ESG AND FINANCIAL PERFORMANCE IN THE NORDIC COUNTRIES: THE MODERATING ROLE OF BOARD GENDER DIVERSITY

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ABSTRACT

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Abstract

The importance of sustainability has increased rapidly overall in the world. At the same time, shareholders' interests have shifted from the growth of profits and wealth maximization towards more sustainable growth. Thus, organizations are under the pressure to respond shareholders' requirements about the sustainability in order to keep them as their investors. Integrating the sustainability activities into the core business practices will strengthen the relationship between the organization and the shareholder, and most likely give competitive advantage to the organization.

The purpose of this study is to observe the relationship between ESG performance and financial performance. ESG performance means environmental, social and governance performance and it has become the established term to describe the sustainability activities. In addition to studying the relationship between ESG and financial performance, board gender diversity is added to the examination as a moderating variable. Both ESG and board gender diversity are current and relevant themes that are beneficial to study in different contexts. By examining the influence of these variables on financial performance, this study will benefit the organizations above all.

The sample of this study consists of 465 publicly listed firms from the Nordic countries (Finland, Norway, Sweden and Denmark) and the observation period covers the years between 2006-2022. All of the data used in this study is gathered from LSEG database. To describe financial performance, both ROA and Tobin's Q are used. According to the results achieved from the regression analysis, no significancy can be discovered between ESG and ROA. However, the environmental factor is found to have a positive and significant relationship with ROA. This finding highlights the importance of environmental engagement in the Nordic countries. Neutral relationship is found between ESG and Tobin's Q, as supposed before the analysis. Additionally, the relationship between ESG and financial performance is discovered to be stronger in organizations that have a

gender-diverse board. Therefore, organizations should have more women on the board because it will enhance both ESG performance and financial performance. For the future research, studying the relationship between ESG and financial performance is still relevant as ESG reporting plays a rather new issue in organizations. In addition, new directives are constantly issued, such as CSRD which requires all large companies, whether listed or non-listed, to report about their sustainability issues.
Key words ESG, ESG performance, CSR, financial performance, board of directors, board gender diversity
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TIIVISTELMÄ

Tekijä
Sanni Mahonen

Työn nimi
ESG ja taloudellinen suoriutuminen pohjoismaissa: Miten naisten osuus yrityksen hallituksessa vaikuttaa kyseisten muuttujien väliseen suhteeseen

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Tiivistelmä

Kestävyysajattelun tärkeys on lisääntynyt nopeasti kaikkialla maailmassa. Samanaikaisesti sijoittajien kiinnostus on siirtynyt tuottojen kasvusta ja varallisuuden maksimoinnista kohti kestävämpää kasvua. Siten yrityksillä on paine vastata sijoittajien vaatimuksiin kestävyydestä pitääkseen heidät yhä sijoittajina. Kestävyystoimien yhdistäminen keskeisiin liiketoimintakäytäntöihin vahvistaa yrityksen ja sijoittajan välistä suhdetta sekä antaa todennäköisesti yritykselle kilpailullista etua.

Tämän tutkimuksen tarkoituksena on tarkastella ESG suoriutumisen ja taloudellisen suoriutumisen välistä suhdetta. ESG suoriutuminen tarkoittaa ympäristöllistä, sosiaalista ja hallinnollista suoriutumista ja siitä on muodostunut vakiintunut termi kuvaamaan kestävyystoimia. ESG suoriutumisen ja taloudellisen suoriutumisen välisen suhteen tutkimisen lisäksi tässä tutkimuksessa tutkitaan sitä, miten naisten osuus yrityksen hallituksessa vaikuttaa kyseiseen edellä mainittuun suhteeseen. Sekä ESG että hallituksen sukupuolten välinen tasa-arvo ovat ajankohtaisia teemoja, joita on hyödyllistä tutkia eri konteksteissa. Koska tässä tutkimuksessa tutkitaan kyseisten muuttujien vaikutusta yrityksen taloudelliseen suoriutumiseen, tämä tutkimus on hyödyllinen ennen kaikkea yritysten kannalta.

Tämä tutkimus koostuu 465 julkisesta listatusta yrityksestä pohjoismaissa (Suomi, Norja, Ruotsi ja Tanska) ja tutkimusajanjakso on 2006–2022. Kaikki tässä tutkimuksessa käytetty data on kerätty LSEG datapalvelusta. Taloudellista suoriutumista kuvataan sekä ROA:n että Tobin's Q:n avulla. Regressioanalyysistä saatujen tulosten mukaan ESG:n ja ROA:n välinen suhde ei ole merkitsevä. Ympäristöllisen tekijän ja ROA:n välinen suhde on kuitenkin positiivinen ja merkitsevä. Tämä korostaa ympäristöllisen sitoutumisen tärkeyttä pohjoismaissa. Kuten ennen analyysiä odotettiin, ESG:n ja Tobin's Q:n välinen suhde on neutraali. ESG:n ja taloudellisen suoriutumisen välinen suhde on vahvempi yrityksissä, joiden hallitus on sukupuolten osalta monimuotoisempi. Yritysten tulisi valita

enemmän naisia hallitukseen, sillä se parantaa sekä ESG suoriutumista, että taloudellista suoriutumista. ESG:n ja taloudellisen suoriutumisen välisen suhteen tutkiminen on ajankohtaista myös tulevaisuudessa, koska ESG raportointi on yhä melko uusi teema yrityksissä. Lisäksi uusia direktiivejä julkaistaan jatkuvasti, josta esimerkkinä on CSRD direktiivi, jonka mukaan kaikkien isojen yritysten, mukaan lukien listattujen ja listaamattomien yritysten, tulee raportoida niiden kestävyystoimista.
Asiasanat ESG, ESG suoriutuminen, CSR, taloudellinen suoriutuminen, hallitus, sukupuolten välinen tasa-arvo yrityksen hallituksessa
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1 INTRODUCTION

1.1 Background

According to an American economist, Milton Friedman, the main responsibility of a company is to maximize shareholders' value (Billio et al., 2021). Thus, companies should primarily act according to shareholders' interests and as those interests change, companies must immediately respond to those demands. Especially during the latest decades, shareholders' interests have changed significantly. The focus has shifted from the growth of profits and wealth maximization towards more sustainable growth. Investors will invest their money in companies that act socially responsible and according to their own values. This has caused pressure in companies and governments to integrate sustainability issues into their regulatory decisions and company strategies (Billio et al., 2021) as well as in their competitive strategy (Galbreath, 2013). According to Rahi et al. (2022), significant competitive advantage can be achieved if a company succeeds in adopting sustainability issues into their core business practices, and that way creates a trusting relationship with its stakeholders.

The increasing need for top management to operationalize sustainability into organization's core business practices across industries is a result from corporate disclosures developing from financial disclosures to ESG disclosures (Amarayil Sreerman & Diwan, 2023). Concerning this transition, the European Union published a directive regarding non-financial reporting in 2014. The directive requires large public companies of the member states to include non-financial statements in their annual reports. According to the directive, disclosure of non-financial information is vital in order to be able to manage change towards a sustainable economy. It is essential to succeed in achieving long-term profitability, social justice and environmental protection. When companies disclose their non-financial information, the measuring, monitoring and

managing of undertakings' performance and their impact on social justice are easier to achieve. (European Union Directive 2014/95/EU, 2014.)

Therefore, environmental, social and governance (ESG) practices have become an essential part in companies around the world, and more and more companies will recognize and take those practices into account also in the future. Despite the fact that ESG reporting is still a rather new concept, its importance as a part of the organizations' reporting has radically increased during just the latest two decades. From an unfamiliar and obscure concept, ESG has developed rapidly to a world widely understood significant and essential concept. To support the raising importance of ESG practices, United Nations (UN) Sustainable Stock Exchange (SSE) Initiative has stated that all large businesses should be reporting on their environmental and social impact by 2030 at the latest (SSE, 2015). One step towards the objective presented by SSE has been taken with CSRD directive. While earlier only listed large companies were required to report on sustainability, the new directive requires also non-listed companies to report on those issues (Petrova, 2024).

Even though ESG factors are typically called as non-financial factors, the means how organizations adopt and manage these factors have consequences also on the financial performance of the organization. It would be expected that if an organization performs socially responsible, it should enhance also its financial performance. A positive link has been found between ESG disclosure level and firm value where the relationship has especially been enhanced by improved transparency, accountability and stakeholder trust (Li et al., 2018). Despite the majority of studies indicating a positive correlation between these two factors, controversial results have also been discovered. Many studies have tried to find a direct relationship between ESG disclosure and financial performance of the company. However, the relationship isn't usually direct and various moderating roles affecting this relationship need to be considered. ESG consisting of environmental, social and governance factors makes the concept complex and, thus it would be beneficial to explore how these three factors of ESG influence separately on financial performance. Especially governance factors have been commonly used as the mediating roles in the examination about the relationship between ESG performance and financial performance.

1.2 Objectives, research questions and limitations to the subject

The aim of this study is to explore the link between environmental, social and governance (ESG) performance and financial performance and whether the link in question is moderated by board gender diversity. As CSR (corporate social responsibility) and corporate governance are complementary disciplines, the different variables of corporate governance might significantly influence the effect of CSR on firm performance (Velte, 2020). Thus, board gender diversity being one of those variables describing corporate governance, I thought it would be interesting to study whether it could have either positive, negative or non-

significant influence on the relationship between ESG performance and financial performance. The relationship between CSR and financial performance with the special attention on board gender diversity has been studied in the French context. The study suggests that CSR and financial performance are positively associated through the positive moderating role of board gender diversity. (Kahloul et al., 2022.) Consisting only of one country, the sample is however quite small and, thus the examination should be extended in order to make more general and reliable conclusions. I decided to use the Nordic countries (Finland, Sweden, Norway and Denmark) as a sample in my research. Historically, Finland, Sweden and Denmark have got acknowledge for being among four most competitive economies in the world by the World Economic Forum's (2003) ranking. These countries were also ranked high as a result from the strong ethical behavior of their national companies. (Campbell, 2007.) Additionally, the Nordic countries have identical political models that promote social welfare and equality (Gregorič et al., 2009, sited in Ishwar, 2022). Thus, it is especially these countries' strong commitment to sustainable matters which encourages me to use those as a sample. Additionally, research considering the Nordic countries related to this subject has not been conducted yet, and hence it presents a research gap in the field of research.

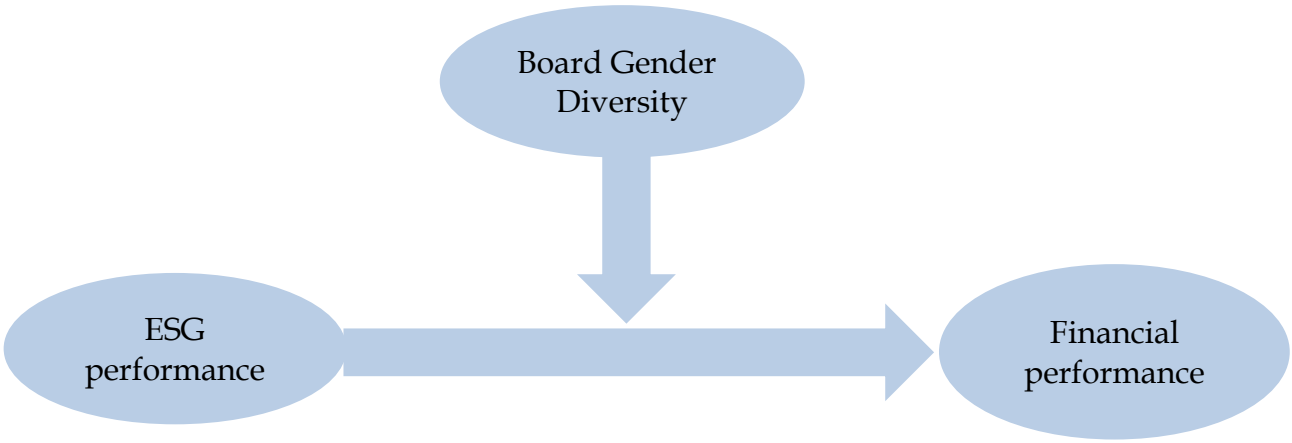

FIGURE 1 The relationship among board gender diversity, ESG performance and financial performance.

To get the answer to the objective of the research, this study consists of two research questions. The research questions are as follows:

1. Does ESG performance correlate positively with firm's financial performance in the Nordic countries?
2. Does board gender diversity play a positive moderating role in the relationship between ESG performance and financial performance?

1.3 Structure

This thesis is structured as follows. The first chapter is the introduction. It will lead to the topic of the study and introduce the research questions. The main aim in this part is to give reasoning and motivation to the importance of the thesis. The second chapter of the study consists of the theoretical background where the main concepts and terms are being explained. This part is divided into issues related to ESG and issues related to the board of directors. The first part discussing ESG includes information about ESG reporting and ESG rating. The roles of the board of directors, board gender diversity and different theories are discussed in the following part. The third part focuses on the previous research which includes the relationship between ESG and financial performance as well as the relationship between board gender diversity and ESG, and board gender diversity and financial performance. Based on the previous literature, the main hypotheses of this study are formed in the third chapter. In the fourth chapter, data and methodology used in this study are introduced. The empirical results of the analysis are discovered and discussed in the fifth chapter. The last and sixth part is the summary and conclusion of the study. This part suggests the practical implications of this study, potential future research topics and limitations of this study.

2 THEORETICAL FRAMEWORK

2.1 Environmental, Social and Governance (ESG)

2.1.1 Definition and history of ESG

ESG reporting has been discovered to have evolved from sustainability reporting (Amarayil Sreerman & Diwan, 2023). Reporting on environmental and social issues has already been observed in the 1980s, motivated by the several environmental disasters such as gas leaks and oil spills (Herremans, 2020, 24). More precisely, according to Janicka and Sajnóg (2022), the term "sustainable development" was used for the first time in the first United Nations Conference on Environment and Development in Stockholm in 1972. Sustainable development has been explained as a development that aims at meeting the needs of the present without threatening the ability of future generations to meet their needs in the future (World Commission on Environment and Development, 1987). Still in the 1980s, the concept of sustainable development consisted mainly of environmental issues but has later extended on social and governance issues as well (Janicka & Sajnóg, 2022). The history of the term ESG, that is used nowadays to describe these issues, dates back to the year 2004 when UN published a report called "Who cares wins". The objective of the report was to encourage the financial industry to better integrate ESG principles in asset management, securities brokerage services and associated research functions. (UN, 2004.) According to the report by UN (2004), taking ESG aspects into account increases shareholder value but also contributes to the sustainable development of the society.

ESG is an abbreviation for "environmental, social and governance". The environmental aspect refers to protecting nature (CFA). Protection of the nature includes for example climate change, carbon emissions and the usage of energy and water (CFA; Galbreath, 2013). The social aspect of ESG considers people and

relationships (CFA), including both internal and external stakeholders. Social responsibility concerns among other things of gender equality, health and safety at work, human rights and social dialogue (European Union Directive 2014/95/EU, 2014). According to Armstrong (2020), the term social encompasses corporate social responsibility (CSR). The governance aspect covers the management of a company which means the role of the board of directors in managing and controlling a company (Armstrong, 2020). This includes for example board composition, reporting and disclosures, as well as bribery and corruption (CFA; Galbreath, 2013). Considering all of these various ESG aspects helps organizations in evaluating possible risks it could face and, hence helps the organization to discover ways how it could manage those risks.

The term ESG has replaced most of the usage of the terms CSR and SRI (socially responsible investing) that were earlier used to describe the issues that ESG considers nowadays. Literature uses varyingly the terms CSR and ESG when describing the different variations of sustainable activities as sometimes these terms are defined differently and sometimes equally. (Janicka & Sajnóg, 2022.) However, differences have been found between these terms. ESG is typically regarded as more expansive than CSR as ESG describes how firms and investors incorporate all environmental, social and governance factors into their businesses. (Gillan et al., 2021.) Instead, European Commission (2001) defines CSR as a concept where companies include only environmental and social factors in their business operations. According to Gillan et al. (2021), CSR can be determined as a part of the *S* pillar of ESG where it concentrates typically and especially on the social responsibility regarding the firms' activities. When talking about ESG, the governance aspect is considered as important as environmental and social factors. However, CSR takes governance issues into account only indirectly through the environmental and social factors. (Gillan et al., 2021.) Nevertheless, CSR is still a relevant concept because companies use CSR actions in mitigating ESG and reputational related risks (Karwowski & Raulinajtys-Grzybek, 2021).

2.1.2 ESG reporting

ESG reporting means reporting where organizations publish reports about their environmental, social and governance activities (PwC). The reports regarding organization's sustainability actions act as an accountability document which determines if the organization's operations are legitimate (Herremans, 2020, 22). In other words, Baranga and Tanea (2022) explain that the purpose of ESG reporting is to improve transparency to the investors. In financial reporting, companies report on their financial activities through financial reports to their stakeholders who provide financial capital. Similarly, with ESG reporting, companies report their environmental, social and governance activities to those stakeholders who are part of these activities (Herremans, 2020, 22). The regulatory of ESG disclosures varies between different countries and areas. In the United States, firms have voluntary disclosure regulations concerning ESG disclosures whereas firms in European Union have been demanded to disclose

their nonfinancial ESG sustainability information under Directive 2014/95/EU from their financial year of 2017 by explaining compliance or non-compliance with the Directive. (Rezaee et al, 2023.) However, this requirement in EU concerns only large companies (Janicka & Sajnóg, 2022) and, hence companies with under 500 employees are not required to report on their ESG issues according to this directive. Nevertheless, companies other than the large ones can voluntarily report on their ESG activities even though they aren't required to do so.

One of the latest significant directives is the Corporate Social Responsibility Directive (CSRD) which was issued in December in 2022. It entered into effect in January 2023 and the first companies had to apply the directive for the first time in 2024. Organizations must include the information in compliance with CSRD for the first time in reports published in 2025. (European Union Directive 2022/2464, 2022.) The information regarding the requirements of CSRD must be included in the annual report where financial information is presented (Primec & Belak, 2022). According to CSRD, all large non-public and public companies must follow the new sustainability reporting requirements (Petrova, 2024). Earlier, the sustainability reporting requirements didn't concern non-listed companies. In addition to large companies, also parent companies of large groups, listed SMEs and subsidiaries with significant revenue listed on an EU-regulated market are required to follow the requirements presented in the new directive (Petrova, 2024). The meaning of CSRD is to harmonize the sustainability reporting inside EU and to increase the comprehensibility of the information for investors' part (Primec & Belak, 2022). According to Petrova (2024), the new directive ensures consistency and comparability by providing better accountability and transparency regarding environmental and social issues, decreasing the gap between the relevance and reliability of non-financial information and standardizing the approach to sustainability disclosure across companies inside the EU.

It has been discovered that the rising importance of ESG issues on companies' operations has also led to the increasing amount of ESG reporting (Arvidsson & Dumay, 2021). As Sweden being one of the leading countries in sustainability reporting, Arvidsson and Dumay (2021) find that even though the quality and quantity of ESG reporting have increased in Sweden, corporate ESG performance has not improved the same way. Similarly, it has been studied that weak ESG performance has been replaced with positive tones on ESG reports which has repaired the legitimacy of the firm (Sun et al., 2024). The main interest should be in maximizing the best possible ESG outcomes instead of focusing mainly on improving ESG reporting regulations (Arvidsson & Dumay, 2021). If companies' switch their interest from concentrating on the quality of ESG reporting to improving their genuine ESG performance, the reporting quality and quantity will most likely also improve.

While reporting on sustainability issues has increased, also the adoption of different ESG reporting frameworks has been on the rise. Organizations are able to use different reporting frameworks to disclose information on the

sustainability and ethical performance of their practices and operations. Notable is the fact that adaptation of different frameworks is fully voluntary. The most famous and well-known ESG reporting frameworks are Global Reporting Initiative (GRI), Carbon Disclosure Project (CDP), United Nations Global Compact, TCDF and SASB. The emergence of these sustainability frameworks has increased the importance of corporate accountability to stakeholders other than shareholders. (Amarayil Sreerman & Diwan, 2023.)

2.1.3 ESG rating

Integrating the environmental, social and governance (ESG) information to investment decisions has become an essential issue for investors (Christensen et al., 2022). Thus, investors have started to use different criteria to evaluate and assess companies' sustainable performance. Different ESG rating agencies have grown their importance in consequence of various market participants' increased usage of ESG ratings provided by these rating agencies. These ESG ratings are produced by different ESG analysts employed by ESG rating agencies where they collect and evaluate ESG data (Christensen et al., 2022.) As a matter of fact, it's important to understand how much money these ratings guide in different investments, how they influence managerial actions in the world and how they highlight different scholarly perspectives on ESG (Chatterji et al., 2015). The common objective of the ESG rating agencies is to measure the ESG performance of firms, portfolios and funds (Berg et al., 2022; Christensen et al., 2022). The measurement of ESG performance should include the evaluation of how a firm manages its ESG risks and opportunities (Christensen et al., 2022). As ESG ratings influence the decisions made by various investors, it might consequently affect asset prices (Berg et al., 2022; Billio et al., 2021) and corporate policies (Berg et al., 2022). Some of the largest and most well-known providers of ESG ratings are MSCI, Sustainalytics and Thomson Reuters (Christensen et al., 2022) as well as Refinitiv and S&P Global (Berg et al., 2022). From these rating agencies, MSCI represents the largest data provider in the investment community. The purpose of MSCI is to sell ESG ratings to investors and to exploit ESG to construct stock market indices. Sustainalytics sells also ESG ratings but provides research services and other advisory additionally. (Christensen et al., 2022.)

However, criticism towards ESG ratings has been expressed widely. Firstly, the information of ESG data is less formalized compared to the information of financial data. ESG analysts tend to collect and evaluate ESG data in a less structured way and subjectivity might be included in the analysis. (Christensen et al., 2022.) Chatterji et al. (2015) point out about the validity of social ratings. According to the researchers, they find disagreement between different ESG rating agencies as they have only little agreement on what they are trying to measure. Billio et al. (2021) even state that different agencies might have opposite opinions on the same assessed companies. When measuring similar theoretical constructs, almost everyone, if not all, will have measurement errors (Billio et al., 2021). Chatterji et al. (2015) suggest that while social responsibility is overall difficult to measure in a reliable way, stakeholders should be careful when

evaluating and making assumptions about companies based on the data provided by these agencies. The ratings from different ESG rating providers have been noticed to include disagreement as a rating divergence also by Berg et al. (2022). Due to this divergence, the evaluation of ESG performance of the companies becomes more difficult as well as companies might not have incentives to improve their ESG performance (Berg et al., 2022). Lack of agreement by ESG rating agencies has also been discovered in the definition of ESG characteristics, attributes and standards when defining environmental, social and governance aspects. When ESG is defined in controversial terms, it can cause various identifications of investments and create various benchmarks. (Billio et al., 2021.)

2.2 Board of Directors

2.2.1 The role of board of directors

Corporate governance occurs inside organizations and focuses on the courses of actions that are used to guide organizations' actions and to monitor their performance (Nordberg, 2010, 5). Board of directors is the main vehicle of corporate governance (Naciti, 2019) and due to its importance, it has also been called as the backbone of corporate governance (Madhani, 2017). There is some guidance on how the board in organizations should be constructed. Firstly, the majority of the directors should be independent non-executive directors, and they shouldn't have any close connections to the organization, to the CEO or to a particular shareholder of the organization. Additionally, there shouldn't either be any former CEOs on the board. Secondly, the board should consist between six to fifteen directors which enables that the voices of the independent directors are heard but also that the board has the power to challenge the CEO of the organization. The board should also have audit committee, remuneration committee and nominations committee. All these committees should consist only of the independent directors. Lastly, risk management should be included as an important item on the board's agenda. (Nordberg, 2010, 121-123.)

There exist multiply roles for the board which are for example strategic role, control role, advice and counsel role, and service or resource provision role (Madhani, 2017). To put in a nutshell, the board has basically the power in deciding which way the company should go and how it should be managed (Krechovská & Procháková, 2014). Board of directors together with governance and CEOs form the dynamic core of the organization aiming at profit maximization, the enhancement of share value, and the credibility of financial performances (Chams & Carcía-Blandón, 2019). Thus, board of directors has a significant impact on business performance (Krechovská & Procházková, 2014). Understanding the role of board of directors is important both for understanding the corporate behaviour and to setting policy to regulate corporate activities.

Traditionally, the role of board of directors has been seen as a responsibility to the owners and investors of the company (Chams & Carcía-Blandón, 2019). In the traditional way of thinking, the tasks include for example advising and counselling CEO and top management, providing expertise in hard times and acting in crisis situations. Overall, board of directors have the requirement to fire and hire CEO and top management. (Mace, 1971, sited in Adams et al., 2010.) However, the role of the board has experienced significant changes recently becoming rather complex to define. Responsibilities of the directors are not so straightforward anymore as they have reshaped especially during the latest century. Reasons behind the change might be explained by societal issues, the environmental deterioration and the shortage of resources. Board of directors is still responsible for meeting shareholders' interests, but the responsibilities have also broadened to addressing the needs of other stakeholders. (Chams & Carcía-Blandón, 2019.) In other words, the agenda of corporate governance has shifted from the relationship between boards and managers and the relationship between boards and investors, to concentrating on the relationship between boards and broader society (Nordberg, 2010, 6). In addition to maximising shareholders' value, board of directors must consider the concerns regarding environmental and social issues as well (Chams & Carcía-Blandón, 2019). Even though sustainability has been understood in organizations' boards, the integration of these matters hasn't always been realized in the way it should have been. Krechovská & Procházková (2014) find in their study that most of the Czech organizations haven't been able to integrate sustainability issues into their corporate management or corporate strategy. These organizations have made some sustainable operations, but they haven't included these operations into the broad business planning and management processes (Krechovská & Procháková, 2014).

Overall, there isn't just one clear answer to the question about the role of the board because different organizations in different countries and in different periods have all their own views. Some might regard the roles of board of directors as legal necessities while some might see them as an active part in the overall management and control of the organization. (Adams et al., 2010.)

2.2.1.1 Stakeholder theory

One of the main theories in the field of corporate governance is stakeholder theory. In 1960s the concept of stakeholder was proposed for the first time for the need to identify other parties of the organization besides the shareholders (Mahajan et al., 2023). Perhaps the most well-known definition of stakeholder has been explained by Freeman (1984). According to the definition, "A stakeholder in an organization is any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984, sited in Galbreath, 2016). Freeman (1984) emphasizes the relationship especially between the company and its employees, suppliers and customers (Freeman, 1984, sited in Nordberg, 2020, 41), who can be described as the stakeholders. Stakeholder theory is stated to be part of the area of business ethics and organizational

management (Mahajan et al., 2023) starting from the assumption that values are an important and explicit part of doing business (Freeman et al., 2004). Mahajan et al. (2023) explains stakeholder theory as a theory that encourages organizations to take their internal and external stakeholders into account as well as tries to increase the importance of understanding and managing stakeholders' needs and demands. Other definition to stakeholder theory states that the theory assumes that organizations satisfying the different needs and demands of their various stakeholders will basically determine the success of the products or services of the organization (Freeman, 1984, sited in Velte, 2017). In the organizations, boards of directors have the main responsibility of taking all the needs of different stakeholders into account. Thus, the focus can't be only on those needs which create shareholder value. (Nordberg, 2010, 41.)

Stakeholder theory can be divided into different perspectives that are an ethical (moral) branch and a positive (managerial) branch (Guthrie et al., 2006). The ethical branch means that all stakeholders should be treated the same way in an organization and that the organization should be managed by managers in a way that the interests of all stakeholders are heard (Deegan, 2006, sited in Guthrie et al., 2006). The positive branch argues that the management of the organization should focus on the needs of those stakeholders that have more control over the resources required by the company (Watts & Zimmermann, 1986, sited in Gutherie et al., 2006). The demands of the stakeholders have bigger possibility to be addressed when the resources of the stakeholders are more critical to the viability and success of the organization (Guthrie et al., 2006).

The focus of stakeholder theory has been expressed with two core questions. The first question asks what the purpose of the company is. It will help managers to recognise the common sense of the value they create and the factors that bring the core stakeholders of the company together. The second question asks what responsibility management has for the stakeholders in the company. Managers must think what kind of relationships the company wants and needs to create with its stakeholders in order to achieve its purpose. (Freeman et al., 2004.)

2.2.1.2 Agency theory

An agency relationship is explained as a contract where one or more persons (the principal) interact with another person (the agent) to carry out service on their behalf (Jensen & Meckling, 1976). In agency theory, the owner of the business is regarded as the principal and the manager as the agent. Agents are required to act in the best interests of the principals. (Nordberg, 2010, 29.) If both parties want to maximize their own advantages, risk for agency problem arises. This means that the agent might not act in the best interests of the principal but instead invest in the agent's own needs. (Jensen & Meckling, 1976.) In organizations this would mean that the interests between the management and shareholders conflict (Cole & Schneider, 2020). To prevent the agents from acting in a self-serving way, the management should be watched and monitored. Rewarding the management for acting in the principal's best interest is also one way to motivate the agent. While Jensen and Meckling (1976) were the first ones to use the term agency problem,

the problem has been identified already in the 1930s. At that time, Berle and Means identified that modern companies' central problem was the separation between ownership of a company and a control of its resources. Therefore, agency problem isn't any new problem in question as it has been one of the core issues about the work of boards of directors and the nature of corporate governance for almost a century. (Nordberg, 2010, 29.)

Essential expenditures stemming from the agency problem are called as the agency costs. Jensen & Meckling (1976) state that agency costs are the sum of the monitoring expenditures by the principal, the bonding expenditures by the agent, and the residual loss. Residual loss means the decrease in the principal's welfare resulting from the deflection between the agent's decisions and those decisions which would maximize the wealth of the principal (Jensen & Meckling, 1976). Additionally, board of directors can be seen as a part of the agency costs where the costs are caused by their fees and their incorrect judgements about when to hold up and when to speed up the processes (Nordberg, 2010, 30). Even though monitoring expenses play a role in the total agency costs, those expenses are needed in order to lower the overall agency costs. Adequate monitoring mechanisms are necessary for protecting shareholders from the conflicting interests of the management (Madhani, 2020).

When the agency conflict between the management and shareholders is minimized and the interests of both parties are in line, the organization should operate more efficiently which might lead to improved financial performance as well (Madhani, 2020). For ensuring that the interests of the management and shareholders are balanced, organizations will carry out corporate governance mechanisms (Cole & Schneider, 2020). Board of directors is one of the main internal corporate governance mechanisms that shareholders use for monitoring the management. Good corporate governance operations indicates that board of directors is accountable and ensures that the shareholders' interests aren't threatened. Board of directors have the duty to monitor and reward management for ensuring that the welfare of the shareholders is maximized. Thus, this will mitigate the agency costs to the organization. (Madhani, 2020.)

2.2.2 Board gender diversity

Historically, women have typically held only few seats on the corporate boards (Adams & Ferreira, 2009). One reason to the low number of female directors might be caused by the negative stereotypes of women being represented in the management. Negativity can be explained for example by women's styles of leadership or their preferences. (Adams, 2016.) However, the pressure to increase the number of female directors on the board has been changing the traditional structure of the board during the 2100th century. In a consequence to the increasing importance of board gender diversity, different legislation initiatives have been created. These initiatives have been explained by the fact that the presence of women on the board will have significant effects on the governance of organizations. (Adams & Ferreira, 2009.) Adams and Ferreira (2009) found in a sample of US firms that female directors have higher attendance level than male

directors in the board meetings as well as male directors will attend more often to the meetings the more gender-diverse the board is. Additionally, monitoring has a bigger role on the boards with more women directors. In other words, the board will be more effective when there are more women represented on the board. Women on the board can be seen as a similar actor to the independent director as their presence on the board will make the board stronger. (Adams & Ferreira, 2009.) Board gender diversity as one of the characteristics of board of directors is amongst other parts the main determinant of ESG disclosure practices in organizations (Wasiuzzaman & Subramaniam, 2023).

In 2023, women held 23,3% of the board seats in the world while the corresponding percentage was 19,7% in 2021 (Deloitte, 2024). Therefore, a significant increasement in the women's representation on the board has been observed. With 44%, France had the highest percentage of women represented on the board in 2023. In addition to France, Norway and Italy were the only countries that exceeded the threshold of 40%. (Deloitte, 2024.) Moreover, especially the Nordic countries are known for their high level of female representation in organizations including the policies regarding gender quotas and internationalization (Gregorič et al., 2009, sited in Ishwar, 2022). According to Ishwar (2022), the history of gender diversity in the Nordic context dates to the 1970s. In this time, the Nordic countries introduced principles to promote gender equality (Ishwar, 2022). According to the report by Deloitte (2024), in 2023 the percentages of board seats held by women in the Nordics were the following: 35,1% in Finland, 43,5% in Norway, 35,3% in Sweden and 34,2% in Denmark. The percentages have increased in two years in all the Nordic countries. Comparing to other developed countries such as North America, board gender diversity is considerably higher in the Nordic countries than in North America. In 2023, the percentage of women represented on the board in North America was only 28,5%. (Deloitte, 2024.)

However, the management techniques practiced in developed countries can't be expected to work similarly in developing countries because the socio-cultural environments are different between these countries (Mendonca & Kanungo, 1996). Consequently, gender equality realizes differently depending on the area and country, and the situation is fully opposite when comparing developing countries to the developed countries. The percentage of women on the board was only 15,1% in Latin and South America in 2023. Similarly, when observing the countries from Middle East and North Africa, the corresponding percentage was only 11,6% in 2023. (Deloitte, 2024.) Referring to this low number of female directors on the board, Wasiuzzaman & Subramaniam (2023) have found that there is a lack of influence female directors have on corporate boards especially in energy firms operating in developing countries.

2.2.2.1 Gender quota

One of the most famous initiatives to increase the importance of gender diversity has been made in Norway. In 2003, Norway issued a law which stated that all listed companies must agree the 40% gender quota (Ferrari et al., 2021) which

means that at least 40% of the board directors must be female or otherwise the company will face dissolution (Adams & Ferreira, 2009). The existing companies had to apply the law by January 2008 and new companies by January 2006 (Ferrari et al., 2021). Additionally, Norway extended the gender quota to involve also large and medium-sized private organizations in 2023 (Deloitte, 2024). Spain followed Norway's path as the second country enacting a law that stated that the 40% gender quota should be achieved by the year 2015 (Adams & Ferreira, 2009). However, as the Norwegian gender quota can be labelled as a "hard quota" which means that companies that don't comply with the quota will face penalties, Spain followed a "soft quota". Soft quota means that companies that don't achieve the objectives of the quota won't experience any negative consequences. (Mateos de Cabo et al., 2019.) In Spain, the achievement of surpassing the threshold of 40% didn't succeed by the year 2015 and the objective hasn't still realized yet. The percentage of women on board was 19,2% in 2018, 26,3% in 2021 and 32,9% in 2023. (Deloitte, 2024.) Hence the number of women on board has increased significantly only in five years so it is expected that the increasement will continue the same in the future.

From the similar culture grounds than Spain, Italy introduced gender quotas in Italian listed companies in 2011. The quotas in Italy are temporary and the measure changes after every three consecutive board elections. (Ferrari et al., 2021.) In 2023, the percentage of women on the board in Italy surpassed the mark of 40% (Deloitte, 2024). Other early adopters of gender quota have been France and Germany (Ferrari et al., 2021). In France, the French Parliament passed a law in 2011 that stated that the percentage of women on board must be over 20% by the end of 2013 and 40% by the end of 2016. The law involved all publicly listed companies and large unlisted companies. The percentage of board seats held by women surpassed 40% in 2021 for the first time. (Aktaş et al., 2023.) Additionally, Germany adopted the law concerning gender quota in 2015 which stated that women should be represented on the board by 30% or more (Adams, 2016). The goal of 30% was completed in 2023 when the percentage reached 31,3% (Deloitte, 2024).

In the EU level, gender quotations have been presented as well. Still in 2022, less than a third of the directors on the board in EU's largest companies were women. Since 60% of the graduates from university are female, the number of women on the board should be significantly higher. (European Commission, 2022.) Member states of EU are required to have an objective that the members of the underrepresented sex hold at least 40% among non-executive board members by 30 June 2026, or that the members of underrepresented sex hold at least 33% among all directors by 30 June 2026 (European Union Directive 2022/2381, 2022). Companies that don't succeed in these objectives have to implement transparent processes when selecting directors and give priority to the underrepresented sex among equally qualified directors (Deloitte, 2024). In 2022, eight Member States had national gender quotas that were applicable for the boards of listed companies. The positive influence of adopting gender quotas is noticeable as Member States with gender quotas had 38,3% women on the

board while the amount was only 17,5% in those Member States that had taken no action at all. (European Commission, 2022.)

2.2.2.2 Critical mass theory

Critical mass theory was most likely introduced for the first time by Granovetter (1978) (Lefley & Janeček, 2023). In the article about threshold models of collective behaviour, Granovetter (1978) stated that there is a requirement about the size of a certain group in order to make a change. This size is now called as a critical mass (Granovetter, 1978, sited in Lefley & Janeček, 2023). The first theories about critical mass theory regarding the board gender diversity were presented by Kanter (1977). Kanter (1977) identified four group types where the division was based on different proportional representations of types of people. These types are uniform, skewed, tilted and balanced groups. Uniform groups consist fully of just one social type. (Kanter, 1977.) Connecting the issue to the board gender diversity, this would mean that the group is entirely composed of either male of female representatives. Skewed groups have dominance of one type over another (Kanter, 1977). For the composition on the board, this would mean that male directors are the dominant type who control the female directors in skewed groups. Board gender diversity realizes slightly better in tilted groups. There the distribution is less extreme and people representing the minority, women in this case, can influence the whole group. There the proportion of women could be even 35%. In balanced groups, different types of people are rather equally represented. In the case of board gender diversity, this means that the proportion of women would be 40-60%. (Kanter, 1977.)

Torchia et al. (2011) found out in their study that with at least three women on the board, it is possible to improve the firm innovation. Otherwise, women won't have enough influence to make a significance difference on the group's decision-making (Yang et al., 2019). The proportion of 30% of women on the board is called as a critical mass which has been generalized in other literature also as the minimum threshold (Lefley & Janeček, 2023). This proportion of women is also supported by Kanter (1977) who states that the possibility to influence the whole group is possible when the minority represents approximately 35% of the whole group. Some benefits stemming from achieving the critical mass are increased teamwork, inclusiveness as well as economic advantages (Lefley & Janeček, 2023). Having at least three women on the board might also benefit the contribution to the strategic tasks of the board. However, according to Lefley & Janeček (2023), the benefits of gender-diverse board may not be achieved if a critical mass doesn't consist of independent women directors. In a consequence of non-independency, women directors may not obtain a collective voice and action but instead act as separate directors with their own voices (Lefley & Janeček, 2023).

Overall, critical mass theory can enhance the understanding of the contribution of women to organizations' boards (Torchia et al., 2010). In other words, behavioural integration of corporate boards will be achieved in a consequence of three or more women represented on the board. Stereotypically,

women directors take every stakeholder's need into account while men might emphasize the benefits of the organizations. (Yarram & Adapa, 2021.) Therefore, women might prevent the board for making negative CSR activities (Yarram & Adapa, 2021), and additionally decrease the risk for agency conflict.

3 PREVIOUS RESEARCH

3.1 ESG and financial performance

A lot of researches have concentrated especially on the association between ESG and financial performance or alternatively firm value in recent years. The typical perspective has usually been to define if ESG disclosure influences a company's financial performance and if it does, is the influence positive or negative. Although most of studies have found a positive link between these two factors, some studies have resulted in conflicting conclusions. According to these studies, either a negative or neutral relationship has been discovered between ESG performance and financial performance. One explanation for the mixed results might be due to the differences in the legislations and social circumstances in different countries. Kahloul et al. (2022) add that also the usage of various econometric methods, data and measurements of these variables might cause challenges in making reliable conclusions about the nature of the relationship. Additionally, observing the influence of just one variable on another is hard because the relationship might easily be affected by other moderating variables (Kahloul et al., 2022).

Patrick Velte has studied the association between ESG and financial performance through various perspectives. One of Velte's studies focuses on German listed companies and whether ESG performance in those companies influences financial performance. Velte (2017) observed the influence of ESG both by the overall ESG score and by each component of ESG separately. The study used accounting-based measure ROA (Return on Assets) and market-based measure Tobin's Q to measure financial performance. Unexpected is the fact that when measured with Tobin's Q, there can't be found any significant influence of ESG to the market-based variable. However, when ROA is used, the study states that there is a positive association between the total ESG and financial performance but also between the three separate dimensions of ESG

(environmental, social and governance) and financial performance. Among the three components, the governance performance is discovered to have the strongest influence on financial performance when comparing it to the environmental and social aspects. (Velte, 2017.) Xie et al. (2019) examined the link between ESG disclosure and the effectiveness of global companies, and the results support Velte's ones as the governance factors are discovered to have the strongest influence on the effectiveness of a company. However, the study states that ESG information and the effectiveness of a company has a rather complex relationship. According to the study, a considerable and positive influence on the effectiveness of a company is achieved by a moderate disclosure level of ESG information. By contrast, low and high disclosure levels of ESG are discovered to have negative associations with the effectiveness of a company. Overall, the study proves that the majority of the ESG operations have neutral relationship with the effectiveness of a company when measuring with both ROA and market value. (Xie et al., 2019.)

The effect of ESG disclosure to financial performance is also analyzed in Italy for the largest listed companies' part. Pulino et al. (2022) measured companies' financial performance with the help of EBIT and ROA which are used to describe especially the profitability of the company. ESG performance was analyzed in total, but the three components were also analyzed separately. As a result, a positive link can be found between ESG disclosure and financial performance. (Pulino et al., 2022.) The most surprising fact is that while Velte (2017) noticed governance factor having the strongest influence on financial performance, Pulino et. al (2022) don't find any significant impact between these factors. Instead, the environmental and social aspects are discovered to have positive influence on financial performance (Pulino et al., 2022). De Lucia et al. (2020) pronounce the environmental and social factors also in their research. They focused on the public enterprises in Europe and their findings support the positive effects ESG practices have on firms' financial performance. Moreover, the relationship is found to be more apparent when enterprises invest in diversity and equal opportunity policies, environmental innovation and employment productivity (De Lucia et al., 2020).

Rahi et al. (2022) study in their research how sustainability practices in the Nordic financial industry influence companies' financial performance. The financial industry includes for example investment holding, real estate rental and banking. Companies which had consistently high scores on sustainability between the years 2015 and 2019 were picked for the analysis. According to the findings, sustainability practice influence both positively and negatively on financial performance. The relationships between the overall ESG score, return on equity, return on invested capital and earnings per share are recognized to be negative. Nevertheles, supporting the results of Velte (2017) and Xie et al. (2019), Rahi et al. (2022) discover also a positive link between governance score and return on assets.

Additionally, even though the majority of the researches have focused on developed economies, some studies have paid attention also to developing

economies and emerging markets. Maji and Lohia (2023) studied how environmental, social and governance (ESG) performance influences financial performance of Indian corporations. Both accounting- and market-based variables were used in the investigation. According to the study, a positive influence of ESG performance on financial performance can be found. The impact was measured positively with both Tobin's Q and ROA as well as the natural logarithm of market capitalization. When each component of ESG was observed individually, the results indicate that Indian firms focus rather on social and governance factors than the environmental ones. (Maji & Lohia, 2023.) Overall, Maji and Lohia (2023) state that when companies pursue environmentally and socially relevant practices and robust governance, it is more likely that the well-being of every stakeholder associated with the firm is ensured. Furthermore, according to the results, higher ESG scores are found to raise the market value of firms (Maji & Lohia, 2023).

Additionally, Aguilera-Caracuel and Dugue-Grisales (2019) have studied the relationship for developing countries' part. The observation of how ESG performance influences a company's financial performance was conducted in emerging markets of multinationals in Latin America (Aguilera-Caracuel & Dugue-Grisales, 2019). The multinational firms in the research were from Brazil, Chile, Colombia, Peru and Mexico. The findings note a negative relationship between ESG performance and financial performance and, thus high ESG scores indicate lower profitability. Especially the social factors are revealed to have the strongest negative influence on financial performance which can be explained by managers' non-responsible behavior. (Aguilera-Caracuel & Dugue-Grisales, 2019.)

Typically, there have been some specific factors of ESG which have been analyzed in the broader analysis when studying the link between ESG performance and financial performance. Velte (2020) conducted a research which analyzed whether the link between ESG and financial performance is moderated by chief executive officer (CEO) power. Similar research has been conducted by Li et al. (2018) where the interest is in the link between ESG performance and firm value with the moderating role of CEO power. Both of these researches used ROA in measuring financial performance, but in addition to ROA, also Tobin's Q was used in the research by Li et al. (2018). Both measures indicate that ESG performance does have a positive influence on financial performance or on firm value. Velte (2020) measured CEO power by CEO pay slice, CEO tenure and CEO ownership whereas Li et al. (2018) used only CEO pay. As a result, it is found in both researches that ESG performance and financial performance have stronger association when CEOs have more power in companies (Li et al., 2018; Velte, 2020.) This means that companies with a powerful CEO, who has better influence on financial as well as non-financial performance and disclosure, are capable of strengthening the link between ESG performance and financial performance (Velte, 2020).

Similar research to the ones by Velte (2020) and Li et al. (2018) have also been conducted on the part of Indonesian public listed companies where CEO

tenure is used as the moderating role. Triyani et al. (2020) discovered that ESG performance influences positively on financial performance measured by ROE (Return on Equity). It was also found that CEO tenure has a moderating impact on the link between ESG performance and financial performance (Triyani et al., 2020). Velte (2020) found that CEO tenure refers to better knowledge which might consequently support the positive link between ESG disclosure and financial performance. However, these results by Triyani et al. (2020) are controversial as they state that CEO tenure decreases actually the strong link between ESG performance and ROE.

The association between ESG performance and financial performance has been studied for the Chinese listed companies' part between the years 2000 and 2020 by Chen and Xie (2022). They discover that ESG performance associates positively with financial performance as corporations with better ESG performance have higher Tobin's Q ratio. Additionally, the research examines the moderating role of ESG investors in the association in question and the findings suggest that the influence of ESG performance is greater in corporations with ESG investors and corporations with high agency costs, high media attention and longer inception. In more detail, it was identified that attracting ESG investors will lead to stronger positive relationship between ESG disclosures and financial performance. (Chen & Xie, 2022.) Another similar study in the Chinese context has also been conducted where the findings are similar to the ones by Chen and Xie (2022). Qu and Zhang (2023) found that ESG responsibility has mainly an influence on firms' financial performances by attracting institutional investors to reduce the agency cost of their free cash flow and raise their holdings. In addition to the positive relationship observed between ESG and financial performance, Qu and Zhang (2023) recognized that the link depends on the phases of the life cycle in a company. According to the findings, ESG positively influences financial performance especially in the growth and mature phases of the life cycles. In the growth phase, companies may participate in the ESG activities as a way to improve their competitiveness and create value for the firm. In the mature phase, companies are more willing to adopt ESG activities as the firms are more mature, and, thus have good development prospects and market reputations which can lead them to acquire higher credit funds at lower costs. Other factors that were found to pronounce the positive relationship between ESG performance and financial performance are the marketization process and ownership structure. State-owned firms in the growth phase that are located in regions with low marketization degree have the strongest possibility to maximize the valuation effect. (Qu & Zhang, 2023.)

Based on this literature review and concentrating especially on the researches conducted in the developed countries, the first two hypothesis can be formed:

H1: The relationship between ESG performance and ROA is positive and significant.

H2: The relationship between ESG performance and Tobin's Q is negative and nonsignificant.

3.2 Board gender diversity

3.2.1 Board gender diversity and ESG

The structure of boards of directors has gain more interest during the latest decade. Overall, in the framework of stakeholder theory, it is supposed that higher female presence on the board is positively associated with sustainability performance (Naciti, 2019). According to the theory about gender socialization, men and women might have different procedures when making decisions and taking risks. Additionally, based on the diversity theory, diversity in decision making might lead to better results. As men are typically regarded as prone to taking excessive risks, ESG controversies are also more possible. Thus, as women are typically more risk averse, it is expected that diversity on the board might reduce ESG controversies. (Issa & Hanaysha, 2023.)

Ishwar (2022) investigated the link between board gender diversity and sustainability performance which can be regarded as a synonym to ESG performance. The sample used in the research consists of 205 Nordic-listed companies from Finland, Denmark, Norway and Sweden. The board gender diversity was measured as a proportion of female directors. The results indicated a positive and significant link between board gender diversity and sustainability performance. (Ishwar, 2022.) Additionally, the positive relationship was found to be stronger in carbon-intensive firms compared to non-intensive firms (Ishwar, 2022) which can be explained with the fact that females have an influential role on board in mitigating the risks concentrated on the environmental factors like climate change, water stress and pollution and waste (Naveed et al., 2021). The contribution women have especially on the environmental issues has also been emphasized by Taglialatela et al. (2023). Board gender diversity is stated to have a significant role in company's support for the Sustainable Development Goals (SDGs) regarding the environmental issues. Women are more aware of the importance of focusing on environmental practices by fighting against the climate change and shifting towards a more sustainable society. (Taglialatela et al. 2023.)

Making differences on the board and creating change will mostly be accomplished when there are three or more women on the board (Konrad et al., 2008). According to Arayakarnkul et al. (2022), companies that have three or more women on the board leads to a positive influence on social commitment which includes product responsibility, human rights as well as the workforce and community of the companies. Additionally, social commitment by companies was observed to increase when there are more women on the board (Arayakarnkul et al., 2022). This number of female directors is derived from the critical mass theory which notes that there should be at least three women on the

board in order to make a significant contribution to ESG performance of the company (Arayakarnkul et al., 2022; Brahma et al., 2020; Post et al., 2011). Similarly, Ishwar (2022) found that the board will enhance sustainability performance significantly only when at least 30% of the board is represented by women. As a consequence for achieving the critical mass, fewer ESG controversies would exist if three or more females would be represented on the board (Issa & Hanaysha, 2023). Yarram and Adapa (2021) state similarly that achieving the critical mass leads to the significant positive relationship between board gender diversity, total CSR and positive CSR while the association between board gender diversity and negative CSR is significantly negative. In addition to the social aspects, also the impact regarding the critical mass theory on environmental factors has been examined. The discoveries by Post et al. (2011) support the ones by Arayakarnkul et al. (2022) as firms with three or more female board members were discovered to strengthen the impact on environmental ratings of the firm. Furthermore, women typically focus more on sensitive and sustainable matters and, thus board gender diversity is discovered to create stronger concentration for firms to report on issues concerning climate, governance and sustainability (Bhatia & Marwatha, 2022).

Velte (2016) examined female representation on the board and whether higher number of female representatives on the board has an impact on ESG performance. The sample used in the examination consist of German and Austrian listed companies. According to the findings, female directors influence positively on ESG performance. The positive impact on ESG performance is indicated to be even stronger when CSR committee is implemented as a part of the management board or supervisory board. (Velte, 2016). Khemakhem et al. (2023) examined the link between gender diversity on the board and the ESG performance, but they paid attention as well to the main committees of the board. The findings recognize a positive and significant relationship between gender diversity on the board and the main committees as well as with ESG performance. The relationship is found to be stronger when there are more females on committees than on the boards because women have better possibility to participate in making board decisions in the committees. (Khemakhem et al., 2023.)

Board gender diversity has also been found to have a different role depending on the area and country the firm operates in. Chams & García-Blandón (2019) investigated the effects of different characteristics of board of directors on the sustainability of the firm between continental EU countries and non-EU countries. In EU, the demographic criteria have the most significant effect on sustainability performance of the firm including age and gender diversity. On the contrary, in non-EU countries, the board structure and the board composition are discovered to enhance sustainability the most, including the size of the board and the number of committees on the board. (Chams & García-Blandón, 2019.)

Even though most of the studies has discovered a positive connection in the link between board gender diversity and ESG performance, some studies have

stated conflicting results. Cucari et al. (2018) examined the association between diversity on the board of directors and ESG disclosure for Italian listed companies' part. Diversity on the board included board gender diversity among other factors. Based on the findings, the increasing number of female board representatives is revealed to have a negative influence on the positive development of ESG disclosure. Even though higher proportion of women on the board typically improves company's social behaviour, the research indicated that ESG performance doesn't improve if higher percentage of females on the board is driven by regulatory pressures rather than expertise. Consistent with the findings by Velte (2016), there is however found a positive and significant relationship between CSR committee and independent directors as well as with ESG disclosure. (Cucari et al., 2018.)

3.2.2 Board gender diversity and financial performance

Many researches concentrating on the relationship between ESG performance and financial performance have especially pronounced the significance of the governance aspects. Thus, factors related to governance have usually been recognized in having significant influence on financial performance. Especially board of directors have a significant role in decision-making as it is in their responsibility to secure good governance of the firm (Ouni et al., 2020). According to Naciti (2019), the composition of the board has an influence on company's financial performance. Additionally, the decisions board of directors make influence for example on the life of the company, effect on the recognition of potential risks that might face the company as well as determine the efficiency indicators (Ouni et al., 2020).

Even though, there has been a lot of interest to explore the relationship between board gender diversity and firm's financial performance, conclusive resolutions to prove or deny the relationship have not been made (Galbreath, 2016; Ouni et al., 2020). The results have typically been conflicting as studies have found both positive, neutral and negative relationships between the two factors (Ouni et al., 2020). Galbreath (2016) tried to understand the relationship using Australia's largest companies as a sample. Even though, a positive link between gender-diverse board and financial performance was found in the research, Galbreath (2016) noted that the link isn't however direct. With the help of mediation test, it appeared the link between board gender diversity and financial performance is fully mediated by CSR (Galbreath, 2016). Similar findings to Galbreath (2016) have been discovered in the research by Ouni (2020) which concentrated on the Canadian context. The results reveal that companies' ESG orientation do have a role in the examination of the association between board gender diversity and financial performance (Ouni et al., 2020).

Despite the challenges in making convincing conclusions about the effects gender-diverse board might have on financial performance, many studies have discovered the relationship positive. As Xie et al. (2019) pronounce the impact of governance factors on the effectiveness of a company, they also state that women on the board contributes to a positive and strong relationship with financial

performance. Additionally, Reguera-Alvarado et al. (2017) investigated the relationship between board gender diversity and financial performance in Spain's context. Spain is an interesting country to focus on as females have historically had a minor involvement in the workforce there. Moreover, Spain was the second country in the world which required legally gender quotas on the board. As a result to the mandatory laws, the proportion of women represented on the board has raised significantly. When more females were represented on the board, it was discovered that higher economic results can be achieved at the same time. (Reguera-Alvarado et al., 2017.)

According to the critical mass theory where three or more women on the board has been recognized to enhance the ESG performance of the company (Arayakarnkul et al., 2022; Issa & Hanaysha, 2023; Post et al., 2011), that level of female representation has been discovered to strengthen the financial performance of the firm as well (Brahma et al., 2020). Brahma et al. (2020) compared boards with three or more females to boards with two or less females and the results were significant. When there are three or more females on the board, the association between board gender diversity and financial performance is positive, highly significant and unequivocal (Brahma et al, 2020).

However, the complexity of the relationship between board gender diversity and financial performance has been observed in the study by Adams and Ferreira (2009). They found that board gender diversity has positive influence on financial performance only in organizations that have otherwise weak governance. Instead in well-governed organizations, negative association can be found between gender diversity and financial performance and, thus mandating gender quotas might reduce firm value as well as shareholder value. The negative relationship might be caused by the increased over-monitoring due to the higher board gender diversity. (Adams & Ferreira, 2009.) Kabir et al. (2023) found also that board gender diversity and financial performance are negatively associated. Negative impact on ROA and ROE was reported when the relationship between board gender diversity and financial performance was moderated by power distance and masculinity. Despite the negative influence on financial performance, board gender diversity is observed to improve productivity and creativity. Moreover, the influence gender diverse board has on financial performance is found to be more positive and significant when it is moderated by various cultural factors. The cultural factors used in the research were the power distance which is the acceptance of inequality among people as well as the masculinity index. (Kabir et al., 2023.)

Based on this literature review, the third hypothesis can be formed:

H3: The relationship of ESG performance on financial performance is more pronounced on companies with a gender-diverse board.

4 DATA AND METHODOLOGY

This part of the research considers the data and methodology used in the study in order to get the answers to the research questions. This chapter presents the design in which the research is conducted, the used regression models, the used variables and descriptive statistics. The methodology used to examine the relationship between ESG scoring and financial performance is based on the study by Velte (2017) as the research had similar objectives compared to this thesis. Observing the moderating role of board gender diversity follows similar structure to the one used in the studies by Ishwar (2022) and Kahloul et al. (2022).

This study is conducted as quantitative research. The main objective of quantitative research is to form valid and objective descriptions on some issue (Taylor, 2005, 91). Quantitative approaches are typically based on gathering numerical data and focusing on those numbers in the examination (Taylor, 2005, 13), which makes it the most suitable method to exploit in this thesis. Quantitative research has some limitations as it can't always fully evaluate the human behaviour (Taylor, 2005, 91). Additionally, the instruments used in data gathering have sometimes problems in answering all of the questions (Taylor, 2005, 91), as some things are hard to transform in quantitative forms. Finally, this work has not used artificial intelligence-based language models.

4.1 Data and sample

The data used in this thesis is secondary from a database called LSEG. More accurately, the data will be gathered from Refinitiv which is part of LSEG. The database provides all the data used in this thesis including for example the information including the financial performance, ESG scoring and the boards in the organizations. The data of this study consists of public listed companies from Finland, Norway, Sweden and Denmark. The ESG related data is available from the year 2003 but because there are just a few companies that have reported their ESG scores between the years 2003 and 2005, the examination period starts from

the year 2006 and ends to the year 2022. The companies that do not have any ESG ratings in this period are removed from the data. Moreover, companies from financial sector are left out of the analysis because they tend to have specific regulations and different capital structures compared to other sectors and companies (Velte, 2017). Financial sector includes banks, financial services and insurance (Nasdaq Nordic, 2024), and companies that are included in these sectors are removed manually from the sample. Lastly, any duplications are excluded from the data. After excluding financial firms, duplications and the firms without ESG scores, the final data includes 464 companies. The sample is noticeable large compared to most of the other studies covering the same theme. For example, in the studies by Velte (2017) and Kahloul et al. (2022), the samples covere only one country in each study and the number of firms is under 100. In the study by Ishwar (2022), the sample consists of the same four Nordic countries that are used in this study. However, the size of the sample is only 205 companies. Larger number of firms used in this study might make the results more generalizable into larger context.

Table 1 shows the companies that are incorporated in the research per country (panel A) and per industry (panel B). Panel A in table 1 indicates that over 50% of the companies represented in the research are from Sweden (54,31%), whereas the remaining sample is consisted quite equally of Finland (15,09%), Norway (18,32%) and Denmark (12,28%). Thus, the results from Sweden will have the strongest impact on the overall results when all the Nordic countries are included. The proportions of the Nordic countries are similar to the study by Ishwar (2022) where the sample consists over 40% of the Swedish companies and the rest of the sample is formed rather equally of the companies from Finland, Norway and Denmark. As stated in the study by Ishwar (2022), despite the high proportion of the Swedish companies, the data appears to be balanced enough across the Nordic countries. Panel B shows the number of firms divided into 15 different industries. Industrials presents over quarter (29,31%) of the industries in the sample. According to Nasdaq, industrials can be explained as companies' manufacturing, producing or distributing goods and services. The next two largest industries are healthcare (13,79%) and technology (10,99%). The rest of the industries are represented relatively equally, the percents varying between 1,51% to 6,68%.

TABLE 1 Sample distribution per country and industry

Panel A: Total number of firms per country		
Country	Total	Percent %
Finland	70	15,09
Norway	85	18,32
Sweden	252	54,31
Denmark	57	12,28
Total	*464*	*100*
Panel B: Total number of firms per industry		
Industry	Total	Percent %
Technology	51	10,99
Telecommunications	18	3,88
Healthcare	64	13,79
Real Estate	27	5,82
Automobiles and Parts	8	1,72
Consumer Products and Services	28	6,03
Media	8	1,72
Retail	19	4,09
Travel and Leisure	17	3,66
Consumer Staples	25	5,39
Industrials	136	29,31
Basic Materials	31	6,68
Energy	25	5,39
Utilities	7	1,51
Total	*464*	*100*

This table reports the total number of firms that are used as a sample. Panel A describes the sample divided by country and Panel B reports the distribution of the firms per industry.

4.2 Regression Variables

4.2.1 Dependent Variables

Since the objective of this thesis is to study the impact of ESG performance on financial performance, the dependent variables in this study are Return on Assets

(ROA) and Tobin's Q. Both variables present a specific perspective on how organizations' financial performance is determined. ROA is an accounting-based variable which can be regarded as the most famous accounting-based variable of financial performance. It represents the profitability of the organization in relation to its total assets. Instead, Tobin's Q is a market-based variable which is the ratio between a physical asset's market value and its replacement value. (Velte, 2017.) According to Kahloul et al. (2022), while Tobin's Q represents the competitive advantages of a business, ROA measures the effectiveness of the business. Because both ROA and Tobin's Q have their own specialities, they both are used as parallel variables in this study as the aim is to gain as comprehensive results as possible.

4.2.2 Independent Variables

The first independent variable used in this study is ESG Score. ESG Score is based on the combination of the three dimensions; environmental, social and governance. The score ranges from 0 to 100, where 0 is the lowest and 100 the highest score. In other words, the higher the score, the more sustainable the company is. LSEG has divided the ESG scoring into four different quartiles. The first one includes the scores between 0 and 25. It indicates poor ESG performance and weak transparency in the public reported ESG data. The second quartile covers the scores between 25 and 50 and it indicates satisfactory ESG performance and moderate level of transparency in reporting the public ESG data. The third quartile includes the scores between 50 and 75 and indicates good ESG performance and above average level of transparency in the public reported ESG data. The fourth quartile forms the scores from 75 to 100. If a company scores in the highest quartile, it indicates excellent ESG performance and high level of transparency in reporting the public ESG data. (LSEG.)

In addition to the overall ESG score, separate scores describing the different dimensions are used in the study. These scores range similarly from 0 to 100. The environmental dimension (ENV) describes how organizations take environmental matters into account in their operations. Moreover, it might indicate how environmentally friendly the organization is aiming to become. The social dimension (SOC) concentrates on its relations with its stakeholders and the society where it operates. Finally, the governance dimension (GOV) focuses on the organization's governance structures which includes for example ensuring that the rights of the shareholders are met.

The other objective of this thesis is to study the moderating role of board gender diversity in the relationship between ESG performance and financial performance. Thus, the second independent but also moderating variable is board gender diversity. Board gender diversity is measured by the proportion of women on the boards, similarly as in the previous study by Ishwar (2022). The proportion of women on the board of directors in relation to the total number of the members on the board is indicated as (WOB). According to the critical mass theory, the optimal number of women on the board is three or more

(Arayakarnkul et al., 2022; Issa & Hanaysha, 2023; Konrad et al. 2008). However, this study doesn't cover testing of this hypothesis about the critical mass theory.

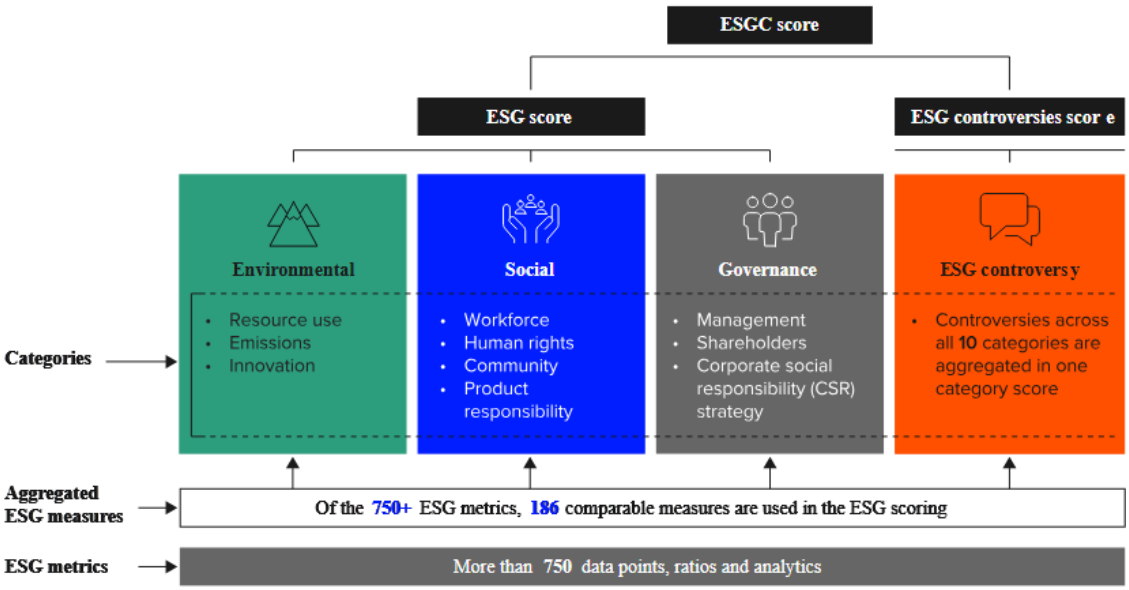

FIGURE 2 ESG Scores (LSEG)

4.2.3 Control Variables

To achieve reliable results, other factors affecting the relation between ESG performance, financial performance and board gender diversity should be considered. Control variables used in this thesis are firm size (FSIZE), research and development expenses (R&D), firm risk including systematic risk (BETA) and unsystematic risk (FLEV), board size (BSIZE) as well as year, country and industry that are used as fixed effects. Firm size is measured by the natural logarithm of total assets (Kahloul et al., 2022; Velte, 2017). R&D describes the innovation and technology knowledge as the research and development intensity (Velte, 2017). Beta is the first variable to measure the firm risk. Beta is the proxy measure for systematic risk (Velte, 2017). The second variable measuring the firm risk is leverage which represents the unsystematic risk (Velte, 2017). Firm leverage is measured as the ratio of total debt to total assets (Kahloul et al., 2022). Board size describes the total number of board members. The number of board members is important to take into account in order to make conclusions about the effects of women being on the board. To make the results stronger, year, country and industry are added as fixed effects. The definitions of variables used in the research are summarized in Appendix.

4.3 Regression Models

The first objective of this thesis is to assess the relationship between ESG performance and financial performance. To determine the correlation between these two factors, the regression method is used. The regression model helps in explaining whether the changes in dependent variable are due to the changes in the independent variables. The specific regression used in this thesis is the pooled ordinary least squares (OLS) method which has been used for example by Maji and Lohia (2018), Li et al. (2018), Ishwar (2022) and Kahloul et al. (2022). Thus, the following regression models are based on the methodology of these studies with own specific modifications required due to the nature of this study.

The first four models try to answer on hypothesis 1 and 2. The variables describing financial performance, ROA and Tobin's Q, are used as dependent variables in all the models. In the first two models, ESG scoring will be used as the independent variable. Additionally, the influence of the separate dimensions of ESG is presented in the third and fourth model. The following models are created:

$$ROA_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (1)$$

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (2)$$

$$ROA_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + \beta_9 YEAR_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (3)$$

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + \beta_9 YEAR_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (4)$$

The second objective of this thesis is to examine the moderating role of board gender diversity on ESG performance and financial performance. Thus, the following models try to answer hypothesis 3. The fifth and sixth models use the overall ESG score and the seventh and eight models consider the influence of the separate dimensions of ESG. The regression uses proxy for gender diversity which is denoted as the proportion of women (WOB). The following models are constructed:

$$ROA_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 WOB_{i,t} + \beta_3 ESG*WOB_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (5)$$

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 WOB_{i,t} + \beta_3 ESG*WOB_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (6)$$

$$ROA_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 WOB_{i,t} + \beta_5 ESG*WOB_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 R\&D_{i,t} + \beta_8 FLEV_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (7)$$

$$Tobin's\ Q_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 WOBi_{,t} + \beta_5 ESG*WOB_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 R\&D_{i,t} + \beta_8 FLEV_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t} \quad (8)$$

4.4 Descriptive Statistics

Figure 3 presents the development of the overall ESG scores for Finnish, Swedish, Norwegian and Danish publicly listed companies between the years 2006 and 2022. The figure demonstrates that ESG scores have increased relatively rapidly from 2006 to 2015. However, other countries than Finland, experienced a small decline in 2010 before turning into growth again. After 2015, the growth has slowed down as the average scores have even turned down in some years. The lowest combined score for all the countries has been reported in 2006 when the percentual average was 34,89%. As supposed, the scores have been the lowest in the beginning of the review period as ESG was still a new concept then and the consciousness of sustainability related themes was not as widely understood as it is nowadays. The highest combined score of all the Nordic countries, 56,16%, was reported in 2015 indicating an increase of 21,26% from the year 2006. Noticeable is the fact that Sweden had the highest ESG scores each year from 2006 to 2014. After that Finland has typically had the highest score. However, during the latest three years, ESG scores in all the Nordic countries have been rather the same and significant differences can't be noticed. The similarity in the development of the ESG scores in the Nordic countries makes the research more reliable and solid as well as more generalized.

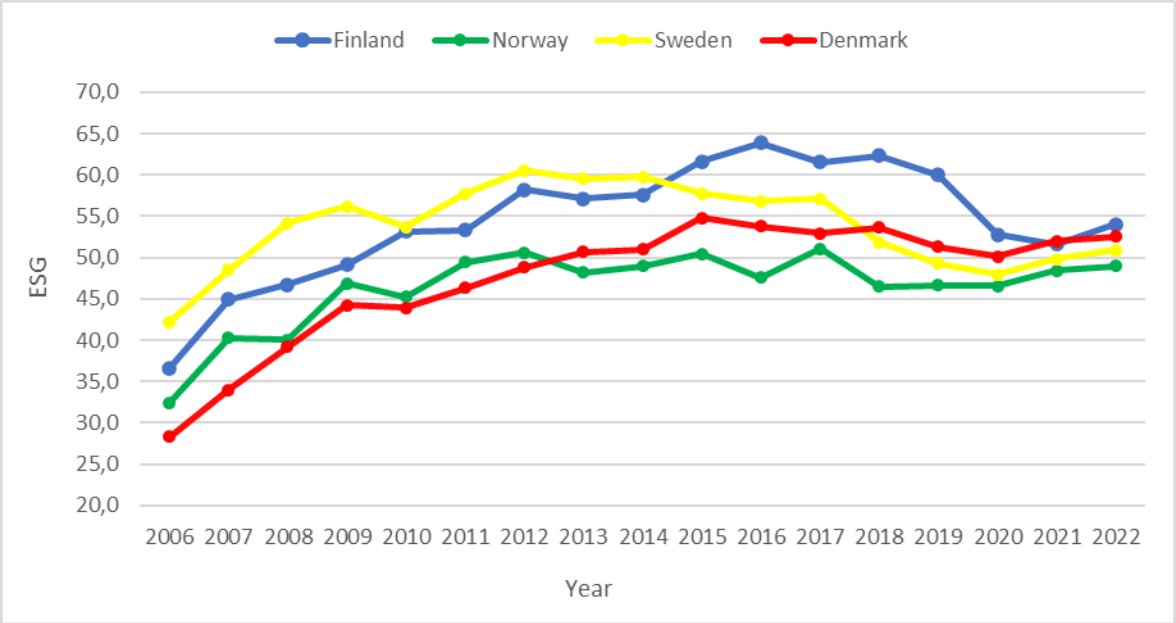

FIGURE 3 The development of ESG scores in the Nordic countries between 2006-2022

Table 2 presents the descriptive statistics about the main variables used in the study. The average ESG score is 50,95 where the standard deviation is 18,62. The ESG scores have a wide range of variation, varying from the minimum of 1,32 to the maximum of 95,16. The table presents also separate descriptive statistics for the three individual dimensions of ESG. The social dimension has the highest mean score with the percentage of 55,23. Additionally, the average score of the environmental dimension is the lowest when comparing to the other dimensions. Notable is the fact that the environmental dimension is the only dimension that has zero as a minimum value. The governance factor has the highest minimum value with 1,24 as well as the highest maximum value with 98,56. Despite the small differences between the three dimensions, the combined ESG score and the three dimensions of ESG have rather similar descriptive statistics overall. These values are also in line with the ones by Velte (2017) in the sample of German companies where the average score of ESG was 56,60. However, the governance dimension had noticeably the lowest mean score (49,80) in Velte's study. There the social dimension has the highest mean value (61,20) similarly to this study but instead the environmental score was significantly higher (58,90) compared to this study.

The table presents also the descriptive statistics of the variables describing financial performance. ROA has an average value of 4,20 varying from -608,73 to 358,88. Tobin's Q has an average value of 1,77, values varying from the minimum of 0,00 to 42,56. For the control variables' part, the average value of firm leverage is 24,02 and the mean value of beta is 0,88. The average value of research and development expenses is 778 699,62.

The average value of firm size is 14,85 varying from 3,87 to 21,10. The values regarding board size vary between 1 and 28 with the mean value of 8,46. The mean value of the board size supports the study focusing on the German and Austrian

context where the mean value was 8,18 (Velte, 2016.) The average value of women on the board (WOB) is 30,25. The values vary from the minimum of 0 to the maximum of 75. The proportion of women on the board is quite similar than in the study by Kahloul et al. (2022) where the average proportion was 29,90 in the French companies' part. However, when compared to the study by Velte (2016), the mean value of women on the board was only 19,80. Thus, it could be concluded that the boards explored in this study are more equal than in German and Austria. However, the importance of increasing the number of women on the board has raised its meaning during the latest years which can explain the growth between the results by Velte (2016) and Kahloul et al. (2022) as well as with this study.

It can be noticed that the number of observations vary between the variables. ROA, Tobin's Q, firm size, firm leverage and beta have the most observations. The numbers of these observations vary between 5729 and 6603. The independent variables which describe sustainability and board gender diversity have approximately 3000 observations which represents approximately half of the number of the observations of the other variables.

TABLE 2 Descriptive statistics

Variable	OBS	Min	Max	Mean	St.dev	P25	Median	P75
Sustainability variables:								
ESG	3207	1,32	95,16	50,95	18,62	37,59	52,52	64,54
ENV	3206	0	98,12	47,93	26,52	26,07	50,37	69,86
SOC	3206	0,71	97,34	55,23	22,84	38,22	57,91	73,44
GOV	3207	1,24	98,56	52,24	22,40	34,09	52,32	70,87
Financial performance variables:								
ROA	6407	-608,73	358,88	4,20	21,40	2,08	5,97	10,21
TOBIN'S Q	6051	0,00	42,56	1,77	2,59	0,56	0,99	1,91
Board gender diversity variable:								
WOB	3206	0,00	75,00	30,25	13,85	20,00	30,77	40,00
Control variables:								
FSIZE	6603	3,87	21,10	14,85	2,19	13,37	14,90	16,45
R&D	2696	8,00	47244000,00	778699,62	3139325,06	17889,25	72000,00	370750,00
FLEV	6570	0,00	260,03	24,06	18,51	9,67	22,18	35,63
BETA	5729	-19,81	7,55	0,88	0,75	0,56	0,85	1,20
BSIZE	3205	1,00	28,00	8,46	2,67	7,00	8,00	10,00

This table reports the descriptive statistics for the sample. The variables are divided into four categories: sustainability variables, financial performance variables, board gender diversity variable and control variables. The definitions of variables are presented in Appendix.

5 EMPIRICAL RESULTS

5.1 Correlations

Table 3 presents the correlation matrix between the variables used in this research. If correlation between two variables is more than 0,8, it is generally considered that there is a multicollinearity problem (Kennedy, 2003, sited in Kahloul et al., 2022). The Pearson correlation matrix below indicates correlation greater than 0,8 between ESG and SOC (0,830) so multicollinearity problem should be considered there. However, it is expected that multicollinearity might be high between ESG and the three dimensions because environmental, social and governance factors are derived from the overall ESG variable. Positive and significant correlation between the separate factors of ESG and the combined ESG score has been noticed also by Velte (2017). In the study by Velte (2017), the correlations don't however surpass the threshold of multicollinearity. The sample in the study of Velte (2017) considers only listed German companies so the sample is rather different compared to the sample in this research. Additionally, multicollinearity can be tested with variance inflation factors (VIF). The VIF value higher than 10 indicates a severe multicollinearity problem. (Velte, 2017.) The values of VIF are also conducted in this research and the highest value according to the results is 3,166. This result indicates that there isn't any multicollinearity problem. Otherwise, the correlations don't exceed the margin of multicollinearity as the highest value between other variables than the sustainability variables is 0,587.

The overall ESG score, environmental score and social score are positively and strongly correlated with ROA. However, governance score is negatively and strongly correlated with ROA. The correlations are even more consistent between the ESG related scores and Tobin's Q. Tobin's Q is negatively and strongly correlated with ESG score, environmental score, social score and governance score. Velte (2017) found also positive correlation between all the ESG related variables and ROA. As a difference to this study, Velte (2017) found also a

positive correlation between the ESG score and Tobin's Q. On the contrary, Kahloul et al. (2022) explored negative correlation between both ESG and ROA and ESG and Tobin's Q.

The combined ESG score as well as the three dimensions are positively and significantly correlated with the variables describing firm size and board size. Due to this finding, it can be concluded that bigger firms have more resources and stronger motivation to invest in ESG actions. WOB is also positively and significantly correlated with both the combined ESG score and the three dimensions which supports the studies stating that gender diverse board will enhance the ESG performance of the company (Ishwar, 2022; Velte, 2016).

Velte (2017) examined that BETA, describing the systematic risk, is negatively and significantly correlated with ROA and Tobin's Q. Negative and significant correlations between leverage and Tobin's Q and ROA were found also in the study by Kahloul et al. (2022). According to the correlation matrix below, the correlations regarding beta are in accordance with the results by Velte (2017) as beta is negatively and significantly correlated with Tobin's Q and ROA at the 0.05 level. Similarly to beta, the variable describing unsystematic risk, firm leverage, is negatively correlated with both ROA and Tobin's Q but the correlation is only significant with Tobin's Q at the 0.01 level. Velte (2017) didn't conduct any significant correlations between the firm risk variables and the variables describing ESG. Significant correlations between the overall ESG score and beta and firm leverage aren't found either in this study. Instead, Kahloul et al. (2022) found positive and significant correlation between ESG and leverage. Additionally, in this study, BETA is positively and significantly correlated with the governance factor and FLEV is positively and significantly correlated with the environmental factor.

TABLE 3 Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) ESG	1											
(2) ENV	0,786**	1										
(3) SOC	0,830**	0,725**	1									
(4) GOV	0,576**	0,328**	0,348**	1								
(5) ROA	0,086**	0,173**	0,130**	-0,096**	1							
(6) TOBIN'S Q	-0,174**	-0,259**	-0,156**	-0,110**	0,126**	1						
(7) FSIZE	0,519**	0,541**	0,557**	0,321**	0,147**	-0,269**	1					
(8) R&D	0,195**	0,214**	0,247**	0,182**	0,041	-0,011	0,369**	1				
(9) FLEV	0,035	0,064*	0,037	-0,007	-0,011	-0,331**	0,173**	-0,062*	1			
(10) BETA	0,013	0,029	-0,028	0,070**	-0,055*	-0,052*	-0,001	-0,016	0,044	1		
(11) BSIZE	0,360**	0,413**	0,403**	0,129**	0,089**	-0,195**	0,587**	0,352**	0,059*	-0,069**	1	
(12) WOB	0,165**	0,061*	0,140**	0,191**	-0,063*	0,027	0,059*	0,007	0,093*	0,002	-0,115**	1

The table reports the correlations for the variables used in the analysis. ** and * denote significance at the 0.01 and 0.05 levels, respectively.

5.2 Regression results

5.2.1 ESG and financial performance

The results of the regression analyses are presented in the next three tables (Table 4, Table 5 and Table 6). The figures in the tables present the standardized coefficients betas and standard errors are shown in the parentheses. The regression models 1, 2, 3 and 4 are presented in table 4. Table 4 shows the regressions between the overall ESG score and the variables describing financial performance. It also includes the examination of the regressions of the separate dimensions of ESG.

TABLE 4 ESG and financial performance

	ROA (1)	**TOBIN'S Q (1)**	**ROA (2)**	**TOBIN'S Q (2)**
ESG	0,037	-0,022		
	(0,034)	(0,005)		
ENV			0,175***	-0,056
			(0,029)	(0,004)
SOC			0,045	0,034
			(0,034)	(0,005)
GOV			-0,183***	-0,052**
			(0,023)	(0,004)
FSIZE	0,130***	-0,184***	0,114**	-0,164***
	(0,383)	(0,057)	(0,401)	(0,061)
R&D	-0,013	0,032	-0,008	0,037
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,041	-0,245***	-0,041	-0,249***
	(0,038)	(0,006)	(0,037)	(0,006)
BETA	-0,053**	-0,039*	-0,042*	-0,033
	(0,637)	(0,096)	(0,627)	(0,096)
BSIZE	-0,012	-0,094***	-0,059*	-0,095***
	(0,216)	(0,032)	(0,215)	(0,033)
Constant	-7,700	7,707***	-1,711	7,547***
	(4,899)	(0,735)	(5,020)	(0,768)
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	3,1 %	24,9 %	7,1 %	25,2 %
Observations	1523	1523	1523	1523

The table reports the estimates of four alternative versions of the following regression equations. The first and second regressions consider the overall ESG, and the third and fourth consider the separate dimensions

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + FixedEffects + \varepsilon i,t$$

where the dependent variable Financial $Performance_{i,t}$ is one of the two alternative measures of financial performance: ROA or Tobin's Q for company i at time t. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

According to table 4, it could be concluded that any significance can't be detected between both ESG and ROA, and ESG and Tobin's Q. However, ESG has a positive association with ROA while the relationship is negative between ESG and Tobin's Q. Due to the non-significant results, accurate and generalized conclusions can't be stated. The results of the regression between ESG and ROA found in this study are partly consisted with the results by Velte (2017) where a positive relationship was found between ESG and ROA. On the contrary to the findings in table 4, Velte (2017) found the relationship also significant. When Tobin's Q is considered, the results in table 4 are in line with the ones found by Kahloul et al. (2022). In the study, negative and nonsignificant regression was found between CSR and Tobin's Q (Kahloul et al., 2022). The results in table 4 are also partly in line with the ones by Velte (2017) as any significance wasn't discovered there either. While the relationship between ESG and Tobin's Q is negative in this study, the association found by Velte was positive.

While nonsignificant relationships have been examined between ESG and the financial performance variables, significant results have been found between some of the control variables and both ROA and Tobin's Q. The associations between FSIZE and ROA, and FSIZE and Tobin's Q are significant at a 1% level. However, in the case of ROA, the relationship is positive while in the case of Tobin's Q, the relationship is negative. One explanation to the positive and significant result between FSIZE and ROA could be that generally bigger companies have better return on assets simply due to the larger size of the company. Instead, BSIZE indicates negative relationship with both ROA and Tobin's Q, but the relationship is significant at a 1% level only with Tobin's Q. The variables describing firm risk are negatively associated with the financial performance variables. The strongest significance at a 1% level can be detected between FLEV and Tobin's Q. The negative and significant regression means that more levered organizations perform worse than less levered companies. Any significancy can't be found between R&D and financial performance variables. Thus, it can't be proven that investing in research and development would enhance financial performance of the firm, according to table 4 at least.

In addition to the overall ESG score, table 4 includes also the examination for the separate dimensions of ESG. These dimensions are environmental, social and governance scores. According to the table, ENV is positively associated with ROA at a 1% significancy level. On the contrary ENV has a negative relationship with Tobin's Q but the relationship is non-significant. Additionally, significance at a 1% level can also be observed between GOV and ROA. The relationship is however negative. The regression is negative with Tobin's Q as well, but the significance level is only at 5%. SOC has positive regression with both ROA and Tobin's Q, but any significance can't be observed. As a result, it can be concluded that environmental and governance factors show the strongest results. In the study by Velte (2017), the governance factor had the strongest impact on ROA compared to the other factors. Velte (2017) found also that all the regressions are positive between the separate factors of ESG and the variables describing financial performance. However, in table 4, both positive and negative

regressions can be noticed. When ESG is divided into the separate dimensions, the regressions between control variables and the financial performance variables are consisted with the results where ESG is considered as the overall score.

According to these findings, the first hypothesis about the relationship between ESG and ROA being positive and significant can't be supported. Additionally, the adjusted R-square is also relatively low which means that the model can explain only 3,1% of the variance. Instead, the second hypothesis can be confirmed because the relationship between ESG and Tobin's Q is both negative and non-significant. While the adjusted R-square is low in the case of ROA, Tobin's Q results relatively high adjusted R-square. According to table 4, the model explains 24,9% of the relationship between ESG and Tobin's Q. Thus, it highlights the better accuracy of the results with Tobin's Q compared to the results where ROA is used.

While any reliable conclusions about the impact of ESG on ROA or Tobin's Q can't be made, some findings about the influence of the separate dimensions of ESG can be made. Organizations which have better environmental score will have better return on assets. Instead, better environmental score will lead to lower Tobin's Q. Additionally, the better the governance score, the lower will ROA and Tobin's Q be. When ESG is divided into environmental, social and governance factors, the value of the adjusted R-square increases. While the adjusted R-square is 3,1% in the first column in table 4, the corresponding value is 7,1% in the third column. This means that when ESG is divided into the separate dimensions, the model explains 7,1% of the variance. The explanation level is still rather low, but compared to the value of 3,1%, the difference is noticeable. Likewise in the case of Tobin's Q, the adjusted R-square is 24,9% when ESG is considered as the overall score. When ESG is divided into the separate factors, the corresponding value is 25,2%. Thus, the model explains 0,3% more of the variance when ESG is considered as the separate environmental, social and governance factors. As a result, it can be concluded that more significant results can be observed when ESG is divided into the three separate factors.

5.2.2 The effect of board gender diversity on the relationship between ESG and financial performance

The third hypothesis states that the relationship of ESG on financial performance is more pronounced in organizations which have more women on the board. This means that the relationships between ESG and the financial performance variables, ROA and Tobin's Q, are expected to be more significant when the board of directors represents higher amount of gender diversity.

Table 5 presents the regression models 5 and 6. While any significance isn't noticed between ESG and the financial performance variables in table 4, significant relationships can be observed in table 5 where women on board (WOB) has been added to the examination.

TABLE 5 The interaction of board gender diversity and ESG with financial performance between years 2006-2022

	ROA (1)	**TOBIN'S Q (1)**	**ROA (2)**	**TOBIN'S Q (2)**
ESG	0,036	-0,020	-0,102	-0,101*
	(0,034)	(0,005)	(0,066)	(0,010)
WOB	-0,053*	0,072***	-0,234***	-0,034
	(0,043)	(0,006)	(0,109)	(0,016)
ESGxWOB			0,258**	0,151*
			(0,002)	(0,000)
FSIZE	0,149***	-0,210***	0,140***	-0,216***
	(0,397)	(0,059)	(0,398)	(0,060)
R&D	-0,014	0,034	-0,010	0,036
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,039	-0,247***	-0,041	-0,248***
	(0,038)	(0,006)	(0,037)	(0,006)
BETA	-0,052**	-0,039*	-0,051**	-0,038*
	(0,636)	(0,095)	(0,635)	(0,095)
BSIZE	-0,021	-0,082***	-0,019	-0,080***
	(0,218)	(0,033)	(0,218)	(0,033)
Constant	-8,254*	7,836***	-0,224	8,637***
	(4,906)	(0,735)	(5,826)	(0,874)
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	3,2 %	25,2 %	3,5 %	25,3 %
Observations	1523	1523	1523	1523

The table reports the estimates of four alternative versions of the following

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 WOB_{i,t} + \beta_3 ESG*WOB_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

where the dependent variable Financial $Performance_{i,t}$ is one of the two alternative measures of financial performance: ROA or Tobin's Q for company i at time t. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Firstly, table 5 shows that WOB has a negative relationship with ROA while the relationship is positive with Tobin's Q. The relationship is significant with ROA at a 10% level and with Tobin's Q at a 1% level. This means that the higher the proportion of women on the board, the higher Tobin's Q will be. On the contrary, higher WOB will contribute to lower ROA. In that case, the results might indicate

that women are more risk-averse which might lead to lower financial performance. However, due to the strong results between WOB and Tobin's Q, it can be concluded that higher proportion of women on board would actually most likely increase financial performance of the firm, at least when measured with market-based variable. Thus, these findings signal controversial results.

Additionally, table 5 shows that WOB influences significantly the relationship between ESG and the financial performance variables. The variable ESG x WOB has a positive regression with ROA at a significance level of 5%. Moreover, the relationship is also positive between ESG x WOB and Tobin's Q at the significance level of 10%. This indicates that the effect of ESG has on both ROA and Tobin's Q is more pronounced in organizations that have more gender-diverse board. These findings are consisted with the earlier studies (Kahloul et al., 2022; Post et al., 2011; Reguera-Alvarado et al., 2017; Velte, 2016). For example, Kahloul et al. (2022) found that the effect of the relationship between the ESG score and board gender diversity on ROA is positive and significant at a 10% level. Company's performance will improve when there are more women on the board monitoring and controlling the efficient performance of ESG by managers. With gender-diverse board, controlling managerial behaviour and guaranteeing strategic decisions might become easier and more effective. (Kahloul et al., 2022.) Adding WOB into the examination strengthens additionally the relationships between other variables. When WOB is included as the independent variable, the regression between ESG and Tobin's Q is more significant at a 10% level. On the contrary to this, any significant relationships between ESG and financial performance variables aren't observed in table 4.

When ESG is divided into three separate dimensions, the results are even more significant. The results regarding the separate dimensions are presented in table 6. Table 6 describes the regression models 7 and 8.

TABLE 6 The interaction of board gender diversity and the three dimensions of ESG with financial performance between years 2006-2022

	ROA (1)	**TOBIN'S Q (1)**	**ROA (2)**	**TOBIN'S Q (2)**
ENV	0,173***	-0,048	0,140***	-0,072*
	(0,029)	(0,004)	(0,030)	(0,005)
SOC	0,044	0,038	-0,005	0,002
	(0,034)	(0,005)	(0,037)	(0,006)
GOV	-0,181***	-0,058**	-0,219***	-0,085***
	(0,023)	(0,004)	(0,026)	(0,004)
WOB	-0,022	0,075***	-0,160***	-0,024
	(0,042)	(0,006)	(0,085)	(0,013)
ESGxWOB			0,194***	0,139**
			(0,001)	(0,000)
FSIZE	0,123***	-0,195***	0,121**	-0,197***
	(0,418)	(0,064)	(0,417)	(0,064)
R&D	-0,008	0,039	-0,001	0,044*
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,040	-0,251***	-0,042	-0,252***
	(0,037)	(0,006)	(0,037)	(0,006)
BETA	0,042*	-0,033	-0,040	-0,031
	(0,627)	(0,096)	(0,626)	(0,096)
BSIZE	-0,062*	-0,085***	-0,064**	-0,086***
	(0,217)	(0,033)	(0,216)	(0,033)
Constant	-2,054	7,749***	3,299	8,403***
	(5,043)	(0,770)	(5,424)	(0,828)
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	7,1 %	25,5 %	7,4 %	25,7 %
Observations	1523	1523	1523	1523

The table reports the estimates of four alternative versions of the following

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 WOB_{i,t} + \beta_5 ESG*WOB_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 R\&D_{i,t} + \beta_8 FLEV_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

where the dependent variable Financial $Performance_{i,t}$ is one of the two alternative measures of financial performance: ROA or Tobin's Q for company i at time t. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 6 shows that ESG x WOB has positive and significant relationship with both ROA and Tobin's Q. The significance level is 1% in the case of ROA and 5% in the case of Tobin's Q. Thus, significance is even stronger than observed in table 5. Overall, the results observed in table 5 and table 6 give strong evidence that more women on board will enhance the effect ESG has on financial performance. Additionally, significance can be noticed between the separate factors of ESG and financial performance variables. Similarly, when studying the relationship between the separate factors and financial performance, table 6 shows that ENV has a strong positive relationship with ROA at a significance level of 1%. Moreover, negative relationship at a significance level of 1% can be observed between GOV and ROA and GOV and Tobin's Q. This finding is also consistent with table 4 where negative and significant relationships have been found between GOV and financial performance.

According to table 5 and table 6, the adjusted R-squares increase when ESG is divided into the separate factors. In table 5, the model explains only 3,5% of the variance of ROA while in table 6 the corresponding value is 7,4%. In other words, the model suits better for analyzing the relationship between the separate factors of ESG and ROA than between the overall ESG score and ROA. Similarly in table 5, the adjusted R-square of Tobin's Q is 25,3% while in table 6 the corresponding value is 25,7%. The adjusted R-squares are noticeably higher with Tobin's Q than with ROA, such as in table 4.

According to the results presented in table 5 and 6, the third hypothesis can be accepted. The findings confirm clearly that firms with gender-diverse boards will have stronger influence in the relationship between ESG and financial performance than those with only few women on boards.

5.3 Robustness tests

Six different robustness tests are implemented to improve the reliability of the results achieved in the main tests. In the first four tests, regressions are tested in separate countries: in Finland, Norway, Sweden and Denmark. Firstly, examining separate countries will point out the consistency between the observed variables in the regressions across the countries. Secondly, testing the relationship in separate countries tries to prove that whether the regression is run for each separate country or all countries together, it will lead to same economic relationships. Additionally, the relationship between the independent and dependent variables should be homogenous between the countries and testing separate regressions shouldn't significantly change the coefficients. The results achieved in the main tests should reflect a broader conclusion that could be applied across countries. Therefore, observed relationships shouldn't be driven by particular characteristics of a separate country. Due to the similar political models and regulatory in Nordic countries, it would be expected that the observed relationships would be rather similar between the separate countries and, thus be consisted with the results in the main tests.

Table 7 shows the relationship between ESG and ROA. The regression between ESG and ROA is nonsignificant in each country. Nonsignificant relationships have been observed also in the main test. In Finland, Norway and Denmark the regression is negative while in Sweden the relationship is positive. As Sweden forms the biggest part of the sample, the results in Sweden are in line with the main test, for the major part at least. Likely in the main test, FSIZE has positive and significant relationship at a 1% level with ROA. In the main test, the variables describing firm risk have negative relationship with ROA. Similarly, it can be observed in table 7 that FLEV is negatively associated with ROA in every country. Instead, BETA and ROA has a negative relationship in all other countries than Sweden. The adjusted R-squares differ a lot between the countries. In Finland and Denmark, the model explains 13,8% and 25,2% of the variance. On the contrary, in Norway and Sweden the corresponding values are only 8,2% and 6,5%. Due to the strong impact of the results from Sweden, the R-square in the main test is also rather low. All in all, the results in the first test are in line with the main test and verify the accuracy of the findings from the main test.

TABLE 7 Regression between ESG and ROA in Finland, Norway, Sweden and Denmark between years 2006-2022

	Finland	**Norway**	**Sweden**	**Denmark**
	ROA	**ROA**	**ROA**	**ROA**
ESG	-0,011	-0,040	0,008	-0,106
	(0,041)	(0,088)	(0,059)	(0,074)
FSIZE	0,006	0,292**	0,216***	0,369***
	(0,477)	(1,105)	(0,764)	(1,035)
R&D	-0,155**	-0,157	-0,080*	0,280***
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,288***	-0,047	-0,029	-0,147**
	(0,049)	(0,083)	(0,078)	(0,064)
BETA	-0,107**	-0,144*	0,001**	-0,110*
	(1,397)	(1,646)	(0,932)	(1,564)
BSIZE	-0,089*	0,109	0,015	-0,244***
	(0,196)	(0,595)	(0,431)	(0,585)
Constant	25,519***	-38,249**	-37,023***	-25,842*
	(6,226)	(16,575)	(10,243)	(13,819)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	13,8 %	8,2 %	6,5 %	25,2 %
Observations	380	194	703	246

The table reports the estimates of four alternative versions of the following regression equation:

$$ROA_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 8 presents the relationship between the three separate dimensions of ESG, and ROA. Noticeable is the fact that Sweden has the strongest significance at a 1% level for both the environmental and governance factors. The relationship is positive between ENV and ROA and negative between GOV and ROA, like in the main test. The negative and significant relationship between GOV and ROA is also observed in Denmark which strengthens the finding in the main test stating that higher governance score will lead to lower ROA. While any significance can't be found between SOC and ROA in the main test, significance at a 5% level can be found in Finland. In other countries, the relationship is however non-significant and hence consistent with the overall results.

As table 7, table 8 shows that the adjusted R-square is a lot higher in Finland and Denmark than in Norway and Sweden. When ESG is divided into ENV, SOC

and GOV, the adjusted R-square increases in all other countries except Norway. The adjusted R-squares increase also in the main test when ESG is divided into the separate factors.

TABLE 8 Regression between ENV, SOC and GOV, and ROA in Finland, Norway, Sweden and Denmark between years 2006-2022

	Finland	**Norway**	**Sweden**	**Denmark**
	ROA	**ROA**	**ROA**	**ROA**
ENV	0,670	-0,036	0,249***	0,104
	(0,038)	(0,087)	(0,053)	(0,050)
SOC	-0,161**	-0,078	0,007	0,053
	(0,044)	(0,089)	(0,062)	(0,065)
GOV	0,046	0,056	-0,166***	-0,282***
	(0,030)	-0,069	(0,042)	(0,043)
FSIZE	0,029	0,310**	0,119*	0,270***
	(0,503)	(1,285)	(0,811)	(1,024)
R&D	-0,168***	-0,166*	-0,058	0,275***
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,321***	-0,074	-0,037	-0,091
	(0,052)	(0,090)	(0,078)	(0,062)
BETA	-0,117**	-0,144*	0,003	-0,043
	(1,463)	(1,724)	(0,918)	(1,543)
BSIZE	-0,078	0,134	-0,032	-0,187**
	(0,201)	(0,650)	(0,430)	(0,587)
Constant	25,198***	-41,714**	-14,284	-12,363
	(6,524)	(18,327)	(11,213)	(13,902)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	14,3 %	7,8 %	9,7 %	31,8 %
Observations	380	194	703	246

The table reports the estimates of four alternative versions of the following regression equation:

$$ROA_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

The next two tables consider the relationship between the sustainability variables and Tobin's Q. Table 9 considers the overall ESG score. When taking the overall ESG score into account, the only significant finding can be noticed in Denmark where the significance is at a 5% level. Otherwise, the relationships are

nonsignificant. These results are similar to the main test because significance in the relationships haven't been noticed there either. As a negative relationship has been found in the main test, the regression is also negative in all of the countries except in Sweden. However, the regressions regarding FSIZE and FLEV are similar to the results in the main test where negative and significant regressions have also been observed. Negative and significant relationship between FSIZE and Tobin's Q at a 1% level can be observed in Norway and Sweden and negative and significant relationship between FLEV and Tobin's Q at a 1% level can be noticed in Finland, Sweden and Denmark. In the main test, BETA and BSIZE are negatively associated with Tobin's Q. BETA and Tobin's Q have also a negative relationship in all separate countries while the regression between BSIZE and Tobin's Q is negative in all countries except Norway.

TABLE 9 Regression between ESG and Tobin's Q in Finland, Norway, Sweden and Denmark between years 2006-2022

	Finland	**Norway**	**Sweden**	**Denmark**
	TOBIN'S Q	**TOBIN'S Q**	**TOBIN'S Q**	**TOBIN'S Q**
ESG	-0,044	-0,060	0,013	-0,194**
	(0,003)	(0,007)	(0,008)	(0,021)
FSIZE	-0,017	-0,437***	-0,330***	0,003
	(0,037)	(0,092)	(0,104)	(0,290)
R&D	-0,135**	-0,205**	0,057***	0,150**
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,460***	-0,123*	-0,249***	-0,322***
	(0,004)	(0,007)	(0,011)	(0,018)
BETA	-0,267**'	-0,253***	-0,035	-0,038
	(0,107)	(1,380)	(0,127)	(0,439)
BSIZE	-0,164***	0,030	-0,085*	-0,063
	(0,015)	(0,050)	(0,059)	(0,164)
Constant	3,951***	8,514***	13,565***	9,187**
	(0,479)	(1,385)	(1,398)	(3,876)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	39,4 %	24,0 %	26,6 %	30,8 %
Observations	380	194	703	246

The table reports the estimates of four alternative versions of the following regression equation:

$$\text{Tobin's } Q_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 FSIZE_{i,t} + \beta_3 R\&D_{i,t} + \beta_4 FLEV_{i,t} + \beta_5 BETA_{i,t} + \beta_6 BSIZE_{i,t} + \text{FixedEffects} + \varepsilon_{i,t}$$

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

In table 10, ESG is divided into the separate dimensions. The regression between the environmental dimension and Tobin's Q is negative and significant only in Sweden. Between the social dimension and Tobin's Q, significant results can be explored in Denmark where the relationship is positive and significant at a 5% level. On the contrary, SOC and Tobin's Q are associated negatively and significantly at a 5% level in Finland. For the governance factor, significance at a 5% level can be noticed in Finland and Denmark where the relationship is negative. These results correlate partly with the results in the main test, where negative and significant relationship at a 5% level has been observed between GOV and Tobin's Q. In the main test, FSIZE, FLEV and BSIZE have a negative and significant relationship with Tobin's Q at a level of 1%. Negative and significant relationship at a 1% level can be noticed between FSIZE and Tobin's

Q in Norway and Sweden, between FLEV and Tobin's Q in Finland, Sweden and Denmark and between BSIZE and Tobin's Q in Finland. In every country expect Norway the adjusted R-squares are higher when ESG is divided into separate factors which is consistent with the results where ROA was used as the dependent variable.

TABLE 10 Regression between ENV, SOC and GOV, and Tobin's Q in Finland, Norway, Sweden and Denmark between years 2006-2022

	Finland	**Norway**	**Sweden**	**Denmark**
	TOBIN'S Q	**TOBIN'S Q**	**TOBIN'S Q**	**TOBIN'S Q**
ENV	0,147**	-0,080	-0,119**	-0,028
	(0,003)	(0,007)	(0,007)	(0,015)
SOC	-0,157**	-0,059	0,06	0,028**
	(0,003)	(0,007)	(0,009)	(0,019)
GOV	-0,109**	-0,002	0,018	-0,223**
	(0,002)	(0,006)	(0,006)	(0,012)
FSIZE	0,018	-0,390***	-0,296***	-0,076
	(0,038)	(0,107)	(0,112)	(0,297)
R&D	-0,101*	0,203**	0,054	0,162**
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,461***	-0,141*	-0,254***	-0,284***
	(0,004)	(0,008)	(0,011)	(0,018)
BETA	-0,300***	-0,249***	-0,031	0,007
	(0,111)	(0,144)	(0,127)	(0,448)
BSIZE	-0,186***	0,053	-0,070	-0,034
	(0,015)	(0,054)	(0,060)	(0,170)
Constant	3,888***	7,918***	12,541***	12,146***
	(0,497)	(1,531)	(1,555)	(4,033)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	40,8 %	23,8 %	26,8 %	32,6 %
Observations	380	194	703	246

The table reports the estimates of four alternative versions of the following regression equation:

$$\text{Tobin's } Q_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

The adjusted R-squares are noticeably higher when financial performance is measured with Tobin's Q than with ROA. This finding is consistent with the main test where the adjusted R-squares were higher with Tobin's Q as the dependent

variable compared to when ROA was used as the dependent variable. Thus, it can be concluded than when the Nordic countries are observed separately, the results referring to the adjusted R-squares are in line with the main tests.

The second test concerns the moderating role of board gender diversity. It aims at verifying the results of the influence of the board gender diversity on the relationship between ESG and financial performance. The variables used in the regression are otherwise same than in the model 5, 6, 7 and 8 but the percentage of women on board (WOB) has been replaced with the Blau index. The Blau index is a heterogeneity index used to measure the board's gender diversity (Kahloul et al., 2022). According to Campbell and Minguez-vera (2008), when measuring board gender diversity with the percentage of women on board, the high percentage will increase instead the homogeneity of this gender which could mean that it won't actually measure the board gender diversity reliably. To prevent this problem, the Blau index could be used to verify these results achieved with the measurement of the percentage of women on board. The maximum value of the Blau index is achieved when the proportion of men and women is equal. Therefore, the Blau index ranges from 0 to 0,5 (Campbell & Minguez-vera, 2008; Kahloul et al., 2022) where 0 means that the board consists fully of either men or women and 0,5 means that both genders are equally represented.

The Blau index is calculated as follows:

Blau index: $1 - (\text{proportion of women}^2 + \text{proportion of men}^2)$

Table 11 shows the moderating impact of Blau index to the relationship between ESG and financial performance variables. Compared to the results where WOB is used to describe board gender diversity, results presented in table 11 are rather similar. However, the results are slightly more significant when WOB is used. When Blau index x ESG is included into the examination, Blau index is found to be negatively and significantly associated with ROA at a 5% level. However, the relationship between Blau index and Tobin's Q is only positive and non-significant. Similarly, WOB is both negatively and significantly correlated with ROA at a 1% level while it has only a negative and non-significant relationship with Tobin's Q. While ESG x WOB is positively and significantly associated with both ROA and Tobin's Q, Blau index x ESG has a positive and significant association only with ROA. When Tobin's Q is considered as the variable describing financial performance, the relationship is only positive. However, these results presented in table 11 confirm the results gained in the main test where board gender diversity is described with the variable WOB. As a conclusion, the results stating that the relationship between ESG and financial performance is stronger in gender-diverse boards can be proved to be true at least when ROA is considered.

TABLE 11 The moderating impact of BLAU to the relationship between ESG and financial performance between years 2006-2022

	ROA (1)	**TOBIN'S Q (1)**	**ROA (2)**	**TOBIN'S Q (2)**
ESG	0,038	-0,024	-0,103	-0,075
	(0,034)	(0,005)	(0,086)	(0,013)
Blau index	-0,043	0,093***	-0,168**	0,048
	(4,635)	(0,693)	(11,207)	(1,677)
Blau index x ESG			0,218*	0,078
			(0,214)	(0,032)
FSIZE	0,145***	-0,216***	0,136***	-0,219***
	('0,395)	(0,059)	(0,398)	(0,059)
R&D	-0,013	0,034	-0,012	0,034
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,039	-0,250***	-0,039	-0,250***
	(0,038)	(0,006)	(0,038)	(0,006)
BETA	-0,053**	-0,039*	-0,052**	-0,038*
	(0,637)	(0,095)	(0,636)	(0,095)
BSIZE	-0,015	-0,086***	-0,013	-0,085***
	(0,216)	(0,032)	(0,216)	(0,032)
Constant	-7,550	7,652***	0,319	8,132***
	(4,899)	(0,732)	(6,465)	(0,968)
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	3,1 %	25,5 %	3,3 %	25,4 %
Observations	1523	1523	1523	1523

The table reports the estimates of four alternative versions of the following regression equation:

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 BLAU_{i,t} + \beta_3 BLAU*ESG_{i,t} + \beta_4 FSIZE_{i,t} + \beta_5 R\&D_{i,t} + \beta_6 FLEV_{i,t} + \beta_7 BETA_{i,t} + \beta_8 BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

where the dependent variable Financial $Performance_{i,t}$ is one of the two alternative measures of financial performance: ROA or Tobin's Q for company i at time t. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

In table 12, ESG is divided into separate dimensions of ENV, SOC and GOV. The results are partly in line with the results where WOB is used as the independent variable. Positive and significant result at a 1% level has been found between ESG x WOB and ROA while positive and significant relationship at a 5% level can be observed between Blau index x ESG and ROA. Thus, it can be confirmed that

gender-diverse boards will enhance the relationship between ESG and ROA. While ESG x WOB is also positively and significantly associated with Tobin's Q at a 5% level, the relationship between Blau index and Tobin's Q is only positive and non-significant. Thus, according to the robustness test where Blau index is used as the dependent variable, the results are mostly aligned with the main test where WOB is used but the results are however less strong and less significant with Blau index.

TABLE 12 The moderating impact of BLAU to the relationship between the three dimensions of ESG and financial performance between years 2006-2022

	ROA (1)	**TOBIN'S Q (1)**	**ROA (2)**	**TOBIN'S Q (2)**
ENV	0,173***	-0,051	0,146***	-0,070**
	(0,029)	(0,004)	(0,031)	(0,005)
SOC	0,045	0,033	0,005	0,005
	(0,034)	(0,005)	(0,038)	(0,006)
GOV	-0,182***	-0,058**	-0,212***	-0,079***
	(0,023)	(0,004)	(0,027)	(0,004)
Blau index	-0,025	0,095***	-0,102**	0,041
	(4,551)	(0,694)	(7,767)	(1,184)
Blau index x ESG			0,133**	0,093
			(0,130)	(0,020)
FSIZE	0,123***	-0,198***	0,121***	-0,200***
	(0,414)	(0,063)	(0,414)	(0,063)
R&D	-0,008	0,039	-0,003	0,042*
	(0,000)	(0,000)	(0,000)	(0,000)
FLEV	-0,040	-0,254***	-0,040	-0,254***
	(0,037)	(0,006)	(0,037)	(0,006)
BETA	-0,042*	-0,032	-0,041	-0,031
	(0,627)	(0,095)	(0,627)	(0,096)
BSIZE	-0,061**	-0,089***	-0,062**	-0,090***
	(0,215)	(0,033)	(0,215)	(0,033)
Constant	-1,680	7,526***	2,529	8,031***
	(5,021)	(0,765)	(5,501)	(0,839)
Year Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Adjusted R^2	7,1 %	25,7 %	7,2 %	25,8 %
Observations	1523	1523	1523	1523

The table reports the estimates of four alternative versions of the following regression equation:

$$FinancialPerformance_{i,t} = \alpha + \beta_1 ENV_{i,t} + \beta_2 SOC_{i,t} + \beta_3 GOV_{i,t} + \beta_4 BLAU_{i,t} + \beta_5 BLAU*ESG_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 R\&D_{i,t} + \beta_8 FLEV_{i,t} + \beta_9 BETA_{i,t} + \beta_{10} BSIZE_{i,t} + FixedEffects + \varepsilon_{i,t}$$

where the dependent variable Financial $Performance_{i,t}$ is one of the two alternative measures of financial performance: ROA or Tobin's Q for company i at time t. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

6 SUMMARY AND CONCLUSION

6.1 Conclusions

Organizations are experiencing significant changes in their reporting habits and stakeholders don't anymore focus only on the financial position of the company. An even more important factor is the sustainability of the company and how well it succeeds in integrating it into the core operations in the business. In addition to the requirements from the stakeholders, different directives and laws about sustainability reporting have been issued. For example, The European Union requires that large public companies from the member states must include also the non-financial reports in addition to the financial reports to their annual reporting (European Union Directive 2014/95/EU, 2014). This non-financial reporting is called generally ESG reporting.

Due to the increasing concentration and interest on sustainability issues, the link between ESG performance and financial performance has been widely studied and analyzed during the latest decade. However, the conclusions in the studies have been conflicting, and a clear consensus which would be consistent in every situation has not been concluded yet (Kahloul et al., 2022). Taking these facts into account, the purpose of this study is to explore the relationship between ESG and financial performance. As Kahloul et al. (2022) have stated that one reason to the conflicting results in this relationship might be caused by the affection of other variables, a moderating variable is added to this study through which the relationship between ESG and financial performance is observed. Gender diversity has been a significant theme during the latest years and many actions to improve equality in organizations have been performed. Earlier studies have found out that women most likely don't just focus on maximizing the profits of the board but also take stakeholders' needs into account. Thus, ESG performance would be better in organizations where the board consists of more women. For these reasons, board gender diversity has been added to the study

as the moderating variable influencing the relationship between ESG and financial performance.

This study focuses on the Nordic countries which include Finland, Norway, Sweden and Denmark. The Nordic countries are typically known for their strong economic performance as well as their commitment to sustainable operations which made studying those countries interesting. The development of ESG scores have also been rather similar between the countries and this similarity of the Nordic countries will strengthen the findings gained in the study. In addition, only a little research has focused on the Nordics which increases the importance of choosing just those countries for the sample. The sample consists of 464 publicly listed companies and the observation period covers the years from 2006 to 2022. The significant influence of the Swedish companies to the overall results has to be taken into account as Sweden covers over a half of the data.

Results from the regressions are gained after controlling firm size, research and development expenses, leverage, board size, year, country and industry. The first hypothesis which supposes that ESG is positively and significantly associated with ROA can't be fully supported. Even though the relationship is positive, no significancy can't be detected. However, when studying the three factors of ESG separately, significancy can be noticed. The environmental factor is positively and significantly at a 1% level associated with ROA while the governance factor and ROA is negatively and significantly associated at a 1% level. The finding between the environmental factor and ROA supports the finding by Velte (2017). However, the result of the relationship between the governance factor and ROA is contrary to the results by Velte (2017). According to Velte (2017), governance factor has the strongest positive impact on ROA compared to the other factors. Germany has a long tradition of corporate governance reporting which could be the reason behind the strong results (Velte, 2017). Nordic countries have especially been known for their environmental innovations and green solutions which could highlight the importance of the environmental factor instead.

The second hypothesis supposes that the relationship between ESG and Tobin's Q is negative and non-significant. According to the results of this study this hypothesis can be supported because negative and non-significant regression has been found. Both studies by Kahloul et al. (2022) and Velte (2017) found neutral regression between ESG and Tobin's Q, which strengthens the second hypothesis to be true. Neutral relationship might be explained by the fact that while shareholders will invest in companies with higher ESG scores, the investments companies put into their sustainability actions might overturn the positive financial growth created by the shareholders. For example, companies might change their used materials from non-renewable to renewable or they might exercise more supervision in their working conditions which typically creates expenses in companies. In other words, this would mean that the financial performance of a company will stay the same despite both the increased number of shareholders in a company and the company's increased investment on ESG actions.

While no significancy was found between the separate dimensions of ESG and Tobin's Q in the study by Velte (2017), some significancy is however found in the Nordic context. Significancy at a 5% level is found between the governance factor and Tobin's Q where the regression is negative. Non-significant regressions are discovered between social dimension and Tobin's Q and between environmental dimension and Tobin's Q. The first regression is positive while the latter is negative. Results regarding the relationship between ESG and financial performance have been confirmed with the robustness tests where every Nordic country has been studied separately. The robustness tests strengthen especially the non-significant relationship between ESG and ROA and the negative and significant relationship between GOV and both ROA and Tobin's Q.

According to the results, the relationship between ESG and both financial performance variables is stronger in organizations where the level of board gender diversity is higher. These findings are in line with the prior studies (Kahloul et al., 2022: Reguera-Alvarado et al., 2017; Xie et al., 2019). These results have been reinforced with the robustness test where the percentage of women on board (WOB) has been replaced with the Blau index. According to the robustness test, positive and significant influence board gender diversity has on the relationship between ESG and ROA can be confirmed. However, when Blau index is used, the robustness tests don't indicate board gender diversity having any significant influence on the relationship between ESG and Tobin's Q. Thus, the third hypothesis can be supported which states that the relationship of ESG on financial performance is more pronounced on companies with gender-diverse boards, at least when ROA is used.

Practical implications can be derived from the results of this research. Studying only the relationship between ESG and financial performance don't however give strong results about the relationship. One significant finding is the strong relationship between the environmental factor and ROA. Organizations should therefore invest in their environmental operations because it will enhance the financial performance of the organization as well. The strong negative relationship between the governance factor and the financial performance variables is also a noticeable discovery which suggests that too strict monitoring in the company might affect negatively on the financial performance of the company. When board gender diversity is added as a moderating variable, the relationship between ESG and ROA becomes significant and strong. Therefore, organizations should concentrate on their board structure in order to enhance their performance. Organizations should include more women on their boards so that the genders are equally represented there. Women might improve the operations of the board by improving the decision making in the board and taking different stakeholders' perspectives into account in addition to the board members. Gender-diverse boards will improve ESG performance of the organization but also affect positively the financial performance of the organization.

6.2 Limitations of the study

First limitation of the study concerns the usage of secondary data. The data used in this study has been obtained from the LSEG database similarly to in most of the prior studies. The most reliable way of gathering data is using the primary data. However, collecting data separately from every organization is nearly impossible in this study as the sample is rather large. Additionally, ESG performance is typically measured as ESG score in nearly every study. Yet, collected from the secondary database, ESG score typically includes some subjectivity which might decrease the validity of the results in the study. Thus, alternative measurements of ESG could possibly be used to confirm these findings achieved with the familiar variable measuring ESG. Organizations have typically a sustainability appendix in their annual reports where different numbers regarding the sustainability actions of the organization are presented. Alternative CSR scores are possible to calculate based on this information which would increase the objectivity and validity of the results.

The second limitation deals with the sample choices. The sources used in this study as a theoretical background concentrated almost completely on the developed countries and thus, the developing countries are not considered as data. The Nordic countries that are used here as the sample are known for their strong commitment to sustainability issues. However, the results obtained in the study can't be generalized to all other countries because even inside Europe, countries have different social circumstances and governance which can lead to controversial results between the countries. Therefore, the findings from this study can only be generalized in countries that are similar to the Nordic countries.

As the concept of ESG is still rather new, it will act as the third limitation of this study. The reporting of ESG might still be challenging and unclear in many organizations because new standards and directives are issued constantly. The straight and reliable effects ESG has on financial performance are rather hard to observe yet. The study about the relationship between ESG and financial performance should be conducted later when ESG issues have been better applied into companies' core practices. Then the results would also be clearer and more realistic.

6.3 Future Research

This study has many suggestions for future research. Firstly, due to the constant issuing of new directives regarding sustainability reporting, studying the relationship between ESG and financial performance in different contexts is still relevant in the future. Legislation and new standards will develop the ESG reporting and, thus the conclusion about the relationship might be easier to conclude in the future. Secondly, as board gender diversity is used as a moderating variable in this study, it would be interesting to use different

moderating variables. It would be beneficial to see how the results about the relationship between ESG and financial performance would change if different moderating variables are used. Lastly, this study concerns only publicly listed companies. Instead, future research could concentrate on only non-public companies. For example, the Corporate Sustainability Reporting Directive (CSRD) entered into force in 2023. According to CSRD, all large companies, whether they are listed on the stock market or not, are required to comply with the directive. Hence, studying non-public companies would be possible in the future due to the disclosure requirements of the new directive.

REFERENCES

Adams, R.B. 2016. Women on boards: The superheroes of tomorrow? The Leadership Quarterly 27 (3), 371-386. https://doi-org.ezproxy.jyu.fi/10.1016/j.leaqua.2015.11.001

Adams, R.B. & Ferreira, D. 2009. Women on the boardroom and their impact on governance and performance, Journal of Financial Economics 94 (2), 291-309. https://doi.org.ezproxy.jyu.fi/10.1016/j.jfineco.2008.10.007

Adams, R.B., Hermalin, B.E. & Weisbach, M.S. 2010. The Role of Boards of Directors in Corporate Governanc: A Conceptual Framework and Survey. Journal of Economic Literature 48 (1), 58-107. https://doi-org.ezproxy.jyu.fi/10.1257/jel.48.1.58

Aguilera-Caracuel, J. & Duque-Grisales, E. 2019. Environemental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack. Journal of Business Ethics 168 (2), 315-334. https://doi-org.ezproxy.jyu.fi/10.1007/s10551-019-04177-w

Aktaş, K., Gattai, V. & Natale, P. Board gender quotas and outward foreign direct investment: Evidence from France. Canadian Journal of Economics 56 (4), 1291-1321. https://doi-org.ezproxy.jyu.fi/10.1111/caje.12646

Amarayil Sreeraman, B. & Divan, H. 2023. From financial reporting to ESG reporting: a bibliometric analysis of the evolution in corporate sustainability disclosures. Environment, Development and Sustainability. https://doi-org.ezproxy.jyu.fi/10.1007/s10668-023-03249-2

Arayakarnkul, P., Chatjuthamard, P. & Treepongkaruna, S. 2022. Board gender diversity, corporate social commitment and sustainability. Corporate Social Responsibility and Environmental Management 29 (5), 1706-1721. https://doi-org.ezproxy.jyu.fi/10.1002/csr.2320

Armstrong, A. 2020. Ethics and ESG. Australasian Accounting, Business and Finance Journal 14 (3), 6-17. https://doi-org.ezproxy.jyu.fi/10.14453/aabfj.v14i3.2

Arvidsson, S. & Dumay, J. 2021. Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice? Business strategy and the environment 31 (3), 1091-1110. https://doi-org.ezproxy.jyu.fi/10.1002/bse.2937

Baranga, L.P. & Tanea, E-I. 2022. Introducing the ESG reporting – benefits and challenges -. Journal of Financial Studies 7 (13), 174-181. https://doi-org.ezproxy.jyu.fi/10.55654/JFS.2022.7.13.14

Berg, F., Kölbel, J.F. & Rigobon, R. 2022. Aggregate Confusion: The Divergence of ESG Ratings. Review of Finance 26 (6), 1315-1344. https://doi-org.ezproxy.jyu.fi/10.1093/rof/rfac033

Bhatia, S. & Marwaha, D. 2022. The Influence of Board Factors and Gender Diversity on the ESG Disclosure Score: A Study on Indian Companies. Global Business Review 23 (6), 1544-1157. https://doi-org.ezproxy.jyu.fi/10.1177/09721509221132067

Billio, M., Costola, M., Hristova, I., Latino, C. & Pelizzon, L. 2021. Inside the ESG ratings: (Dis)agreement and performance. Corporate Social Responsibility and Environmental Management 28 (5), 1426-1445. https://doi-org.ezproxy.jyu.fi/10.1002/csr.2177

Brahma, S., Nwafor, C. & Boateng, A. 2020. Board gender diversity and firm performance: The UK evidence. International Journal of Finance and Economics 26 (4), 5704-5719. https://doi-org.ezproxy.jyu.fi/10.1002/ijfe.2089

Campbell, J.L. 2007. Why would corporations behave in socially responsible ways? An institutional theory of corporate social rsponsiblity. Academy of Management Review 32 (3), 946-967. https://doi-org.ezproxy.jyu.fi/10.5465/AMR.2007.25275684

Campbell, K. & Minguez-vera, A. 2008. Gender Diversity on the Boardroom and Firm Financial Performance. Journal of Business Ethics 83 (3), 435-451. https://doi-org.ezproxy.jyu.fi/10.1007/s10551-007-9630-y

CFA. What is ESG Investing and Analysis? Retrieved 5.9.2024 from What is ESG Investing? | CFA Institute

Chams, N. & García-Blandón, J. 2019. Sustainabile or not sustainable? The role of the board of directors. Journal for Cleaner Production 226, 1067-1081. https://doi-org.ezproxy.jyu.fi/10.1016.j.jclepro.2019.04.118

Chatterji, A., Durand, R., Levine, D.I. & Touboul, S. 2015. Do ratings of firms converge? Implications for managers, investors and strategy researches. Strategic Management Journal 37 (8), 1597-1614. https://doi-org.ezproxy.jyu.fi/10.1002/smj.2407

Chen, Z. & Xie, G. 2022. ESG disclosure and financial performance: Moderating role of ESG investors. International Review of Financial Analysis 83, 102291. https://doi-org.ezproxy.jyu.fi/10.1016/j.irfa.2022.102291

Christensen, D.M., Serafeim, G. & Sikochi, A. 2022. Why is Corporate Virtue in the Eye of the Beholder? The Case of ESG Ratings. The Accounting Review 97 (1), 147-175. https://doi-org.ezproxy.jyu.fi/10.2308/TAR-2019-0506

Cole, C.D. & Schneider, R. 2020. Corporate Governance and Capital Structure: Extending Agency Theory From Executives to the Board of Directors. Journal of Accounting and Finance 20 (6), 108-124. https://doi-org.ezproxy.jyu.fi/10.33423/jaf.v20i6.3319

Cucari, N., Esposito De Falco, S. & Orlando, B. 2018 Diveristy of Board of Directors and Environmental Social Governance: Evidence from Italian Listed Companies. Corporate Social Responsibility and Environmental Management 25 (3), 250-266. https://doi-org.ezproxy.jyu.fi/10.1002/csr.1452

De Lucia, C., Pazienza, P. & Bartlett, M. 2020. Does Good ESG Lead to Better Financial Performance by Firms? Machine Learning and Logistic Regression Models of Public Enterprises in Europe. Sustainability 12 (13), 5317. https://doi-org.ezproxy.jyu.fi/10.3390/su12135317

Deloitte, 2024. A Deloitte Global report on gender diversity on boards and women in leadership. Retrieved from

https://www2.deloitte.com/content/dam/insights/articles/glob176823_board_effectiveness_wob/GLOB176823_Women-in-the-boardroom-2.pdf
European Commission. 2022. Gender Balance on Corporate Board. Retrieved from https://commission.europa.eu/system/files/2022-11/Gender_Balance_on_Corporate_Boards__2_.pdf.pdf
European Commission. 2001. Promoting a European framework for Corporate Social Responsibility. Green Paper. Retrieved from https://www.europarl.europa.eu/meetdocs/committees/deve/20020122/com%282001%29366_en.pdf
European Union Directive. 2014. 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. Retrieved 5.9.2024 from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0095
European Union Directive. 2022. Directive (EU) 2022/2464 of the European Parliament of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting. Retrieved 5.9.2024 from https://eur-lex.europa.eu/legal-content/EN/TXT/?toc=OJ%3AL%3A2022%3A322%3ATOC&uri=uriserv%3AOJ.L_.2022.322.01.0015.01.ENG
European Union Directive. 2022. Directive (EU) 2022/2381 of the European Parliament and of the Council of 23 November 2022 on improving the gender balance among directors of listed companies and related measures. Retrieved 11.9.2024 from https://eur-lex.europa.eu/eli/dir/2022/2381/oj
Ferrari, G., Ferraro, V., Profeta, P. & Pronzato, C. 2021. Do Board Gender Quotas Matter? Selection, Performance, and Stock Market Effects. Management Science 68 (8), 5618-5643. https://doi-org.ezproxy.jyu.fi/10.1287/mnsc.2021.4200
Freeman, R.E., Wicks, A.C. & Parmar, B. 2004. Stakeholder Theory and "The Corporate Objective Revisited". Organization Science 15 (3), 364-369. https://doi-org.ezproxy.jyu.fi/10.1287/orsc.1040.0066
Galbreath, J. 2013. ESG in focus: The Australian Evidence. Journal of Business Ethics 118 (3), 529-541. https://doi-org.ezproxy.jyu.fi/10.1007/s10551-012-1607-9
Galbreath, J. 2016. Is Board Gender Diversity Linked to Financial Performance? The Mediating Mechanism of CSR. Business & Society 57 (5), 863-889. https://doi-org.ezproxy.jyu.fi/10.1177/0007650316647967
Gillan, S.L., Koch, A. & Starks, L.T. 2021. Firms and social responsibility: A review of ESG and CSR research in corporate finance. Journal of Corporate Finance 66, 101889. https://doi-org.ezproxy.jyu.fi/10.1016/j.jcorpfin.2021.101889

Granovetter, M. 1978. Threshold Models of Collective Behavior. American Journal of Sociology 83 (6), 1420-1443. https://doi-org.ezproxy.jyu.fi/10.1086/226707

Guthrie, J., Petty, R. & Ricceri, F. 2006. The voluntary reporting of intellectual capital: Comparing evidence from Hong Kong and Australia. Journal of Intellectual Capital 7 (2), 254-271. https://doi-org.ezproxy.jyi.fi/10.1108/14691930610661890

Herremans, I. 2020. Sustainability Performance and Reporting. Business Expert Press. Ebook.

Ishwar, K. 2022. Board gender diversity and sustainability performance: Nordic evidence. Corporate Social Responsibility and Environmental Management 30 (3), 1495-1507. https://doi-org.ezproxy.jyu.fi/10.1002/csr.2432

Issa, A. & Hanaysha, J.R. 2023. Breaking the class ceiling for a sustainable future: the power of women on corporate boards in reducing ESG controversies. International Journal of Accounting & Information Management 31 (4), 623-646. https://doi-org.ezproxy.jyu.fi/10.1108/IJAIM-03-2023-0053

Janicka, M. & Sajnóg, A. 2022. The ESG Reporting of EU Public Companies. Does the Company's Capitalization Matter? Sustainability 14 (7), 42-79. https://doi-org.ezproxy.jyu.fi/10.3390/su14074279

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

Kabir, A., Ikra, S.S., Saona, P. & Azad, Md.A.K. 2023. Board gender diversity and firm peformance: new evidence from cultural diversity in the boardroom. LBS journal of management & research 21 (1), 1-12. https://doi-org.ezproxy.jyu.fi/10.1108/LBSJMR-06-2022-0022

Kahloul, I., Sbai, H. & Grira, J. 2022. Does Corporate Social Responsibility reporting improve financial performance? The moderating role of board diversity and gender diversity. The Quarterly Review of Economics and Finance 84, 3015-314. https://doi-org.ezproxy.jyu.fi/10.1016/j.qref.2022.03.001

Kanter, R.M. 1977. Some Effects of Proportions on Group Life: Skewed Sex Ratios and Responses to Token Women. American Journal of Sociology 82 (5), 965-990. https://doi-org.ezproxy.jyu.fi/10.1086/226425

Karwowski, M. & Raulinajtys-Grzybek, M. 2021. The application of corporate social responsibility (CSR) actions for mitigation of environmental, social, corporate governance (ESG) and reputational risk in integrated reports. Corporate Socal Responsibility and Environmental Management 28 (4), 1270-1284. https://doi-org.ezproxy.jyu.fi/10.1002/csr.2137

Khemakhem, H., Arroyo, P. & Montecinos, J. 2023. Gender diversity on board committees and ESG disclosure: evidence from Canada. Journal of Management and Governance 27 (4), 1397-1422. https://doi-org.ezproxy.jyu.fi/10.1007/s10997-022-09658-1

Konrad, A.M., Kramer, V. & Erkut, S. 2008. Critical Mass: The Impact of Three or More Women on Corporate Boards. Organizational Dynamics 37 (2), 145-164. https://doi-org.ezproxy.jyu.fi/10.1016/j.orgdyn.2008.02.005

Krechovská, M. & Procházková, P. 2014. Sustainability and its Integration into Corporate Governance Focusing on Corporate Performance Management and Reporting 69, 1141-1151. https://doi-org.ezproxy.jyu.fi/10.1016/j.proeng.2014.03.103

Lefley, F. & Janeček, V. 2023. Board gender diversity, quotas and critical mass theory. Corporate Communications: An International Journal 29 (2), 139-151. https://doi-org.ezproxy.jyu.fi/10.1108/CCIJ-01-2023-0010

Li, Y., Gong, M., Zhang, X. & Koh, L. 2018. The impact of environmental, social ang governance disclosure on firm value: The role of CEO power. The British Accounting Review 50 (1), 60-75. https://doi-org.ezproxy.jyu.fi/10.1016/j.bar.2017.09.007

LSEG. LSEG ESG Scores. Retrieved 24.9.2024 from https://www.lseg.com/en/data-analytics/sustainable-finance/esg-scores

Madhani, P.M. 2017. Diverse Roles of Corporate Board: A Review of Various Corporate Governance Theories. IUP Journal of Corporate Governance 16 (2), 7-28. Retrived from https://www.proquest.com/docview/1897744700/fulltext/964E25AF58BF4F50PQ/1?accountid=11774&sourcetype=Scholarly%20Journals

Mahajan, R., Lim, W.M., Sareen, M., Kumar, S. & Panwar, R. 2023. Stakeholder theory. Journal of Business Research 166, 114104. https://doi-org.ezporoxy.jyu.fi/10.1016/j.jbusres.2023.114104

Maji, S.G. & Lohia, P. 2023. Environmental, social and governance (ESG) performance and firm performance in India. Society and Business Review 18 (1), 175-194. https://doi-org.ezproxy.jyu.fi/10.1108/SBR-06-2022-0162

Mateos de Cabo, R., Terjesen, S., Escot, L. & Gimeno, R. 2019. Do 'soft law' board gender quotas work? Evidence from a natural experiment. European Management Journal 37 (5), 611-624. https://doi-org.ezproxy.jyu.fi/10,1016/j.emj.2019.01.004

Mendonga, M. & Kanungo, R. 1996. Impact on culture on performance management in developing countries. Internation journal of manpower 17 (4/5), 65-75. https://doi-org.ezproxy.jyu.fi/10.1108/01437729610127640

Naciti, V. 2019. Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. Journal of Cleaner Production 237 (10), 117727. https://doi-org.ezproxy.jyu.fi/10.1016/j.clepro.2019.117727

Nasdaq. Glossary. Retrieved 27.8.2024 from https://www.nasdaq.com/glossary/i/industrial

Nasdaq Nordic. 2024. Indexes. Retrieved 22.10.2024 from https://www.nasdaqomxnordic.com/indeksit?languageId=1&Instrument=SSE101

Naveed, K., Voinea, C.L., Ali, Z., Rauf, F. & Fratostineanu, C. 2021. Board Gender Diversity and Corporate Social Performance in Different Industry Groups:

Evidence from China. Sustainablity 13 (6), 3142. https://doi-org.ezproxy.jyu.fi/10.3390/su13063142
Nordberg, D. 2010. Corporate Governance. SAGE Publications Ltd 2010.
Ouni, Z., Ben Mansour, J. & Arfaoui, S. 2020. Board/Executive Gender Diversity and Firm Financial Performance in Canada: The Mediating Role of Environmental, Social and Governance (ESG) Orientation. Sustainability 12 (20), 8386. https://doi-org.ezproxy.jyu.fi/10.3390/su12208386
Petrova, P. 2024. Accounting for Impacts: Exploring Sustainability Reporting in Bulgarian Companies under the CSRD. Proceedings on the … International Conference on Business Excellence 18 (1), 2172-2182. https://doi-org.ezproxy.jyu.fi/10.2478/picbe-2024-0182
Post, C., Rahman, N. & Rubow, E. 2011. Green Governance: Board of Directors' Composition and Environmental Corporate Social Responsibility. Business & Society 50 (1), 189-223. https://doi-org.ezproxy.jyu.fi/10.1177/0007650310394642
Primec, A. & Belak, J. 2022. Sustainable CSR: Legal and Managerial Demands of the New EU Legislation (CSRD) for the Future Corporate Governance Parctices. Sustainability 14 (24), 16648. https://doi-org.ezproxy.jyu.fi/10.3390/su142416648
Pulino, S.C., Ciaburri, M., Magnanelli, B.S. & Nasta, L. 2022. Does ESG Disclosure Influence Firm Perfromance? Sustainability 14 (3), 7595. https://doi-org.ezproxy.jyu.fi/10.3390/su14137595
PwC. ESG reporting and preparation of a Sustainability Report. Retrieved 24.9.2024 from https://www.pwc.com/sk/en/environmental-social-and-corporate-governance-esg/esg-reporting.html
Qu, W. & Zhang. J. 2023. Environmental, Social and Corporate Governance (ESG) Life Cycle, and Firm Performance: Evidence from China. Sustainability 15 (8), 14011. https://doi-org.ezproxy.jyu.fi/10.3390/su151814011
Rahi, ABM.F., Akter, R. & Johansson, J. 2022. Do sustainability practices influence financial performance? Evidence from the Nordic financial industry. Accounting Research Journal 35 (2), 292-314. https://doi-org.ezproxy.jyu.fi/10.1108/ARJ-12-2020-0373
Reguera-Alvarado, N., De Fuentes, P. & Laffarga, J. 2017. Does Board Gender Diversity influence Financial Performance? Evidence from Spain. Journal of Business Ethics 141 (2), 337-350. https://doi-org.ezproxy.jyu.fi/10.1007/s10551-015-2735-9
Rezaee, Z., Homayoun, S., Poursoleyman, E. & Rezaee, N.J. 2023. Comparative analysis of environmental, social and governance disclosures. Global Finance Journal 55, 100804. https://doi-org.ezproxy.jyu.fi/10.1016/j.gfj.2022.100804
Sun, Y., Zhao, D. & Cao, Y. 2024. The impact of ESG performance, reporting framework, and reporting assurance on the tone of ESG disclosures: Evidence from Chinese listed firms. Journal of Cleaner Production 466, 142698. https://doi-org.ezproxy.jyu.fi/10.1016/j.clepro.2024.142698

Sustainable Stock Exchange Initiative. Model Guidance on Reporting ESG Information to Investors. Retrieved 5.9.2024 from Model Guidance on Reporting ESG Information to Investors: A Voluntary Tool For Stock Exchanges to Guide Issuers (sseinitiative.org)

Taglialatela, J., Pirazzia Maffiola, K., Barontini, R. & Testa, F. 2023. Board of Directors' characteristics and environmental SDGs adoption: an international study. Corporate Social Responsibility and Environmental Management 30 (5), 2490-2506. https://doi-org.ezproxy.jyu.fi/10.1002/csr.2499

Taylor, G.R. 2005. Integrating Quantitative and Qualitative methods in research. University Press of America, Second Edition.

Torchia, M., Calabrò, A., Huse, M. & Brogi, M. 2010. Critical Mass Theory and Women Directors' Contribution to Board Strategic Tasks. Corporate Board: Role, Duties & Composition 6 (3), 42-51. https://doi-org.ezproxy.jyu.fi/10.2139/ssrn.1861447

Torchia, M., Calabrò, A. & Huse, M. 2011. Women Directors on Corporate Boards: From Tokenism to Critical Mass. Journal of Business Ethics 102 (2), 299-317. https://doi-org.ezproxy.jyu.fi/10.1007/s10551-011-0815-z

Triyani, A., Setyahuni, S.W. & Kiryanto. 2020. The Effect of Environmental, Social and Governance (ESG) Disclosure on Firm Performance: The Role of Ceo Tenure. Jurnal Reviu Akuntasi dan Keuangan 10 (2), 261-270. https://doi-org.ezproxy.jyu.fi/10.22219/jrak.v10i2.11820

UN Global Compact. 2004. Who Cares Wins – Connecting Financial Markets to a Changing World. Retrieved from https://www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf

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.ezproxy.jyu.fi/10.1108/JGR-11-2016-0029

Velte, P. 2020. Does CEO power moderate the link between ESG performance and financial performance: A focus on the German two-tier system. Management Research Review 43 (5), 497-520. https://doi-org.ezproxy.jyu.fi/10.1108/MRR-04-2019-0182

Velte, P. 2016 Women on management board and ESG performance. Journal of Global Responsibility 7 (1), 98-109. https://doi-org.ezproxy.jyu.fi/10.1108/JGR-01-2016-0001

Wasiuzzaman, S. & Subramaniam, V. 2023. Board gender diversity and environmental, social and governance (ESG) disclosure: Is it different for developed and developing nations? Corporate Social Responsibility and Environmental Management 30 (5), 2145-2165. https://doi-org.ezproxy.jyu/10.1002/csr.2475

World Commission on Environment and Development. 1987. Our Common Future. Retrieved from https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

Xie, J., Nozawa, W., Yagi, M., Fujii, H. & Managi, S. 2019. Do environemental, social and governance activities improve corporate financial performance? Business strategy and the environment 28 (2), 286-300. https://doi-org.ezproxy.jyu.fi/10.1002/bse.2224

Yang, W., Yang, J. & Gao, Z. 2019. Do Female Board Directors Promote Corporate Social Responsibility? An Empirical Study Based on the Critical Mass Theory. Emerging Markets Finance and Trade 55 (15), 3452-3471. https://doi-org.ezproxy.jyu.fi/10.1080/1540496X.2019.1657402

Yarram, S.R. & Adapa, S. 2021. Board gender diversity and corporate social responsibility: Is there a case for critical mass? Journal of Cleaner Production 278 (1), 123319. https://doi-org.ezproxy.jyu.fi/10.1016/j.jclepro.2020.123319

APPENDIX

Variable definitions

Variable name	Definition
Sustainability variables	
ESG	Environmental, social and governance performance collected from LSEG database. The ESG disclosure score is scored between 0 and 100
ENV	Environmental performance collected from LSEG database. ENV measures a company's impact on environmental matters, including resource use, emissions and innovations. The ENV disclosure score ranges between 0 and 100
SOC	Social performance collected from LSEG database. SOC includes workforce, human rights, community and product responsibility. The SOC disclosure score ranges between 0 and 100
GOV	Governance performance collected from LSEG database. GOV includes management, shareholders and CSR strategy. The GOV disclosure score ranges between 0 and 100
Financial performance variables	
ROA	Ratio of net income to total assets
Tobin's Q	Ratio of market value of equity and liabilities to book value of equity and liabilities
Board gender diversity variables	
Board gender diversity (WOB)	The proportion of women on the board in relation to the total number of the members on the board. The score ranges between 0 and 100
Board gender diversity (Blau index)	1 - (proportion of women^2 + proportion of men^2). The score ranges between 0 and 0,5 where 0,5 means that both genders are equally represented

Control variables	
Firm size (FSIZE)	The natural logarithm of total assets
Research and development (R&D)	Research and development expenses
Firm leverage (FLEV)	Ratio of total debt tot total assets
BETA	Beta factor (systematic firm risk)
Board size (BSIZE)	Total number of board members