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The Impact of Sustainability Reporting on Firm Performance

Empirical Evidence from Finland

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ABSTRACT:

Corporate Social Responsibility (CSR) disclosure has emerged as a crucial component of modern corporate communication, due to the growing expectations that firms exhibit accountability in environmental, social, and governance (ESG) domains. However, the academic literature regarding the relationship between CSR disclosure and firm performance presents mixed and often contradictory evidence, showing positive, negative, or statistically insignificant effects.

This study investigates this ongoing discussion by examining publicly listed companies in Finland, a renowned sustainability leader in northern region and across the globe, that ranked first out of 193 nations according to Sustainable Development Goals Index in 20024 with a score of 86.35.

The study explores whether ESG transparency results in better operational, financial and market outcome, drawing on theories of stakeholder, legitimacy, and agency. The study employs fixed-effects regression models to investigate the effects of ESG disclosure scores, obtained from Bloomberg, on Return on Equity (ROE), Return on Assets (ROA), Tobin's Q, and annual stock returns using a panel dataset of 88 firms over a six- years period (2018–2023).

The results show that the relationship between ESG disclosure and firm performance is largely statistically insignificant, with some dimensions even revealing a negative relationship. These findings suggest that while ESG reporting may serve legitimacy purposes in high-standard CSR environments like Finland, it does not necessarily yield measurable financial advantages.

That said, the robustness test suggests that the link between ESG disclosures and firm performance can differ depending on the industry and timing of the ESG impacts. These results highlight the importance of considering the broader context when analysing the impact of ESG disclosures. This opens opportunities for future research to explore how ESG disclosures influences companies differently across sectors and over extended time periods. By focusing on Finnish firms, this study provides country specific insights to the growing body of CSR literature and highlight the need for further investigation into the qualitative and strategic dimensions of ESG practices within organizations.

KEYWORDS: Corporate Social Responsibility (CSR), ESG disclosure, sustainability reporting, firm performance, operational performance, financial performance, market performance, Finland

Contents

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Abbreviations

CSR	Corporate Social Responsibility
ESG	Environmental, Social and Governance
SDG	Sustainability Development Goals
UN	United Nations
ROA	Return on Assets
ROE	Return in Equity
TQ	Tobin's Q
RTS	Return to Stocks / stock returns
TCFD	Task Force on Climate-Related Financial Disclsoures
SASB	Sustainability Accounting Standards Board
GRI	Global Reporting Initiative
TBL	Triple Bottom Line
ICB	Industry Classification Benchmark
VIF	Variance Inflation Factor

1 Introduction

Corporate Social Responsibility (CSR) disclosure has become a central aspect of modern corporate communication, as firms increasingly recognize the importance of sustainability and social responsibility. Academic literature combines sustainability and corporate social responsibility (CSR) into a single concept (Dhaliwal et al., 2011). A company's duty to measure and handle social and environmental results from business operations is commonly known as CSR. The company's responsibility to implement CSR must become part of its core business strategy and operations by maintaining ethical conduct together with environmental stewardship and human rights protection and consumer considerations following legal requirements (European Commission, n.d.). Companies increasingly publish sustainability reports in order to showcase their CSR efforts to the stakeholders (Christensen et al., 2021). This form of reporting has become an almost widely accepted global norm with the majority corporations now disclosing information on their sustainability efforts (KPMG, 2022).

Depending on the sustainability reporting measure, financial performance measure, sample composition, time-period, and control variables, the results of the relationship between CSR disclosure and firm performance, provide mixed, inconsistent and often contradictory evidence ranging from positive, to negative, to statistically insignificant according to the academic literature. However, majority of evidence from literature suggest positive relationships while explaining that comprehensive CSR reporting enhances a firm’s financial performance by enhancing market competitiveness, attracting ethical investors, improving consumer loyalty (Cahan et al., 2016; De Klerk et al., 2015; Tsang et al., 2022). Meanwhile, other researchers like Chen et al. (2018), Grewal et al. (2017), Lioui and Sharma (2012), have found a negative relationship and studies done by Atan et al. (2018), Guidry and Patten (2010) and Phan et al. (2020), have not discovered any meaningful connection about this relationship. Furthermore, several studies conducted by Jones (2005), Mănescu (2011), Omar and Zallom (2016) produced contradictory results about this relationship. This conflicting finding encourages more

research into the potential effects of CSR disclosures on firm performance across various market environments, especially in Finland.

1.1 Background of the study

Nowadays environmental, social and governance (ESG) issues have become central to how business operate. The companies' expectations have changed towards demonstrating their commitment to sustainability in tangible ways.

Due to this change companies are increasingly adopting CSR frameworks, guidelines, and reporting standards to show they understand the importance of CSR and sustainability in today's business world (Carroll, 1999; Elkington, 1997). Companies use CSR as an essential strategic element to define their corporate reputation and business identity in the market. In today's modern world, companies need to show transparency in their environmental and social operations in order to follow laws and build a better reputation in the market (Freeman, 1984).

CSR reporting throughout history has been considered as an optional voluntary procedure which helps businesses showcase their values. Organizations would disclose data about their ESG efforts to prove their social engagement alongside ethical conduct. However, society's general understanding about CSR has changed overtime. The implementation of legal CSR disclosure requirements has become standard practice in many nations across the world. Research examining the effects of this mandatory CSR disclosures on firm performance becomes more important after this transition (Haji et al., 2023).

Business operations face significant changes because companies must develop sustainable approaches to balance profitability together with social benefits (Aggarwal, 2013). When CSR gained prominence, it gained status as a vital business management perspective which required organizations to exceed regulatory requirements by actively

discussing and sharing their CSR initiatives to build competitive advantages (Du et al., 2017).

This is demonstrated by the Non-Financial Reporting Directive (2014/95/EU), that the European Commission enacted. This directive applies to publicly listed companies that have an average of at least 500 employees during the financial year. These companies must report their CSR activities as per the mandatory requirement established since 2017 (European Commission, 2014).

Lueg and Peshva (2021) together with Midttun et al (2015) and Strand et al (2015), confirm through research that Nordic counties have established themselves as leaders in sustainability. These countries performing well in various sustainability rankings, and corporate social responsibility stands as a vital strategic component that shapes their business approaches (Lueg & Pesheva, 2021). Although scholarly research in Nordic context remains scarce which proves that additional research is required according to Khatri & Kjærland (2023).

Finland is often seen as one of the Nordic countries that puts a strong focus on sustainability. More and more Finnish companies are now making corporate social responsibility (CSR) a key part of how they do business. This shift is largely driven by the fact that society, both customers and the general public, expect companies to take responsibility for their actions, especially when it comes to the ESG issues. Although interest in CSR is growing across the country, there still isn't enough literature that shows how CSR activities affect business performance in Finland. This study hopes to fill that gap by looking into the link between what companies report about their CSR efforts and how well they perform. In Finland, doing business responsibly isn't just encouraged, it's become something that people expect as part of good business practice.

1.2 Purpose of the study

The purpose of this study to find out whether sustainability disclosures have a significant impact on the performance of Finnish companies. Finland is widely recognised for its strong commitment to sustainability and currently Finland ranked first according to the Sustainable Development Report 2024 followed by Sweden and Denmark (Sachs et al., 2024). In light of this background, Finnish firms offer a unique setting to explore whether this improved ESG disclosure translate into better outcomes for businesses.

This study looks at publicly listed companies in Finland over the years 2018 to 2023 and uses Bloomberg ESG disclosure scores to measure sustainability disclosure. It then examines how these ESG disclosure scores impact on firm performance assessed across three dimensions;

- **Operational Performance:** determined by Return on Assets (ROA).
- **Financial Performance:** determined by Return on Equity (ROE).
- **Market Performance:** determined by Tobin's Q and stock returns.

The main research question of the study is;

- Do CSR disclosures have a positive effect on firm performance in the Finnish context?

By answering this question, this study aims to provide a clearer picture of whether ESG disclosure truly benefits firms in a country where sustainability is already a high priority. The goal of this study to offer valuable and up-to-date insights not only for researchers but also for businesses, investors, and policymakers who are navigating the growing expectations around responsible business conduct.

1.3 Structure of the study

The structure of the remaining chapters in this thesis uses the following order. Chapter two provide the theoretical framework that support the empirical analysis. It begins by introducing the concept of CSR, tracing its definitions and development over time, and then explores CSR reporting with a particular focus on context of Nordic region and Finland. This chapter also present three theoretical perspectives that help explain CSR behaviour of firms, namely legitimacy, stakeholder, and agency theory. These theories give an in depth understanding into why companies engage in CSR reporting. Chapter three continue with an in-depth review of existing literature and introduces research hypotheses. The literature is categorized into three groups, studies showing a positive link between CSR and firm performance, studies indicating a negative relationship and those that report no significant connection between the variables under investigation.

The methodology and data are presented in the fourth chapter. It first describes data collection and sample selection procedure, variables of the study and data cleaning procedure. This chapter also includes a presentation of descriptive statistics and correlation analysis to provide an overview of the dataset. Subsequently, the regression models employed in the study are explained along with a discussion of model selection and the diagnostic tests conducted to ensure reliability. Chapter five presents the empirical findings including the results of robustness checks. The findings of the study are then analysed and discussed in depth. The sixth chapter is the conclusion which include summarization of the whole thesis, practical implications, contribution and limitations, and ideas for future research.

2 Theoretical Framework

The study's theoretical framework is divided into two sections, corporate social responsibility (CSR) and its foundational theories. The first section explores the concept of CSR, its definitions and evolution, CSR reporting, and the application of CSR within the Nordic region and Finland. The second section outlines key CSR related theories commonly utilized in related studies. Altogether, this chapter provides a theoretical foundation and introduces key concepts important for the empirical analysis of the study.

2.1 Corporate Social Responsibility (CSR)

There is no universally accepted definition for Corporate social responsibility (CSR) as its meaning can vary depending on the context. This concept has emerged in the 1950s. Over time, many definitions have been proposed, and debates have arisen about which one is the most accurate. Companies began recognizing the public's increasing concern with social issues, which were previously not seen as significant. External stakeholders now expect more from businesses, particularly regarding transparency. Corporations are increasingly held accountable for being responsible citizens and acting ethically (Porter & Kramer, 2006).

2.1.1 Definition and Evolution of CSR

Over the decades, various definitions of Corporate Social Responsibility (CSR) have been proposed. Scholars using different terms such as 'social responsibility' to describe CSR. (Carroll, 1999). One of the earliest definitions was provided by Howard Bowen In 1953, who describe it as the obligation of business to align their policies, decisions and actions with societal expectations and values (Bowen, 1953). Another early definition by Keith Davis viewed social responsibility as actions and decisions made by corporations for reasons beyond direct economic and technical considerations (Davis, 1960). Over time,

researchers began acknowledging the broader range of responsibilities that businesses hold beyond their economic duties (Carroll, 1999).

The understanding of CSR has progressively developed over the time, shaped by various academic and practical contributions (Carroll, 1999; Latapí Agudelo et al., 2019; Lee, 2008). According to Carrol (1999), the concept of CSR began to take shape in the late 1950s, though earlier scholarly works had presented it from a different perspective. Bowen's 1953 study is frequently considered as the first theoretical framework for understanding the interaction between businesses and society (Carroll, 1999; Lee, 2008). He argued that corporate actions and decisions have significant societal impact, and while CSR doesn't solve all societal issues, it is a key step toward improving welfare (Bowen, 1953). Around the same time, new laws regarding business conduct, employee, and consumer protection emerged in the U.S., and the consumer rights movement gained momentum, which introduced new complexities for businesses to navigate (Lee, 2008).

During the 1960s, the body of CSR empirical evidence grew considerably during the 1960s, with many scholars seeking to define the concept (Carroll, 1999). In 1960, the scholars introduced two distinct categories of responsibilities within CSR, namely, socio-economic, which focuses on public welfare like employment and competition, and socio-human, which concerns values such as cooperation and morale (Davis, 1960). Carroll (1999) highlights that Davis's view on the link between CSR and business power became widely accepted in the late 1970s and 1980s. The committee for Economic Development further expanded the CSR concept, addressing its controversies and arguing that socially responsible behaviour benefits shareholders in 1970 (Lee, 2008; Wallich & McGowan, 1970). throughout the 1970s, definitions of CSR became more specific, with scholars like Harold Johnson emphasizing the importance of considering groups beyond stockholders, such as employees and the local community (Johnson, 1971).

While new definitions of Corporate Social Responsibility (CSR) slowed in the 1980s, other ideas, such as Corporate Social Performance (CSP), gained popularity (Carroll, 1999). Carrol (1999) explains that CSR reflects a broader set of responsibilities that business holds, whereas CSP focuses more on the actual outcomes of those responsibilities. Stakeholder theory, corporate social responsiveness and business ethics were also discussed during this time (Carroll, 1999). While new interpretations of CSR continued to emerge, significance global events played a major role in increasing CSR awareness in the 1990s. A good example for that is the Summit of United Nations on the Environment and Development. Throughout this decade, corporate social responsibility (CSR) became an essential part of organizational reputation and stakeholder management, making the foundation for other related ideas like stakeholder theory and business ethics (Carroll, 1999; Lee, 2008).

The introduction of new organizational frameworks and strategies made corporate social responsibility (CSR) recognized internationally throughout the 2000s. According to Latapí Agudelo et al. (2011) the European Commission released a corporate social responsibility report in 2001 alongside international corporate certification development including ISO 26000. According to Latapí Agudelo et al. (2011) CSR transformed into a vital strategic management instrument. The new concepts of shared value creation emerged, further developing the CSR concept during the subsequent decade. The social and economic value generation framework Named Creating Shared Value (CSV) was initially proposed by Porter and Kramer (2011). Unlike CSR, CSV directly enhance company profitability and competitiveness, while improving corporate reputation (Porter & Kramer, 2011). Werther and Chandler (2014) also emphasized strategic CSR, encouraging companies to find market-based solutions to societal issues in order to create social and economic value.

According to Cupertino et al. (2022) CSR has become an essential component for businesses while various organizations present different definitions of this concept. For example, The United Nations Industrial Development Organization (UNIDO) defines CSR

as the practice of incorporating social and environmental factors into business operations (UNIDO, n.ds.). But according to the European Commission, it is the duty of corporations to consider their effects on society, including ethical and environmental issues (European Commission, n.d.). These fundamental ideas have changed over time while the core principle of CSR remained consistent over time.

2.1.2 CSR Reporting

In today's business environment, being transparent about sustainability and social responsibility become an important aspect of corporate reporting. The practice of disclosing CSR initiatives as a report has become popular throughout the globe, as many businesses share information about their sustainability efforts and results (KPMG, 2020, 2022). The core purpose of CSR reporting involves collecting, analysing and presenting data that describes both measurable and subjective evidence about firm's social, ethical, and environmental responsibilities (Christensen et al., 2021).

The purpose of CSR disclosures includes both strategic and communicative elements. According to Crane and Glozer (2016), the strategic purpose of CSR disclosures classified into influence both behaviours and attitudes, legitimacy establishment, reputational development, stakeholder interaction as well as corporate identity creation. These disclosures included in the annual report or in a separate report that contain information about CSR. The content of these reports often changes, but it commonly includes sections about community relations, supply chain management, human rights combined with workplace safety, CSR tactics, risk mitigation, ethical conduct and environmental initiatives (Vartiak, 2016). Companies during recent years have prioritized sharing information about climate risks, while working to reduce their carbon emissions and contributing to the Sustainable Development Goals (KPMG, 2022).

CSR reporting for companies involves the environmental, social, and governance aspects known as ESG. Fair labour practices, workplace diversity, and consumers safety belong

to ‘social’ component of ESG assessment. The ‘environmental’ component looks at how companies evaluate their natural impact, such as resource utilization and waste management (Clément et al., 2023). The ‘governance’ pillar of ESG investigates company leadership structure, fight against corruption, and its ethical standards (Singh & Chakraborty, 2021). As noted by Clément et al. (2023) and Han et al. (2016), ESG scores are often used to evaluate how well a company is performing in these ESG-related domains. Although CSR and ESG terms are sometimes treated identically, many experts agree that ESG provides a wider perspective by prioritizing governance elements (Abdul Rahman & Alsayegh, 2021).

Many corporations adopted uniform standards to manage their reporting because stakeholders expected higher levels of corporate social responsibility. Three main frameworks exist for reporting which include the Task Force on Climate-related Financial Disclosures (TCFD) as well as Sustainability Accounting Standards Board (SASB) and Global Reporting Initiative (GRI). However, GRI is recognized worldwide as the most common standard (KPMG, 2022). Through its standardized approach organizations can assess and report their environmental social and economic impacts through GRI platform. GRI standards consist of ‘Topic Standards’ which focus on workplace safety, waste management and taxes, ‘Sector Standards’ particular to industry-specific reporting standards along with ‘Universal Standards’ that apply to all organizations (GRI, n.d.).

CSR reporting is optional in many jurisdictions, just as the adoption of such frameworks is. To uphold their ethical reputation, satisfy stakeholders, or show social responsibility, businesses frequently decide to voluntarily reveal CSR information (Dobbs & van Staden, 2016; Mukherjee & Nuñez, 2019; Thorne et al., 2014). However, an increasing number of governments have started enacting mandatory CSR disclosure laws; this is seen in Asia and the European Union (European Commission, 2021; Mukherjee et al., 2018). As KPMG (2022) notes that there has been a noticeable shift from voluntary to mandatory

CSR reporting, therefore more business will soon be required to report their sustainability performances by the law.

Mandatory and voluntary CSR reporting have impacted differently to the Companies. For example, mandatory disclosures usually lead to higher short-term operating expenses since they force businesses to improve their CSR initiatives to meet regulatory requirements (Cupertino et al., 2022). Frequently, the driving forces behind the push are social pressures, stakeholder influence, and industry comparisons (Christensen et al., 2021). However, mandatory reporting also enhances the transparency and dependability of CSR disclosures by standardizing what needs to be reported. Organizations that adopt voluntary reporting had freedom to publish only positive information that builds reputational value, but it creates concerns regarding their trustworthiness (Gatti et al., 2019). Mixing both mandatory requirements and their own voluntary efforts in reporting CSR, it encourages more honest and responsible behaviour (Christensen et al., 2021; Gatti et al., 2019).

2.1.3 CSR in the Nordic Region and Finland

Nordic countries are often seen as leaders when it comes to corporate social responsibility (CSR) and sustainability according to Midttun et al. (2015). Throughout different periods in history these countries have worked together to improve social wellbeing, protect the environment, and strengthen their economies through various partnerships (Bird, 2017). Scientific evidence show that people in the Nordic region are generally willing to spending more on environmental protection and are supportive of eco-friendly efforts (Reyes, 2021). Many companies in this region have made sustainability a part of their everyday business activities (Lueg & Pesheva, 2021). Nordic governments also play an important role in global CSR efforts. They support international programs, such as those led by the United Nations, and promote sustainable practices through national policies (Lueg & Pesheva, 2021; Midttun et al., 2015).

International sustainability rankings show Finland as a leader with its first-place position from 193 countries scoring 86.35 on the 2024 Sustainable Development Goals (SDG) Index that assesses countries on their progress toward SDGs (Sachs et al., 2024). This top ranking highlights the country's serious commitment to protecting the environment and promoting sustainable development. Sustainability reporting is also widely practiced in Finland. KPMG's 2024 report shows that 94% of Finnish companies included in the survey published sustainability reports, number that has stayed steady since 2022 (KPMG, 2022, 2024). This thesis investigates the impact of ESG disclosures on corporate performance, with a particular focus on Finland.

The Nordic welfare model is distinguished by the government's proactive engagement in social and environmental issues. Several CSR-related policies have been developed as a result of this over time (Midttun et al., 2015). Finland's public discourse and CSR-related policy implementation, however, have developed more slowly than those of its Nordic neighbours. However, the legislative measures like the Finnish Accounting Act, which mandate that certain companies disclose non-financial information as part of their annual reporting obligations were introduced by the Finland government (Khatri & Kjærland, 2023; Midttun et al., 2015).

Even though sustainability performance is generally high, a 2023 report by Finnish Business and Society notes that although many Finnish companies have a strong foundation for CSR, their efforts can still be improved (Finnish Business & Society, 2023). However, in areas such as CSR integration and sustainability reporting, Finland continues to perform well globally (KPMG, 2022; Sachs et al., 2024).

Currently, CSR reporting practices in Finland are greatly influenced by EU regulations. The Nordic nations work together to position themselves as the most sustainable region in the world by 2030, in addition to fulfilling regulatory requirements. Achieving carbon neutrality, advancing the ideas of the circular economy, encouraging innovation, and

improving social inclusion and equality are just a few of the objectives included in this vision (Nordic Council of Minister, 2020).

Sustainability is often seen as a way to support both economic growth and environmental responsibility. Aagaard et al. (2022) point out that the Nordic countries have several strengths in this area. Thanks to their strong start-up environment and advanced technical expertise, these nations are well-positioned to build and support sustainable systems. Moreover, this region maintains a strong position to develop economic value through job creation because it effectively utilizes its resources to align with established policy goals that support worldwide sustainability transitions.

2.2 Key theories in CSR

In academic literature, corporate social responsibility (CSR) has been studied from a number of theoretical perspectives (Frynas & Yamahaki, 2016). Research studies have utilized various theoretical frameworks to explain CSR practice mechanisms including political economy theory, resource dependency theory, agency theory, legitimacy theory, stakeholder theory and resource-based view. These theories are frequently cited by scholars like Frynas and Yamahaki (2016) and Mehedi and Jalaluding (2020). This research will focus primarily on stakeholder theory and legitimacy theory together with agency theory since these theories offer significant insights about CSR reporting effects on firm performance. This paper analyzes each of these theories in separate sections.

2.2.1 Legitimacy Theory

Voluntary disclosure practices of social and environmental matters are commonly studied using Legitimacy theory within the CSR field. ‘Social contract theory’ stands as the foundational idea behind this framework according to Guthrie and Parker (1990). Lindblom (1993) defines business legitimacy through operational conformity to wider

social norms and organizational principles and procedural standards. In other words, companies seek to maintain continuous social acceptance in order to ensure their survival and success.

Legitimacy evolves over time as public values, expectations and awareness change. Failure to adopt to these changes exposes firms to legitimate threats that may originate from ethical and moral problems, environmental incidents, or business transparency issues (Fernando & Lawrence, 2014). To overcome these many businesses, take steps to act more responsibly and share information about their actions through CSR efforts (Deegan et al., 2002).

The idea of this theory based on the view that companies are part of a broader society and their decisions and actions shaped by political, social and economic influences. (Deegan et al., 2002; Gray et al., 1995). In other words, organizations must earn their 'license to operate' through continuous stakeholder satisfaction since the automatic right to operate no longer exists. Because of this, legitimacy theory considers CSR reporting essential for organizations to implement their communication strategy.

The disclosure of CSR initiatives helps businesses convince the public they are committed to follow ethical standards while reducing adverse feedback and constructs favourable reputation. The reporting process helps businesses showcase their environmental projects and community involvement alongside the management of their reputation risks by handling adverse incidents (Villiers & Maroun, 2017). As an example, businesses increased their environmental reporting effort after environmental tragedies to rebuild their lost legitimacy.

Interestingly, the legitimacy theory explains the existence of correlation between CSR reporting and company performance. Through CSR reporting companies can build their reputation, prevent external stakeholder conflicts and can obtain competitive benefits by improving stakeholder perceptions and establishing trust. Companies that build

positive public reputation through enhanced disclosure may obtain multiple financial benefits from expanded capital access, greater customer loyalty and operational efficiency.

In today's world, CSR reporting transparency plays a vital role due to stricter regulations and improved stakeholder awareness (KPMG, 2020). CSR reporting is no longer something companies do just to look good, it's now a crucial part of building trust and improving how a business performs.

2.2.2 Stakeholder Theory

Corporate responsibility can be better understood through stakeholder theory which Freeman introduced in 1984 because this approach demonstrates that companies maintain relationships with diverse stakeholder groups. Besides shareholders the framework of stakeholder theory includes communities together with government agencies, suppliers, workers as well as consumers and even the environment. The model of stakeholder theory instructs businesses to interact with various stakeholder groups' multiple interests and expectations since they affect company operations (Freeman, 1984).

According to Friedman (1970) classical thinking maintains the company's only social obligation consists of shareholder profit maximization but this approach contradicts his view. According to Rather stakeholder theory accepts a wider corporate goal spectrum because it understands that financial outcomes have social and environmental responsibilities (Fernando & Lawrence, 2014).

According to Freeman and McVea (2001), the successful engagement of businesses with stakeholders leads to trust development and enhances reputation alongside maintaining long-term success of the business. CSR reporting demands transparent disclosure about environmental and social projects since such openness helps build better stakeholder

relationships. CSR reporting that actively manages stakeholder expectations by being proactive brings dual benefits of risk reduction while promoting positive goodwill.

Donaldson and Preston (1995) have defined Stakeholder theory into the three parts of normative, instrumental and descriptive. Through this theory we understand business stakeholder relationships and we can forecast financial effects of stakeholder management while companies face moral obligations to address stakeholder needs. The understanding of how CSR reporting affects business performance requires these core elements to establish moral responsibility while achieving strategic targets.

CSR driven by stakeholder theory demonstrate positive value creation despite being misperceived as mere regulatory obligations. Research finds that when companies seriously address stakeholder matters, through initiatives like better worker treatment and environmental reduction efforts and transparency commitments will lead businesses to experience higher morale among employees and better loyalty from customers as well as increased confidence from investors (Barnett & Salomon, 2002; Waddock & Graves, 1997).

There remains an increasing doubt about the authenticity of disclosures that organizations publish regarding their Corporate Social Responsibility activities. Some critics argue that businesses utilize CSR reporting as a symbolic gesture for accountability more than real improvement, a tactic often called "window-dressing" (Connors et al., 2017; Ting, 2021). Which is why stakeholder theory emphasizes that true responsibility means understanding all stakeholder conflicts rather than catering to interests of specific group. Therefore, to deliver meaningful CSR reporting organizations need true and equal measures that prove their dedication toward social environmental and economic duties (Lin et al., 2022).

To sum up, the stakeholder theory creates a useful system to investigate how CSR reporting impacts business performance. The theory demonstrates that correctly

presented ethical business practices through CSR disclosures create legitimacy while delivering long-term profitability thanks to their focus on open stakeholder engagement.

2.2.3 Agency Theory

Jensen and Meckling (1976) established that agency theory defines the relationships between principals (business owners like shareholders) and agent who manage the company. This relationship is prone to conflicts of interest wherein managers choose personal benefits over shareholder value growth because they seek promotions and bonuses and personal recognition (Quinn & Jones, 1995). Agency problems are a common term used to describe these conflicts.

Information asymmetry is one of the main causes of agency issues. Compared to external stakeholders, managers typically possess a more comprehensive understanding of the company's operations, risks, and performance because they are internal actors. Moral hazard, in which managers make choices that benefit themselves more than the company or its investors, can result from this imbalance. Due to inadequate disclosure, it may also result in adverse selection, where shareholders or potential investors find it difficult to determine the firm's actual state (de Klerk & de Villiers, 2012). As a result, Investors may consequently perceive increased risk, which could result in higher capital expenditures or an undervaluation of the company's stock.

According to this viewpoint, CSR reporting significantly contributes to fewer agency-related issues. Businesses can increase transparency and accountability by voluntarily releasing comprehensive information on their governance, social, and environmental practices. This improved transparency enables managers to direct their decisions toward business objectives which strengthens trust between stakeholders and management staff. CSR disclosures serve as a monitoring system which reveals how managers handle stakeholder matters and implement company responsibilities.

Trustworthy CSR reporting allows organizations to decrease agency costs through reduced expenses for monitoring workplace behaviour. Through trustworthy CSR reporting an organization establishes better marketplace legitimacy and reputation by showing stakeholders commitment to moral sustainable practices (Dhaliwal et al., 2011).

According to a comprehensive stakeholder-oriented perspective Brealey et al. (2011) state that the principal-agent framework recognizes various stakeholder groups beyond shareholder interests. During these circumstances managers need to consider consumer interests alongside worker interests, supplier interests, community interests and shareholder value creation. Thoroughly prepared CSR reports serve as tools for showing how companies fulfil their various requirements in addition to presenting a complete picture of decision-making and performance metrics (de Klerk & de Villiers, 2012).

To sum up, CSR reporting serves to enhance corporate governance by resolving agency problems and enhancing transparency and through alignment of managerial actions with stakeholder expectations. These efforts can build trust, reduce perceived risks, attract socially responsible investors, and support long-term relationships with key stakeholders, all of which can contribute to better overall company performance (Dhaliwal et al., 2011).

3 Literature review

By reviewing previous research that provides pertinent empirical insights, this review of the literature seeks to investigate the complex relationship between corporate social responsibility (CSR) disclosure and firm performance. It lays the groundwork for the empirical investigation of this thesis, which aims to assess how ESG disclosures affect different aspects of business performance, such as operational efficiency, financial success, and market valuation. The review starts with discussing previous research on CSR disclosure and firm performance. The review then organized into three subsections, research that shows no significant relationship, research that shows a negative relationship, and research that shows a positive relationship. The thesis then goes on to discuss how the research hypotheses were developed.

3.1 CSR disclosure and firm performance

The connection between firm performance and CSR disclosures has drawn growing interest among researchers as highlighted in Chapter 1. The results of a great deal of research on this subject are still inconsistent and occasionally contradictory. Although some research indicates a positive relationship between CSR and financial results, other studies find no connection at all, and some even point to a negative relationship.

CSR has changed from being a completely voluntary practice to a reaction influenced by societal scrutiny and rising stakeholder expectations. Businesses are now expected to show accountability for social and environmental issues in addition to making a profit. High-profile incidents such as Nike's labour disputes, which led to widespread consumer outrage and boycotts after the New York Times exposed unethical labour practices, made this change especially clear (Porter & Kramer, 2006). These public responses show how changes in society and the economy can affect investor behaviour and heighten calls for corporate accountability and transparency.

Scholars have investigated how corporate social responsibility (CSR) contributes to long-term financial resilience as well as reputation enhancement. Kim et al. suggests that businesses that incorporate sustainable practices may improve their financial and public standing, primarily because of their perceived dedication to the well-being of future generations. Likewise, Burke and Logsdon (1996) point out that companies that reveal environmental, social, and governance (ESG) information typically encounter lower market risks, especially in developed markets, since these disclosures mitigate the possibility of legal action and harm to their reputation.

Porter and Kramer (2006) contend that corporations actively integrating Environmental, Social, and Governance (ESG) practices may secure a competitive advantage. By harmonizing their product and service offerings with objectives such as environmental preservation and societal well-being, corporations can bolster their market positions.

In order to shed light on the various findings in this field, Huang et al. (2020) carried out a thorough meta-analysis that included 437 empirical studies. According to their findings, about 40% of the studies discovered a positive relationship between CSR and CFP, 50% found no significant effect, and 10% found a negative one. Methodological variances among studies, such as differences in the definition and measurement of CSR disclosures and firm performance, can be attributed for these conflicting findings (Huang et al., 2020; Q. Wang et al., 2016), including variations in sample sizes, analytical methodologies, and industry and geographic contexts (Quazi & Richardson, 2012). CSR results are also influenced by macroeconomic circumstances, as well as the type of CSR disclosure, whether it is required by law or voluntary (Chen et al., 2018; Dhaliwal et al., 2011; Huang et al., 2020).

3.2 Positive relationship between CSR reporting and firm performance

The idea that sustainability initiatives can be strategically advantageous for businesses is supported by an increasing amount of research that indicates a positive relationship

between CSR disclosures and firm performance. According to empirical data, companies that implement CSR practices frequently see better operational and financial results. Studies by Kapoor and Sandhu (2010), Ameer and Othman (2012), and Akisik and Gal (2014), for example, offer strong proof that sustainability initiatives have a positive correlation with conventional performance metrics like ROA and ROE. According to these studies, businesses that have active sustainability disclosures or reporting systems typically see increases in operational effectiveness and profitability. This connection is further supported by the stakeholder-oriented view, which highlights that socially conscious businesses are more likely to win over important stakeholders like clients, staff, and investors, improving long-term competitiveness and financial results in the process (Marom, 2006; Orlitzky et al., 2003).

Market-based performance metrics can also be impacted by CSR. Transparency in ESG disclosures has been demonstrated in numerous studies to decrease information asymmetry and boost investor confidence, both of which have a positive impact on stock valuations and Tobin's Q (De Klerk et al., 2015; Reverte, 2016; Saleh et al., 2011). More specifically, De Klerk et al. (2015) and Reverte (2016) contend that CSR disclosures enhance traditional financial reporting and allow investors to value companies more accurately. Furthermore, studies carried out in the Nordic region, including Lueg and Pesheva (2021), confirm that ESG elements, particularly governance, can make a substantial contribution to overall shareholder returns. These results support the idea that CSR investments can act as intangible assets that increase customer loyalty, and reduce financial analysts' perceptions of risk, thus enhancing the firm's value (Hichri & Ltifi, 2021; Tsang et al., 2022). Together, these studies support the study's theoretical framework by indicating that market (Tobin's Q, stock return), financial (ROE), and operational (ROA) performance metrics may be significantly influenced by ESG disclosure, a measurable representation of CSR.

3.3 Negative relationship between CSR reporting and firm performance

While numerous studies highlight the potential benefits of corporate social responsibility (CSR), some empirical evidence suggests a negative association between CSR initiatives and firm performance, especially in the short term. An article by Friedman (1970) is frequently cited in the early literature exploring the negative link between corporate sustainability and financial outcomes. He argues that the concept of "social responsibility" is misapplied to corporations, as only individuals, not businesses can hold responsibilities. In his view, it is the duty of company executives to prioritize profit maximization on behalf of shareholders. Any diversion from this goal, such as adopting socially responsible initiatives, imposes additional costs that may reduce shareholder wealth. As a result, Friedman contends that corporate sustainability efforts are misaligned with the core objective of maximizing shareholder value, given that social and administrative expenses do not contribute directly to financial returns (Friedman, 1970).

From an agency theory perspective, managers may engage in CSR for personal motives, potentially misaligning with shareholder interests (Jensen, 2002; Preston & O'Bannon, 1997). Ho and Taylor (2007) found that firms with extensive sustainability disclosures under the triple bottom line (TBL) framework reported lower profitability (ROA), while López et al. (2007) observed that companies listed in the Dow Jones Sustainability Index experienced reduced profit before tax (PBT) growth.

Market inefficiencies also contribute to this relationship. Brammer et al. (2006) argued that socially responsible firms often underperform due to investor reluctance to divest, leading to asset mispricing. Similarly, Makni et al. (2009) found that the costs of CSR often outweigh short-term benefits, reducing net income. Kao et al. (2018) and Hichri & Ltifi (2021) emphasized that CSR may divert resources from core business areas or lead to inefficient capital allocation.

CSR's reputational risks can also harm firm value. Wang and Zhang (2022) showed that negative CSR media coverage has stronger market impacts than positive news. Chen et al. (2018) observed that mandatory CSR disclosures in China, although non-costly, correlated with declines in profitability (ROA, ROE), likely due to increased social pressure. Industry-specific evidence by Omar and Zallom (2016) demonstrated negative CSR effects in sectors like food and pharmaceuticals, particularly in themes such as environment and community. Moreover, Lioui and Sharma (2012) found environmental CSR negatively impacts performance unless paired with innovation, such as R&D.

Overall, the negative CSR and firm performance relationship highlights the potential short-term costs, misalignments, and market skepticism that firms may face when implementing CSR without strategic integration or stakeholder alignment.

3.4 Neutral relationship between CSR reporting and firm performance

While a significant body of research supports either a positive or negative link between CSR and firm performance, some studies have reported neutral or inconclusive results. Inoue and Lee (2011), for example, conducted a sector-specific analysis by breaking down sustainability into five dimensions, diversity, community involvement, product quality, employee relations, and environmental responsibility. Their findings revealed that the impact of these sustainability elements varied significantly across industries, with some dimensions showing no substantial effect on firms' short-term or long-term profitability as measured by ROA and Tobin's Q.

Similarly, Dilling (2010) observed that while firms with higher profit margins tended to issue high-quality sustainability reports, there was no evident association between sustainability reporting and governance-related variables such as board committees or audit oversight. This suggests that profitability might encourage disclosure, but governance practices may not necessarily align with sustainability performance.

Guidry and Patten (2010) also found that the initial release of standalone CSR reports in the U.S. did not elicit a significant market reaction. However, report quality, measured through adherence to GRI standards, played a notable role, with high-quality reports attracting better market responses than low-quality ones. Lastly, Atan et al. (2018), focusing on Malaysian firms, reported no statistically significant relationship between individual or composite ESG scores and profitability or firm value. The only exception was a positive association among the overall ESG score and the cost of capital, suggesting that while ESG efforts may not immediately influence firm performance metrics, they might have long-term implications for financing costs. The authors also noted that stakeholders' skepticism and the limited three-year study period could explain the absence of stronger associations.

3.5 Research Hypothesis

This part presents the research hypothesis developed considering the theoretical framework and insights from the literature review. The first hypothesis addresses the main research question of this study. Drawing upon prior literature, which largely supports a positive association between Sustainability disclosures and firm performance and considering Finland's strong track record in ESG disclosure practices, this study hypothesizes a positive relationship between sustainability disclosures and firm performance. The second hypothesis builds on findings in the literature that suggest firms with more comprehensive ESG disclosures may experience greater benefits in terms of performance outcomes. Accordingly, the following hypotheses are proposed.

H1: *CSR disclosures have a positive impact on overall firm performance (as measured by ROA, ROE, Tobin's Q, and stock returns).*

H2: *The relationship between ESG disclosure and firm performance is stronger in firms with high ESG disclosure scores than in those with lower scores.*

4 Data and Methodology

This study explores the association between Corporate Social Responsibility (CSR) disclosures and firm performance, including operational, financial, and market performance over a period of 6 years. The selected time period is 2018–2023 as complete ESG disclosure score data was not available for most firms prior to 2018. Firm performance is measured by two accounting-based indicators, namely ROA and ROE, and two market-based indicators, namely Tobin's Q and stock returns. These variables are selected based on prior literature. Sustainability disclosures are measured using Bloomberg's ESG disclosure scores. To examine the relationship, this study employs a quantitative methodology and performs a regression analysis.

The study partially adopts the approaches of Al Hawaj and Buallay (2022), Buallay (2019) and Botchwey et al. (2022). Given the numerical and measurable nature of the variables of interest, quantitative research methods are preferred over qualitative ones in this study setting. Since quantitative methods enable accurate measurement of the direction and strength of the relationship between variables, they are appropriate for this thesis.
In this chapter the data and the used methodology are presented. The procedure for gathering data and choosing a sample is described in the first subchapter. The sample distribution by industry and ESG disclosure score levels is covered in the second subchapter. In the third subchapter, the variables of this study are presented. Data cleaning and processing steps were explained in the fourth subchapter and the fifth subchapter focus on the correlation between the variables. The descriptive statistics are presented in the sixth subchapter, while the regression analysis and model are covered in the last subchapter.

4.1 Data collection

The data for this study was collected by combining information from various data sources. The data for this study was sourced from active Finnish companies listed on the Helsinki

Stock Exchange as of the 06th of February 2025, downloaded from Refinitiv which is a well-known financial data platform. The original dataset consisted of 193 active companies listed on the Helsinki Stock Exchange as of this date. It was then I identified that ESG disclosure data was not available for all these companies.

Therefore, two sample selection criteria were applied to verify the quality and consistency of the dataset. First, companies must have been listed and established before January 1, 2019. This criterion was applied to improve the robustness of the analysis by ensuring a consistent time series of data. As a result, 56 companies listed after this date were excluded. Second, companies without ESG data available throughout the study period were also excluded, leading to the removal of an additional 49 companies. After applying these criteria, the final sample used in the analysis consisted of 88 companies.

The financial data gathered from the Refinitiv database includes various metrics such as ROA, ROE, market capitalization, minority interests, preferred stocks, total assets, total liabilities, total debt to total assets, market to book, stock price beginning values, as well as starting and ending values of stock prices. These raw data were used to calculate the dependent and control variables using Excel. The data for the independent variable, ESG disclosure scores, was obtained from the Bloomberg Terminal.

4.1.1 Sample selection

To ensure representativeness, the sample will include companies across all major industries, proportional reflecting their presence in the Finnish economy. The industry classification in this study follows the Industry Classification Benchmark System (ICB). This study measures the level of sustainability reporting using ESG disclosure scores. The sampling method employs a stratified approach to ensure the sample represents diverse industries and varying levels of ESG disclosures.

The process involves two main steps;

- **Industry Categorization:** The study adopts the Industry Classification Benchmark system (ICB) system to categorize sample firms. This internationally accepted taxonomy developed by FTSE Russell and Dow Jones in 2005 and it organizes companies into 11 distinct industrial sectors (FTSE Russell, 2024). To account for sector-specific effects, industry dummy variables are incorporated as controls in the analysis, with each sector identified by its unique two-digit ICB code. Table 1 provides comprehensive details regarding the distribution of companies across these industrial classifications.

- **ESG disclosure categorization:** Within each industry, companies are further classified based on their corporate social responsibility (CSR) performance, measured by their average ESG disclosure scores over the study period (2018–2023). To ensure a meaningful comparison, I calculated each company's mean ESG score across these six years and then categorized them as High ESG disclosure firms and Low ESG disclosure firms. The threshold for these categories was determined using ESG score benchmarks, as illustrated in Table 2.

This stratification ensures that both industry diversity and different levels of ESG transparency are represented, enabling a comprehensive analysis of CSR disclosures and their impact on operational, financial, and market performance.

4.1.2 Sample distribution

Table 1 presents distribution of the sample of companies according to their industry. The industrials sector has the largest representation making up for around one-third of the total sample. Following that, the consumer discretionary sector is the second and technology sector is the third most represented industries. On the other hand, the telecommunications, utilities, and energy sectors are the least represented, each comprising just over 1% of the total sample. Additionally, Table 1 includes the corresponding ICB codes with two-digits used to create dummy for industries as a control variable for the analysis.

Table 1. Industry distribution

ICB Code	Industry (ICB)	No. of firms	Observations	Share of Total
55	Basic Materials	7	42	7.95 %
40	Consumer Discretionary	18	108	20.45 %
45	Consumer Staples	7	42	7.95 %
30	Financials	7	42	7.95 %
20	Health Care	4	24	4.55 %
50	Industrials	29	174	32.95 %
35	Real Estate	2	12	2.27 %
10	Technology	11	66	12.50 %
15	Telecommunications	1	6	1.14 %
65	Utilities	1	6	1.14 %
60	Energy	1	6	1.14 %
	Total	**88**	**528**	**100.00 %**

Table 2 represents the threshold for categorizing companies into low and medium to High ESG levels. The disclosure groups were determined based on the mean ESG scores calculated for each firm over the study period from 2018–2023. The overall mean ESG score for the full sample was 39.88, which shows the general level of ESG transparency among the firms studied. For simplicity and practical application, the threshold was rounded to 40. Companies with an average ESG score equal to or greater than 40 were categorized as medium to high ESG disclosure firms, while those with scores below 40 were classified as low ESG disclosure firms. This ESG-based categorization was specifically designed to test Hypothesis 2 (H2) of the study.

Table 2. ESG disclosure categorization criteria

Categorization	Threshold: average score (2018-2023)
Low ESG Disclosure Firms	Average ESG disclosure score < 40
Medium to High ESG Disclosure Firms	Average ESG disclosure score ≥ 40

The full list of companies included in the analysis, along with their industry classification, is provided in Appendix 1. Each firm was categorized into either the low or medium-to-high ESG disclosure group according to its average score across the study period. This

classification enables a comparative analysis of how varying levels of ESG disclosure relate to firms' operational, financial, and market performance across different sectors.

4.2 Variables of the study

This research explores how Finnish companies' operational, financial, and market outcomes are associated with their CSR disclosures or reporting practices. Regression analysis will be the main analytical tool used in this quantitative study to look at how CSR disclosures affect performance indicators like ROA, ROE, Tobin's Q and stock returns. Table 3 presents all the variables used in the regression models of this study.

Table 3. Summary of variable measurements

Variables	Labels	Measurements
Dependent Variables		
Operational Performance	ROA	Net income divided by total assets
Financial Performance	ROE	Net income divided by shareholder equity
Market Performance	TQ	(Market value of equity + total liabilities) ÷ total assets
Market Performance	RTS	Percentage change in stock price over a defined period
Independent Variables		
ESG Disclosure	ESG	Bloomberg index which combines E, S and G dimensions
Environmental Disclosure	E	Bloomberg index which measures the disclosure of the firm's energy consumption, waste, pollution levels, conservation of natural resource and treatment of animals.
Corporate Social Responsibility Disclosure	S	Bloomberg index which measures the disclosure of the firm's business relationships, charitable activities, volunteer work, employees' health, welfare and safety
Corporate Governance Disclosure	G	Bloomberg index which measures the disclosure of corporate adherence to governance standards and practices.
Control Variables		
Firm Size	TA	Logarithm of total assets
Leverage	LEV	Ratio of total debt to total assets
Growth	MTB	Market-to book ratio
Industry Type	IND	Dummy variable based on the industry of the firm
Additional Dummy		
ESG Disclosure Group (H2)	ESGHigh_Low	Dummy = 1 if ESG score ≥ 40 (Medium-to-High), 0 if ESG score < 40 (Low)

4.2.1 Dependent variables

This study aims to explore the impact of sustainability reporting on firm performance. Accordingly, firm performance serves as the dependent variable, as it is the outcome expected to respond to changes in the independent variable. To evaluate firm performance, two accounting-based and two market-based indicators have been selected. Each indicator is introduced in the following sections, along with its definition, formula, and the rationale for its inclusion in the analysis.

4.2.1.1 Return on Assets (ROA)

ROA is employed in this study as an indicator of operational efficiency. It reflects how effectively a firm utilizes its assets to generate profit. This ratio is calculated by dividing the net income of a company by its total assets.

Formula for ROA:

$$\frac{Net\ Income}{Total\ Assets} \times 100 \qquad (1)$$

A higher ROA suggests that the company is more efficient in turning its asset base into net earnings. Since some industries rely more heavily on assets than others, ROA values may naturally differ across sectors. Despite this, ROA remains a widely accepted measure of profitability and is often used in empirical research examining the relationship between corporate social responsibility (CSR) disclosure and firm performance (Al Hawaj & Buallay, 2022; Botchwey et al., 2022; P. Wang & Zhang, 2020).

Some researchers prefer using EBIT or profit before tax in ROA calculations, particularly when dealing with companies across different tax jurisdictions, to minimize distortions from varying tax policies. However, since our sample is drawn entirely from firms operating within the same Finnish tax framework, such adjustments were not necessary for this study.

4.2.1.2 Return on Equity (ROE)

To assess the financial performance aspect of firms, this study uses Return on Equity (ROE). ROE evaluates how effectively a company generates profit relative to the equity invested by its shareholders, thereby providing insight into shareholder profitability. It is calculated by dividing the net income for the fiscal year by the total shareholder equity.

Formula for ROE:

$$\frac{Net\ Income}{Shareholder\ Equity} \times 100 \qquad (2)$$

While ROE is a widely recognized and commonly used profitability ratio, it can be influenced by managerial decisions such as equity buybacks, which may reduce the denominator and artificially inflate the ratio. However, within the scope of our sample, this risk is considered minimal and does not significantly affect the reliability of the metric.

Similar to ROA, ROE is viewed as a neutral and established measure of profitability and is frequently cited in CSR disclosure and firm performance research (Al Hawaj & Buallay, 2022; Botchwey et al., 2022; P. Wang & Zhang, 2020). Although ROA and ROE are likely to be strongly correlated, they provide complementary perspectives. ROA focuses on asset efficiency, whereas ROE captures return specifically from the viewpoint of shareholders. Including both metrics allows us to obtain a more nuanced understanding of how sustainability reporting relates to different dimensions of firm performance.

Return on equity (ROE) is the measure used to measure the financial performance of our study. ROE measures the profits generated by the company against the money shareholders have invested in the company. More specifically, the ratio measures profitability for the shareholders. The ratio is calculated by dividing the net profit of the fiscal year with the total equity of the company. ROE is however considered to be easily manipulated by managers, as they can reduce equity through equity buybacks. We do however not see this risk to be material in our investigation. We choose to use ROE as

our second dependent variable as it is, similar to ROA, a neutral and popular profitability measure. ROE is also according to Wang and Zhang (2020) a frequently used measure in previous CSR – firm performance research (Wang & Zhang, 2020). As previously stated, ROE calculates shareholder profitability, which the researcher believes to be an intriguing comparison to ROA. Although a comparatively high correlation between ROA and ROE is anticipated, the researcher think that each will still contribute unique insights to this research.

4.2.1.3 Tobin's Q (TQ)

To evaluate market performance, Tobin's Q (TQ) is employed as one of the dependent variables. Originally introduced by Brainard and Tobin (1968) and further developed by Tobin (1969), Tobin's Q reflects the ratio between a firm's market value and the book value of its assets. Higher Q values indicate that the market values a company above the accounting value of its asset base, which may reflect positive future expectations (Atan et al., 2018).

Formula for Tobin's Q:

$$\frac{(Market\ capitalization + Total\ Liabilities + Preferred\ Stocks + \ Minority\ interest)}{Total\ assets} \times 100 \qquad (3)$$

This measure is selected for several reasons. First, it captures market perceptions of firm value and can reflect the added value that sustainability reporting may bring (Tsang et al., 2022). Second, as noted by Agostini et al. (2022), it is one of the most frequently applied market-based indicators in CSR disclosure and firm performance relationship.
For these reasons, Tobin's Q is an appropriate measure for evaluating how the market perceives the influence of sustainability reporting.

4.2.1.4 Return to stocks (RTS)

The second market-based indicator used in this study is stock returns, which provide a direct measure of how a company's share price has evolved over a specific period. Stock returns were selected because they encompass a broad range of market expectations and investor perceptions regarding a firm's future performance (de Villiers & Marques, 2016).

Stock prices are forward-looking and integrate market sentiment about potential earnings, associated risks, and other relevant information. As mentioned by De Klerk et al. (2015) and Reverte (2016), CSR disclosures can contribute additional signals to the market, helping investors better assess a company's long-term value and risk profile. Therefore, stock returns serve as a comprehensive reflection of market performance. Following Dorfleitner et al. (2018), this study measures stock returns using the share price at the end of the financial year, including dividends when applicable.

Formula for stock returns:

$$\frac{(Share\ price_{End} + dividends) - share\ price_{Beg}}{Shate\ price_{Beg}} \times 100 \qquad (4)$$

4.2.2 Independent variables

In this study, the independent variables, also known as explanatory variables, are central to understanding the relationships examined. The primary focus is on the overall ESG (Environmental, Social, and Governance) disclosure score, along with its three subcomponents: Environmental, Social, and Governance disclosure scores.

This research emphasizes the disclosure of sustainable practices. As highlighted by Brammer et al. (2006), CSR reports that are ambiguous or inconsistent may not

contribute positively to corporate value. From a stakeholder's point of view, a company's "greenness" is closely tied to how effectively it communicates its sustainability efforts. The most common method for this is through annual sustainability or CSR reports. In Finland, CSR reporting becomes mandatory when companies surpass certain thresholds, though there are no standardized guidelines governing how these reports should be structured or what content must be included.

Typically, companies with robust CSR integration tend to have substantial content to include in their sustainability reports. Conversely, firms with limited CSR engagement might produce only minimal reports. As such, a company's disclosure often reflects the extent of their actual CSR activities. This study applies the "fair view" principle, assuming that sustainability disclosures accurately represent a company's CSR efforts. Accordingly, firms with more comprehensive reports are considered to have higher ESG disclosure scores. We use this principle to maintain analytical focus rather than delve into ethical concerns.

4.2.2.1 ESG disclosure score

The core independent variable in this research is the ESG disclosure score. As a quantitative study, this study utilizes secondary data, specifically ESG disclosure scores sourced from Bloomberg Terminal. This score serves as a proxy for transparency and quality in ESG reporting. Bloomberg's ESG Disclosure Score is widely recognized by investors, analysts, and corporations for assessing how thoroughly a company communicates its ESG-related risks, strategies, and initiatives to stakeholders (Oberndorfer, 2021).

Rather than measuring ESG performance outcomes directly, the score reflects the level of detail and frequency of ESG disclosures across more than 120 data points spanning environmental, social, and governance topics (ESG Advising LLC, 2024). These scores, ranging from 0 to 100, are not a measure of actual ESG performance but rather of the

quality, consistency, and depth of reporting. Higher scores indicate greater transparency and completeness in disclosure.

Environmental Disclosures (E) cover aspects such as greenhouse gas emissions, energy and water consumption, waste management practices, environmental risk management, and climate-related reporting. This reflects how openly a firm discusses its environmental footprint and sustainability measures (ESG Advising LLC, 2024).

Corporate Social Responsibility Disclosures (S) relate to areas including labor practices, employee health and safety, diversity and inclusion, community engagement, and product responsibility. This sub-score assesses the extent to which a company reports on its social impact and interactions with various stakeholders (ESG Advising LLC, 2024).

Governance governance disclosures (G) address corporate structure and policies, including board diversity, executive remuneration, shareholder rights, anti-corruption policies, and overall business ethics. This helps capture the degree of transparency around decision-making structures and ethical standards within the firm (ESG Advising LLC, 2024).

Bloomberg gathers these disclosures from publicly available sources such as annual and sustainability reports, regulatory filings, company websites, and direct disclosures (Oberndorfer, 2021). The frequency and detail of updates also play a role in determining the score.

4.2.3 Control variables

Control variables play a critical role in regression analysis by helping to isolate the relationship between the key independent and dependent variables. While they are not the primary focus of this research, their inclusion is essential as they may provide alternative explanations for observed effects. These variables are typically selected

because they could influence both the explanatory and outcome variables in the model. In this study, control variables have been carefully chosen based on their potential relevance to the sample and their frequent use in previous literature.

There are several company- and industry-specific characteristics that may influence the link between sustainability disclosure and firm performance. To reduce the risk of omitted variable bias and improve the robustness of the model, this study incorporates four control variables widely adopted in related empirical studies firm size, financial leverage, growth opportunities, and industry classification (Al Hawaj & Buallay, 2022; Cupertino et al., 2022).

4.2.3.1 Firm size

Firm size is chosen as a control variable because bigger companies typically perform better than smaller ones as well as because prior studies have suggested that the size of a company may influence stakeholders' interest in its sustainability initiatives (Feng et al., 2017; Velte, 2017). They also contend that smaller businesses might be less inclined to engage in socially conscious practices than larger ones since, as they mature and expand, they will draw greater interest from outside parties and be more inclined to accommodate stakeholder demands (Waddock & Graves, 1997).

In order to determine whether firm size has a significant impact on the regression results, firm size must be added as a control variable because the sizes of the companies in our sample are not balanced. Building on earlier research by Agostini et al. (2022), De Klerk et al. (2015), Feng et al. (2017) and Velte (2017), this study incorporate natural logarithm of total assets as a control variable to represent firm size.

Formula for log of total assets (represent firm size):

$$Log\ (Total\ Assets) \tag{5}$$

4.2.3.2 Financial Leverage

Financial leverage is also considered as it can impact both a firm's sustainability initiatives and its overall performance. High debt levels may increase financial risk, which in turn can negatively affect performance (Atan et al., 2018; Omar & Zallom, 2016). Additionally, leverage may influence a firm's capacity or willingness to invest in sustainability (Cupertino et al., 2022). In line with the methodology used by Agostini et al. (2022) and Tsang et al. (2022), financial leverage is calculated as the ratio of total debt to total assets.

Formula for financial leverage:

$$\frac{Total\ Debt}{Total\ Assets} \times 100 \quad (6)$$

4.2.3.3 Growth

This study also controls for firm growth using the market-to-book ratio, which reflects investors' expectations of future profitability and growth (Fama & French, 1992). A higher ratio often signals that the market anticipates strong future performance, potentially affecting firm outcomes independent of ESG factor (Christensen et al., 2021). Conversely, a low ratio could imply undervaluation or weak growth prospects. By accounting for growth potential, the analysis ensures that the observed relationships between ESG disclosure and firm performance are not merely capturing the effects of growth expectations. Growth is measured as the ratio of the market value of equity to its book value.

The market-to-book ratio is included as a control variable in this study because it reflects growth opportunities and market valuation relative to the firm's book value (Fama & French, 1992). A higher market-to-book ratio often indicates that investors expect strong future growth and profitability, which can positively influence firm performance (Galant

& Cadez, 2017). Conversely, a lower ratio may suggest that the firm is undervalued or faces limited growth prospects.

This variable is particularly relevant for the study because it helps control for variations in firm performance that stem from growth potential rather than the effects of ESG factors. By accounting for growth opportunities, the analysis can isolate the true impact of ESG practices on firm performance and ensure that the observed relationships are not driven by growth expectations. In this study, the market-to-book ratio is calculated by dividing the market value of equity by the book value of equity.

Formula for growth (market-to-book ratio):

$$\frac{Market\ value\ of\ Equity}{Book\ value\ of\ Equity} \times 100 \qquad (7)$$

4.2.3.1 Industry type

Firms operating in different sectors often face distinct operational demands, regulatory pressures, and stakeholder expectations, all of which may affect both performance and sustainability reporting (Singh & Chakraborty, 2021). Thus, industry type is included as a categorical control variable to capture sector-specific influences.

Industry classification in this study follows the ICB (Industry Classification Benchmark) (FTSE Russell, 2024). In line with the studies done by Cupertino et al (2022) and Singh and Chakraborty (2021), the sample firms are grouped into 11 broad industry sectors, and industry dummy variables are created to control for these effects.

Research by Ruf et al. (2001) emphasizes that companies within the same industry are subject to similar stakeholder pressures and must often address comparable expectations. As a result, financial and sustainability performance can differ significantly across industries. Controlling for industry type helps ensure that the influence of ESG

disclosure is not confounded by sector-based performance differences (Waddock & Graves, 1997).

4.3 Data cleaning and preprocessing

Prior to conducting the empirical analysis, it was necessary to verify the accuracy and reliability of the dataset. Data cleaning and preprocessing steps were implemented to address inconsistencies that could compromise the validity of the findings. Particular attention was given to managing outliers and handling missing values, both of which are prevalent challenges in financial datasets. These measures were taken to improve data quality and ensure the robustness of the statistical analysis

4.3.1 Managing outliers

Outliers are data points that significantly deviate from the overall pattern of a dataset. These extreme values can distort statistical analyses and potentially lead to misleading conclusions if not addressed properly before running regression models. One of the initial steps in identifying such anomalies is through examining the descriptive statistics, particularly the minimum, maximum, mean, and median values of each variable. Additionally, visual tools such as scatterplots can help in detecting values that fall far outside the normal distribution.

In this study, noticeable outliers were identified in variables like Return on Equity (ROE), Tobin's Q (TQ), and stock returns. These variables showed extreme minimum and maximum values that differed substantially from their central tendency measures. To address this, a uniform outlier treatment was applied to all dependent variables through a technique known as Winsorization. The same method was followed by a similar study done by Söderholm & Metsä-Tokila (2021).

Table 4. Comparison of original and winsorized dependent variables

	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	5.068	4.440	42.930	-41.870	7.486
ROA (wins.)	5.126	4.440	24.711	-9.522	6.609
ROE	7.174	10.360	117.180	-1117.920	54.551
ROE (wins.)	9.788	10.360	49.373	-40.307	16.697
TQ	1.719	1.278	29.131	0.497	1.892
TQ (wins.)	1.618	1.278	5.655	0.689	1.020
RTS	0.086	0.012	3.255	-0.900	0.468
RTS (wins.)	0.075	0.012	1.327	-0.607	0.409

As shown in Table 4, the winsorization method was employed to reduce the influence of extreme values by capping them at more moderate percentiles. Specifically, a 2% winsorization threshold was used, which involved adjusting the lowest 1% of values to the 1st percentile and the highest 1% to the 99th percentile. This adjustment is a common practice to enhance data quality while preserving the majority of the dataset's structure.

The most significant transformation occurred in the ROE variable, where the extreme maximum value of 1,117% was reduced to 49.37%, and the overall variability (standard deviation) dropped by approximately 69%. While such outliers may reflect real-world situations, like companies facing bankruptcy or undergoing restructuring, they can unduly skew analytical outcomes if left untreated. The winsorization process helped in stabilizing the data and improving its suitability for regression analysis.

Overall, the application of a standard 2% winsorization threshold across the dataset proved effective. It brought the extreme values closer to the central range, resulting in a more balanced distribution without compromising the integrity of the data.

4.3.2 Handling missing values

The dataset used in this study, which was compiled from secondary sources, included some missing entries, particularly within the ESG disclosure score variables. This is a common occurrence in sustainability-related datasets, as firms often vary in the consistency and frequency of reporting ESG-related information across different years.

As depicted in Table 5, the bulk of missing data was observed in ESG-related variables. The Environmental Disclosure Score, in particular, had the highest proportion of missing values, with 92 observations absent, accounting for roughly 17.4% of the total for that variable. Meanwhile, the ESG, Social, and Governance disclosure scores each had 53 missing entries, representing approximately 10% of their respective datasets. On the other hand, most financial variables, such as ROA and Tobin's Q, were nearly complete, with only minor gaps (less than 0.4% missing).

In total, 253 out of 5,808 values were missing, equating to a missing data rate of 4.36%. This falls below the widely accepted threshold of 5%, above which more sophisticated statistical treatments are typically recommended (Allison, 2001). Furthermore, no patterns indicating systematic bias were identified, suggesting that the missingness was random and not driven by any specific variable or firm characteristic.

Given the minimal scope of missing data and the lack of evidence for non-randomness, imputation was deemed unnecessary. Instead, the dataset was used in its existing form to preserve the authenticity of the data and avoid introducing estimation-based artifacts. This approach maintains the robustness and interpretability of the regression results while keeping the analysis straightforward and reliable.

Table 5. Summary of missing data

Variable	Observations	Zero values (No data)	Total Observations
ESG	475	53	528
E	436	92	528
S	475	53	528
G	475	53	528
ROA	528	0	528
ROE	526	2	528
TQ	528	0	528
RTS	528	0	528
TA	528	0	528
LEV	528	0	528
MTB	528	0	528
Total	**5555**	**253**	**5808**

4.4 Correlation Analysis

To investigate the potential presence of multicollinearity between the variables, the A correlation analysis was conducted in this study. Correlation coefficients range from -1 to 1, where values close to -1 or 1 indicate strong linear relationships, while those near 0 imply weak or no linear association. Typically, a correlation coefficient above 0.7 suggests a possible risk of multicollinearity warranting further investigation (Velte, 2017). Table 6 presents the Pearson correlation matrix of the key variables. Significance levels are denoted at 1% ($p < 0.01$) and 5% ($p < 0.05$). The matrix allows for a preliminary observation of inter-variable relationships and potential concerns regarding collinearity.

As shown in the table 6, no significant correlation exists between ESG scores and performance measures, indicating that ESG disclosure levels do not directly associate with short-term financial outcomes. A particularly high correlation is observed between Return on Assets (ROA) and Return on Equity (ROE) ($r = 0.896$), which is expected since both indicators are derived from net income. Despite the high correlation, both ROA and ROE are retained in the analysis due to their distinct interpretation of operational and financial performance as explained in chapter 4.2. To avoid multicollinearity, they are analyzed in separate regression models.

Tobin's Q demonstrates moderate positive correlations with both ROA (r = 0.625) and ROE (r = 0.513), but these values remain below the 0.7 threshold, suggesting no immediate concern. The overall ESG score is strongly correlated with the individual ESG pillar scores: Environmental (E = 0.898), Social (S = 0.908), and Governance (G = 0.876). These high correlations are expected since the aggregate ESG score is derived from these components. However, to avoid multicollinearity, the pillar scores are not included in the same regression models with the overall ESG score.

Financial leverage has a notable significant negative correlation with both Tobin's Q and stock returns, suggesting that companies with reduced debt tend to perform well in the market. This is consistent with the significant negative correlations observed between leverage and both ROA and ROE. These findings are in line with prior research done by Feng et al. (2017), Phan et al (2020) and Singh and Chakraborty (2021) which similarly find that firms with greater efficiency and profitability typically experience superior market performance.

ESG scores are positively and significantly correlated with firm size, measured by the log of total assets. This suggests that larger firms may possess more resources to invest in ESG initiatives. Conversely, financial leverage is negatively correlated with all ESG variables, implying that highly leveraged firms may allocate fewer resources to ESG practices.

Among the control variables, firm size positively correlates with ESG disclosure (r = 0.427) but negatively correlates with Tobin's Q (r = -0.125), potentially reflecting differing stages of firm growth. Financial leverage is negatively associated with both ROA (r = -0.315) and ROE (r = -0.289), consistent with the financial burden associated with higher debt levels.

Additionally, Tobin's Q shows an extremely high correlation with the market-to-book ratio (r = 0.939), indicating that both variables serve as closely related proxies for market

valuation. Although this presents a potential multicollinearity concern, MTB is retained in the analysis due to its theoretical distinctiveness from Tobin's Q. To further assess multicollinearity, variance inflation factors (VIFs) were computed. This test is a standard that measures the effect of independent variables (Buallay, 2019).

As can be seen in Appendix 2, All VIF values were found to be below 5, suggesting that multicollinearity is not a serious issue. VIF values above 10 generally considered to indicate problematic multicollinearity as explained in prior literature (de Villiers & Marques, 2016; Gujarati, 2003; Omar & Zallom, 2016; Reverte, 2016; Velte, 2017). Therefore, the MTB variable was retained in the models even when Tobin's Q was used as the dependent variable.

Table 6. Correlation Analysis

	ROA	ROE	TQ	RTS	ESG	E	S	G	TA	LEV
ROA	1.0000									
ROE	**0.8963****	1.0000								
TQ	**0.6247****	0.5128**	1.0000							
RTS	0.4116**	0.4248**	0.3958**	1.0000						
ESG	0.0583	0.0357	0.0701	0.0022	1.0000					
E	0.0836	0.0557	0.0466	-0.0333	**0.8977****	1.0000				
S	0.0692	0.0554	0.0770	0.0135	**0.9083****	**0.8174****	1.0000			
G	0.0124	-0.0046	0.0680	0.0269	**0.8759****	**0.6075****	**0.6844****	1.0000		
TA	-0.0941*	0.0177	-0.1248**	-0.0678	0.4270**	0.5024**	0.4575**	0.2216**	1.0000	
LEV	-0.3147**	-0.2891**	-0.2249**	-0.1005*	-0.0994*	-0.1223**	-0.0990*	-0.0513	0.0443	1.0000
MTB	0.5918**	0.5211**	**0.9390****	0.4207**	0.0543	0.0224	0.0548	0.0682	-0.1127**	-0.1528**

* Correlation is considered statistically significant at the 10% threshold ($p < 0.10$)

** Correlation is considered statistically significant at the 5% threshold ($p < 0.05$)

4.5 Descriptive statistics

Table 7 summarizes the descriptive statistics for the variables used in the analysis, including values of mean, median, minimum, maximum, standard deviation, and the number of observations. The dataset comprises 528 firm-year observations.

Focusing first on the dependent variables, the average Return on Assets (ROA) is 5.13%, indicating that the firms in the sample generally utilize their assets efficiently to generate profits. The ROA ranges from a low of -9.52%, suggesting operational inefficiencies in some firms, to a high of 24.71%, reflecting significant profitability in others. The standard deviation of 6.61% signals moderate dispersion in profitability levels.

For Return on Equity (ROE), the mean value is 9.79%, with a median of 10.36%. This suggests that, on average, firms have managed to deliver solid returns to shareholders. However, the wide range from -40.31% to 49.37%, along with a relatively high standard deviation of 16.70%, illustrates substantial differences in shareholder return performance across firms in the sample.

Tobin's Q, with a mean of 1.62, a minimum of 0.69, and a maximum of 5.66, indicates that the majority of firms are valued above the replacement cost of their assets, an interpretation consistent with positive investor sentiment. Despite this, the standard deviation of 1.02 reflects significant variability in market valuations. These findings align with previous literature (Feng et al., 2017; Tsang et al., 2022).

Turning to stock performance, the mean stock return is 7.5%, suggesting a moderate average gain. Nevertheless, the high standard deviation of 0.41 and the range from -0.61 to 1.33 point to pronounced volatility, with some firms facing notable losses and others enjoying substantial returns.

The average ESG disclosure score across the sample is 39.88, indicating that firms are, on the whole, only partially compliant with ESG standards. The scores range from 0 to 82.72, with a standard deviation of 19.80, highlighting significant variation in ESG-related performance.

Breaking down ESG components, the Environmental (E) dimension has a mean score of 27.79, suggesting room for improvement in environmental practices. Similarly, the Social (S) score averages at 23.84, reinforcing this view. In contrast, the Governance (G) component stands out with a higher mean of 67.91, suggesting stronger performance in corporate governance among the sampled firms.

Regarding the control variables, the average of the natural logarithm of total assets (log assets) is 13.48, indicating a wide range in firm size, further supported by a standard deviation of 2.07. The mean leverage ratio is 27.43%, with extreme values ranging from as low as 0.04% to as high as 79.64%, reflecting diverse capital structures. Finally, the average Market-to-Book (MTB) ratio is 2.45, suggesting that, on average, firms are valued above their book value. The maximum MTB of 11.09 points to high growth expectations for some firms.

Table 7. Descriptive Statistics

Variables	Mean	Median	Min.	Max.	Std. Dev.	Observations
ROA	5.126	4.440	-9.522	24.711	6.609	528
ROE	9.788	10.360	-40.307	49.373	16.697	528
TQ	1.618	1.278	0.689	5.655	1.020	528
RTS	0.075	0.012	-0.607	1.327	0.409	528
ESG	39.883	40.273	0.000	82.718	19.797	528
E	27.795	26.246	0.000	81.758	23.993	528
S	23.841	21.191	0.000	71.735	16.417	528
G	67.907	75.090	0.000	98.615	26.175	528
TA	13.482	13.061	10.138	22.616	2.073	528
LEV	27.434	26.850	0.040	79.640	15.154	528
MTB	2.452	1.760	0.392	11.086	2.212	528

In summary, the descriptive statistics reveal considerable heterogeneity in the sample, particularly in financial performance, ESG scores, and firm characteristics, supporting the need for further analysis.

4.6 Regression analysis and model

Regression models are empirical tools designed to detect and quantify the influence of one or more explanatory variables on a target variable (Singh & Chakraborty, 2021). These models assess how a change in one or more predictors impacts an outcome variable (Feng et al., 2017). The key components involved in regression analysis include independent variables, dependent variables, and control variables, each of which will be elaborated upon in subsequent sections. In this study, the dependent variable is firm performance, which is analysed through financial, operational, and market-based metrics. The main explanatory variable is the ESG disclosure score, complemented by several control variables designed to account for other significant elements that could affect the sustainability- firm performance relationship.

A fixed effects panel data regression model was selected for this study. This approach controls for unobserved, firm-specific characteristics that do not vary over time but may differ across firms, such as management practices, organizational culture, or industry classification (Velte, 2017). The fixed effects method is particularly appropriate when unobservable firm-specific features are potentially correlated with the explanatory variables, making it ideal for panel data analysis where certain characteristics stay constant within firms but differ across them. By accounting for these time-invariant characteristics, the model helps to minimize bias in the estimated relationships.

The primary objective of the regression model in this research is to investigate the effect of sustainability reporting, captured through ESG scores, on firm performance. Firm performance is assessed using three dimensions: financial, operational, and market

performance. Control variables listed in Table 3 are included to reduce omitted variable bias.

The core regression model of this study expressed as:

$$Perf_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (8)$$

To capture each dimension of performance, the model is further decomposed into four sub-models, each testing a separate dependent variable:

$$ROA_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (9)$$

$$ROE_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (10)$$

$$TQ_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (11)$$

$$SR_{it} = \beta_0 + \beta_1 ESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (12)$$

In above models, Perf represents a continuous dependent variable reflecting firm performance measured using four distinct models; Return on Assets (ROA), Return on Equity (ROE), Tobin's Q model and Stock Returns. The term β0 denotes the constant while β1 to β5 represents the slope of the explanatory and control variables. The main explanatory factor is sustainability disclosure captured through the ESG components, Environmental (E), Social (S) and Governance (G). The control variables include Total Assets (TA), Financial Leverage (FLEV), Growth (GRO) and Industry Classification (IND). The error term (ε) accounts for random disturbances, with (i) stands for firms and (t) indicate the period.

In each case, the dependent variable is one of the four performance indicators: Return on Assets (ROA), Return on Equity (ROE), Tobin's Q (TQ), and Stock Returns (SR). β0 is the constant and β1–5 the slope of the control and independent variables. The ESG score serves as the main independent variable, while TA (Total Assets), FLEV (Financial Leverage), GRO (Growth), and IND (Industry) are treated as controls. (ε) is a random error, (i) stands for firms, (t) stands for the period.

To test Hypothesis 2, an additional regression model is constructed to evaluate the impact of different levels of ESG disclosure on firm performance. Specifically, this model compares firms categorized as having Low ESG disclosure with those falling into the Medium-to-High ESG disclosure group. The goal is to assess whether higher sustainability reporting levels correspond with improved firm outcomes. The modified model introduces a binary dummy variable (see table 3), HighESG_it, which takes the value 1 for firms with Medium-to-High ESG disclosure and 0 for Low ESG disclosure firms.

The regression equation is formulated as:

$$Perf_{it} = \beta_0 + \beta_1 HIGHESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (13)$$

Where HighESG_it is the dummy variable indicating Medium-to-High ESG disclosure (1 = Medium/High, 0 = Low). Each of the four dependent variables (ROA, ROE, TQ, and SR) will be tested individually within this model. Therefore, four separate regressions will be conducted.

$$ROA_{it} = \beta_0 + \beta_1 HIGHESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (14)$$

$$ROE_{it} = \beta_0 + \beta_1 HIGHESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (15)$$

$$TQ_{it} = \beta_0 + \beta_1 HIGHESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (16)$$

$$SR_{it} = \beta_0 + \beta_1 HIGHESG_{it} + \beta_2 TA_{it} + \beta_3 FLEV_{it} + \beta_4 GRO_{it} + \beta_5 IND_{it} + \alpha_i + \varepsilon_{it} \quad (17)$$

This model facilitates direct comparison across ESG disclosure tiers and evaluates whether a higher commitment to sustainability reporting is associated with better firm performance outcomes. While the structure of the regression remains consistent, ESG is recoded into categorical levels to compare the groups. The same control variables are retained across both models to ensure consistency and comparability.

4.7 Regression model selection and diagnostic tests

To determine the most suitable panel regression model for the analysis, it was necessary to evaluate among pooled Ordinary Least Squares (OLS), fixed effects (FE), and random effects (RE) models. Although the nature of the panel data suggested that a fixed effects approach might be appropriate, a series of diagnostic tests were conducted to validate the model choice statistically (Romppanen, 2016). The Breusch-Pagan Lagrange Multiplier (LM) test (see Appendix 3) was first applied to assess whether a simple pooled OLS model could sufficiently capture the data structure or if a panel model would offer a better fit. The significant result of the test ($p < 0.05$) led to the rejection of the null hypothesis, confirming the presence of panel effects and thus justifying the use of a panel data model over pooled OLS.

Following this, the Hausman test was utilized to decide between the fixed and random effects models by examining whether the individual-specific effects were correlated with the explanatory variables (see appendix 4). The test yielded a statistically significant result ($p < 0.05$), rejecting the null hypothesis that favors the random effects model, and indicating that the fixed effects model would provide more reliable and consistent estimates.

As such, the final model specification included fixed effects for firms only, allowing control for firm-level heterogeneity that remains constant over time. Based on the results of these diagnostic tests, the fixed effects model emerged as the most robust and appropriate method for analysing the influence of ESG disclosure on firm performance. Consequently, this study adopts the OLS fixed effects model for the empirical analysis.

5 Empirical Results

This chapter presents the empirical findings of the fixed effects Ordinary Least Squares (OLS) regression models investigating the link between corporate sustainability disclosures and firm performance. The analysis is structured as follows: the first section examines the direct association between sustainability disclosures and firm performance metrics (H1), the second section explores whether the magnitude of ESG disclosure (i.e., high vs. low) moderates this relationship (H2), the third section discusses robustness checks, and the final section offers an overall discussion of the key findings.

All regression models incorporate standard firm-level control variables, including firm size (logarithm of total assets), financial leverage, market-to-book ratio (as a proxy for growth), board size, and debt ratio. Furthermore, to control for sector-specific effects, dummy variables for 10 industry categories (based on the ICB classification) are included. The 'Industrials' sector, which comprises 32.95% of the sample, is omitted as the reference category to avoid multicollinearity, providing a stable baseline for interpreting the effects of other sectors.

5.1 Regression results for hypothesis 1

To test main hypothesis 1, that corporate sustainability reporting positively influences firm performance, OLS regressions were estimated using four dependent variables: Return on Assets (ROA), Return on Equity (ROE), Tobin's Q, and Stock Returns. The analysis is based on regression equations (9), (10), (11), (12) detailed in Section 4.6. The model specifications and results are detailed in Table 8, with p-values reported in parentheses. All dependent variables are winsorized at the 2% level to reduce the impact of outliers as explained in chapter 4.3. Statistical significance is indicated by asterisks: $p < 0.10$ (*), $p < 0.05$ (**), and $p < 0.01$ (***).

Table 8. Regression results for H1

	Dependent Variables			
	ROA	**ROE**	**TQ**	**RTS**
Constant	-10.433	-74.808***	1.008*	1.303*
	(0.283)	(0.006)	(0.097)	(0.093)
Independent Variables				
ESG	0.002	-0.023	-0.001	-0.001
	(0.856)	(0.502)	(0.679)	(0.419)
E	0.048	0.099	-0.003**	-0.005*
	(0.139)	(0.268)	(0.025)	(0.062)
S	-0.024	-0.007	0.001	0.002
	(0.585)	(0.952)	(0.631)	(0.538)
G	-0.015	-0.069	0.002	0.001
	(0.368)	(0.128)	(0.153)	(0.354)
Control Variables				
TA	1.329*	7.110***	0.002	-0.119**
	(0.065)	(0.000)	(0.970)	(0.038)
LEV	-0.214***	-0.673***	-0.009***	-0.005**
	(0.000)	(0.000)	(0.000)	(0.037)
MTB	1.395***	3.325***	0.358***	0.220***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry				
Basic Materials	1.171	2.898	0.011	0.094
	(0.379)	(0.242)	(0.852)	(0.107)
Consumer Discretionary	0.267	4.043**	0.013	0.056
	(0.815)	(0.016)	(0.752)	(0.157)
Consumer Staples	-1.432	-1.610	0.058	0.054
	(0.277)	(0.500)	(0.324)	(0.337)
Financials	-2.124	6.753**	0.029	0.179***
	(0.116)	(0.011)	(0.659)	(0.004)
Health Care	-3.059	1.548	0.309***	-0.067
	(0.191)	(0.603)	(0.000)	(0.337)
Real Estate	2.401	7.644*	0.181*	0.184*
	(0.190)	(0.073)	(0.084)	(0.066)
Technology	-1.527	-2.181	0.115**	0.052
	(0.212)	(0.275)	(0.019)	(0.271)
Telecommunications	1.877	10.469*	-0.066	-0.137
	(0.426)	(0.075)	(0.648)	(0.321)
Utilities	-3.104	-8.023	0.026	0.144
	(0.188)	(0.170)	(0.857)	(0.294)
Energy	3.059	2.713	0.556***	0.051
	(0.191)	(0.640)	(0.000)	(0.710)
No.of Observations	528	528	528	528
R-squard	0.690	0.579	0.958	0.423
F-stat	9.557***	6.598***	96.696***	3.508***

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

5.1.1 ROA and ESG disclosure

The results for ROA suggest a positive but statistically insignificant relationship with overall ESG disclosure (coefficient = 0.002, p = 0.856). This indicates that, within the sample and model constraints, there is insufficient evidence to conclude that ESG disclosures meaningfully influence firms' return on assets. Similarly, the individual ESG components, Environmental (E), Social (S), and Governance (G), do not show statistically significant effects on ROA. While the environmental disclosure shows a small positive coefficient, both the social and governance components are negative and insignificant.

Among the control variables, firm size (Log of total assets) is positively associated with ROA at the 10% significance level (p = 0.065), suggesting that larger firms are likely to perform slightly better in terms of asset efficiency. Leverage exhibits a strong negative effect on ROA at the 1% level (p = 0.000), aligning with the theoretical expectation that increased debt burdens can negatively affect firm performance. Furthermore, market-to-book ratio (MTB) shows a robust and significant positive relationship with ROA (p = 0.000), indicating that high-growth firms tend to exhibit better asset returns. Although industry-specific effects were largely insignificant, positive coefficients were observed for Real Estate and Energy sectors, hinting at possible sector-specific advantages in ROA performance.

The R-squared value of 0.690 suggests that approximately 69% of the variation in ROA is explained by the model, and the F-statistic confirms overall model significance at the 1% level.

These results align with findings from Phan et al. (2020), who also reported no statistically significant relationship between ESG disclosure and ROA. However, broader meta-analytic studies, such as Friede et al. (2015), suggest a general tendency for ESG practices to be positively associated with financial performance. The lack of significance in the present study may point to issues in the quality or consistency of disclosure practices. This interpretation resonates with Brammer et al. (2006), who argue that firms

providing incomplete or inconsistent CSR reporting are less likely to derive tangible performance benefits from their sustainability efforts.

5.1.2 ROE and ESG disclosure

Turning to the relationship between ESG disclosure and Return on Equity (ROE), the results show a negative and statistically insignificant coefficient for overall ESG disclosure ($p = 0.502$). Similar to the ROA results, none of the individual ESG dimensions exhibit significant associations with ROE: the environmental dimension has a positive, though insignificant, coefficient, while social and governance disclosures both show negative signs.

These results indicate a lack of robust evidence supporting the hypothesis that ESG disclosures improve equity returns. One possible explanation is that ROE, as a measure of profitability from shareholders' equity, may be influenced by additional firm-specific strategies and capital structures that are not directly captured through ESG disclosure metrics.

Nevertheless, several control variables show significant effects. Firm size (log assets) is positively related to ROE at the 1% significance level, suggesting economies of scale or enhanced resource efficiency in larger firms. Leverage maintains a strong negative association with ROE ($p = 0.000$), highlighting the adverse impact of excessive debt on shareholder returns. Similarly, MTB ratio remains positively and significantly related to ROE, consistent with the idea that growth-oriented firms generate higher returns.

From an industry perspective, several sectors demonstrate significant positive deviations from the baseline Industrials category. Notably, the Financials sector shows a statistically significant positive coefficient ($p = 0.011$), while the Telecommunications sector is marginally significant ($p = 0.075$). Consumer Discretionary and Real Estate sectors also exhibit positively significant relationships with ROE.

The R-squared value of 0.579 suggests that nearly 58% of the variance in ROE is explained by the model. Again, the F-statistic supports the overall model fit at the 1% level.

Taken together, these results suggest that while ESG disclosures may have a theoretical and long-term role in enhancing firm value, their short-term impact on accounting-based performance measures like ROE appears limited. These findings underscore the importance of contextual factors such as firm size, capital structure, and industry when interpreting the financial consequences of sustainability disclosures.

5.1.3 Tobin's Q and ESG disclosure

ESG performance and Tobin's Q have a statistically insignificant but mostly negative relationship. These findings support previous research by Phan et al. (2020) and Velte (2017), which similarly observed no significant association among ESG indicators and firm valuation as measured by Tobin's Q.

Looking at the individual ESG pillars, environmental (E) performance is found to have a significant negative relationship with Tobin's Q. This supports the argument that while environmental efforts are essential from a sustainability perspective, they may not be perceived as value-enhancing by the market in the short term. For social (S) and governance (G) factors, the relationships with Tobin's Q are positive but insignificant, suggesting a lack of strong investor valuation impact for these dimensions.

Regarding control variables, leverage and firm size both show a significant negative association with Tobin's Q. These findings align with studies by Lioui & Sharma (2012), Saleh et al. (2011), and Atan et al. (2018), which suggest that higher leverage increases financial risk, thereby decreasing market valuation. Similarly, larger firms may face diminishing returns to scale or higher complexity, reducing their perceived value by investors (Tsang et al., 2022).

5.1.4 Stock returns and ESG disclosure

The regression analysis also reveals an insignificant negative relationship between overall ESG performance and stock returns. While this might seem counterintuitive, the result is consistent with E-Vahdati et al. (2023) and other scholars who argue that ESG activities do not automatically result in higher short-term stock performance. One plausible explanation is that markets may take a longer time horizon to reflect the benefits of ESG activities or may view such investments as a trade-off against near-term profitability.

At the pillar level, environmental (E) performance is found to be significantly negatively associated with stock returns. This could again point to the perceived cost burden of implementing environmental initiatives, which might not yield immediate investor returns. On the other hand, social (S) and governance (G) dimensions show positive but statistically insignificant relationships with stock returns, indicating a generally weak market response to these aspects of ESG.

When considering control variables, financial leverage shows a significant negative association with stock returns. This result confirms the findings of E-Vahdati et al. (2023) and others who argue that highly leveraged firms are more vulnerable to financial distress, which is often penalized by the stock market. Conversely, firm size displays a significant positive relationship with stock returns, consistent with Havlinova and Kukacka (2023). Larger firms often enjoy more stability, market access, and investor confidence, which may help explain their superior stock performance.

5.2 Regression results for hypothesis 2

Table 9 presents the results of the OLS fixed effects regression used to examine whether the impact of ESG disclosure on firm performance differs between high and low ESG-

disclosing firms. The analysis is based on regression equations (14), (15), (16), (17) (detailed in Section 4.6), which incorporates an interaction term (ESG*High_Low ESG Dummy) to capture the moderating effect of ESG disclosure level on firm performance. The dummy variable (High_Low ESG) distinguishes firms based on whether their ESG disclosure levels are above or below the sample median, and this dummy is interacted with ESG and its sub-pillars to assess heterogeneous effects.

5.2.1 Impact on ROA

The interaction term between ESG disclosure and the high ESG dummy (ESGHigh_Low) shows a positive coefficient, but it is statistically insignificant (p = 0.237). This indicates that the difference in the ESG-ROA relationship between firms with high and low ESG disclosure levels is not statistically robust. However, the interaction between governance disclosure and the high ESG dummy (GHigh_Low) is weakly significant at the 10% level (p = 0.100), suggesting that firms with higher ESG transparency may slightly benefit more from governance initiatives in terms of return on assets. Conversely, the interaction term for social disclosure (S*High_Low) is negatively associated with ROA and also marginally significant (p = 0.054), implying that for firms with high ESG disclosure, increasing social transparency could be linked to a modest decline in ROA.

5.2.2 Impact on ROE

For return on equity (ROE), the interaction between the social pillar and high ESG firms (SHigh_Low) is negative and statistically significant (p = 0.029). This finding suggests that among firms with higher ESG disclosure, increased emphasis on social factors may lead to lower ROE. The interaction terms for overall ESG (ESGHigh_Low) and governance (G*High_Low) do not show significant effects, indicating that these dimensions do not meaningfully differentiate the ESG-ROE relationship across disclosure levels. Notably,

governance as a standalone variable is negatively and significantly associated with ROE, hinting at potential short-term trade-offs between governance efforts and equity returns.

5.2.3 Impact on Tobin's Q

Regarding Tobin's Q, none of the interaction terms between ESG (or its components) and the high ESG dummy are statistically significant. This implies that the relationship between ESG disclosure and market-based firm valuation does not differ significantly between firms with high versus low ESG transparency. The model's explanatory power for Tobin's Q appears to be primarily driven by firm-specific variables, especially the market-to-book ratio, and industry effects, rather than ESG-related factors. This result suggests that, during the study period, investors may not have fully incorporated ESG disclosures into their valuation assessments.

5.2.4 Impact on stock returns

The regression model for stock returns reveals a marginally negative relationship with ESG disclosure ($p = 0.063$), potentially reflecting short-term costs or market skepticism associated with ESG initiatives. However, none of the interaction terms between ESG components and the high ESG dummy are statistically significant. This indicates that the stock return implications of ESG disclosure are not markedly different across firms with varying ESG transparency levels. It also suggests that, in the short term, equity markets may not differentiate firms based on the intensity of their ESG disclosures.

Table 9. Regression results for H2

	ROA	ROE	TQ	RTS
Constant	5.494***	-1.029	1.123***	0.099
	(0.010)	(0.858)	(0.000)	(0.466)
Independent Variables				
ESG	-0.030	-0.052	0.000	-0.003*
	(0.225)	(0.429)	(0.925)	(0.063)
E	-0.008	0.016	0.000	-0.001
	(0.772)	(0.816)	(0.967)	(0.531)
S	0.087*	0.323**	0.000	0.001
	(0.084)	(0.017)	(0.994)	(0.782)
G	-0.043***	-0.148***	0.000	-0.002
	(0.006)	(0.000)	(0.943)	(0.129)
High_Low ESG Dummy	-1.256	-2.738	0.103	-0.086
	(0.347)	(0.446)	(0.237)	(0.308)
ESG*High_Low ESG Dummy	0.035	0.010	0.001	0.002
	(0.237)	(0.896)	(0.537)	(0.317)
E*High_Low ESG Dummy	0.030	-0.002	0.002	0.000
	(0.433)	(0.985)	(0.328)	(0.879)
S*High_Low ESG Dummy	-0.119*	-0.361**	0.001	0.000
	(0.054)	(0.029)	(0.815)	(0.913)
G*High_Low ESG Dummy	0.049*	0.127	-0.002	0.000
	(0.100)	(0.110)	(0.405)	(0.823)
Control Variables				
TA	-0.092	0.833*	-0.039***	-0.005
	(0.582)	(0.065)	(0.000)	(0.655)
LEV	-0.108***	-0.298***	-0.005***	-0.002**
	(0.000)	(0.000)	(0.000)	(0.024)
MTB	1.651***	3.824***	0.420***	0.070***
	(0.000)	(0.000)	(0.000)	(0.000)
Basic Materials	2.544***	2.872	0.006	0.087
	(0.006)	(0.250	(0.927)	(0.141)
Consumer Discretionary	1.793***	4.129**	0.008	0.057
	(0.004)	(0.014)	(0.836)	(0.148)
Consumer Staples	0.100	-1.453	0.049	0.056
	(0.910)	(0.544)	(0.398)	(0.318)
Financials	-0.609	6.002**	0.075	0.173***
	(0.547)	(0.028)	(0.254)	(0.007)
Health Care	1.541	0.987	0.345***	-0.070
	(0.169)	(0.743)	(0.000)	(0.321)
Real Estate	3.930**	8.369*	0.137	0.191*
	(0.014)	(0.051)	(0.189)	(0.059)
Technology	-0.045	-2.379	0.126***	0.049
	(0.951)	(0.236)	(0.010)	(0.303)
Telecommunications	3.362	11.085**	-0.105	-0.134
	(0.125)	(0.060)	(0.462)	(0.335)
Utilities	-1.734	-8.318	0.037	0.135
	(0.426)	(0.156)	(0.797)	(0.329)
Energy	4.403**	2.520	0.559***	0.040
	(0.042)	(0.664)	(0.000)	(0.767)
No.of Observations	528	528	528	528
R-squard	0.442	0.367	0.900	0.414
F-stat	19.074***	13.956***	217.223***	17.038***

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

Overall, the empirical findings provide limited support for Hypothesis 2. The differential effects of ESG disclosure on firm performance across high and low ESG disclosing firms are only partially evident. Specifically, significant interactions are observed for the social and governance dimensions in relation to accounting-based metrics such as ROA and ROE. However, no significant differences emerge for market-based measures like Tobin's Q and stock returns. These results imply that while ESG practices may enhance internal firm performance, especially through improved governance structures, their external recognition by the market may lag behind. This underscores the notion that the benefits of ESG disclosure may manifest more strongly in firm operations rather than in investor perceptions, at least in the short term.

5.3 Robustness Test

To verify the stability of the empirical findings and examine whether the effect of ESG performance on firm outcomes is lagged or differ across industries, two robustness check was carried out.

5.3.1 Lagged ESG variables

First approach incorporates lagged ESG variables. This approach aligns with numerous prior studies in the ESG-performance literature, which suggest that ESG activities may have a delayed impact on financial performance and help mitigate endogeneity concerns (Agostini et al., 2022; De Klerk et al., 2015; Lioui & Sharma, 2012; Reverte, 2016; Velte, 2017).

According to earlier research, ESG initiatives are unlikely to produce immediate financial benefits. For instance, Choi and Wang (2009) argue that the impact unfolds over time, while Porter and Kramer (2006) describe sustainability efforts as strategic actions whose outcomes materialize gradually. Therefore, this study examined whether ESG scores

from the previous year (t–1) have a predictive relationship with current financial performance.

Due to the lag structure, the number of observations in this analysis is slightly lower than in the main model, primarily because financial data for the most recent period were not fully available.

The results presented in Table 10, indicate that the lagged overall ESG score (ESG t–1) is negatively and significantly related to Return on Equity (ROE, $p < 0.1$) and Stock Returns ($p < 0.01$), while having a positive and significant association with Tobin's Q ($p < 0.05$). No statistically significant relationship was observed between ESG (t–1) and Return on Assets (ROA), consistent with the original model.

Notably, compared to the baseline results, the lagged model reveals stronger significance in certain relationships. The previously insignificant association between ESG and Tobin's Q becomes positive and significant at the 5% level. This shift suggests that ESG engagement may enhance firm valuation over time, even if the short-term accounting-based measures like ROA remain unaffected.

The lagged ESG sub-dimensions reveal varying effects on financial performance indicators. The Environmental (E) score from the previous period (t–1) shows a significant negative relationship with stock returns ($p < 0.05$), although its impact on ROA, ROE, and Tobin's Q remains statistically insignificant. The Social (S) score demonstrates a positive association with Tobin's Q ($p < 0.1$) and a negative relationship with stock returns ($p < 0.05$). Notably, the previously insignificant link between the social disclosure score and Tobin's Q in the main model becomes statistically significant in the lagged version, suggesting a delayed positive impact. Meanwhile, the Governance (G) score exhibits a weak negative relationship with stock returns ($p < 0.1$), but it does not significantly influence the other financial performance metrics.

Table 10. Lagged ESG and firm performance

	Dependent Variables			
	ROA	**ROE**	**TQ**	**RTS**
Constant	4.249	-0.756	0.943	2.429
	(0.041)	(0.895)	(0.000)	(0.013)
Independent Variables				
ESG (t-1)	-0.015	-0.122*	0.004**	-0.015***
	(0.506)	(0.088)	(0.033)	(0.000)
E (t-1)	-0.018	-0.051	0.002	-0.008**
	(0.410)	(0.398)	(0.110)	(0.019)
S (t-1)	0.019	0.050	0.003*	-0.010**
	(0.503)	(0.534)	(0.096)	(0.029)
G (t-1)	-0.010	-0.064	-0.003	-0.003*
	(0.531)	(0.159)	(0.116)	(0.095)
Control Variables				
TA	-0.050	1.011*	-0.033**	-0.146**
	(0.793)	(0.070)	(0.026)	(0.044)
LEV	-0.103***	-0.315***	-0.005***	-0.009***
	(0.000)	(0.000)	(0.000)	(0.001)
MTB	1.688***	3.895***	0.418***	0.224***
	(0.000)	(0.000)	(0.000)	(0.000)
Industry				
Basic Materials	3.199***	5.139*	-0.013	0.094
	(0.001)	(0.061)	(0.856)	(0.164)
Consumer Discretionary	1.458**	3.213*	0.005	0.051
	(0.028)	(0.081)	(0.922)	(0.261)
Consumer Staples	0.409	-1.227	0.047	0.056
	(0.664)	(0.632)	(0.494)	(0.387)
Financials	-1.039	3.832	0.050	0.142*
	(0.350)	(0.224)	(0.552)	(0.063)
Health Care	1.121	0.584	0.349***	-0.082
	(0.337)	(0.861)	(0.000)	(0.308)
Real Estate	3.968**	7.502*	0.191	0.169
	(0.018)	(0.099)	(0.114)	(0.142)
Technology	0.495	-2.383	0.094	0.031
	(0.532)	(0.285)	(0.115)	(0.571)
Telecommunications	2.945	10.356*	-0.103	-0.200
	(0.202)	(0.100)	(0.540)	(0.207)
Utilities	-2.099	-9.834	-0.021	0.062
	(0.361)	(0.116)	(0.900)	(0.694)
Energy	5.221**	3.546	0.558***	-0.012
	(0.023)	(0.569)	(0.001)	(0.937)
No.of Observations	440	440	440	440
R-squard	0.479	0.406	0.895	0.520
F-stat	21.536***	15.311***	190.700***	4.142***

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

These patterns suggest that ESG effects vary across different performance indicators. While accounting-based measures such as ROA and ROE show limited responsiveness to ESG factors, market-based indicators like Tobin's Q and Stock Returns appear more sensitive to ESG performance, particularly when lagged.

The negative association between lagged ESG scores and stock returns may reflect short term investor concerns regarding the cost or trade-offs of ESG investments. However, the positive impact on Tobin's Q supports the view that ESG engagement contributes to long-term value creation and firm valuation.

The control variables in the lagged models retain similar significance patterns to the original regressions. Leverage and market-to-book ratio (MTB) continue to show strong statistical relevance, while the effect of firm size (measured by log of assets) becomes less pronounced in the lagged specification, implying a more immediate influence.

However, the lagged analysis strengthens the credibility of the main findings by revealing that ESG-related financial impacts may take time to manifest. The emergence of significant relationships, especially the negative association with ROE and stock returns, and the positive link with Tobin's Q, suggests a time-dependent dynamic. Firms that engage in ESG practices might not experience immediate financial gains, but these efforts can enhance long-term firm value.

From a strategic standpoint, the results align with the notion that ESG initiatives should be viewed as long-term investments. Investors and corporate decision-makers should be mindful that ESG benefits are not always immediately reflected in financial metrics but can influence valuation and shareholder perceptions over time.

5.3.2 Industry Interaction Effects

As the second robustness check, the interaction term between ESG and industry dummies were introduced in this study. This will help to examine whether the effect of ESG performance on firm outcomes is differ across industries. Huang et al (2020) also explored the industrial and regional differences in ESG and firm performance measures suggesting that such effects may be heterogeneous and context dependent.

Table 11 summarizes the interaction effects between ESG and industry dummies across four firm performance measures. The Basic Materials industry shows a consistently positive and statistically significant interaction with ESG across ROA, ROE and stock returns suggesting that firms in this sector experience stronger operational, financial and market benefits by disclosing ESG performance. This finding is consistent with De Klerk et al. (2015) and Reverte (2016), who found that the association among ESG or CSR activity disclosures and firm performance is more pronounced in environmentally sensitive industries. In such industries, ESG disclosures are likely to be more visible and material to stakeholders, which increase the firm valuation and investor confidence.

Similarly, Utilities sector also shows significant positive ESG interaction effect on both ROA and ROE, implying that ESG disclosure in this industry may increase operational efficiency and financial performance. Given the environmental exposure of utility firms, these results also aligned with prior studies which found stronger ESG related benefits in resource intensive sectors (Reverte, 2016).

Healthcare industry demonstrates a positive and highly significant ESG interaction effect on Tobin's Q, as well as moderately significant effect on ROA. These results shows that ESG disclosures in the healthcare sector may contribute positively to both market valuation and operational outcomes. It is possible that socially responsible behaviour in this industry increase reputation and stakeholder trust, leading to a better valuation by the market.

Table 11. Interaction effects of ESG on performance across industries

Industry	ROA (ESG*Ind)	ROE (ESG*Ind)	Tobin's Q (ESG*Ind)	Stock Returns (ESG*Ind)
Basic Materials	0.120***	0.268***	0.001	0.004**
	(0.000)	(0.002)	(0.715)	(0.047)
Consumer Discretionary	-0.046	-0.147*	0.001	-0.003
	(0.133)	(0.073)	(0.496)	(0.139)
Consumer Staples	-0.015	0.025	-0.001	-0.001
	(0.755)	(0.850)	(0.670)	(0.789)
Financials	-0.055	-0.146	-0.003	0.004
	(0.344)	(0.356)	(0.479)	(0.242)
Health Care	0.096**	0.143	0.012***	-0.001
	(0.033)	(0.243)	(0.000)	(0.776)
Real Estate	0.010	0.084	-0.002	-0.002
	(0.918)	(0.740)	(0.756)	(0.697)
Technology	-0.014	-0.017	-0.001	0.001
	(0.727)	(0.876)	(0.750)	(0.567)
Telecommunications	-0.045	-0.062	-0.003	0.002
	(0.613)	(0.796)	(0.629)	(0.751)
Utilities	0.149*	0.366*	-0.003	0.002
	(0.057)	(0.083)	(0.556)	(0.665)
Energy	-0.010	-0.034	0.004	0.004
	(0.889)	(0.867)	(0.423)	(0.352)
Industrials	-0.007	-0.066*	0.002*	-0.002*
	(0.652)	(0.099)	(0.053)	(0.052)

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

In contrast, the Consumer Discretionary industry presents a weakly significant and negative ESG and ROE interaction. This could suggest in firms involve in consumer discretionary business, ESG disclosures may not directly translate into enhanced short

term financial returns, possibly due to high upfront costs or misalignment between ESG practices and consumer purchasing behaviours.

However, the industrial sector shows slightly different result. Even though Tobin's Q shows a significantly positive relationship with ESG, both ROE and stock returns indicate a negative and significant relationship. This contrasting result between two market-based indicators may demonstrate differing investor perceptions or time horizons. A possible explanation could be that, as captured by Tobin's Q, the market rewards long term intangible benefits of ESG while as captured by stock returns, investors may penalize short-term earnings volatility or cost pressures caused by ESG investments. This finding is aligned with Omar and Zallom (2016), who explained that certain ESG/CSR activity disclosures might create financial burden or fail to generate immediate returns, leading to negative market reactions in some industries.

For other industries such as Consumer Staples, Financials, Real Estate, Technology, Telecommunications, and Energy, the ESG interaction terms are statistically insignificant across all performance measures. However, this non-significance should not be interpreted as a lack of impact, rather, it may reflect industry-specific dynamics or the non-linear nature of the impact of ESG on firm performance.

These results show some similarities with the work of Pérez et al. (2020) who observed that the market reactions to ESG or CSR news vary by industry and are more stronger in specific sectors. Their research also aligns with the idea that negative ESG or CSR events often trigger stronger market reactions than positive ones, showing investor sensitivity to reputational risk.

5.4 Discussion and findings

This study aimed to evaluate two main hypotheses concerning the relationship between ESG (Environmental, Social, and Governance) disclosures and various aspects of firm

performance, namely, operational (ROA), financial (ROE), and market-based (Tobin's Q and stock returns). Additionally, it investigated whether this relationship is more pronounced for firms that engage in higher levels of ESG disclosure.

The regression analysis revealed that the models for ROA, ROE, and Tobin's Q are statistically significant and possess strong explanatory power, as indicated by the F-test p-values below 0.05. Despite this, the overall results offer limited support for the hypothesized positive impact of ESG disclosures on firm performance.

Hypothesis 1 (H1) proposed a general positive relationship between CSR (or ESG) disclosures and firm performance. However, the regression results suggest that this relationship is largely statistically insignificant across all four performance indicators, operational (ROA), financial (ROE) and market-based (Tobin's Q and stock returns). This indicate that overall hypothesis is not supported.

While analysing each performance metric in detail, the study found no significant association between ESG disclosures and either operational or financial performance. For market-based outcomes, the results received only partial support, although the Environmental (E) disclosure showed significant effects on Tobin's Q and stock returns, these effects were negative and contrary to expectations. In contrast, the Social (S) and Governance (G) dimensions did not exhibit any statistically significant relationships with market performance. These findings suggest that ESG transparency, in the Finnish context, may serve more as a legitimacy tool than a driver of measurable financial benefits.

Hypothesis 2 (H2) expected stronger effects of ESG disclosures on firm performance among firms with higher levels of ESG reporting. However, the interaction between ESG scores and the high/low disclosure dummy showed minimal support. The overall interaction term for ESG did not reach statistical significance for any of the performance measures, leading to the rejection of the hypothesis.

Looking more closely at the individual ESG dimensions, some interesting patterns emerged. Social (S) disclosure dimension showed a significant negative interaction with both operational (ROA) and financial performance (ROE), suggesting that higher social disclosures may be associated with weaker outcomes in these areas. On the other hand, Governance (G) interaction displayed a significant positive effect on ROA, indicating that strong governance disclosures might contribute positively to operational performance. However, none of the interaction effects showed statistical significance in relation to market-based measures such as Tobin's Q and stock returns.

To strengthen the validity of these findings, two robustness tests were conducted. The first robustness test examined the lagged ESG variables to account for delayed effects. The results revealed that the lagged Environmental score had a significant negative relationship with stock returns, while the social score showed a significant positive association with Tobin's Q and a negative one with stock returns. The Governance score had a weak negative effect on stock returns. These delayed effects imply that ESG-related impacts may take time to manifest in firm performance, supporting the view that ESG investments are strategic and long-term in nature.

The second robustness test carried out to examine whether the ESG and firm performance relationship vary across industries and firm characteristics. This analysis included interaction terms with industry dummies. Interestingly, this test showed that ESG disclosures appear to matter more in certain sectors, particularly those where ESG issues are more material, such basic materials, healthcare, utilities and industrials. For example, Basic Materials industry shows a consistently positive and statistically significant interaction with ESG across ROA, ROE and stock returns suggesting that firms in this sector experience stronger operational, financial and market benefits by disclosing ESG performance.

These additional findings add value to the broader results. While the main models suggest that ESG disclosure has a mostly insignificant impact on firm performance, the robustness test results show that contextual factors like industry characteristics and time lagged effects can influence the strength and direction of ESG disclosure's impact.

The main findings align with prior studies such as Cahan et al. (2016), who reported a neutral relationship between ESG disclosures and firm performance, specially in environments where CSR practices are already widespread and expected. Similarly, in such settings, when CSR awareness is high, the impact of disclosures on firm outcomes is minimal (Mittelbach-Hörmanseder et al., 2021). This is particularly relevant in Finland, where sustainability standards are already high (KPMG, 2022; Sachs et al., 2024), making ESG reporting more of a baseline expectation than a source of competitive advantage. As such, investors may not reward firms with marginally higher ESG scores with superior valuations or returns.

The negative or insignificant association between ESG disclosures and Tobin's Q, are consistent with prior studies by Phan et al. (2020) and Velte (2017), who also questioned the ability of ESG factors to drive market valuation. One possible explanation is the 'saturation effect', where ESG is so embedded in the business environment that it no longer differentiates firms in the eyes of investors.

Furthermore, prior literature (e.g., Aupperle et al., 1985; Marsat, 2014), highlights that ESG initiatives, while valuable for transparency and reputation, can increase operational costs without immediate financial gains. This cost-benefit imbalance might explain the weak or negative relationships observed in this study, particularly when it comes to market-based indicators like Tobin's Q.

To summarize, although the main models of this study show that ESG disclosures do not have a significant or uniform effect on firm performance, the overall picture is more complex. The robustness checks specially those incorporating lagged ESG variables and

industry interactions, provide valuable findings, showing that ESG effects may differ across time and context. Even though the study does not offer conclusive evidence supporting the main two hypotheses, these additional analyses provide credibility to the findings and point promising directions for future research. Specially, investigating firm level heterogeneity and industry specific ESG materiality could deepen the understanding of when and why ESG disclosures translate into improved firm outcomes.

6 Conclusion

In today's rapidly evolving and interconnected world, access to information has never been easier. As a result, stakeholders are more aware of the consequences of corporate actions, which has heightened the importance of corporate social responsibility (CSR) and sustainability. Cases like Volkswagen's emissions scandal highlight how negative publicity can severely affect a firm's financial standing (BBC, 2015). In this context, sustainability reporting has become a critical communication tool for companies seeking to convey their responsible business practices. This thesis investigated the effect of ESG disclosures on firm performance in the Finnish market, analysing 88 listed firms over a six-year period (2018–2023) through 528 firm-year observations. ESG scores, sourced from Bloomberg, were regressed against performance indicators including Return on Assets (ROA), Return on Equity (ROE), Tobin's Q (TQ), and stock returns. Using fixed-effects panel regression, the study incorporated firm-specific and industry-specific controls. The research draws upon theoretical frameworks such as agency theory, legitimacy theory, and stakeholder theory.

6.1 Summary of the study

The conversation around sustainability and ESG has gained increasing attention in recent decades. Stakeholders today expect firms to go beyond financial returns and actively contribute to social and environmental goals. This shift has been reinforced by stakeholder theory, which emphasizes the importance of identifying and addressing the expectations of diverse stakeholders. Sustainability reports serve as an avenue for companies to communicate their CSR initiatives and performance.

Despite extensive research on the link between CSR disclosure and firm performance, the literature remains inconclusive, with studies reporting positive, negative, and insignificant relationships. This thesis sought to provide clarity by examining how ESG disclosures relate to firm performance in Finland. The study utilized a quantitative

approach through fixed-effects OLS regression over six years, employing ESG disclosure scores from Bloomberg and financial metrics (ROA, ROE, TQ, and stock returns) as proxies for performance.

The results of the study show that ESG disclosures generally have a statistically insignificant impact on how Finnish companies perform, specially when looking at their operational (ROA) and financial (ROE) performance. When it comes to market performance, metrics showed mixed results, while the Environmental (E) dimension had a significant negative effect on Tobin's Q and stock returns, these effects were contrary to expectations. The Social (S) and Governance (G) components on the other hand, did not show any meaningful connection to firm performance. These patterns suggest that simply disclosing ESG activities might not be enough to drive better firm performance. Robustness tests supported these conclusions and highlighted factors like industry a company operates in, and delayed effects could all influence how ESG reporting impacts firm performance over time.

6.2 Practical implications

The empirical results suggest that ESG disclosures alone may not necessarily enhance firm performance and, in some cases, may even have unintended adverse effects, particularly in market-based metrics. Therefore, corporate managers should strategically assess the costs and benefits associated with CSR initiatives. It is crucial to focus on the most material ESG components relevant to the firm's operations to avoid over-investment in areas with limited value creation.

In Finland, where CSR standards are relatively high, maintaining legitimacy through transparent and responsible practices remains essential. Managers should prioritize identifying ESG issues most relevant to their industry and stakeholders, as this can help streamline reporting efforts and mitigate information overload. Doing so can also better support investors in evaluating firms' long-term sustainability.

6.3 Contribution, limitations and suggestions

This study contributes to the literature by offering updated empirical evidence on the relationship between ESG disclosure and firm performance within the Finnish context. By focusing on a Nordic country with high CSR standards, the study enhances understanding of ESG-performance dynamics in developed, sustainability-oriented markets.

However, several limitations should be acknowledged. First, the analysis captures only the quantity, not the quality, of ESG disclosures. A high disclosure score may reflect transparency rather than the effectiveness of ESG practices. Future studies could incorporate qualitative assessments of ESG reports or include primary data such as interviews with sustainability officers.

Second, the sample is limited to listed firms available on Bloomberg, excluding SMEs and state-owned enterprises (SOEs), which may also engage in significant CSR practices. Including such firms could yield a more holistic view of ESG impacts.

Third, the study focuses solely on Finland, limiting the generalizability of findings to other regions. Furthermore, it does not consider external factors such as macroeconomic conditions or firm-specific events that may confound the observed relationships.

Lastly, while firm performance is the primary focus, CSR disclosures may also influence other dimensions such as brand reputation, stakeholder trust, and employee engagement, which were beyond the scope of this research.

Future research could employ mixed methods by integrating qualitative insights with quantitative data to capture a more nuanced understanding of ESG practices. Comparative studies across different countries or regions, including both developed and emerging markets, could reveal how institutional contexts shape ESG-performance

relationships. Researchers might also explore the moderating effects of board characteristics, audit committees, and regulatory frameworks, such as the EU's Corporate Sustainability Reporting Directive, on the ESG-performance link.

Building on the robustness results, future research could take a closer look at how ESG disclosures affect firms within specific industries, particularly those where sustainability plays a major role and sustainability issues are more material. This kind of industry-level focus may help uncover patterns that broader analyses might miss. It would also be worthwhile to explore the longer-term effects of ESG practices by examining lagged variables. Since this study suggests that some impacts of ESG may take time to materialize, looking at extended time periods could offer a clearer view of ESG disclosure's strategic value over time.

Lastly, cross-country comparisons between sustainability leaders like Finland and those lagging behind in CSR maturity could offer valuable insights into best practices and challenges in ESG implementation.

Despite its limitations, this study offers a foundation for further exploration and contributes to the broader understanding of ESG disclosures in shaping firm performance within a developed European context.

References

Aagaard, P., Andersen, J. R., Dahlqvist, F., & Nauclér, T. (2022, September 1). Playing offense to create Nordic sustainability champions. *McKinsey & Company, Inc.* https://www.proquest.com/docview/2708834028/abstract?sourcetype=Magazines

Abdul Rahman, R., & Alsayegh, M. F. (2021). Determinants of Corporate Environment, Social and Governance (ESG) Reporting among Asian Firms. *Journal of Risk and Financial Management*, *14*(4), 167. https://doi.org/10.3390/jrfm14040167

Aggarwal, P. (2013). SUSTAINABILITY REPORTING AND ITS IMPACT ON CORPORATE FINANCIAL PERFORMANCE: A LITERATURE REVIEW. *Indian Journal of Commerce & Management Studies*, *4*(3), 51–59. https://www.proquest.com/scholarly-journals/sustainability-reporting-impact-on-corporate/docview/1541487978/se-2

Agostini, M., Costa, E., & Korca, B. (2022). Non-Financial Disclosure and Corporate Financial Performance Under Directive 2014/95/EU: Evidence from Italian Listed Companies. *Accounting in Europe*, *19*(1), 78–109. https://doi.org/10.1080/17449480.2021.1979610

Akisik, O., & Gal, G. (2014). Financial performance and reviews of corporate social responsibility reports. *Journal of Management Control*, *25*(3–4), 259–288. https://doi.org/10.1007/s00187-014-0198-2

Al Hawaj, A. Y., & Buallay, A. M. (2022). A worldwide sectorial analysis of sustainability reporting and its impact on firm performance. *Journal of Sustainable Finance & Investment*, *12*(1), 62–86. https://doi.org/10.1080/20430795.2021.1903792

Allison, P. D. (2001). Missing Data. In *[University Paper 136]*. SAGE Publications, Inc.

Ameer, R., & Othman, R. (2012). Sustainability Practices and Corporate Financial Performance: A Study Based on the Top Global Corporations. *Journal of Business Ethics*, *108*(1), 61–79. https://doi.org/10.1007/s10551-011-1063-y

Atan, R., Alam, Md. M., Said, J., & Zamri, M. (2018). The impacts of environmental, social, and governance factors on firm performance. *Management of Environmental*

Quality: An International Journal, *29*(2), 182–194. https://doi.org/10.1108/MEQ-03-2017-0033

Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). AN EMPIRICAL EXAMINATION OF THE RELATIONSHIP BETWEEN CORPORATE SOCIAL RESPONSIBILITY AND PROFITABILITY. *Academy of Management Journal*, *28*(2), 446–463. https://doi.org/10.2307/256210

Barnett, M. L., & Salomon, R. M. (2002). Beyond dichotomy: the curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal*, *27*(11), 1101–1122. https://doi.org/10.1002/smj.557

BBC. (2015). *Volkswagen: The scandal explained*. https://www.bbc.com/news/business-34324772

Bird, T. (2017). *Nordic Action on Climate Change*. Nordic Council of Ministers. https://doi.org/10.6027/ANP2017-766

Botchwey, E. A., Soku, M. G., & Awadzie, D. M. (2022). SUSTAINABILITY REPORTING AND THE FINANCIAL PERFORMANCE OF BANKS IN AFRICA. *Journal of Business, Economics and Finance*, *11*(1), 43–57. https://doi.org/10.17261/Pressacademia.2022.1551

Bowen, H. R. (1953). *Social responsibilities of the businessman*. New York, Harper.

Brainard, W. C., & Tobin, J. (1968). Pitfalls in Financial Model-Building. *American Economic Review*, *58*(244). https://www.researchgate.net/publication/4859885_Pitfalls_in_Financial_Model-Building

Brammer, S. J., Brooks, C., & Pavelin, S. (2006). Corporate Social Performance and Stock Returns: UK Evidence from Disaggregate Measures. *Financial Management*, *35*(3). https://doi.org/10.2139/SSRN.739587

Brealey, R., Myers, S., & Allen, F. (2011). *Principles of Corporate Finance (Finance, Insurance, and Real Estate)* (10th ed.). McGraw-Hill.

Buallay, A. (2019). Between cost and value: Investigating the effects of sustainability reporting on a firm's performance. *Journal of Applied Accounting Research*, *20*(4), 481–496. https://doi.org/10.1108/JAAR-12-2017-0137

Burke, L., & Logsdon, J. M. (1996). How corporate social responsibility pays off. *Long Range Planning*, *29*(4), 495–502. https://doi.org/10.1016/0024-6301(96)00041-6

Cahan, S. F., De Villiers, C., Jeter, D. C., Naiker, V., & Van Staden, C. J. (2016). Are CSR Disclosures Value Relevant? Cross-Country Evidence. *European Accounting Review*, *25*(3), 579–611. https://doi.org/10.1080/09638180.2015.1064009

Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & Society*.

Chen, Y.-C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, *65*(1), 169–190. https://doi.org/10.1016/j.jacceco.2017.11.009

Christensen, H. B., Hail, L., & Leuz, C. (2021). Mandatory CSR and sustainability reporting: economic analysis and literature review. *Review of Accounting Studies*, *26*(3), 1176–1248. https://doi.org/10.1007/s11142-021-09609-5

Clément, A., Robinot, É., & Trespeuch, L. (2023). The use of ESG scores in academic literature: a systematic literature review. *Journal of Enterprising Communities: People and Places in the Global Economy*, *19*(1), 92–110. https://doi.org/10.1108/JEC-10-2022-0147

Connors, S., Anderson-MacDonald, S., & Thomson, M. (2017). Overcoming the 'Window Dressing' Effect: Mitigating the Negative Effects of Inherent Skepticism Towards Corporate Social Responsibility. *Journal of Business Ethics*, *145*(3), 599–621. https://doi.org/10.1007/s10551-015-2858-z

Crane, A., & Glozer, S. (2016). Researching Corporate Social Responsibility Communication: Themes, Opportunities and Challenges. *Journal of Management Studies*, *53*(7), 1223–1252. https://doi.org/10.1111/joms.12196

Cupertino, S., Vitale, G., & Ruggiero, P. (2022). Performance and (non) mandatory disclosure: the moderating role of the Directive 2014/95/EU. *Journal of Applied Accounting Research*, *23*(1), 163–183. https://doi.org/10.1108/JAAR-04-2021-0115

Davis, K. (1960). Can Business Afford to Ignore Social Responsibilities? *California Management Review*, *2*(3), 70–76. https://doi.org/10.2307/41166246

de Klerk, M., & de Villiers, C. (2012). The value relevance of corporate responsibility reporting: South African evidence. *Meditari Accountancy Research*, *20*(1), 21–38. https://doi.org/10.1108/10222521211234200

De Klerk, M., de Villiers, C., & van Staden, C. (2015). The influence of corporate social responsibility disclosure on share prices. *Pacific Accounting Review*, *27*(2), 208–228. https://doi.org/10.1108/PAR-05-2013-0047

de Villiers, C., & Marques, A. (2016). Corporate social responsibility, country-level predispositions, and the consequences of choosing a level of disclosure. *Accounting and Business Research*, *46*(2), 167–195. https://doi.org/10.1080/00014788.2015.1039476

Deegan, C., Rankin, M., & Tobin, J. (2002). An examination of the corporate social and environmental disclosures of BHP from 1983-1997: A test of legitimacy theory. *Accounting, Auditing & Accountability Journal*, *15*(3), 312–343. https://doi.org/10.1108/09513570210435861/FULL/XML

Dhaliwal, D. S., Li, O. Z., Tsang, A., & Yang, Y. G. (2011). Voluntary Nonfinancial Disclosure and the Cost of Equity Capital: The Initiation of Corporate Social Responsibility Reporting. *The Accounting Review*, *86*(1), 59–100. http://www.jstor.org/stable/29780225.

Dilling, P. F. A. (2010). Sustainability Reporting In A Global Context: What Are The Characteristics Of Corporations That Provide High Quality Sustainability Reports An Empirical Analysis. *International Business & Economics Research Journal (IBER)*, *9*(1). https://doi.org/10.19030/iber.v9i1.505

Dobbs, S., & van Staden, C. (2016). Motivations for corporate social and environmental reporting: New Zealand evidence. *Sustainability Accounting, Management and Policy Journal*, *7*(3), 449–472. https://doi.org/10.1108/SAMPJ-08-2015-0070

Donaldson, T., & Preston, L. E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. *The Academy of Management Review*, *20*(1), 91. https://doi.org/10.2307/258887

Dorfleitner, G., Utz, S., & Wimmer, M. (2018). Patience pays off - corporate social responsibility and long-term stock returns. *Journal of Sustainable Finance and*

Investment, *8*, 132–157. http://www.tandfonline.com/eprint/EvUjsfpeS4aUCWkUm9a7/full

Du, S., Yu, K., Bhattacharya, C. B., & Sen, S. (2017). The Business Case for Sustainability Reporting: Evidence from Stock Market Reactions. *Journal of Public Policy & Marketing*, *36*(2), 313–330. https://doi.org/10.1509/jppm.16.112

Elkington, J. (1997). *Cannibals With Forks: The Triple Bottom Line of 21st Century Business* (Vol. 23). https://doi.org/10.1023/A:1006129603978

ESG Advising LLC. (2024, March 1). *Bloomberg's ESG Disclosure Score*. https://www.esg-advising.com/insights/bloombergs-esg-disclosure-score

E-Vahdati, S., Wan-Hussin, W. N., & Mohd Ariffin, M. S. (2023). The Value Relevance of ESG Practices in Japan and Malaysia: Moderating Roles of CSR Award, and Former CEO as a Board Chair. *Sustainability*, *15*(3), 2728. https://doi.org/10.3390/su15032728

European Commission. (n.d.). *Corporate sustainability and responsibility*. Retrieved April 9, 2025, from https://single-market-economy.ec.europa.eu/industry/sustainability/corporate-sustainability-and-responsibility_en

European Commission. (2014, November 15). *DIRECTIVE 2014/95/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups*. https://eur-lex.europa.eu/eli/dir/2014/95/oj/eng

European Commission. (2021). *Proposal for a Directive of The European Parliament and of The Council: amending Directive 2013/34/EU, Directive 2004/109/EC, Directive 2006/43/EC and Regulation (EU) No 537/2014, as regards corporate sustainability reporting*. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021PC0189

Fama, E. F., & French, K. R. (1992). The Cross-Section of Expected Stock Returns. *The Journal of Finance*, *47*(2), 427–465. https://doi.org/10.1111/j.1540-6261.1992.tb04398.x

Feng, M., Wang, X., & Kreuze, J. G. (2017). Corporate social responsibility and firm financial performance. *American Journal of Business*, *32*(3–4), 106–133. https://doi.org/10.1108/AJB-05-2016-0015

Fernando, S., & Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. *Journal of Theoretical Accounting Research*, *10*(1), 149–178. https://www.researchgate.net/publication/290485216_A_theoretical_framework_for_CSR_practices_Integrating_legitimacy_theory_stakeholder_theory_and_institutional_theory

Finnish Business & Society. (2023). *Sustainability in Finland 2023 A survey on the corporate responsibility management, practices, challenges and future prospects of Finland's largest companies*. https://fibsry.fi/wp-content/uploads/2023/05/FIBS_Sustainability-in-Finland-2023_Summary_Final-1.pdf

Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Cambridge University Press.

Freeman, R. E. E., & McVea, J. (2001). A Stakeholder Approach to Strategic Management. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.263511

Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment*, *5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917

Friedman, M. (1970, September 13). The Social Responsibility of Business Is to Increase Its Profits. *New York Times Magazine*, 122–126.

Frynas, J. G., & Yamahaki, C. (2016). Corporate social responsibility: review and roadmap of theoretical perspectives. *Business Ethics: A European Review*, *25*(3), 258–285. https://doi.org/10.1111/beer.12115

FTSE Russell. (2024). *Industry Classification Benchmark (ICB) | LSEG*. https://www.lseg.com/content/dam/ftse-russell/en_us/documents/ground-rules/icb-ground-rules.pdf

Galant, A., & Cadez, S. (2017). Corporate social responsibility and financial performance relationship: a review of measurement approaches. *Economic Research-Ekonomska Istraživanja*, *30*(1), 676–693. https://doi.org/10.1080/1331677X.2017.1313122

Gatti, L., Seele, P., & Rademacher, L. (2019). Grey zone in – greenwash out. A review of greenwashing research and implications for the voluntary-mandatory transition of CSR. *International Journal of Corporate Social Responsibility*, *4*(1), 6. https://doi.org/10.1186/s40991-019-0044-9

Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal*, *8*(2), 47–77. https://doi.org/10.1108/09513579510146996/FULL/XML

Grewal, J., Riedl, E. J., & Serafeim, G. (2017). Market Reaction to Mandatory Nonfinancial Disclosure. *Management Science*, *65*(7), 3061–3084. https://doi.org/http://dx.doi.org/10.2139/ssrn.2657712

GRI. (n.d.). *A Short Introduction to the GRI Standards*. Retrieved April 9, 2025, from https://www.globalreporting.org/media/wtaf14tw/a-short-introduction-to-the-gri-standards.pdf

Guidry, R. P., & Patten, D. M. (2010). Market reactions to the first-time issuance of corporate sustainability reports. *Sustainability Accounting, Management and Policy Journal*, *1*(1), 33–50. https://doi.org/10.1108/20408021011059214

Gujarati, D. N. (2003). *BASIC ECONOMETRICS* (fourth). https://zalamsyah.staff.unja.ac.id/wp-content/uploads/sites/286/2019/11/7-Basic-Econometrics-4th-Ed.-Gujarati.pdf

Guthrie, J., & Parker, L. D. (1990). Corporate social disclosure practice: a comparative international analysis. *Advances in Public Interest Accounting*, 159–175.

Haji, A. A., Coram, P., & Troshani, I. (2023). Consequences of CSR reporting regulations worldwide: a review and research agenda. *Accounting, Auditing & Accountability Journal*, *36*(1), 177–208. https://doi.org/10.1108/AAAJ-05-2020-4571

Han, J.-J., Kim, H. J., & Yu, J. (2016). Empirical study on relationship between corporate social responsibility and financial performance in Korea. *Asian Journal of*

Sustainability and Social Responsibility, *1*(1), 61–76. https://doi.org/10.1186/s41180-016-0002-3

Havlinova, A., & Kukacka, J. (2023). Corporate Social Responsibility and Stock Prices After the Financial Crisis: The Role of Strategic CSR Activities. *Journal of Business Ethics*, *182*(1), 223–242. https://doi.org/10.1007/s10551-021-04935-9

Hichri, A., & Ltifi, M. (2021). Corporate social responsibility and financial performance: bidirectional relationship and mediating effect of customer loyalty: investigation in Sweden. *Corporate Governance: The International Journal of Business in Society*, *21*(7), 1495–1518. https://doi.org/10.1108/CG-10-2020-0472

Ho, L. C. J., & Taylor, M. E. (2007). An empirical analysis of triple bottom-line reporting and its determinants: Evidence from the United States and Japan. *Journal of International Financial Management and Accounting*, *18*(2), 123–150. https://doi.org/10.1111/J.1467-646X.2007.01010.X

Huang, K., Sim, N., & Zhao, H. (2020). Corporate social responsibility, corporate financial performance and the confounding effects of economic fluctuations: A meta-analysis. *International Review of Financial Analysis*, *70*, 101504. https://doi.org/10.1016/j.irfa.2020.101504

Inoue, Y., & Lee, S. (2011). Effects of different dimensions of corporate social responsibility on corporate financial performance in tourism-related industries. *Tourism Management*, *32*(4), 790–804. https://doi.org/10.1016/j.tourman.2010.06.019

Jensen, M. C. (2002). Value Maximization, Stakeholder Theory, and the Corporate Objective Function. *Business Ethics Quarterly*, *12*(2), 235–256. https://doi.org/10.2307/3857812

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Johnson, H. L. (1971). *Business in contemporary society: framework and issues /*. Wadsworth Pub. Co.,.

Jones, S. (2005). Notes of the University of Sydney Pacioli Society. *Abacus*, *41*(2), 211–216. https://doi.org/10.1111/j.1467-6281.2005.00176.x

Kao, E. H., Yeh, C.-C., Wang, L.-H., & Fung, H.-G. (2018). The relationship between CSR and performance: Evidence in China. *Pacific-Basin Finance Journal*, *51*, 155–170. https://doi.org/10.1016/j.pacfin.2018.04.006

Kapoor, S., & Sandhu, H. S. (2010). Does it Pay to be Socially Responsible? An Empirical Examination of Impact of Corporate Social Responsibility on Financial Performance. *Global Business Review*, *11*(2), 185–208. https://doi.org/10.1177/097215091001100205

Khatri, I., & Kjærland, F. (2023). Sustainability reporting practices and environmental performance amongst nordic listed firms. *Journal of Cleaner Production*, *418*, 138172. https://doi.org/10.1016/j.jclepro.2023.138172

KPMG. (2020). *The Time Has Come: The KPMG Survey of Sustainability Reporting 2020*. https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2020/11/the-time-has-come.pdf

KPMG. (2022). *The Survey of Sustainability Reporting 2022*. https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/10/ssr-small-steps-big-shifts.pdf

KPMG. (2024). *The move to mandatory reporting - Survey of Sustainability Reporting 2024* . https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2024/11/the-move-to-mandatory-reporting-web-copy.pdf

Latapí Agudelo, M. A., Jóhannsdóttir, L., & Davídsdóttir, B. (2019). A literature review of the history and evolution of corporate social responsibility. *International Journal of Corporate Social Responsibility*, *4*(1), 1. https://doi.org/10.1186/s40991-018-0039-y

Lee, M. P. (2008). A review of the theories of corporate social responsibility: Its evolutionary path and the road ahead. *International Journal of Management Reviews*, *10*(1), 53–73. https://doi.org/10.1111/j.1468-2370.2007.00226.x

Lioui, A., & Sharma, Z. (2012). Environmental corporate social responsibility and financial performance: Disentangling direct and indirect effects. *Ecological Economics*, *78*, 100–111. https://doi.org/10.1016/j.ecolecon.2012.04.004

Lin, Y.-T., Liu, N.-C., & Lin, J.-W. (2022). Firms' adoption of CSR initiatives and employees' organizational commitment: Organizational CSR climate and employees' CSR-induced attributions as mediators. *Journal of Business Research*, *140*, 626–637. https://doi.org/10.1016/j.jbusres.2021.11.028

Lindblom, C. K. (1993). *The Implications of Organisational Legitimacy for Corporate Social Performance and Disclosure*.

López, M. V., Garcia, A., & Rodriguez, L. (2007). Sustainable Development and Corporate Performance: A Study Based on the Dow Jones Sustainability Index. *Journal of Business Ethics*, *75*(3), 285–300. https://doi.org/10.1007/s10551-006-9253-8

Lueg, R., & Pesheva, R. (2021). Corporate sustainability in the Nordic countries – The curvilinear effects on shareholder returns. *Journal of Cleaner Production*, *315*, 127962. https://doi.org/10.1016/j.jclepro.2021.127962

Marom, I. Y. (2006). Toward a unified theory of the CSP-CFP link. *Journal of Business Ethics*, *67*(2), 191–200. https://doi.org/10.1007/S10551-006-9023-7

Marsat, S. (2014). Does the Market Value Social Pillar? *SSRN Electronic Journal*. https://www.academia.edu/104530495/Does_the_Market_Value_Social_Pillar

Mehedi, S., & Jalaludin, D. (2020). Application of theories in CSR research focusing study context and corporate attributes. *International Journal of Ethics and Systems*, *36*(3), 305–324. https://doi.org/10.1108/IJOES-09-2019-0146

Midttun, A., Gjølberg, M., Kourula, A., Sweet, S., & Vallentin, S. (2015). Public Policies for Corporate Social Responsibility in Four Nordic Countries. *Business & Society*, *54*(4), 464–500. https://doi.org/10.1177/0007650312450848

Mittelbach-Hörmanseder, S., Hummel, K., & Rammerstorfer, M. (2021). The information content of corporate social responsibility disclosure in Europe: an institutional perspective. *European Accounting Review*, *30*(2), 309–348. https://doi.org/10.1080/09638180.2020.1763818

Mukherjee, A., Bird, R., & Duppati, G. (2018). Mandatory Corporate Social Responsibility: The Indian experience. *Journal of Contemporary Accounting & Economics*, *14*(3), 254–265. https://doi.org/10.1016/j.jcae.2018.06.002

Mukherjee, A., & Nuñez, R. (2019). Doing well by doing good: can voluntary CSR reporting enhance financial performance? *Journal of Indian Business Research*, *11*(2), 100–119. https://doi.org/10.1108/JIBR-07-2018-0199

Mănescu, C. (2011). Stock returns in relation to environmental, social and governance performance: Mispricing or compensation for risk? *Sustainable Development*, *19*(2), 95–118. https://doi.org/10.1002/sd.510

Nordic Council of Minister. (2020). The Nordic Region – towards being the most sustainable and integrated region in the world. In *The Nordic Region – towards being the most sustainable andintegrated region in the world*. Nordic Council of Ministers. https://doi.org/10.6027/POLITIKNORD2020-728

Oberndorfer, M. (2021, March 22). *ESG Disclosure and Scoring – a new feature on the CEO dashboard | ESG.Guide*. InvestESG. https://esg.guide/insight/4288/esg-disclosure-and-scoring-a-new-feature-on-the-ceo-dashboard

Omar, B. F., & Zallom, N. O. (2016). Corporate social responsibility and market value: evidence from Jordan. *Journal of Financial Reporting and Accounting*, *14*(1), 2–29. https://doi.org/10.1108/JFRA-11-2014-0084

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta-analysis. *Organization Studies*, *24*(3), 403–441. https://doi.org/10.1177/0170840603024003910

Phan, H.-T.-P., de Luca, F., & Iaia, L. (2020). The “Walk” towards the UN Sustainable Development Goals: Does Mandated “Talk” through NonFinancial Disclosure Affect Companies’ Financial Performance? *Sustainability*, *12*(6), 2324. https://doi.org/10.3390/su12062324

Porter, M. E., & Kramer, M. R. (2006). Strategy and society: the link between competitive advantage and corporate social responsibility. *Harvard Business Review*, *84*(12), 78–163. https://doi.org/10.1108/sd.2007.05623ead.006

Porter, M. E., & Kramer, M. R. (2011). *Creating Shared Value*. Harvard Business Review. https://www.hbs.edu/faculty/Pages/item.aspx?num=39071

Preston, L. E., & O'Bannon, D. P. (1997). The Corporate Social-Financial Performance Relationship. *Business & Society*, *36*(4), 419–429. https://doi.org/10.1177/000765039703600406

Pérez, A., García de los Salmones, M. del M., & López-Gutiérrez, C. (2020). Market reactions to CSR news in different industries. *Corporate Communications: An International Journal*, *25*(2), 243–261. https://doi.org/10.1108/CCIJ-05-2019-0056

Quazi, A., & Richardson, A. (2012). Sources of variation in linking corporate social responsibility and financial performance. *Social Responsibility Journal*, *8*(2), 242–256. https://doi.org/10.1108/17471111211234860

Quinn, D. P., & Jones, T. M. (1995). An Agent Morality View of Business Policy. *The Academy of Management Review*, *20*(1), 22. https://doi.org/10.2307/258885

Reverte, C. (2016). Corporate social responsibility disclosure and market valuation: evidence from Spanish listed firms. *Review of Managerial Science*, *10*(2), 411–435. https://doi.org/10.1007/s11846-014-0151-7

Reyes, J. A. L. (2021). How Different Are the Nordics? Unravelling the Willingness to Make Economic Sacrifices for the Environment. *Sustainability*, *13*(3), 1294. https://doi.org/10.3390/su13031294

Romppanen, T. (2016). *Corporate social responsibility and financial performance: Evidence from European companies from years 2005-2013*. https://osuva.uwasa.fi/handle/10024/4846

Ruf, B. M., Muralidhar, K., Brown, R. M., Janney, J. J., & Paul, K. (2001). An empirical investigation of the relationship between change in corporate social performance and financial performance: A stakeholder theory perspective. *Journal of Business Ethics*, *32*(2), 143–156. https://doi.org/10.1023/A:1010786912118

Sachs, J. D., Lafortune, G., & Fuller, G. (2024). *SUSTAINABLE DEVELOPMENT REPORT 2024*. https://s3.amazonaws.com/sustainabledevelopment.report/2024/sustainable-development-report-2024.pdf

Saleh, M., Zulkifli, N., & Muhamad, R. (2011). Looking for evidence of the relationship between corporate social responsibility and corporate financial performance in an emerging market. *Asia-Pacific Journal of Business Administration*, *3*(2), 165–190. https://doi.org/10.1108/17574321111169849

Singh, A., & Chakraborty, M. (2021). Does CSR disclosure influence financial performance of firms? Evidence from an emerging economy. *Sustainability Accounting, Management and Policy Journal*, *12*(4), 788–810. https://doi.org/10.1108/SAMPJ-02-2018-0042

Makni, R., Francoeur, C., & Bellavance, F. (2009). Causality Between Corporate Social Performance and Financial Performance: Evidence from Canadian Firms. *Journal of Business Ethics*, *89*(3), 409–422. https://doi.org/10.1007/s10551-008-0007-7

Mănescu, C. (2011). Stock returns in relation to environmental, social and governance performance: Mispricing or compensation for risk? *Sustainable Development*, *19*(2), 95–118. https://doi.org/10.1002/sd.510

Strand, R., Freeman, R. E., & Hockerts, K. (2015). Corporate Social Responsibility and Sustainability in Scandinavia: An Overview. *Journal of Business Ethics*, *127*(1), 1–15. https://doi.org/10.1007/s10551-014-2224-6

Söderholm, S., & Metsä-Tokila, F.-W. M.-T. (2021). *CSR disclosure in Finland: Does comprehensive reporting enhance financial performance?* https://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-185694

Thorne, L., S. Mahoney, L., & Manetti, G. (2014). Motivations for issuing standalone CSR reports: a survey of Canadian firms. *Accounting, Auditing & Accountability Journal*, *27*(4), 686–714. https://doi.org/10.1108/AAAJ-07-2013-1393

Ting, P.-H. (2021). Do large firms just talk corporate social responsibility? - The evidence from CSR report disclosure. *Finance Research Letters*, *38*, 101476. https://doi.org/10.1016/j.frl.2020.101476

Tobin, J. (1969). A General Equilibrium Approach To Monetary Theory. *Journal of Money, Credit and Banking*, *1*(1), 15. https://doi.org/10.2307/1991374

Tsang, A., Wang, K. T., Wu, Y., & Lee, J. (2022). Nonfinancial Corporate Social Responsibility Reporting and Firm Value: International Evidence on the Role of

Financial Analysts. *European Accounting Review*. https://doi.org/10.1080/09638180.2022.2094435

UNIDO. (n.d.). *What is CSR?* . Retrieved April 9, 2025, from https://www.unido.org/our-focus-advancing-economic-competitiveness-competitive-trade-capacities-and-corporate-responsibility-corporate-social-responsibility-market-integration/what-csr

Vartiak, L. (2016). CSR Reporting of Companies on a Global Scale. *Procedia Economics and Finance*, *39*, 176–183. https://doi.org/10.1016/S2212-5671(16)30276-3

Velte, P. (2017). Does ESG performance have an impact on financial performance? Evidence from Germany. *Journal of Global Responsibility*, *8*(2), 169–178. https://doi.org/10.1108/JGR-11-2016-0029

Villiers, C., & Maroun, W. (2017). Sustainability Accounting and Integrated Reporting. In *Sustainability Accounting and Integrated Reporting* (1st ed.). Routledge. https://doi.org/10.4324/9781315108032/SUSTAINABILITY-ACCOUNTING-INTEGRATED-REPORTING-CHARL-VILLIERS-WARREN-MAROUN

Waddock, S. A., & Graves, S. B. (1997). Finding the Link Between Stakeholder Relations and Quality of Management. *The Journal of Investing*, *6*(4), 20–24. https://doi.org/10.3905/joi.1997.408435

Wallich, H. C., & McGowan, J. J. (1970). *Stockholder interest and the corporation's role in social policy. A new rationale for corporate social policy*.

Wang, P., & Zhang, H. (2020). *Doing Well by Doing Good? Evidence From Luxury Brands' Social Responsibility Disclosure and Their Financial Performance*. https://doi.org/10.2139/ssrn.3761725

Wang, Q., Dou, J., & Jia, S. (2016). A Meta-Analytic Review of Corporate Social Responsibility and Corporate Financial Performance. *Business & Society*, *55*(8), 1083–1121. https://doi.org/10.1177/0007650315584317

Werther, W. B., & Chandler, Jr. D. (2014). *Strategic corporate responsibility: stakeholders, globalization, and sustainable value creation* (3rd ed.). SAGE. https://archive.org/details/strategiccorpora0000wert

Appendices

Appendix 1. Sample of the study

	Company Name	Industry	ICB Industry Classification	CSR Disclosure level
1	Afarak Group A	Industrial Metals and Mining	Basic Materials	Low
2	Aktia Bank A	Banks	Financials	Medium to High
3	Alandsbanken A	Banks	Financials	Low
4	Alisa Bank Ordinary	Banks	Financials	Low
5	Alma Media	Media	Consumer Discretionary	Low
6	Anora Group	Beverages	Consumer Staples	Medium to High
7	Apetit	Food Producers	Consumer Staples	Low
8	Aspo	General Industrials	Industrials	Low
9	Atria A	Food Producers	Consumer Staples	Low
10	Bittium	Software and Computer Services	Technology	Low
11	Cargotec B	Industrial Goods and Services	Industrials	Medium to High
12	Citycon	Real Estate Investment and Services	Real Estate	Medium to High
13	Componenta	Industrial Metals and Mining	Basic Materials	Low
14	Consti	Industrial Goods and Services	Industrials	Low
15	Digia	Software and Computer Services	Technology	Low
16	Dovre Group	Industrial Goods and Services	Industrials	Low
17	Eezy	Support Services	Industrials	Low
18	Elisa	Fixed Line Telecommunications	Telecommunications	Medium to High
19	Enento Group	Support Services	Industrials	Low
20	Etteplan	Industrial Goods and Services	Industrials	Low
21	Exel Composites	Industrial Engineering	Industrials	Low
22	Finnair	Travel and Leisure	Consumer Discretionary	Medium to High
23	Fiskars A	Consumer Products and Services	Consumer Discretionary	Medium to High
24	Fortum	Electricity	Utilities	Medium to High
25	Glaston	Construction and Materials	Industrials	Low
26	Gofore	Software and Computer Services	Technology	Low
27	Harvia	Leisure Goods	Consumer Discretionary	Low
28	Hkfoods A	Food Producers	Consumer Staples	Medium to High
29	Huhtamaki	General Industrials	Industrials	Medium to High
30	Ilkka	Media	Consumer Discretionary	Low
31	Incap	Industrial Goods and Services	Industrials	Low
32	Innofactor	Software and Computer Services	Technology	Low
33	Kamux	General Retailers	Consumer Discretionary	Low
34	Kemira	Chemicals	Basic Materials	Medium to High
35	Kesko B	Food and Drug Retailers	Consumer Staples	Medium to High
36	Kojamo	Real Estate Investment and Services	Real Estate	Medium to High

37	Kone B	Industrial Engineering	Industrials	Medium to High
38	Konecranes	Industrial Engineering	Industrials	Medium to High
39	Lassila and Tikanoja	Support Services	Industrials	Medium to High
40	Lehto Group	Construction and Materials	Industrials	Low
41	Lindex Group Share B	General Retailers	Consumer Discretionary	Medium to High
42	Marimekko	Personal Goods	Consumer Discretionary	Medium to High
43	Martela A	Household Goods and Home Construction	Consumer Discretionary	Medium to High
44	Metsa Board B	Forestry and Paper	Basic Materials	Medium to High
45	Metso Corporation	Industrial Goods and Services	Industrials	Medium to High
46	Neste	Energy	Energy	Medium to High
47	Noho Partners	Travel and Leisure	Consumer Discretionary	Low
48	Nokia	Technology Hardware and Equipment	Technology	Medium to High
49	Nokian Renkaat	Automobiles and Parts	Consumer Discretionary	Medium to High
50	Nordea Bank (Helsinki)	Banks	Financials	Medium to High
51	Olvi A	Beverages	Consumer Staples	Low
52	OMA Saastopankki	Banks	Financials	Low
53	Oriola B	Health Care Equipment and Services	Health Care	Low
54	Orion B	Pharmaceuticals and Biotechnology	Health Care	Medium to High
55	Outokumpu 'A'	Industrial Metals and Mining	Basic Materials	Medium to High
56	Panostaja	Financial Services (Sector)	Financials	Low
57	Pihlajalinna	Health care Providers	Health Care	Low
58	Ponsse	Industrial Goods and Services	Industrials	Low
59	QT Group	Software and Computer Services	Technology	Low
60	Raisio	Food Producers	Consumer Staples	Medium to High
61	Rapala VMC	Leisure Goods	Consumer Discretionary	Low
62	Raute A	Industrial Engineering	Industrials	Medium to High
63	Reka Industrial	Industrial Goods and Services	Industrials	Low
64	Robit	Industrial Goods and Services	Industrials	Low
65	Saga Furs C	Personal Goods	Consumer Discretionary	Low
66	Sampo A	Nonlife Insurance	Financials	Medium to High
67	Sanoma	Media	Consumer Discretionary	Low
68	Scanfil	Industrial Goods and Services	Industrials	Medium to High
69	Siili Solutions	Software and Computer Services	Technology	Low
70	Solteq	Software and Computer Services	Technology	Low
71	SRV Yhtiot	Construction and Materials	Industrials	Low
72	Stora Enso R	Forestry and Paper	Basic Materials	Medium to High
73	Suominen	Household Goods and Home Construction	Consumer Discretionary	Medium to High
74	Talenom	Industrial Goods and Services	Industrials	Low
75	Tecnotree	Software and Computer Services	Technology	Low

76	Teleste	Technology Hardware and Equipment	Technology	Low
77	Terveystalo	Health care Providers	Health Care	Low
78	Tietoevry	Software and Computer Services	Technology	Medium to High
79	Tokmanni Group	General Retailers	Consumer Discretionary	Low
80	Tulikivi A	Construction and Materials	Industrials	Low
81	UPM-Kymmene	Forestry and Paper	Basic Materials	Medium to High
82	Vaisala A	Industrial Goods and Services	Industrials	Medium to High
83	Valmet	Industrial Engineering	Industrials	Medium to High
84	Verkkokauppa Com	General Retailers	Consumer Discretionary	Low
85	Viking Line	Travel and Leisure	Consumer Discretionary	Low
86	Wartsila	Industrial Goods and Services	Industrials	Medium to High
87	Wulff-Group	Support Services	Industrials	Low
88	YIT	Construction and Materials	Industrials	Low

Appendix 2. Variance Inflation Factors (VIF)

Variance Inflation Factors
Date: 03/21/25 Time: 18:40
Sample: 2018 2023
Included observations: 528

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3.48015	50.85946	NA
ESG	0.00022	6.362921	1.255928
LOGASSETS	0.020073	54.57861	1.25849
LEVERAGE	0.00031	4.449195	1.038671
MTB	0.014645	2.332538	1.045544

Appendix 3. Breusch- Pagan Test

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
(all others) alternatives

	Test Hypothesis		
	Cross-section	**Time**	**Both**
Breusch-Pagan	69.387	0.251	69.638
	0.000	-0.616	0.000
Honda	8.330	-0.501	5.536
	0.000	-0.692	0.000
King-Wu	8.330	-0.501	1.454
	0.000	-0.692	-0.073
Standardized Honda	9.758	-0.184	0.091
	0.000	-0.573	-0.464
Standardized King-Wu	9.758	-0.184	-1.565
	0.000	-0.573	-0.941
Gourieroux, et al.	--	--	69.387
			0.000

Appendix 4. Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	16.399	4.000	0.003

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
ESG	0.002	-0.001	0.000	0.414
LOGASSETS	1.329	-0.045	0.476	0.046
LEVERAGE	-0.214	-0.148	0.000	0.001
MTB_WIN2P	1.395	1.531	0.024	0.384