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Impact of ESG score on Company Performance in Nordic Countries

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ABSTRACT:

This thesis analyzes the relationship between ESG scores and financial performance of the publicly listed Nordic companies from 2014 and 2023. The research uses a panel data set of 187 companies and 1, 363 firm-year observations to describe how a total ESG performance and its components (environmental, social and governance) influence ROA and ROE. The study uses fixed-effects regression models to explore contemporaneous and lagged effects. The models are controlled with the firm size, leverage, growth, and price-to-book ratio. The findings show a positive and statistically significant relationship between the overall ESG Score and ROA, and environmental dimension has the strongest positive association. Nevertheless, there is no clear relationship between both ESG metrics and ROE in the contemporaneous models. Remarkably, lagged analysis showed dominant negative (but largely insignificant) ESG-financial performance relationships. Which is contrary to the expectation that ESG payoffs happen over long periods of time. These results suggest that, in Nordic markets ESG initiatives will have quicker operational benefits instead of long-term effects. The study contributes to the conceptual framework of stakeholder theory, resource-based view, and institutional theory. It presents the practical aspects of sustainable investment strategies in mature ESG markets. The results emphasize importance of the disaggregated ESG analysis and the effect of the institutional context on ESG-financial performance relations.

KEYWORDS: ESG (Environmental, Social, and Governance), Financial Performance, Nordic Countries, Return on Assets (ROA), Return on Equity (ROE).

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Abbreviations

CFP Corporate Financial Performance

CSR Corporate Social Responsibility

EPS Environmental Pillar Score

ESG Environmental, Social, and Governance

GPS Governance Pillar Score

PB Price-to-Book Ratio

RBV Resource-Based View

ROA Return on Assets

ROE Return on Equity

SPS Social Pillar Score

1 Introduction

1.1 Background

The importance of Environmental, Social, and Governance (ESG) has become undeniable in modern era. Companies are under constant pressure to address sustainability into their business processes (Broadstock et al., 2021). This is driven by the changing stakeholder expectations and regulations around the globe. The Nordic countries are Denmark, Finland, Iceland, Norway, and Sweden. And they are known for their priority sustainability as a principle(Gillan et al., 2021). These countries are leading in strong commitment to environmental, social, and governance principles.

Investors use ESG metrics more frequently to assess business success along with traditional financial metrics. This shift is the evidence of moving towards sustainable finance (Gillan et al., 2021). ESG was formerly a niche approach which gradually has become a mainstream investment strategy. There has been exponential growth globally in investments for ESG in recent years.

The Nordic corporate governance model is characterized by high stakeholder inclusion, high transparency, and an emphasis on long term value (Thomsen et al., 2018). Generally, the Nordic companies show strong performance on ESG relative to global peers. The institutions in the region promote sustainable business practices. Compared to other regions, many companies in Nordic countries adopted ESG reporting as a requirement (Mion & Loza Adaui, 2019). This regulatory environment creates a particularly interesting context to study ESG-financial performance relationship in Nordic countries.

1.2 Problem Statement

There is growing interest in ESG investing, but the relationship between ESG performance and financial performance remains disputed. This relationship differs widely in various studies in different markets and different time periods (Friede et al., 2015). Many studies find positive relation between ESG measures and financial performance measures, and some others find relationships that are neutral or negative. This inconsistency leads to confusion among investors and corporate executives.

The Nordic context is an invaluable yet underexplored context for ESG research. Most extant studies have examined U.S. markets or global samples but with small Nordic representations. As a result, there is an information void on ESG impacts in more mature markets. The institutional context of the Nordic region and the leadership motivates for more studies. The study framework can deliver important insights for other developing ESG markets.

Additionally, most studies consider ESG as a combined score. It is possible that this method can mask the varying influences of the specific environmental, social and governance dimensions (Drempetic et al., 2020). Each of the ESG components might influence financial performance through different levels. Such strategies need to be more specific, hence the component-level analysis is essential. Knowing which ESG factors drive financial performance at their level will allow companies to prioritize efforts related to ESG.

Furthermore, the temporal dynamics of ESG effects also are relatively understudied. It is still unclear if ESG investments would bring immediate returns or if they may take a long time horizon to realize returns (Xie et al., 2019). The lack of clarity makes it difficult for companies to decide how to invest for sustainability. The strategic planning would be much better if it can be understood with the time lags between improvements on ESG aspects and financial benefits. That would also align stakeholder expectations on sustainability initiatives.

1.3 Research Purpose and Objectives

This study investigates the relationship between ESG scores and financial performance in public Nordic companies. It examines ESG scores, Environmental Pillar Score, Social Pillar Score, and Governance Pillar Score to explain Return on Assets (ROA) and Return on Equity (ROE). The period chosen for the analysis allows to see the recent trends and temporal dynamics.

The specific objectives of this research are:

1. To analyze the relationship between overall ESG scores and financial performance measures (ROA and ROE) in Nordic countries.
2. To analyze how individual ESG components (environmental, social, and governance) independently affect financial performance in Nordic countries.
3. To contribute to the theoretical understanding of ESG-financial performance relationships in Nordic countries.
4. To provide practical insights for sustainable investment strategies and corporate sustainability initiatives in Nordic countries.

This study adopts a holistic approach to ESG analysis. It looks at immediate and lagged financial impacts. The study includes two different financial performance indicators to obtain robust results. Using panel data methodology provides the ability to control for company-specific characteristics likely affecting results. It can overcome the methodological limitations identified in the earlier ESG literature(Flammer, 2015).

1.4 Research Questions

The aim of this research is to answer these following questions:

1. How do the overall ESG, and the Environmental, Social, Governance components of ESG affect the financial performance in Nordic companies based on ROA?

2. How do the overall ESG, and the Environmental, Social, Governance components of ESG relate to financial performance in Nordic companies based on ROE?
3. Is there delayed effect of overall ESG, and the Environmental, Social, Governance components of ESG and the financial performance in Nordic companies based on ROA?
4. Is there delayed effect of overall ESG, and the Environmental, Social, Governance components of ESG and the financial performance in Nordic companies based on ROE?

By answering these questions, this thesis will enhance the theoretical and practical aspects of ESG investment in the Nordic region. The results will inform investors on how to assess sustainable investments. They will support enterprises to formulate successful sustainability performance strategies and contribute to the improvement of financial performance.

1.5 Significance of the Study

This study offers several important dimensions to the sustainability and finance literature. It tries to address knowledge gaps on ESG impacts in high sustainability markets. The Nordic perspective offers learnings from a geographic region where ESG has developed significantly. The findings will provide answers about whether leadership in sustainability have an advantage in financial performance.

This study helps to provide evidence-based sustainability investment advice. It can inform how companies allocate resources by understanding the ESG pillars that mostly relate with financial performance. It allows companies to build their sustainability strategies based on evidence. Lagged effects analysis also helps with realistic timelines for anticipating ESG financial benefits.

2 Literature Review

2.1 Theoretical Framework

2.1.1 Stakeholder Theory

Stakeholder theory forms a theoretical basis for exploring the link between ESG performance and financial returns. Freeman's (1984) stakeholder theory suggests that an organization is the sum of all stakeholders, and its purpose is to create value for all categories of stakeholders, not only shareholders. Recent findings highlighted that better performance on stakeholder needs translates into higher financial performance through better relationships, lower risks, and a better reputation (Flammer, 2015). Those firms that actively engage their stakeholder relationships are likely to generate sustainable competitive advantages and better financial performance (Harrison et al., 2020).

Recent research has found stakeholder theory directly to ESG considerations. Eccles & Stroehle (2018) show that firms with higher stakeholder orientation on average perform better on ESG measures. This generates a virtuous cycle where engagement creates value for stakeholders. The Nordic countries offer ideal context for examining this relationship due to their long history of stakeholder capitalism (R. Strand & Freeman, 2015). Such strong stakeholder relation through governance structures and corporate policies actively encourages stakeholder engagement.

Kumar et al. (2016) found that more stakeholder-oriented firms are more resistant to economic shocks. That resulted in less volatility in stock prices and more consistently dependable financial performance. In Nordic countries, stakeholder theory helps to explain why companies invest in ESG initiatives beyond minimum compliance (Miska et al., 2018). The embedded stakeholder perspective in Nordic business culture drives the corporate decision-making toward sustainable practices.

2.1.2 Resource-Based View Theory

The resource-based view (RBV) theory offers another theoretical perspective for analyzing ESG performance. According to this theory a sustainable competitive advantage comes from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Modern RBV applications view ESG capabilities as strategic resources that create competitive advantages (Hart & Dowell, 2011). Companies with better ESG performance develop unique organizational capabilities that can strengthen their competitiveness.

Academic research has recently identified channels through which ESG creates value. Miroshnychenko et al. (2017) found that resource efficiency encourages financial performance through environmental performance. Surroca et al. (2013) argue that social performance develops human capital resources and contributes to increased connectivity with external stakeholders. Governance capabilities ensure that firms use their resources efficiently yet ethically (R. Strand, 2024).

RBV helps to explain how firms exploit advanced ESG practices as competitive advantages in Nordic countries. Nordic firms have thus cultivated high maturity in opportunities for sustainable innovation and stakeholder management(R. Strand, 2024). This enables them to extract more value from ESG investments than other regions. These unique ESG resources are developed due to the support from the Nordic institutional environment through policy incentives and normative pressures (R. Strand et al., 2015; R. Strand, 2024).

2.1.3 Institutional Theory

Institutional theory helps us to understand how the broader social, cultural and regulatory background shapes of ESG and the relationship between financial performance. Regulations, norms, and competitors affect their behavior.

Nordic firms have a different image that may support the relationship between ESG - financial performance. Their environment is high in the terms of strong environmental regulations, advanced social welfare systems and transparent corporate governance standards that encourage high ESG performance (Thomsen et al., 2018). They focus on collective responsibility, equality and trust for sustainable business practices.

Matten & Moon (2020) studied between “explicit” and “implicit” corporate social responsibility which is helpful to especially relevant to the understanding of the Nordic approach to ESG. In liberal market economies while companies in the United States do often practice explicit CSR as a strategic option, Nordic firms are working in coordinated market economies where responsibility is implicitly in the institutional structure. This difference suggests that the ways of ESG affects in financial performance may vary in the Nordic countries than other regions.

2.2 ESG Performance and Financial Outcomes

2.2.1 Global Evidence on ESG-Financial Performance Relationship

There has been an increasing number of empirical literatures exploring the relationship between ESG performance and financial outcome in the recent years. And they have varied results. A meta-analysis by Friede et al. (2015) combined the results from over 2,200 studies. And they found that roughly 90% of studies reported a non-negative ESG-financial performance relationship. These relationships are also different in various dimensions of ESG, industry, region, and time.

Recent studies have investigated this relationship using ever more complex methodologies. Eccles et al. (2020) used a matched-pair analysis to compare high and low sustainability companies over a long period and concluded that high-sustainability firms outperformed their counterparts in both stock market and accounting measures. Similarly, Khan et al. (2016) found that companies dealing with material ESG issues pertinent to

their industry performed better financially than companies that focused on immaterial issues.

The relationship between ESG and financial performance seems to be moderated by several factors. For example, Broadstock et al. (2021) discovered that superior ESG performance is linked to better access to finance and capital constrains, which in turn can have positive impact on the financial outcomes. According to Flammer (2018), companies that have good environmental performance record positive stock market reaction to eco-friendly initiatives and negative reaction to eco-harmful behavior, which implies that the market is rewarding environmental responsibility.

ESG performance is related with both the ROA and ROE indicators. Velte (2017) found a positive relationship between ESG ratings and ROA in European companies. Although Asian markets is more mixed. For example, The study by Naimy et al. (2021) on East Asian listed industrial firms found no significant relationship between ESG scores and ROA and ROE, it suggests that the ESG–financial performance link may not be universal across regions. These relationships may be firm-specific and country-level factors (Eliwa et al., 2021).

2.2.2 ESG Performance in Nordic Countries

Nordic countries always have been leading in ESG performance in the world. According to Strand et al., (2015), Nordic corporations significantly performed better in almost all ESG dimensions than their global competitors. Nordic corporate governance has a focus on including stakeholders, transparency and value creation in the long term (Thomsen et al., 2018).

The unique features of Nordic ESG performance have been examined in several comparative studies. Strand et al. (2015) discovered that the Nordic firms show high engagement on all ESG dimensions, and especially high performance in environmental

management, labor practices and corporate governance transparency. Similarly, Morsing and Strand (2014) reported that Nordic firms are more likely to in-corporate sustainability into core business strategies than are other firms in Europe.

There are many reasons why Nordic firms have great ESG performance. They have good regulatory frameworks which motivate the sustainable practices (Thomsen et al., 2018). Their cultural values include collective welfare and environmental stewardship as their top values create normative expectations for business of responsible conduct. And their collaborative relationships of businesses, governaments and civil society organizations allow collaborative approaches to addressing sustainability challenges (Strand & Freeman, 2015).

2.2.3 Environmental Performance and Financial Outcomes

Some of the environmental dimensions of ESG are the climate change mitigation, resource efficiency, pollution prevention and conservation of biodiversity. Studies on the relationship between environmental performance and financial outcomes have found evidence of positive association, especially in industries with high environmental impacts.

In Nordic countries the environmental performance seems especially relevant for financial results, because of the high environmental regulations and consumer tendencies to choose products and services that are eco-friendly. Halme et al. (2020) discovered that Nordic firms that were more environmentally efficient had lower cost of capital and higher valuations than firms with poorer environmental focus. Similarly, Tagesson & Brunström (2022) found positive relations between environmental disclosures and measures of profitability for Swedish listed firms.

2.2.4 Social Performance and Financial Outcomes

The social dimension of ESG includes employee relations, human rights, community, product responsibility and diversity initiatives. The connection between social performance and financial outcomes has been studied in contexts other than ours, with mostly positive but context-dependent results.

Meta-analyses by Wang et al. (2024) showed that there is positive relationship between social performance and financial outcomes and the effects were stronger for developed economies and stakeholder-oriented institutional contexts. Similar to this, Edmans, (2011) found that firms with high employee satisfaction had superior long-term returns, which implied that people are valuable sources of capital.

In Nordic countries, the social performance is strongly integrated into business operations because of strong labor protections, gender equal policies and cooperative employer-employee relations. Thomsen et al. (2018) discovered that Nordic firms that have good social performance have lower employee turnover, higher productivity and consequently better financial outcomes.

2.2.5 Governance Performance and Financial Outcomes

Corporate governance includes board structure and process, executive remuneration, shareholders' rights, business ethics and transparency. The link between governance practices and financial results has been well researched. The governance performance of the ESG dimension might be the most directly related factor to financial performance.

The meta-analysis of Wang et al. (2024) supported positive relationships between governance quality and measures of financial performance, and especially high impact of board independence, audit quality and shareholder rights protection. Similarly, Gompers

et al. (2003) found that, firms with powerful shareholder rights had higher firm value, profitability as well as sales growth.

Nordic countries have unique corporate governance models like two tier board structure, employee representation, concentrated ownership and gender balanced leadership (Thomsen et al., 2018). Such aspects of governance produce a specific governance atmosphere that can influence relations between the governance practices and financial results.

2.3 Research Gaps

Although there are many research on ESG-financial performance relationships, there are still knowledge gaps, especially in the Nordic context. Even though there is a lot of evidence available for individual Nordic countries, there is little comparative analysis in relation to all Nordic states. Studies usually concentrate on certain countries (usually Sweden or Denmark) rather than the Nordic region as a whole (Strand et al., 2015).

There is a need for further development of research on differential impacts of ESG dimensions in Nordic contexts. Although environmental and governance dimensions have been given a lot of attention, social dimensions are underdeveloped in terms of their unique financial implications (Morsing & Spence, 2019).

The temporal dynamics of ESG-financial performance relationships need further study. Most studies use rather short time horizons which may fail to capture the delayed effects that may be especially relevant to Nordic contexts in view of its orientation towards long-term value creation (Thomsen et al. 2018).

More detailed consideration is needed of mediating mechanisms through which ESG dimension influences financial performance in Nordic firms. Although conceptual

frameworks outline several pathways, empirical verification of these mechanisms can be further developed.

Tthe relationship between ESG initiatives and financial performance may be different. Because of the unique feature of Nordic sustainability governance. And it gives the opportunity to future research area. The findings of how these factors affect financial results may be useful to practitioners and policymakers.

2.4 Hypothesis Development

Based on the theoretical frameworks and empirical evidence reviewed above, this section formulates specific hypotheses about the relationship between ESG performance (overall and component-specific) and financial outcomes in Nordic companies.

2.4.1 Overall ESG Performance and Financial Outcomes

The stakeholder theory proposes that firms that seek to serve the interests of many stakeholders can build sustainable long term value(Freeman, 2010; Harrison et al., 2020). The resource-based view states that ESG related capabilities may be strategic resources that make competitive advantage possible (Hart & Dowell, 2011). Moreover, institutional theory reveals the ways in which the Nordic institutional context with strong regulatory context and cultural focus on sustainability could strengthen the ESG-financial performance relationship (Thomsen et al., 2018).

The evidence from the global studies (Friede et al., 2015; Eccles et al., 2020) mostly shows positive relationships of overall ESG performance to financial outcomes. Research related to Nordic countries indicate that the unique institutional environment of the region may enhance this relationship (R. Strand, 2024; R. Strand et al., 2015; Lu et al., 2019). The extensive stakeholder orientation and future-oriented approach in Nordic business

models, and companies with good overall ESG performance are likely to have better financial results.

Based on these theoretical arguments and empirical findings, the following hypotheses are developed:

H1a: There is a positive relationship between overall ESG scores and Return on Assets (ROA) in Nordic countries.

H1b: There is a positive relationship between overall ESG scores and Return on Equity (ROE) in Nordic countries.

2.4.2 Environmental Performance and Financial Outcomes

The environmental aspect of ESG has received much attention in the theoretical and empirical literature. Under the resource-based view, environmental capabilities can lead to cost advantage using efficiency gains and product differentiation using eco-friendly products (Ortiz-de-Mandojana & Bansal, 2016). According to Institutional theory, the strong environmental regulations and cultural value of environmental stewardship in Nordic countries create both the normative and coercive pressures towards superior environmental performance.

According to empirical research, there are positive correlations between environmental and financial performance, which have not all been implemented (Flammer, 2018; Friede et al., 2015). In the Nordic context, environmental performance are quite significant to financial results due to high environmental regulation in this region, consumers for green products, and the developed carbon management systems (Bolton & Kacperczyk, 2021).

Based on these theoretical arguments and empirical findings, the following hypotheses are developed:

H2a: There is a positive relationship between Environmental performance scores and Return on Assets (ROA) in Nordic countries.

H2b: There is a positive relationship between Environmental performance scores and Return on Equity (ROE) in Nordic countries.

2.4.3 Social Performance and Financial Outcomes

Social component of ESG is such elements of the firm's relationship with employees, customers, communities, and other stakeholders. Stakeholder groups focused firms can create trust, enhance reputation and guarantee access to the resources required to ensure long-term success. According to the resource-based view, some of these social capabilities including stakeholder integration and human capital development could be a valuable, rare and imitable resource.

Empirical research has in most cases revealed positive correlation between social performance and financial results, particularly in developed economies and stakeholder oriented institutional environments (Edmans, 2011). In Nordic countries where social aspects of sustainability are tightly integrated into business operations because of strong labor protections, gender equality policies, and employer-employee collaboration, these relations can be particularly apparent.

Based on these theoretical perspectives and empirical studies the following hypotheses are developed:

H3a: There is a positive relationship between social performance scores and Return on Assets (ROA) in Nordic countries.

H3b: There is a positive relationship between social performance scores and Return on Equity (ROE) in Nordic countries.

2.4.4 Governance Performance and Financial Outcomes

Corporate governance is important in ESG. It involves mechanisms of accountability, transparency and responsible decision making. According to the resource-based view, the governance capabilities can enhance strategic decision making as well as the organizational adaptability (Barney, 1991).

The empirical research have always demonstrated that there are positive relationships between governance quality and financial performance in various ways (Liang & Renneboog, 2020). In Nordic countries, there are governance features such as two-tier board structures, employee representation, and balanced gender leadership that creates a special governance environment that can have a positive effect on these relationships.

Based on these theoretical arguments and empirical findings, the following hypotheses are developed:

H4a: There is a positive relationship between governance performance scores and Return on Assets (ROA) in Nordic countries.

H4b: There is a positive relationship between governance performance scores and Return on Equity (ROE) in Nordic countries.

3 Methodology and Data Analysis

3.1 Research Design

This thesis studies the relationship between ESG performance and financial outcomes in Nordic companies. The analysis follows a quantitative research approach relying on secondary data. The longitudinal panel design offers advantages over cross-sectional methods by controlling for unobserved heterogeneity while capturing both time-series and cross-sectional dimensions (Brooks & Oikonomou, 2018).

3.2 Data Collection

All data were collected from Refinitiv's ESG database, which provides comprehensive ESG scores based on over 450 metrics. Refinitiv scores are widely used in academic research due to their extensive coverage, transparency, and multidimensional assessment approach. Financial performance data are also collected from Refinitiv to ensure consistency.

The time period was chosen from 2014 to 2023, spanning a decade. It provides opportunity to observe sufficient temporal depth and potential lagged effects of ESG initiatives on financial performance. This period reflects major changes in ESG disclosure and growing institutional demand for sustainability in Nordic markets.

3.3 Sample Selection

The collected dataset had primarily data for 2000 publicly listed companies in Nordic countries. To maintain analytical rigor, observations with more than 4 missing key variables out of 10 were removed. This reduces potential bias in imputation. After the

filtering process the final panel data consists of 187 Nordic companies and a total of 1,363 firm-year observations across the 10-year window.

3.4 Measurement of Variables

3.4.1 Dependent Variables: Financial Performance Metrics

Return on Assets (ROA) and Return on Equity (ROE) are used to measure the financial performance. These two ratios are widely used in similar research. They also serve as the dependent variables.

Return on Assets (ROA) assesses a firm's ability to earn profits from its assets. ROA is calculated as net income divided by total assets. It measures firm's operational efficiency. ROA captures operational benefits of sustainability initiatives and efficient resource utilization (Broadstock et al., 2021).

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

Return on Equity is calculated as net income divided by shareholders' equity. It evaluates a company's profitability in relation to equity investment. It is a profitability measure that indicates how efficiently a company can utilise its investors' funds to create profits (Xie et al., 2019). This is a relevant measure as it provides insights in how ESG performance influences returns to shareholders (Barauskaite & Streimikiene, 2021).

(2) Return on Equity (ROE) = $\frac{Net\ Income}{Total\ Equity}$

3.4.2 Independent Variables: ESG Performance Metrics

The independent variables are the on ESG score, Environmental Pillar Score, Social Pillar Score, and Governance Pillar Score.

ESG Score is the single metric of a company's overall environmental, social, and governance performance. Companies are assessed based on 10 main themes across the three ESG pillars, using over 400 company-level ESG metrics. This score allows to study the overall association of sustainability and finance.

The Environmental Pillar Score measures a company's impact on natural systems through resource usage, emissions management, and innovation initiatives. Studies found that that the relationship between environmental performance and financial performance operates via resource efficiency, risk mitigation and capitalizing on environmental-related market opportunities (Bolton & Kacperczyk, 2021).

Social Pillar Score indicates the ability to build confidence and loyalty among staff, customers and society. Financial impact of social performance occurs via better human capital, improved stakeholder relations, and reduced operational risks (Grewal et al., 2021).

Governance Pillar Score evaluates a company's governance practices and policies. It reflects board members and executives interests of company leadership and long-term shareholders relationship. It includes the management structure. Governance quality impacts financial performance through better decision-making, lower agency costs, and greater accountability (Nguyen et al., 2020).

3.4.3 Control Variables

Some of the mostly used control variables in the ESG and financial performance, and related studies include the size, industry, risk, R&D and advertising expenses (Lu et al.,

2014). And the following control variables are used in this analysis to control for company-specific characteristics that can influence the financial performance.

Size is the natural logarithm of total assets. Larger firms generally have greater access to more resources, operational capabilities, and market power. These can affect both ESG performance and financial outcomes (Brooks & Oikonomou, 2018).

(3) Size =Ln(Total Assets)

Leverage is the ratio of total debt to total assets. The variable explains the impact of capital structure on both ESG initiatives and financial results (Li et al., 2019). Firms with high levels of debt have limited ability to make ESG investments and experience different financial outcomes (Broadstock et al. 2021).

(4) Leverage $= \frac{Total\ Debt}{Total\ Assets}$

Growth is measured as the annual percentage change in net sales or net income. This variable controls for the impact of company growth trajectories on financial performance (Xie et al., 2019).

(5) Growth = $\frac{Net\ Income_{i,t} - Net\ Income_{i,t-1}}{Net\ Income_{i,t-1}}$

Price-to-Book Ratio is included to control for growth opportunities and market expectations. This ratio reflects the market's assessment of a company's future prospects relative to its accounting value.

(6) Price-to-Book Ratio $= \frac{Market\ Capitalization}{Book\ Value\ of\ Equity}$

3.5 Regression Models

This thesis adopts both contemporaneous and lagged panel fixed effects regression models to examine the relationships between ESG performance and financial outcomes. The contemporaneous models examine immediate effect, and the lagged models explore potential time delays for ESG benefit to manifest. This combined approach addresses methodological suggestions that highlight the temporal nature of ESG-financial performance relationships.

The regression models for analyzing ROA are specified as follows:

(7)

$$ROA_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(8)

$$ROA_{it} = \alpha + \beta_1 ENVIRONMENT\_PILLAR\_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(9)

$$ROA_{it} = \alpha + \beta_1 SOCIAL\_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(10)

$$ROA_{it} = \alpha + \beta_1 GOVERNANCE\_SCORE_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

The models for analyzing ROE follow the same structure:

(11)

$$ROE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(12)

$$ROE_{it} = \alpha + \beta_1 EPS_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(13)

$$ROE_{it} = \alpha + \beta_1 SPS_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(14)

$$ROE_{it} = \alpha + \beta_1 GPS_{it} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

In the lagged models the independent variables take one-year lagged value (t-1). These analyze how ESG scores might have delayed effects on financial performance. ESG investments may take time before manifesting as financial gains (Flammer, 2015). These models follow the same structure as contemporaneous models but replace current ESG variables with their respective one-year lagged values.

Lagged Models for ROA:

(15)

$$ROE_{it} = \alpha + \beta_1 ESG_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(16)

$$ROE_{it} = \alpha + \beta_1 EPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(17)

$$ROE_{it} = \alpha + \beta_1 SPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(18)

$$ROE_{it} = \alpha + \beta_1 GPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

Lagged models for ROE:

(19)

$$ROE_{it} = \alpha + \beta_1 ESG_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(20)

$$ROE_{it} = \alpha + \beta_1 EPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(21)

$$ROE_{it} = \alpha + \beta_1 SPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

(22)

$$ROE_{it} = \alpha + \beta_1 GPS_{i,t-1} + \beta_2 SIZE_{it} + \beta_3 LEVERAGE_{it} + \beta_4 GROWTH_{it} + \beta_5 PRICE\_TO\_BOOK_{it} + \varepsilon_{it}$$

This analytical methodology allows thorough investigation of the relationships between financial performance and different ESG scores. The models also control for a few critical firm characteristics that may confound these relationships, making the finding more robust. These different models offer the opportunity to treat immediate effects separately from the delayed effects.

4 Findings and Discussion

This chapter presents the results of the analysis and findings of the relationship between ESG performance and financial outcomes in Nordic companies. All models follow the fixed effect regression based on the Breusch-Pagan test, Hausman Test. And so, the analysis uses fixed effect panel regression models to examine relationships between financial performance measures (ROA and ROE) and the ESG along with its components (environmental, social and governance).

4.1 Descriptive Statistics

The descriptive statistics presented in Table 1 offer an overview of the distributional characteristics of the key variables used in this study. These insights can help to establish a preliminary understanding of the dataset before conducting regression analysis.

Table 1. Descriptive Statistics

	MEAN	***MEDIAN***	***MAXIMUM***	***MINIMUM***	***OBSERVATIONS***
ROA	6.855422	6.240000	62.26000	-85	1363
ROE	14.07015	13.81000	103.9300	-94	1363
ESG	55.15349	56.97000	92.94000	1.320000	1363
EPS	52.41412	55.34000	94.54000	0.000000	1363
SPS	59.85955	62.29000	96.39000	0.700000	1363
GPS	51.84326	53.59000	96.42000	1.240000	1363

SIZE	16.75425	16.70260	22.61626	11.28225	1363
LEVERAGE	26.31428	25.21433	84.44000	0.000000	1363
GROWTH	10.94964	4.527366	1129.985	-84	1363
PB	3.924872	2.280000	59.27000	0.210000	1363

The descriptive statistics show important patterns of the collected data sample. The average of ROA is 6.86% and ROE average is 14.07%. It may suggest that the financial performance of the sample firms have been well. The wide range from the lowest to the highest value indicates a lot of variations in terms of profitability. Mean ESG score of 55.15 indicates that the Nordic companies overall perform sustainably at moderate to high levels. From the ESG components, social pillar score (SPS) has the highest average score of 59.86 followed by environmental pillar score(EPS) with 52.41, and the average of governance pillar score (GPS) is 51.84. These imply that Nordic companies perform best in the social dimensions of sustainability. The average of size (16.75) and leverage ratio of 26.31% suggest mid-to-large companies have moderate levels of debt. The large variation in growth rates (from -84% to 1129.99%) and price-to-book ratio (from 0.21 to 59.27) indicate considerable diversity among growth tracks and market values in the sample.

4.2 Correlation Matrix

The correlation analysis is presented in table 2. The correlation analysis gives initial understanding about relationships between the variables.

Table 2. Correlation Matrix

	ROA	*ROE*	*ESG*	*EPS*	*SPS*	*GPS*	*SIZE*	*LEVERAGE*	*GROWTH*	*PB*
ROA	1									
ROE	0.87752	1								
ESG	-0.0132	0.06843	1							
EPS	-0.0043	0.07298	0.82690	1						
SPS	-0.0003	0.08319	0.88406	0.69801	1					
GPS	-0.0634	-0.0167	0.69753	0.35368	0.40211	1				
SIZE	-0.0639	0.05172	0.47523	0.51628	0.42403	0.31911	1			
LEVERAGE	-0.2195	-0.1621	-0.0018	0.07604	-0.0591	0.05532	0.25747	1		
GROWTH	-0.0161	-0.0002	-0.0376	-0.0627	-0.0400	0.01454	-0.0132	-0.06119	1	
PB	0.37148	0.36057	-0.1237	-0.1522	-0.0843	-0.1172	-0.3049	-0.32239	0.122241	1

ROA and ROE as have positive strong correlations (0.878) which is generally expected. The relations between the ESG metrics and the financial performance seem to be complex. The ESG score has a poor negative correlation with ROA (-0.013) but weak positive correlation with ROE (0.068). The high correlation scores between the ESG components, (ESG Score with social and environmental pillar scores) suggest that companies do not perform well in specific areas of sustainability, but they remain consistent across all the dimensions. There is a moderate positive correlation between firm size and the ESG performance (0.475), which is consistent with the existing literature. That suggest larger firms often have more sustainability engagement. And having more resources result in higher stakeholders expectations. Interestingly, price-to-book ratio has positive correlations with financial performance measures but negative correlations with ESG and components. Growth is only positively correlated with governance pillar score and price to book ratio. These may suggest mixed company performance in Nordic counties.

4.3 Impact of ESG Performance on Return on Assets (ROA)

The results of the regression analysis show that the Nordic region companies have good relationships between their ESG performance and Return on Assets. Table 3 presents the

results of contemporaneous models that analyze the relation between ESG factors and ROA at the current times.

Table 3: Regression Analysis on Return on Assets(ROA)

Variable	(1) ESG	(2) EPS	(3) SPS	(4) GPS
C	–10.6494 (12.7669)	–8.3566 (12.8276)	–11.0323 (12.7840)	–11.8712 (12.7834)
ESG	0.0545* (0.0316)			
EPS		0.0469** (0.0217)		
SPS			0.0177 (0.0256)	
GPS				0.0162 (0.0185)
SIZE	1.1143 (0.7749)	1.0142 (0.7779)	1.2590 (0.7747)	1.3258* (0.7641)
LEVERAGE	–0.2386*** (0.0296)	–0.2400*** (0.0295)	–0.2416*** (0.0297)	–0.2439*** (0.0295)
GROWTH	–0.0005 (0.0040)	–0.0004 (0.0040)	–0.0005 (0.0040)	–0.0005 (0.0040)
PB	0.5381*** (0.0851)	0.5299*** (0.0850)	0.5350*** (0.0853)	0.5344*** (0.0852)
R-squared	0.6318	0.6324	0.6310	0.6311
Adj. R-squared	0.5684	0.5691	0.5675	0.5676
Observations	1 363	1 363	1 363	1 363

P-values are presented in parantheses. Asterix denotes statistical significance at the 1%(***), 5%(**) and 10%(*) –level.

The overall ESG score has a positive and significant relationship with ROA ($\beta = 0.0545$, $p < 0.10$). This finding is consistent with the stakeholder theory that meeting the needs of a variety of stakeholders will lead to strong financial results because of better relationships and lower risks. Firms with higher overall ESG performance tend to be more efficient in their asset usage. This positive relationship is consistent with resource-based view explanations that ESG skills are intangible strategic assets that can be sources of competitive advantage.

The environmental pillar has a higher positive and significant relationship with ROA ($\beta = 0.0469$, $p < 0.05$) among the pillar scores. This suggests that it is the nature of

environmental actions that have the greatest impact on financial performance in firms in the Nordic region. The result is consistent with the study of Bolton and Kacperczyk (2021), which reveals that firms with higher environmental performance bear less climate-related transition risks and have better financial performance. Improvements in environmental processes increase resource efficiency and hence directly lead to improved performance (Broadstock et al., 2021).

The social and governance pillars show positive but non-significant associations with ROA. This suggests that while social and governance have positive impact on financial performance, their immediate impacts are slower than environmental factors in Nordic markets. This pattern is different from findings that governance factor is strongly related with financial performance globally (Pizzi et al., 2020). It may suggest that Nordic countries have already achieved high standards in corporate governance.

Among the control variables, leverage has a significant negative relationship with ROA in all models ($\beta = -0.2386$ to -0.2439, $p < 0.01$). This indicates that higher debt levels reduce profitability regardless of ESG performance. No significant relation with growth. The price-to-book ratio has a significant positive relationship with ROA. It suggests that companies with higher market valuations relative to book value achieve better financial performance.

4.4 Impact of ESG Performance on Return on Equity (ROE)

Table 4 presents regression results for Return on Equity with current values. The results are somewhat different compared to the ROA findings. The overall ESG score shows a positive but non-significant relationship with ROE ($\beta = 0.0868$).

Table 4. Regression Analysis on Return on Equity

Variable	(1) ESG	(2) EPS	(3) SPS	(4) GPS
C	2.5929	3.4986	2.1233	0.1135
	(22.9670)	(23.1092)	(22.9904)	(22.9806)
ESG	0.0868			
	(0.0568)			
EPS		0.0323		
		(0.0391)		
SPS			0.0350	
			(0.0460)	
GPS				0.0439
				(0.0332)
SIZE	0.8932	1.0360	1.0888	1.2047
	(1.3940)	(1.4015)	(1.3931)	(1.3736)
LEVERAGE	–0.4175***	–0.4236***	–0.4213***	–0.4257***
	(0.0533)	(0.0531)	(0.0534)	(0.0530)
GROWTH	0.0059	0.0061	0.0059	0.0059
	(0.0072)	(0.0072)	(0.0072)	(0.0072)
PB	0.6742***	0.6629***	0.6705***	0.6713***
	(0.1531)	(0.1531)	(0.1533)	(0.1531)
R-squared	0.6249	0.6244	0.6243	0.6247
Adj. R-squared	0.5603	0.5597	0.5597	0.5601
Observations	1 363	1 363	1 363	1 363

P-values are presented in parantheses. Asterix denotes statistical significance at the 1%(***), 5%(**) and 10%(*) –level.

None of the individual ESG pillars have statistically significant relationships with ROE in these models. The environmental pillar shows the smallest coefficient (β = 0.0323), and governance shows the largest (β = 0.0439). This pattern is different from the ROA findings, where environmental pillar score had the strongest relationship. This difference indicates that the impact of ESG will differ across multiple metrics of financial performance.

The control variables exhibit similar trends to ROA models. Leverage is negatively related to ROE across all models. The price to book ratio is significantly positive with ROE (β=0.6629 to 0.6742, p<0.01).

4.5 Lagged Effects of ESG Performance on ROA

Table 5 presents the regression analysis results of ROA and the lagged ESG variables. Which can indicate any delayed impact of ESG Scores on firm profitability. Surprisingly all of the lagged ESG scores are negatively related even though they are not significant.

Table 5: Regression Analysis on ROA with Lagged Variables

Variable	(1) ESG(-1)	(2) EPS(-1)	(3) SPS(-1)	(4) GPS(-1)
C	–14.3075	–14.4438	–14.0818	–13.9563
	(14.7765)	(14.8343)	(14.7818)	(14.7875)
ESG(-1)	–0.0355			
	(0.0323)			
EPS(-1)		–0.0056		
		(0.0224)		
SPS(-1)			–0.0172	
			(0.0259)	
GPS(-1)				–0.0095
				(0.0188)
SIZE	1.6135*	1.5158*	1.5431*	1.4980*
	(0.8862)	(0.8904)	(0.8834)	(0.8790)
LEVER-AGE	–0.2484***	–0.2448***	–0.2473***	–0.2442***
	(0.0309)	(0.0308)	(0.0310)	(0.0307)
GROWTH	0.0039	0.0040	0.0040	0.0040
	(0.0037)	(0.0037)	(0.0037)	(0.0037)
PB	0.5846***	0.5911***	0.5872***	0.5893***
	(0.0850)	(0.0848)	(0.0850)	(0.0849)
R-squared	0.6884	0.6880	0.6882	0.6881
Adj. R-squared	0.6249	0.6244	0.6246	0.6245
Observa-tions	1 176	1 176	1 176	1 176

P-values are presented in parantheses. Asterix denotes statistical significance at the 1%(***), 5%(**) and 10%(*) –level.

These results indicate that ESG investments in Nordic companies might not gain delayed financial returns as indicated by ROA. These results suggest that the ESG benefits are not realized in the longer horizons. Which is contradictory with many studies. This pattern may suggest that in the developed sustainability environment of Nordic markets, ESG initiatives might have more instant financial effects than delayed effects. As these results are puzzling it suggests that the relationship of delayed ESG factors may be also impacted by other factors which are not included in the analysis.

The control variables maintain consistent relationships with ROA across all of the lagged models. Size is statistically significant ($\beta = 1.4980$ to 1.6135, $p < 0.10$), suggesting that larger companies may achieve better financial performance over time (Drempetic et al., 2020). Leverage continues to show a strong negative relationship. Growth has no significant but positive relation, and the price-to-book ratio maintains a positive association.

4.6 Lagged Effects of ESG Performance on ROE

Table 6 presents the regression results of ROE and lagged ESG variables. Similar to the ROA with lagged value models most ESG variables show negative relationships with ROE. These are also contradictory results of the belief that ESG benefits the financial performance more in longer time. The lagged overall ESG score shows the negative but no significance coefficient ($\beta = -0.0868$). The environmental pillar indicates a negative and statistically significant ($\beta = -0.0770$, $p < 0.10$) relationship. Which can mean that the environment investments could deter at first from shareholders' returns before they gain profit. This finding reflects the investment perspective that sustainability initiatives usually involve short term costs and temporarily reduce financial returns (Kumar et al., 2016).

Table 6: Regression Analysis on ROE with lagged variables

Variable	(1) ESG(-1)	(2) EPS(-1)	(3) SPS(-1)	(4) GPS(-1)
C	–3.4097	–7.1868	–2.7928	–3.1522
	(28.5292)	(28.6057)	(28.5348)	(28.5642)
ESG(-1)	–0.0868			
	(0.0624)			
EPS(-1)		–0.0770*		
		(0.0432)		
SPS(-1)			–0.0609	
			(0.0499)	
GPS(-1)				0.0076
				(0.0364)
SIZE	1.9150	2.0908	1.8128	1.5722
	(1.7111)	(1.7171)	(1.7052)	(1.6979)
LEVER-	–0.4988***	–0.4979***	–0.4996***	–0.4882***
AGE	(0.0596)	(0.0594)	(0.0599)	(0.0592)
GROWTH	0.0118*	0.0118*	0.0120*	0.0122*
	(0.0071)	(0.0071)	(0.0071)	(0.0071)
PB	0.7108***	0.7208***	0.7124***	0.7297***
	(0.1640)	(0.1635)	(0.1641)	(0.1640)
R-squared	0.6683	0.6687	0.6681	0.6676
Adj. R-squared	0.6006	0.6011	0.6004	0.5998
Observa-tions	1 176	1 176	1 176	1 176

P-values are presented in parantheses. Asterix denotes statistical significance at the 1%(***), 5%(**) and 10%(*) –level.

The social pillar has a negative, but non-significant relationship (β = –0.0609). The governance pillar has a very small positive but non-significant relation (β = 0.0076). These results indicate that there may be varying impacts over time with ESG dimensions and financial performance. Governance pillar score possibly affects more in immediate results, compared to initiatives that may take longer time horizons to be realized into shareholder returns (Elmarzouky et al., 2021).

The relations with ROE with control variables remain consistent across the lagged models. Leverage remains highly statistically significant and negative (β = − 0.4882 to − 0.4996, $p < 0.01$) and growth is marginally statistically significant in these specifications (β = 0.0118 to 0.0122, $p < 0.10$). Price-to-book ratio remains significantly correlated (β

= 0.7108 to 0.7297, $p < 0.01$). These findings align with recent studies emphasizing on growth and market capitalization for financial performance (Giannarakis et al., 2017).

4.7 Synthesis of Findings

Table 7 summarizes the hypothesis testing results based on the regression findings. Overall, H1a and H2a are supported with the findings, and other hypotheses are not supported. This result is consistent with stakeholder theory and resource-based views that ESG competencies increase operational effectiveness by better relationship with stakeholders and valuable strategic assets (Harrison et al., 2020).

Table 7: Hypotheses Testing Summary

Hypothesis	Description	Result	Evidence
H1a	Positive relationship between overall ESG score and ROA	Supported	$\beta = 0.0545$, $p < 0.10$
H1b	Positive relationship between overall ESG score and ROE	Not supported	$\beta = 0.0868$, not significant
H2a	Positive relationship between environmental performance and ROA	Supported	$\beta = 0.0469$, $p < 0.05$
H2b	Positive relationship between environmental performance and ROE	Not supported	$\beta = 0.0323$, not significant
H3a	Positive relationship between social performance and ROA	Not supported	$\beta = 0.0177$, not significant
H3b	Positive relationship between social performance and ROE	Not supported	$\beta = 0.0350$, not significant
H4a	Positive relationship between governance performance and ROA	Not supported	$\beta = 0.0162$, not significant
H4b	Positive relationship between governance performance and ROE	Not supported	$\beta = 0.0439$, not significant

There is a positive relationship between overall ESG score and ROA ($\beta = 0.0545$, $p < 0.10$). This supports hypothesis H1a. It supports the perspectives of stakeholder theory and

resource-based view, which consider ESG capabilities as operational efficiency catalysts through the establishment of better relations with stakeholders and valuable strategic resources (Harrison et al., 2020).

Hypothesis H2a is supported as both variables ROA and ROE are positively related ($\beta = 0.0469$, $p < 0.05$). The finding is consistent with the resource-based view, which suggests that environmental capabilities form a special, rare, and non-substitutable strategic resource that increases operational efficiency (Pizzi et al., 2021).

Other hypotheses are not supported because as they are not significant at conventional levels. This pattern probably indicates the already high stakeholder expectations and strict social and governance benchmarks of the region. And the mix findings propose that there are more factors that can influence the relationship between ESG and financial performance of the companied in Nordic countries.

5 Conclusion

5.1 Summary

This thesis contributes to several theoretical aspects of the literature. It provides insights into ESG materiality in advanced sustainability markets. Although much previous research has explored the global patterns, this study focuses on the Nordic countries. The findings show that in even the most sophisticated sustainability markets, ESG performance has a positive impact on financial performance.

The study focuses on independent dimensions of ESG instead of depending on aggregated scores only. Which advances the component-level knowledge about ESG effects on firm performance. There are different patterns in environmental, social, and governance scores and company performance. That suggests the necessity of disaggregated analysis to recognize rather more sophisticated sustainability effects. Leading presence of the environmental dimension in the Nordic markets contributes to theoretical knowledge of how institutional settings define the financial materiality of certain ESG dimensions.

The study explores the temporal dynamics of the ESG-financial performance relationships. By comparing immediate and lagged impacts this study discovers that, ESG benefits may not quite take extended periods to impact the financial outcomes. But instead, it may be realized more immediately in financial outcome.

The study also helps to integrate various theoretical perspectives including stakeholder theory, resource-based view and institutional theory to understand ESG Scores and financial performance. The positive ESG-ROA relation corresponds to the stakeholder theory. Meeting various stakeholder needs is correlated positively to operational efficiency at an improved level of relationships and a low level of risks. The role of the environmental dimension is consistent with resource-based view theory. Environmental capabilities

are sources of valuable strategic resources creating competitive benefits. The variances in Nordic patterns and global results are consistent with institutional theory.

5.2 Limitations and Future Research Directions

Despite of the contributions this study has several limitations and provide opportunities for future research.

While focusing on Nordic countries offers valuable context-specific insights, it limits generalizability to other regions. Future studies could adopt comparative approaches examining how ESG-financial performance relationships differ across regions with varying sustainability maturity levels. That would enhance understanding of institutional factors moderating ESG effects.

The study focuses on a limited number of financial metrics (ROA and ROE). Future research could analyze the ESG-CFP relationship with more financial performance metrics. Even though several factors were considered for the analysis and regression, the mixed findings suggest that there might be external factors which can impact the relationship. And this relation could be endogenous. This research uses the quantitative methodologies. It may not fully reflect the qualitative aspects of ESG. Future studies could adopt mixed method of quantitative and qualitative approaches. The analysis with case studies or interviews to provide deeper insights into how companies operationalize ESG initiatives and how these translate into financial outcomes.

In summary, this research improves the understanding of the ESG performance impacts on financial performance of Nordic countries companies. The results indicate that ESG initiatives can improve operational productivity, and their relationship with shareholder returns is further complex and time dependent. The environmental dimension is the focus material in Nordic markets. This indicates of the institutional positioning of Nordic markets towards environmental sustainability.

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