities for enhancing corporate decision-making and stakeholder engagement. For instance, policies promoting board diversity and participation may not yield immediate financial returns but align with Shared Value principles by fostering long-term resilience and ethical practices.

When it comes to investor decision-making, the study highlights financial importance of environmental factors compared to social and governance dimensions, emphasising the need for regulatory alignment and proactive environmental strategies in ESG-focused portfolios. Investors should prioritise sectors with demonstrated adaptability, such as utilities and communications, while adopting a cautious approach to structurally challenged sectors like real estate and materials. Recognising the temporal nature of ESG benefits, investors should integrate both short-term and

long-term considerations into portfolio strategies, balancing immediate market valuation gains with delayed operational improvements.

From a policy perspective, the significant market valuation benefits tied to EU Taxonomy alignment illustrate the crucial role of regulatory frameworks in driving corporate sustainability. Policymakers should expand these frameworks to include a broader range of industries and provide clear implementation guidelines to maximise their effectiveness. The CSRD's double materiality requirement serves as a benchmark for promoting transparency and comparability, enabling investors to channel capital flows more effectively into sustainable business models. The lagging nature of social and governance benefits suggests the need for policies incentivising long-term strategies over short-term compliance. Tax incentives, grants, and public recognition could encourage companies to prioritise workforce development, board diversity, and other governance enhancements. Policymakers should also collaborate with industries facing structural barriers to ESG adoption, such as real estate and materials, to develop tailored solutions, consistent with the European Green Deal's objectives.

Regarding sector-specific strategies, the findings highlight the need to tailor ESG approaches according to industry contexts. For instance, the adaptability of utilities and communications sectors underscores their potential as benchmarks for best practices. Firms in these sectors should leverage their strategic advantages to enhance both market valuation and operational performance. Conversely, companies in real estate and materials should focus on targeted interventions, such as investing in energy-efficient technologies or partnering with regulators, to address systemic barriers and facilitate ESG integration. Policymakers and investors should provide tailored support to ensure equitable transitions to sustainable practices. Enhancing Governance Practices Although governance factors demonstrated weaker correlations with financial performance, their marginal significance for TQ suggests potential long-term benefits.

Strengthening governance practices through policies that promote inclusivity, and accountability can improve stakeholder trust, decision-making, and corporate resilience. Firms should integrate governance enhancements as part of broader ESG strategies, aligning with regulatory requirements and stakeholder expectations.

Overall, this research provides a comprehensive understanding of the financial implications of ESG factors by addressing a critical gap in the literature. By disaggregating ESG dimensions and contextualizing them within regulatory frameworks like the EU Taxonomy, SFDR, and CSRD, the study offers actionable recommendations for corporate managers, investors, and policymakers. Future research should build on these findings by exploring the long-term impacts of specific ESG initiatives and examining the moderating effects of industry, firm size, and regional context on the ESG-performance relationship.

3.9 Luisa Kausch - Qualitative Implications for Corporate Strategy

The integration of ESG principles into corporate strategy has become essential as regulatory requirements increase and stakeholder expectations evolve. This section explores the qualitative implications arising from the research findings and how ESG influences strategic decision-making, stakeholder engagement and long-term competitiveness.
The analysis bridges established theories such as the triple bottom line, stakeholder theory and the concept of shared value with practice, revealing both opportunities and challenges. Key themes include the role of governance structures, cultural alignment and balancing economic and social objectives. The findings show how companies can translate ESG insights into actionable strategies to achieve financial stability while fostering sustainability-led innovation and market leadership.

3.9.1 Theoretical Implications

The findings of this study reveal diverse and interconnected implications for understanding the integration of ESG principles into corporate strategies and their financial outcomes. They not only affirm existing theories like stakeholder theory, the triple bottom line, and the concept of shared value but also challenge and expand them, addressing underexplored dynamics such as internal barriers, cultural influences, and the practical realities of implementation.

One of the most significant insights is the pivotal role of stakeholders in driving ESG adoption. Edward Freeman and Phillips (2002) highlight the importance of companies recognising the interests of all stakeholders and not just those of shareholders. This perspective is strongly supported by the findings, which highlight that customers, NGOs, and investors act as key external drivers. For example, the study showed that ESG compliance is becoming a non-negotiable prerequisite for securing partnerships, particularly in supply chains. These findings extend stakeholder theory by illustrating how these pressures directly shape daily business operations, transforming ESG from an ethical priority into a market necessity.

Elkington's (1998) triple bottom line framework provides another critical lens, advocating for a balance between social, environmental, and financial goals. However, the findings suggest that governance often acts as the backbone enabling this balance. Structured governance mechanisms, such as sustainability committees, were shown to enhance companies' capacity to align financial objectives with environmental and social priorities. This perspective not only supports the TBL framework but also introduces governance as a central enabler for realising sustainable outcomes, particularly when tangible financial gains, such as improved market positioning and valuation multiples, are achieved.

The findings also resonate with Porter and Kramer's (2011) concept of shared value, which emphasises the potential for simultaneous economic and societal benefits. ESG initiatives, such as innovative products and operational efficiencies, were shown to create financial advantages. However, the research also revealed the limitations of the shared value framework, particularly when cultural or regional differences act as barriers. For instance, inconsistent regulations or resistance to ESG principles in certain regions hinder the broader application of shared value. These challenges underscore the need to adapt the framework to accommodate the complexities of real-world implementation.

Economic sustainability emerged as a recurring theme, reinforcing the work of Hermundsdottir and Aspelund (2022), who argue for the importance of long-term planning and innovation. The findings demonstrated that while ESG adoption often leads to long-term benefits, such as cost efficiencies and revenue growth, it also imposes short-term challenges like increased implementation costs. This tension complicates the narrative that sustainability automatically leads to financial success, suggesting a need for a more dynamic, time-sensitive approach that acknowledges both the sacrifices and gains involved.

Another crucial contribution of this study lies in the examination of barriers to ESG implementation. Financial and regulatory constraints are well-documented in the literature, but this research highlights the significant role of internal factors, such as employee engagement and cultural alignment. Several interviewees stressed that fostering a sense of responsibility among employees was vital for overcoming resistance and embedding sustainability into organisational culture. This finding aligns with Sancak (2023) assertion that clear communication is essential for ESG success, while also supporting Hörisch, Freeman, and Schaltegger (2014) emphasis on feedback loops between internal and external stakeholders to improve performance.

In summary, this study contributes to the literature by affirming the importance of stakeholder engagement, governance structures, and long-term planning while expanding on challenges like cultural barriers and employee involvement. By integrating theoretical frameworks with practical findings, it offers a nuanced understanding of ESG's role in corporate strategy. This research not only enriches existing theories but also provides actionable insights for businesses navigating the complex landscape of sustainability.

3.9.2 Practical Implications

The integration of ESG is not just a response to external demands, it represents a strategic lever for achieving financial and competitive advantages. To effectively benefit from this potential, companies need to develop a comprehensive ESG strategy that goes beyond regulatory compliance and embeds ESG into all core facets of their corporate strategy. The practical implications can also be categorised into three key dimensions: external drivers, systemic ESG integration, and financial performance. These dimensions form a solid foundation for understanding the strategic potential that ESG offers.

External factors, including customer demands, regulatory mandates, and investor expectations, significantly influence the integration of ESG principles and their connection to financial performance. Companies must proactively leverage this external pressure to prioritise ESG initiatives and realise financial benefits. Stakeholders, such as customers, NGOs, and suppliers, are placing increased expectations on ESG implementation. These demands should be viewed not as annoying compliance obligations but as strategic opportunities to enhance market positioning. Customers increasingly expect products and services that align with ESG standards, while investors perceive sustainable practices as critical to long-term value creation. By addressing these expectations with transparency and effective communication, companies can meet regulatory

requirements, foster investor confidence, and build stronger customer loyalty. In a competitive landscape, aligning with ESG is likely necessary to maintain market relevance. Regulatory frameworks, such as the Corporate Sustainability Reporting Directive and the EU taxonomy, also exert significant external pressure. Compliance with these regulations can position companies favourably within their industry, serving not only as a compliance measure but also as a differentiator that secures long-term financial and competitive advantages.

Integrating ESG principles into the core of corporate strategy is crucial for securing long-term financial and strategic advantages. This necessitates a robust governance framework that recognises ESG as a fundamental element of corporate management, rather than a peripheral consideration. Establishing institutionalised ESG governance, such as a dedicated sustainability committee comprising board members and representatives from key departments, ensures the consistent integration of ESG principles into operational and strategic decision-making processes. Such governance structures promote organisational agility and adaptability in responding to rapidly evolving external requirements, ensuring that ESG remains a key priority in corporate management.

The strategic integration of ESG should endeavour to establish it as a fundamental element of business strategy, thereby fostering a sustainable competitive edge. Companies can leverage ESG as a differentiator to attain a stronger market position by offering sustainable products and services. This approach has the potential to enhance a company's valuation through alignment with the growing demand for sustainable investment solutions, thereby increasing its appeal to investors. Moreover, cultivating a corporate culture that supports ESG is vital for its success. A robust sustainability culture cultivates an environment where ESG initiatives are embraced and effectively executed. To nurture this culture, companies should implement targeted training programs and internal communication strategies that elevate awareness and engage employees. This cultural

alignment is crucial for embedding ESG as a shared value throughout the organisation, supporting both effective implementation and long-term success.

The integration of environmental, social, and governance practices can have a significant impact on a company's financial performance. Strategic ESG integration has the potential to enhance a company's valuation, drive operational efficiency, and secure financial resilience over time. Organisations that effectively incorporate ESG into their core processes can generate substantial financial value, ranging from cost savings to revenue growth. By leveraging sustainability as a market differentiator, companies can justify premium pricing and improve their appeal to investors. Importantly, clear and effective communication of ESG initiatives is critical in positioning the company as a leader in sustainability and enabling it to capitalise on the premium that eco-conscious consumers and investors are willing to pay for responsible practices.

While the transition to sustainable practices may pose short-term challenges and costs, ESG integration should be viewed as a strategic investment in the future. Companies must recognise that these initial investments and associated costs will yield long-term benefits, making the upfront commitment worthwhile. However, maintaining efficiency must remain a priority. Organisations need to avoid getting entangled in bureaucracy, as the complexity of ESG requirements and regulatory frameworks can pose significant risks. Companies must streamline ESG processes to ensure they do not become overly burdensome, allowing them to maintain agility and respond effectively to evolving demands. To build financial resilience, companies need to balance immediate success metrics with long-term sustainability objectives. Investments in sustainable infrastructure and practices are crucial to ensuring competitiveness over the long term, enabling companies to adapt flexibly to changing market expectations. By proactively investing in ESG, companies can not only reduce operational costs but also create new business opportunities and secure long-term financial stability.

In conclusion, the strategic integration of environmental, social, and governance principles necessitates a comprehensive organizational approach to realize positive financial impacts. By aligning ESG initiatives with external market drivers, systematically embedding ESG considerations into corporate governance frameworks, and maintaining a focus on financial objectives, companies can cultivate long-term competitive advantages, enhance financial performance, and contribute positively to society. The strategic deployment of ESG demands a holistic adaptation of corporate strategy, encompassing the establishment of robust governance structures, the nurturing of a supportive organizational culture, and the articulation of a clear long-term financial vision.

3.10 Group Part: Synthesis of Quantitative and Qualitative Findings

The findings of this study reveal a complex interplay between ESG performance and firm performance, highlighting both long-term and short-term dynamics. From a long-term perspective, the quantitative analysis shows a significant positive correlation between EU Taxonomy-aligned revenues and TQ. This underscores the strategic value of regulatory compliance in enhancing market valuation. Investments in sustainable infrastructure, such as photovoltaic systems mentioned by Interviewee A, exemplify this relationship. Although these investments require a longer amortisation period, they eventually lead to higher market value, aligning with Stakeholder Theory, which emphasises balancing stakeholder interests for long-term success. While long-term benefits dominate, the qualitative findings also highlight immediate cost savings. Interviewees A and J reported quick wins from implementing LED lighting and efficient water usage, which led to direct cost reductions. These insights are consistent with the quantitative finding that Scope 2 GHG reductions significantly impact TQ but not ROA. This discrepancy suggests that while ESG initiatives improve market perception, their operational benefits may take longer to materialise.

Short-term costs, such as those associated with ESG software, were noted by Interviewee J, reflecting the initial financial burden of adopting ESG measures. Employee-related factors also play a role in firm performance. Although no interviewee explicitly discussed employee turnover, one mentioned that salary increases led to higher productivity. This aligns with the quantitative finding that employee turnover positively influences firm performance. Investing in employees through compensation and cultural alignment appears to enhance productivity and overall performance. This is further supported by the qualitative insights on the importance of fostering a sustainability-oriented corporate culture. Interviewees emphasised that internal alignment and employee engagement are crucial for successful ESG integration. Governance structures emerged as another critical factor. While the quantitative analysis found no significant correlation between women on boards and firm performance, the qualitative findings underscore the importance of effective governance. Interviewee C highlighted the role of board meetings, held up to four times annually, in making sustainability decisions. This supports the need for structured governance frameworks to integrate ESG systematically and drive financial impacts. These governance practices reflect the broader role of institutional mechanisms in overcoming internal barriers to ESG adoption, aligning with frameworks like the Triple Bottom Line (Elkington 1998) and Shared Value (Porter and Kramer 2011). Organisational culture is another theme that bridges the quantitative and qualitative findings. The qualitative data emphasise the importance of cultural alignment in embedding ESG principles, which correlates with the quantitative analysis of average training hours. Training initiatives help foster a sustainability-focused culture, laying the foundation for long-term financial benefits. This dynamic aligns with findings from Hermundsdottir and Aspelund (2022), who highlight the importance of innovation and long-term planning for ESG success. External stakeholders, including customers, NGOs, and investors, exert significant pressure on ESG adoption. The quantitative finding that EU Taxonomy-aligned

revenues enhance market valuation reflects this regulatory influence. Interviewees confirmed that meeting stakeholder expectations is crucial for maintaining market relevance and securing partnerships. This aligns with Stakeholder Theory, emphasising that balancing the interests of diverse stakeholders from regulatory bodies to consumers is key to financial success. However, the qualitative data reveal regional and cultural challenges in implementing ESG, suggesting that stakeholder pressures vary depending on local contexts. The strategic integration of ESG is essential for maximising financial benefits. The quantitative findings support Stakeholder Theory, showing that balancing stakeholder interests improves market valuation. Interviewee A's insights emphasise that ESG must be embedded into the overall corporate strategy. Many interviewees stressed the importance of shaping corporate culture to prioritise sustainability, reinforcing the need for systematic ESG integration. Additionally, the qualitative findings highlight that ESG compliance is becoming a prerequisite for business partnerships, particularly in supply chains, transforming ESG from a compliance task into a competitive advantage. The temporal nature of ESG's financial impact is a recurring theme. Quantitative data indicate that environmental initiatives such as Scope 2 GHG reductions improve market valuation (TQ) but have limited immediate effects on profitability (ROA). Interviewees described the upfront costs of ESG initiatives, such as investments in ESG software and infrastructure, which take time to yield returns. However, these investments ultimately lead to long-term cost efficiencies and enhanced investor confidence. This duality reflects the findings of Hermundsottir and Aspelund (2021), who emphasise the need for time-sensitive approaches to ESG adoption. Financial benefits from ESG initiatives are primarily reflected in market-driven metrics like TQ rather than operational metrics like ROA. This is consistent with qualitative insights, where one interviewee noted an increase in valuation multiples after adopting ESG practices. Thus, while ESG may not yield immediate operational gains, it enhances market perception and long-term valuation. This aligns with the

broader strategic implication that ESG practices must be viewed as investments in future competitiveness.

In conclusion, the financial benefits of ESG initiatives are predominantly long-term, though immediate cost-saving opportunities exist. Strategic ESG integration, supported by effective governance, cultural alignment, and stakeholder engagement, is crucial for balancing short-term costs with long-term gains. Both quantitative and qualitative findings underscore the importance of regulatory compliance, external stakeholder pressure, and systematic ESG practices in driving firm performance. The research highlights the need for dynamic, time-sensitive approaches that acknowledge the complexity of ESG adoption, balancing immediate challenges with the pursuit of sustainable financial success.

4 Group Part: Limitations

To ensure the trustworthiness of this work, the limitations of this work are listed below. We will first list the limitations of our quantitative analysis and then discuss the limitations of the qualitative analysis. Despite the methodological rigour, the study acknowledges several limitations. First, the focus on European firms limits the generalizability of findings to other regions with differing regulatory and market contexts. The reliance on secondary data restricts the scope of the analysis to metrics available in the Bloomberg database, potentially excluding qualitative dimensions of ESG practices. Additionally, while the study identifies correlations between ESG performance and financial outcomes, it does not establish causality.

The results of the qualitative research are limited regarding the statistical legitimacy and the overall applicability given the research design of the study. The main findings were gained through interviews with 10 participants, each representing a different company in all different industries. An important consideration is that all interviewees were male, which could lead to a

possible homogeneity bias. In addition, the interviews were organised in a semi-structured format that enabled spontaneous questions that differed as the conversation progressed. This flexibility led to differences in the topics discussed and the answers given. As most of the participants were international participants, the interviews were conducted in English. Since English was not the native language of many interviewees, there is a possibility that language-related misunderstandings or misinterpretations occurred.

5 Group Part: Future Research

Future research could address the limitations of the present study by employing experimental or mixed method approaches to establish causal relationships and deepen the understanding of the role of ESG in corporate success. In the quantitative domain, future studies should consider adopting longitudinal research designs that extend the observation period beyond five years. This would allow for the identification of long-term trends and causality between ESG factors and financial performance. Expanding the dataset to include global firms beyond Europe would provide comparative insights into the influence of regional regulatory frameworks and cultural factors on ESG performance, thereby enhancing the generalisability of the findings. Additionally, incorporating alternative financial metrics, such as cash flow returns or risk-adjusted performance measures, could offer a more holistic perspective on the multifaceted financial impacts of ESG initiatives.

Improvements to qualitative methodologies are equally essential. Increasing the sample size and ensuring a more balanced gender representation among interviewees would reduce potential homogeneity bias and capture a wider array of perspectives. While this study utilised a fully structured interview guide, conducting follow-up interviews could provide an opportunity to explore developing perspectives and emerging themes in greater depth. Longitudinal qualitative

research, which tracks interviewees' perceptions over time, would further elucidate how ESG priorities evolve in response to shifting market dynamics and regulatory environments. Moreover, conducting interviews in participants' native languages could mitigate potential misunderstandings arising from language barriers, thereby ensuring greater precision and reliability in data collection.

By refining both quantitative and qualitative methodologies, future research could significantly enhance the reliability, depth, and breadth of insights into ESG integration. A dual emphasis on longitudinal quantitative data and enriched qualitative analyses would enable a more comprehensive understanding of how companies perceive, implement, and derive value from ESG practices, contributing robust and actionable knowledge to the fields of corporate strategy and sustainability.

6 Group Part: Conclusion

The study is designed to provide an in-depth examination of the relationship between ESG integration and financial performance in listed companies. The study uses a mixed-methods approach, combining quantitative analysis through multiple linear regression and qualitative insights from expert interviews. This method helps identify key drivers, challenges, and implications of ESG adoption, providing a thourough understanding of its financial and strategic impacts.

On the basis of the quantitative results, it seems fair to suggest that ESG integration is strongly influenced by a number of external factors, including customer requirements, regulatory requirements and investor expectations. Through modelling multiple regressions, it can be seen that environmental metrics, such as increasing EU taxonomy-aligned revenues and reducing Scope 2 greenhouse gas emissions, appear to have a positive impact on market valuation (TQ), although their direct impact on profitability (ROA) may be limited. These results show that while the

introduction of ESG improves market awareness, the operational benefits only start to realise after a longer period of time. In particular, the analysis shows that companies in sectors like utilities and communications are benefitting most from ESG compliance due to the flexibility of the market they operate in.

The social and governance factors also show more complex relationships. Reducing employee turnover is shown to have a positive, albeit marginal, impact on market valuation, suggesting that investors recognise workforce stability as a signal of sound governance. In contrast, governance factors such as board diversity and meeting attendance show limited statistical significance, suggesting that these factors may require longer observation periods to produce measurable financial returns. This emphasises the idea that while social and governance metrics are important for long-term sustainability, their immediate economic effects are less apparent.

The results of the qualitative research reinforce these findings by emphasising contextual dynamics that quantitative models alone cannot capture. The interview data shows that institutionalised ESG governance structures, such as sustainability committees, enable companies to align ESG objectives with their core business strategies, thereby promoting innovation, operational efficiency and long-term value creation. In addition, cultural dynamics play a crucial role. Corporate cultures that emphasise sustainability through training and awareness programmes strengthen internal commitment and support the triple bottom line framework, which reconciles social, environmental and economic goals.

Nevertheless, regional and cultural complexity are proving to be critical obstacles. While the regulatory ESG accountability strengthens the market position of companies in Europe, less stringent regulations in other regions act as a barrier to global ESG standardisation. This requires localised strategies that are tailored to each regulatory environment and reflect the diverse landscape of global ESG implementation.

The results also show the dual financial effects of ESG. The short-term financial challenges involve high initial costs for ESG investments, like decarbonisation and compliance initiatives. Yet these investments yield long-term benefits, including enhanced valuation multiples, operational efficiencies and greater investor confidence. This is in line with the shared value theory and demonstrates the way in how social and economic goals can be reciprocally strengthened when sustainability is embedded in corporate strategy.

These findings have several implications for companies, investors and policy makers. Companies should adopt proactive, integrated ESG strategies that align governance structures with sustainability objectives and prioritise long-term value creation over short-term financial goals. Investors should integrate long-term ESG criteria into their valuation framework, balancing immediate market performance with future financial resilience. Government policy makers need to strengthen the ESG regulatory framework, establish a standardised set of ESG metrics and support challenging industries through dedicated incentives and public-private collaborations. Businesses also should consider investing in internal cultural development through education as well as engagement initiatives to ensure that sustainability becomes embedded in their corporate identity. By connecting theoretical frameworks with empirical evidence, this study underscores the critical financial relevance of ESG integration as a driver of long-term corporate success. It emphasises the opportunities and challenges linked to ESG adoption and highlights sustainability as a strategic necessity for long-term competitive advantage and financial resilience.

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Appendix

Appendix A – Interview Guide

Introduction

- Could you briefly introduce yourself and your role in the company, as well as provide a short overview of the company's main activities and industry?

General Attitude Towards ESG-Initiatives:

- How does your company view the importance of Environmental, Social, and Governance (ESG) factors in your overall corporate strategy?
  - Please explain whether ESG initiatives are mainly driven by internal values or external pressures (such as regulatory requirements or investor expectations).
- To what extent is your company intrinsically motivated to implement ESG initiatives, regardless of external expectations such as regulations or investor demands? *(*Can you share specific examples of internal motivations, such as leadership actions or cultural shifts, that drive your ESG efforts?*)*
  - Provide specific examples of internal motivations (e.g., company culture, leadership priorities, long-term vision) that drive your ESG efforts.
- Which external stakeholders (e.g., investors, governments, NGOs) have the greatest influence on your ESG strategy?
  - Provide examples of how these external actors influence your ESG decision-making.
- What role does the board of directors play in setting and overseeing the company's ESG strategy?
  - Explain how often the board reviews ESG-related issues and whether there have been any recent governance reforms related to ESG.

Financial Impact of ESG Initiatives

- Are your ESG initiatives primarily aimed at sustainably improving your company's financial performance, or would you say that the focus is on reducing environmental impacts—regardless of the costs—and any financial benefits are seen as a positive side effect?"
- How do you balance the need for short-term financial performance with long-term ESG goals? (Can you provide a real-life example of a situation where you faced this conflict, and how it was resolved?)
  - Discuss any challenges or strategies you've implemented to manage potential conflicts between profitability and sustainability e.g. reporting costs.
- To what extent do you believe that ESG performance has a direct or indirect impact on your company's financial performance? (*Could you give an example of a time when ESG efforts directly influenced your financial performance, such as through cost savings or investment attraction?*)
  - Are there specific examples that demonstrate this relationship?
- How do you measure the financial impact of your ESG initiatives? Which financial metrics (e.g., return on investment, stock price, credit ratings) do you find most useful in tracking ESG's impact?
  - Which financial metrics are directly linked to your ESG activities?

Challenges and Future Outlook

- What are the primary obstacles your company faces in achieving ESG metrics, both within your operations and from external factors such as regulations or market conditions? How are you addressing these challenges like reducing emissions in your supply chain, transitioning to renewable energy, or meeting compliance standards?
  - Identify both internal and external challenges and discuss your strategies to address them.
- How do you see the relevance of ESG evolving within your industry, and what is your company doing to stay ahead of emerging ESG trends? (*What recent ESG trends have you already adapted to, and what future initiatives are planned to stay ahead?*)
  - Reflect on the future of ESG in your sector and the strategies your company is implementing to adapt to new challenges and opportunities.

Appendix B- Sample Translations

Original Quote (German)	Translation (British English)
„Am besten Beispiel bei uns ist es eben, der Start eines Projekts zur Implementierung eines Umweltmanagementsystems und Energiemanagementsystems. Da kommt es natürlich so wie bei jedem Unternehmen auch erstmal am Anfang darauf an was kostet das Ganze und welche Auswirkungen haben wir hier? Das ist ein ganz klassisches Beispiel, wo man natürlich, wenn man in einem anderen Unternehmen wäre und nur auf die Kosten gucken würde, dann natürlich erstmal da kritischer drauf gucken würde.“ (Interviewee E, 12:38)	„The best example for us is the start of a project to implement an environmental management system and energy management system. As with any company, it depends at the beginning on how much does it all cost and what impacts do we have here? That is a classic example where, if you were in another company and were only looking at the costs, you would of course look at it more critically.” (Interviewee E, 12:38)
„Politischen und und rechtlichen Anforderungen in Form von Richtlinien ist hier definitiv eine Herausforderung, sondern auch wenn man sich noch mal auf unsere auf unser Unternehmensleitbild oder unser Ziel rückbesinnt, also auch Deutschland im Bereich der digitalen Zukunft mitzuprägen und auch voranzubringen, merkt man hier ganz klar eben, dass teilweise auch auf politischer Ebene Zielkonflikte herrschen.“ (Interviewee E, 22:08)	“So not only the political and legal requirements in the form of guidelines are definitely a challenge here, but also if you think back to our company mission statement or our goal of helping to shape and advance Germany in the area of the digital future, you can clearly see that there are sometimes conflicting goals at the political level.” (Interviewee E, 22:08)

Appendix C- Coding Tree

Example Quotes	First Order Concepts	Second Order Concepts	Aggregated Dimensions
• Now, if you come to customers, customers are also putting in conditions that there should […] have a certain ESG score, you should have an ESG integrated report […] these are part of the pre-qualification requirement before you. […] do business with that company. • A lot of external stakeholders […] like investors, governments and NGO […] • […] one customer said, or you have that certification or I don't buy from you what we do.	• Customer Prioritization of ESG for Business Partnerships • NGOs Monitoring ESG Compliance • Supply Chain Partners Demanding ESG Alignment	External Stakeholder Pressure Linking ESG and Financial Performance	External Drivers Linking ESG Integration to Financial Outcomes
• It's the regulation that dictates certain things to us […] if investors aren't interested in that, then it's more of a matter of fulfilling an Obligation […] • The Introduction of the CSRD hast Made governments the most influential stakeholder […] • Public tenders and government initiatives, like the EU's Green Deal and carbon neutrality goals, place significant emphasis on ESG performance.	• Increasingly Strict Regulations • CSRD and EU Taxonomy Frameworks Driving ESG Reporting • Article 8 Compliance and UN-PRI Standards	Regulatory-Driven ESG Accountability	
• […] every employee in our company is working very hard because the trading companies are their own […] if you create more value to the customer, you will get more revenue. If you get More revenue […] you will be the owner of the company […] • ESG performance is increasingly critical in company valuations and investor decisions. • […] the investors are looking at how is your ESG score […] keep money in your company or they move it	• Influence of Parent Companies as Investors • Employee Ownership Drives Value Creation • Investor Expectations Enhancing ESG Attractiveness • ESG Performance Reduces Cost of Capital	Investor Pressure for ESG Integration to Enhance Financial Value	
• We have a sustainability committee that includes the board of directors and key departments […] and usually meets three or four times a year to make decisions on sustainability strategy and review ESG-relevant topics. • We have few sustainability initiatives from a top-down approach […] most are driven by external changes, pressures, or demands.	• Strategic Leadership and Governance by the Management Board • Top-Down Implementation and Oversight • Responsiveness to External Pressure	Institutionalized ESG Governance for Strategic and Financial Impact	Systemic ESG Integration as a Lever for Financial and Strategic Impact
• We see ESG as a core part of our strategy and value proposition […] positioning us as an ESG-oriented company to attract investors and stay ahead of competitors. • Measures to secure long-term asset performance and value also ensure our future viability […] aligning with the growing demand for sustainable investments and giving us a competitive advantage.	• ESG as a Gradual Strategic Value Driver • ESG Embedded in Corporate Strategy as a Long-Term Enabler • ESG Driven Innovation as a Competitive Advantage	Strategic Integration of ESG for Sustainable Competitive Advantage	
• In Portugal, the biggest barrier is culture […] many people have only a vague idea of what ESG is. • We observe a cultural divide, with German employees being more engaged in sustainability than those in the US. • There is a need for ESG education […] while many speak about ESG, few understand its meaning. This ties into a broader issue of culture and education, which are critical aspects.	• Cultural Resistence as a Barrier to ESG-Adoption • Cultural Alignment with ESG as a Driver for Organizational Change • Education as a Catalyst for ESG Culture	Cultural Dynamics as a Key Determinant of ESG Integration	
• We believe that in 3 to 5 years, ESG-compliant companies […] may achieve higher multiples, potentially 12 times EBITDA. • We discussed with a U.S. department store about a fully natural product […] and were told that with good communication, it could sell at a 20% premium. • Increasing wages alongside productivity improvements […] can create a win-win […]	• Increase in Enterprise Value Through ESG Compliance • Price Premiums for Sustainable Products Cost Reduction Through Environmental Measures • Productivity Gains Through Social ESG Measures	Financial Value Creation Through Holistic ESG Integration	Financial Performance Through ESG Integration
• So even there are a lot of initiatives taken which hast a cost impact on the shorttern basis. • Sometimes we lose some profit because we have to reduce a lot of our margins to do some deals. • Okay, we know we are in the right way, but the world is not in the same position at this moment. The different regions have different positions in these, so these caused me bigger costs.	• Short-Term Cost Burden of ESG Initiatives • Margin Erosion Due to ESG Compliance • Regional and Regulatory Variances Increase Costs	Economic Challenges of ESG Transition	
• Measures to secure assets in the long term […] increase their value and ensure our future viability as a company. • As sustainable investments remain in demand […] we gain a competitive advantage with our broad range of offerings. • We must balance short-term success with long-term strategy […]	• Investments in Future Viability and Asset Value • Long-Term Benefits of Sustainable Investments • Balancing Short-Term Survival with Long-Term Strategy	Long-Term Value Creation Through ESG Investments	

ESG Integration and Financial Performance: A Dual Perspective

We certify that:

(1) The thesis submitted for examination has been independently created by us.

(2) Our research has been conducted in accordance with ethical standards.

(3) The data and results presented are authentic and were obtained by us during the research.

(4) The work, ideas, and results of others have been properly acknowledged in the thesis.

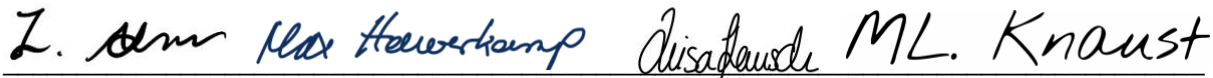
(5) In cases of collaboration with other researchers, we have clearly stated our individual contributions to the investigation in the thesis.

(6) In agreement with our supervisor António Leite, the formal assignment of individual sections was made solely for administrative purposes. Due to the specific structure of this thesis, the actual contributions of the team members exceeded the formally assigned parts and cannot be clearly attributed.

(7) The thesis has not been submitted to any other examination committee.

(8) The thesis has not been published before.

17.12.2024
Lisboa



(signatures)

Leonard Alms/Max Hawerkamp/Luisa Kausch/Max Linus Knaust