



# Handelshøyskolen BI

## GRA 19703 Master Thesis

Thesis Master of Science 100% - W

### Predefinert informasjon

<b>Startdato:</b>	16-01-2022 09:00	<b>Termin:</b>	202210
<b>Sluttdato:</b>	01-07-2022 12:00	<b>Vurderingsform:</b>	Norsk 6-trinns skala (A-F)
<b>Eksamensform:</b>	T		
<b>Flowkode:</b>	202210  10936  IN00  W  T		
<b>Intern sensor:</b>	(Anonymisert)		

### Deltaker

Navn:

### Informasjon fra deltaker

Tittel \*:

Navn på veileder \*:

Inneholder besvarelsen  
konfidensielt  
materiale?:

Kan besvarelsen  
offentliggjøres?:

### Gruppe

Gruppenavn:

Gruppenummer:

Andre medlemmer i  
gruppen:

GRA1974 MASTER THESIS  
BI NORWEGIAN BUSINESS SCHOOL

# **Sustainable Corporate Governance in the Nordic Region: Does Board Diversity Matter?**

Kaja Ligård  
Victoria Lavold

Supervisor: Professor Charlotte Østergaard, Ph.D.  
Programme: Master of Science in Business - Major in Finance

**Oslo, Norway 01.07.2022**

This thesis is a part of the MSc programme at BI Norwegian Business School. The school takes no responsibility for the methods used, evidence found, or conclusions drawn.

## Acknowledgements

We would like to thank our supervisor, Charlotte Østergaard, for being a source of valuable advice and enlightened input during the writing process. Along with the insightful discussions, the collaboration has been inspiring. Working on the master thesis has both been challenging and rewarding. Gaining a deeper insight into the relationship between sustainable corporate governance and board diversity has been fascinating. We hope that our study highlights the impact of board diversity on sustainable corporate governance in the Nordic context.

BI Norwegian Business School

Oslo, July 2022

Kaja Ligård

Kaja Ligård

Victoria Lavold

Victoria Lavold

## **Abstract**

Over recent years, the Nordic region has been exposed to several regulatory changes regarding political and social concerns of sustainable corporate governance and diversity in decision-making positions. Special attention is drawn to how diversity attributes, such as gender balance, independence, and tenure, can enhance corporate governance practices and meet stakeholders' demands. This thesis examines the impact of board diversity on sustainable corporate governance and ESG disclosure dimensions in the Nordic region. The study applies fixed-effect models with lagged board variables to a sample of 340 listed firms. Our findings highlight the importance of implementing corporate board diversity as it can increase ESG disclosure levels. The analysis finds that women on board and board independence significantly impact engagement in ESG, encouraging firms to increase transparency and accountability related to sustainable corporate governance. For companies, this also strengthens the necessity for legislative requirements to achieve corporate board diversity. On the contrary, the study finds no effect from board tenure and small significance from different industries on the overall ESG score. This study provides evidence to policymakers and regulators as a stimulus to continue promoting diversity across boards.

***Keywords*** – Sustainable Corporate Governance, ESG, Board Diversity

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Problem Formulation</b>	<b>4</b>
<b>3</b>	<b>Theoretical Background</b>	<b>5</b>
3.1	ESG Disclosure . . . . .	5
3.2	Stakeholder Theory and Resource Dependence Theory . . . . .	5
<b>4</b>	<b>Prior Research and Hypothesis Development</b>	<b>8</b>
4.1	ESG Disclosure and Board Diversity . . . . .	8
4.2	Board Diversity Measures . . . . .	8
4.3	Underlying Forces of E, S, and G Disclosure Scores . . . . .	11
<b>5</b>	<b>Research Methodology</b>	<b>14</b>
5.1	Population and Sample . . . . .	14
5.2	Dependent Variable . . . . .	14
5.3	Independent and Control Variables . . . . .	15
5.4	Model Specification . . . . .	16
<b>6</b>	<b>Discussion of Results</b>	<b>19</b>
6.1	Descriptive Statistics and Correlation Analysis . . . . .	19
6.2	Industry-wide Effects . . . . .	22
6.3	Board Gender Diversity . . . . .	23
6.4	Board Independence . . . . .	32
6.5	Board Tenure . . . . .	35
6.6	Control Variables . . . . .	35
<b>7</b>	<b>Conclusion</b>	<b>37</b>
7.1	Main Findings . . . . .	37
7.2	Sustainable Corporate Governance Implications . . . . .	38
7.3	Limitations and Future Research . . . . .	38
	<b>References</b>	<b>40</b>
	<b>Appendix</b>	<b>49</b>
A1	Industry-wide Effects . . . . .	49
A2	Refinitiv Category Scores . . . . .	51

## List of Tables

4.1	Description of environmental, social and governance categories . . . . .	11
4.2	Hypotheses on board diversity and ESG disclosure score . . . . .	13
6.1	Descriptive statistics for variables . . . . .	19
6.2	Correlation analysis . . . . .	21
6.3	Descriptive statistics for industries . . . . .	22
6.4	Regression analysis of ESG score and related pillars (E, S and G)	25
6.5	Regression analysis of environmental (E) category scores . . . . .	29
6.6	Regression analysis of social (S) category scores . . . . .	30
6.7	Regression analysis of governance (G) category scores . . . . .	31
A1.1	Regression analysis - development of Real Estate . . . . .	49
A1.2	Regression analysis with industries . . . . .	50
A2.1	Description of category scores . . . . .	51
A2.2	Descriptive statistics for categories variables . . . . .	52

## 1 Introduction

Over the past years, environmental, social, and governance (ESG) factors have received considerable attention in the financial markets. The momentum of ESG initiatives has fostered the UN launching of the 2030 Agenda for Sustainable Development. The agenda marked a groundbreaking step in aligning corporate strategies with sustainable environmental, social, and governmental development (UN, 2015; Qureshi et al., 2020; Nicolò et al., 2021). Growing emphasis on sustainable corporate governance accelerates the necessity of corporate transparency and accountability (Nicolò et al., 2021). Consequently, firms are increasingly incorporating information on ESG disclosures in their strategy and reports to meet their stakeholders' expectations.

Prior literature finds that corporate governance and corporate board diversity are essential in ESG disclosure practices (Aryassi et al., 2014; Nicolò et al., 2021; Giannarakis et al., 2014). As a result, corporations are increasingly encouraged to go beyond the financial component of their operations by disclosing information on the different non-financial dimensions that influence long-term value creation processes. Yet, ESG disclosure practices are still inconsistent between firms and regions, shedding light on potential elements that may influence ESG transparency levels (Nadeem et al., 2017; Qureshi et al., 2020). Prior literature emphasizes that corporate governance features, such as the board of directors' composition and diversity, may impact non-financial disclosure practices. In particular, board gender diversity, tenure, and independence are variables that affect ESG disclosure levels (Nicolò et al., 2021; Aryassi et al., 2020; Rao & Tilt, 2016; Wasiuzzaman & Wan Mohammad, 2020). However, empirical evidence has shown mixed findings on how board attributes affect non-financial performance and reporting (Rao & Tilt, 2016). According to the Resource Dependence theory and Stakeholder theory, diversity can give the board access to critical resources, such as required knowledge or skills - making the board more heterogeneous, leading to broader discussions and alignment of corporate strategies with the external environment. In such a way, diverse boards can support firms adopting ESG responsible behavior, increasing ESG disclosure levels for the benefit of various stakeholders (Kulik et al., 2013;

---

Rao & Tilt, 2016). This paper investigates the relationship between board diversity and ESG disclosure in Nordic countries. The Nordic region, comprising Finland, Denmark, Sweden, Norway, and Iceland, has been ranked as the most sustainable region in terms of environmental, social, and governance investment (Robeco, 2021). Additionally, the Nordic region have been subject to several regulations affecting sustainable corporate governance, such as introducing ESG disclosure reporting requirements and promoting board diversity (EU Commission, 2012, 2020; UN, 2015; Furlotti et al., 2019; Jourova, 2016).

The sample comprises ESG data from 340 listed companies in the Nordic region as of 2021. The corresponding board diversity measures we study are: women on board, board independence, and board tenure. Accordingly, control variables related to firm characteristics (size, risk, performance, growth, and efficiency) and board composition (size) were also incorporated to improve the fit of the model. Subsequently, our study supplement prior literature by examining how board diversity influences each pillar (E, S, and G) and their underlying category scores - in addition to considering industry-wide effects. To evaluate a possible issue with endogeneity, a fixed-effect model with lagged board variables is applied to recognize possible variances across firms and reverse causality (Liu et al., 2014; Boulouta, 2013; Manita et al., 2018).

We provide evidence that board diversity increases the performance of sustainable corporate governance in the Nordic region. Firstly, our findings show that the most crucial board diversity measure is the inclusion of women on the board, as the overall ESG disclosure score improves. We suggest that gender balance enhance discussions and increases accountability and transparency toward ESG initiatives. Our results indicate that gender-diverse boards that prioritize resources into the distinct environmental (E), social (S), and governance (G) dimensions will improve the overall ESG performance. The findings strengthen the need for greater legislative requirements to achieve gender diversity in corporate boards. Secondly, our study shows that board independence positively relates to the governance (G) dimension in the overall ESG disclosure score. This emphasizes the influence independent directors have on the corporate governance aspects of ESG. In particular, the results support existing literature on independent directors providing a key role in



objectively assessing firm performance, mitigating potential agency conflicts, and securing the firm's corporate creditability in context to ESG disclosure performance. Thirdly, we find that board tenure is not associated with the ESG disclosure score or underlying components. Lastly, our industry analysis found that industry characteristics can negatively influence the disclosure of the social (S) and governance (G) dimensions. This provides sufficient knowledge for policymakers in improving sustainable corporate governance within each E, S and G dimensions. However, our study found small significant differences between the different industries and the extent of the overall ESG disclosure levels. This highlights that variation in the overall ESG disclosure scores is primarily explained by boards' diversity attributes. We propose that a diverse board fosters broader discussions and access to resources needed to ensure effective monitoring of the firm's ability to meet investors' and other stakeholders' demands.

The master thesis is organized into six sections. Firstly, we introduce the topic of ESG disclosure and draw on theoretical arguments and preliminary empirical evidence to derive our hypotheses. Secondly, we describe our procedures for identifying samples and variables and outline our analysis methods. Next, we discuss our findings concerning our presented frameworks. After making inferences, we conclude by reviewing our contribution, limitations, and future research suggestions.

## 2 Problem Formulation

Our study examines whether board diversity drives companies listed in the Nordic region to perform better on sustainable corporate governance. We propose the following research question:

*Is there a positive relationship between board diversity and sustainable corporate governance of listed firms in the Nordic countries?*

To investigate the relationship, we apply the overall ESG disclosure score and decomposition of the E, S, and G dimensions. We use data on ESG disclosure scores as a proxy for sustainable corporate governance. Subsequently, we investigate the relationship further by examining the underlying categorical scores of the dimension scores. The measures representing diversity are: 1) women on board, 2) board tenure, and 3) board independence. The analysis is based on the presence of ESG disclosure scores in the listed companies at the year-end of 2021, such that the disclosure scores reflect the perspectives of the data-provider at one point in time. Additionally, we have limited the study only to contain the Nordic region with available ESG disclosure score at that point in time.

### **3 Theoretical Background**

#### **3.1 ESG Disclosure**

Environmental, social, and governance principles (ESG) are standards that encourage companies to behave responsibly. ESG has emerged as an extension of corporate social responsibility (CSR) (Cucari et al., 2018). To explain, CSR impacts the internal processes and company culture, and is a method of self-regulation. In contrast, ESG clarifies a company's identification of risks and opportunities for external stakeholders and investors. In addition, ESG emphasizes the ethics of a company. This might be why ESG encounters a better relation to board diversity, as it enables businesses to measure their sustainable and societal impact.

The topic of ESG disclosures is partially driven by regulatory requirements, where the European Directive 2014/95/UE defines the shift of making non-financial reporting mandatory (European Commission (EC), 2012). The change to mandatory disclosure has emerged continuously with investors' increasing awareness of ESG factors. Accordingly, public companies are incentivized to disclose more information to satisfy investors' expectations of transparency as the stakes increase (Euronext, 2022). In 2020, the European Commission launched an initiative to improve the EU regulatory framework on company law and corporate governance, enabling companies to focus on long-term sustainable value creation by integrating environmental, social, and governmental aspects in a firm's strategy (Nicolò et al., 2021). This aims to improve the alignment of the companies, shareholders, managers, and societal interests (European Commission, 2020). The initiative also complies with the UN SDGs and the European Green Deal agenda (UN, 2015; European Commission, 2012).

#### **3.2 Stakeholder Theory and Resource Dependence Theory**

The importance of board diversity in strengthening sustainable corporate governance mechanisms and cultivating higher ESG disclosure can be enclosed within Resource Dependence theory and Stakeholder theory (Rao & Tilt, 2016; Ferreira, 2010). These perspectives may provide a conceptual framework for further describing the manifestation of the direct link between board

diversity and ESG disclosure (Jamali et al., 2008). Stakeholder theory focuses on the relation between corporate governance mechanism and ESG disclosure by suggesting that boards of directors are accountable to a broad group of stakeholders (Nicolò et al., 2021). Firms have contracts with their stakeholders, where firm value depends on the ability to fulfill these obligations (Cornell et al., 1987). By being the main corporate decision-making body, the board is responsible for providing a monitoring role by overseeing and advising the management in coherence with stakeholders' interests (de Villiers et al., 2021; Endrikat et al., 2020). Failure to align management's interests with stakeholders might result in monetary and reputational losses. Therefore, effective stakeholder management is essential for a company's success. To monitor efficiently, the board needs appropriate capabilities, including experience and skills. Accordingly, the members' diversity should be considered when assembling a corporate board to achieve an adequate composition (Fernandez et al., 2018). Several researchers agree that board diversity needs to be included with the Stakeholder theory to explain how they jointly influence ESG disclosure (Rao & Tilt, 2016; Nicolò et al., 2021).

Kulik et al. (2013) advocate that corporations need diverse boards because of the essential functions the board serves. In particular, the board makes strategic decisions and establishes relationships with external stakeholders. Each of these functions can be facilitated by diversity. This is highlighted in the Resource Dependence theory (RDT). The theory emphasizes the role the board of directors have in gaining access to essential resources and managing uncertainty in the external environment (Hillman et al., 2009). The corporation is dependent on contingencies in the external environment. It influences the performance of the firm and consists of entities that control critical resources, thus resulting in challenges and uncertainty for the corporation (Pfeffer & Salancik, 2003). RDT further indicates that the board of directors can act to reduce this dependence and uncertainty through their control of vital resources (Hillman et al., 2009). For example, by incorporating more diverse boards, specifically gender diversity, the board can access better resources, as female directors can help the business understand a broader range of customers in the external environment (Nadeem et al., 2017). In addition, an increase in the

---

number of board members can provide the board with the potential for more expertise and external connections (Zahra & Perace, 1989). In particular, the heterogeneity of boards results in a broader perspective, as the diverse board members have different monitoring perspectives. This results in more informed decisions and in-depth conversations (Watson et al., 1998; Robinson et al., 1997). As a result of the diversity provided by such features, the organization can be encouraged to adopt more socially responsible behaviors and sustainable practices. This can stimulate the potential for increased accountability and transparency about ESG issues (Nadeem et al., 2017). Furthermore, it may result in better performance due to a better understanding of the external environment.

---

## 4 Prior Research and Hypothesis Development

### 4.1 ESG Disclosure and Board Diversity

In recent years, the debate around the relevance of board diversity in corporate boards is increasing, involving politics and academics. A considerable amount of empirical evidence has been conducted on board diversity. Krüger (2009) suggests that board diversity has significant implications for the board's performance, whereas Hambrick et al.'s (1996) study finds that diversity's benefits can outperform homogeneity. As a result of the increasing emphasis on political and social concerns, researchers have investigated the importance of board diversity in environmental, social, and governance disclosure.

Several researchers have shown that a higher level of board diversity is positively associated with firms' sustainable corporate practices and ESG disclosure scores (Ismail & Latiff, 2019; Cucari et al., 2017). Nielsen (2010) showed that heterogeneous top management achieves better performance under high uncertainty around social and environmental issues compared to less heterogeneous teams. This increases the likelihood that board diversity may affect how the firm engages in sustainability-related activities (Deegan et al., 2006). In addition, board diversity can induce high-quality discussions at the board level, influencing the firm's environmental, social, and governance aspects (Hafsi et al., 2013). Rao & Tilt (2016) suggest a positive relationship between corporate governance and societal responsibility, and the board has a decisive role in reporting on ESG objectives (Jamali et al., 2008).

### 4.2 Board Diversity Measures

In this study, we have applied three diversity variables to measure the extent of board diversity. The board diversity measures we have chosen are gender diversity, tenure, and independence. In the following section, we will discuss the previous literature on the relationship between ESG disclosure scores and the board diversity variables.

*Board Gender Diversity.* Several companies have been promoting more diversified boards to ensure sustainable corporate governance in recent years.

As a result of the EC legislative proposal to increase the occurrence of the under-represented gender among non-executive board members by 40% in listed companies by 2020, countries have adopted voluntary and mandatory measures to promote diversity in corporate boards (European Commission, 2012; Nadeem et al., 2017; Furlotti et al., 2019). Norwegian firms have the leading role in board gender quotas. They are subject to regulatory requirements for the board of directors, where 40 percent of both genders must be represented on the board. Similarly, Sweden has adopted measures to improve gender balance on corporate boards (Nicolò et al., 2021; Deloitte, 2021). Denmark and Finland have no quotas for women on the board, yet there is an ongoing debate about implementing such quotas to ensure gender balance. In addition, the topic has been widely attentive in several global agendas. For example, in 2015, the UN declared the 2030 Agenda for Sustainable Development, which aims to achieve gender equality and empower all women and girls. The agenda recognized the need to “ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life” (UN, 2015; Nicolò, 2021). Following this, in 2016, the European Commission presented its actions to promote gender balance on the boards of listed companies in the European Union (Jourova, 2016).

Several researchers have established that sustainable corporate practices increase with board gender diversity (Zahid et al., 2020; Nadeem et al., 2017). Numerous reviewed studies found a positive relationship between board gender diversity and sustainable corporate governance. Similarly, findings from several studies reflected the positive relationship between a higher percentage of women on board and improved ESG disclosure scores (Nicolò et al., 2021; Tamimi & Sebsatianelli, 2017; Qureshi et al., 2017). However, the results are mixed. Manita et al. (2018) found no significant relationship between board gender diversity and ESG disclosure, whereas Cucari (2018) and Husted et al. (2019) found a negative relationship. Despite the contradictory empirical evidence, we expect that board gender diversity improves the ESG disclosure score.

*Board Tenure.* Board tenure is one of the essential observable backgrounds of diversity issues for the board of directors (Kang et al., 2007). Diversity in tenure within firms’ corporate boards is expressed as the concurrence of

different generations. This includes the difference in values, experiences, and cultural norms that impact the intuitive decision-making approach adopted by the directors (Cucari et al., 2018). Board tenure is a board characteristic attracting interest in the previous literature, yet the findings are inconsistent. Krüger's (2009) findings support that longer tenure improves the experience, skills, and expertise. Handajani et al. (2014) found that boards with lower tenure may produce higher corporate social disclosure. Hafsi & Turgut's (2013) findings showed that tenure has no effect. According to Anderson et al. (2004), the board's age can be used as a proxy for board tenure. However, Cucari et al. (2018) found no effect between board age and ESG score. Similarly, Giannarakis (2014) detected no significant relationship between average board age and ESG disclosure. The empirical evidence is mixed, yet we believe that less tenured boards improves the ESG disclosure performance, because more tenured boards are fixed in their ways of practice.

*Board Independence.* The variable most frequently applied in literature to describe the structure of the board and diversity characteristics is board independence (Hussain et al., 2018). These directors are not involved in internal managerial activities and have no direct or indirect ties to ownership (Arayssi et al., 2020). Previous literature findings show that the higher percentage of independent members on a corporate board, the more effective decisions, and incitement for ESG initiatives (Holtz & Sarlo Neto, 2014). Accordingly, independent board members effectively monitor and ensure management actions consistent with corporate stakeholders' interests (Handajani et al., 2014). Rao and Tilt (2016) highlight that most studies linking board independence and sustainable corporate governance confirm a positive relationship. Yet, their findings exhibited no significant relationship. On the contrary, Arayssi (2019) found that board independence improves the implementation of ESG initiatives. Cucari et al. (2018) suggest that firms' ESG disclosure is associated with an independent director. Thus, independent board members are also likely to promote involvement in more corporate sustainable responsibilities and have the incentive to require higher transparency and accountability in ESG issues (Arayssi et al., 2020; Zahid et al., 2020; Nicolò, 2021). Based on the previous literature, we expect that board independence improves ESG performance.



### 4.3 Underlying Forces of E, S, and G Disclosure Scores

Despite the empirical evidence supporting the argument that board diversity measures is positively associated with sustainable corporate governance and ESG disclosure score, we acknowledge that differences exist in the prioritization of the E, S, and G dimensions across corporate boards. Table 4.1 illustrates the underlying categories of each dimension.<sup>1</sup>The following section will address previous literature on the topic.

**Table 4.1:** Description of environmental, social and governance categories

<b>Environmental (E)</b>	<b>Social (S)</b>	<b>Governance (G)</b>
Emissions score	Community score	CSR strategy score
Innovation score	Human rights score	Management score
Resource Use score	Product responsibility score	Shareholder score
	Workforce score	

*Environmental Dimension(E)*. Several studies find a positive association between board diversity and a firm’s environmental performance (Kyaw et al., 2022). Previous literature highlights that diversity in boards expands the perspectives to sustain environmental concerns better, as diverse boards are argued to improve the sensitivity towards climate challenges and pollution (Nicolò, 2021; Rao & Tilt, 2016). Konadu et al. (2022) findings suggest that board diversity enhances better board effectiveness concerning environmental aspects. However, the evidence is mixed, as they found a negative relationship between board diversity and the extent of carbon emissions. As board diversity increases the perspectives of boards, researchers highlight that diverse boards increase the investment in environmental concerns to ensure corporate reputation (Giannarakis et al., 2014). Campbell and Minguez-Vera’s (2008) findings emphasize that more diverse boards are more innovative and creative in the environmental dimension. Griffin et al. (2021) found that firms with diverse boards have more patents and higher innovative efficiency, as several perspectives result in a balanced risk attitude to board decisions. Based on the empirical evidence, we predict that board diversity improves the environmental (E) performance and thus improves the overall ESG disclosure score.

<sup>1</sup>Source: Refinitiv. For category definitions, see Table 1, Appendix A2

*Social Dimension(S)*. Several previous studies suggest that board diversity increases the performance of social disclosure (Hafsi & Turgut, 2012; Williams, 2003; Nerantzidis et al., 2022). Research has shown that diverse boards engage more in corporate social responsibilities and appreciate a more favorable social reputation (Adams et al., 2015; Post & Byron, 2016). Greater board diversity will exhibit unique experiences and knowledge because of the diverse background and might enable the board members to consider a much broader range of external stakeholders. Thus, this will improve the performance of the social dimension. On the contrary, in situations where influential stakeholders and a diverse board of directors are present, different opinions might emerge. This may cause conflicts and delays in decision-making regarding the business direction, negatively affecting the social dimension score. However, Francoer et al. (2019) suggest that diverse boards are positively related to social dimensions when the stakeholder is less powerful and external, such as the community.

Regarding the workforce, Modiba and Ngwakwe's (2017) findings suggest that board diversity may impact the social sustainability disclosure since they assist firms in achieving equal employment goals. This is based on the diverse board's attributes, as a broader perspective increases the social concerns (Nadeem et al., 2017; Nicolò et al., 2021; Williams, 2003). Consequent to the inconsistent empirical evidence, we suggest that board diversity impacts the underlying categorical forces of the social (S) disclosure score in different directions, moderating the overall ESG performance.

*Governance Dimension(G)*. There is already substantial empirical evidence suggesting that firms concentrating on the governance aspect of ESG ultimately yield better sustainable corporate governance. Higgs' (2003) findings show that diverse boards can improve decisions and governance practices by bringing unique expertise and perspectives. In line with the Stakeholder theory, good corporate governance serves the interest of the internal stakeholders, as a diverse board is responsible for overseeing and advising the management consistent with stakeholders' interests. As a result, in addition to adding reputational incentives and a prominent level of diligence, diverse boards concentrate on the organizations' compliance with CSR strategy, which affects the governance dimension positively. Sarhan et al. (2019) propose that board diversity is not

impacted by moral attitude; they occur because of the cost-benefit concerns of what diversity can bring to the firm. Considering the predominance of empirical evidence, we suggest that board diversity ensures better governance (G) disclosure performance, thus improving the overall ESG performance.

The inconsistent empirical evidence proposes the importance of assessing the overall ESG disclosure and the underlying forces of the E, S, and G disclosure performance. We suggest that board diversity influences the environmental (E) and governance (G) dimensions positively, whereas the forces of the social (S) dimension will act in contradictory directions. In addition, based on the discussion, we expect that the board diversity measures women on board and board independence will have the most significant impact on ESG disclosure performance. Based on this, we have stated the hypotheses in Table 4.2.

**Table 4.2:** Hypotheses on board diversity and ESG disclosure score

---

<b>H1.</b>	There is a positive relationship between board diversity and ESG disclosure
<b>H2.</b>	There is a positive relationship between board diversity and environmental(E) disclosure
<b>H3.</b>	There is a positive relationship between board diversity and social (S) disclosure
<b>H4.</b>	There is a positive relationship between board diversity and governance (G) disclosure
<b>H5.</b>	There is a positive relationship between board diversity and the underlying categories of ESG disclosure

---

## 5 Research Methodology

### 5.1 Population and Sample

The population includes all listed firms operating in the Nordic countries, comprising Norway, Denmark, Finland, Sweden, and Iceland. The decision to focus on the Nordic environment was appropriate for the following reasons. Firstly, the Nordic countries are relatively homogenous in their culture, population, and institutions (Zoëga et al., 2011). Secondly, the RobecoSAM Country Sustainability Ranking ranked the Nordics as the most sustainable region out of 150 emerging and developed countries. Thirdly, diversity is a top priority for Nordic company boards compared to other regions in Europe, according to the 2020 Nordic Spencer Stuart Board Index (Spencer Stuart, 2020). Thus, the Nordic context proposes the possibility of analyzing the top-performing sample regarding sustainable corporate governance and board diversity. The sample selection process begins with all publicly traded companies headquartered in one of the Nordic countries as of the Thomson Reuters Refinitiv Eikon database. Due to the extensive data availability and global coverage, Eikon has been selected as an ideal data supplier for ESG data collecting (Jackson et al., 2020). The initial sample consisted of 1,751 Nordic listed firms. Firms that missed ESG and governance data were excluded, which reduced the final sample to 340 listed firms. The final sample is unbalanced as Iceland is not represented due to the mentioned exclusions.

Consistent with prior literature, the Global Industry Classification Standard was chosen as a sorting method for Nordic firms. GICS represent a definitive explanation of co-movements in stock prices and cross-sectional variations in financial ratios, valuation metrics, and predicted growth rates. In addition, the standard is aligned with definitions and techniques commonly employed by investors and creates an opportunity for the thesis to fulfill investment decisions (Bhojraj et al., 2003; Scislaw, 2015).

### 5.2 Dependent Variable

The ESG disclosure scores are obtained from the Thomas Reuters database. Thomson Reuters provides weighted average ESG scores based on 186 critical

public disclosed measures (Refinitiv, 2021). The final ESG score reflects a firm's performance, commitment, effectiveness, and transparency toward ESG initiatives (Nicolò et al., 2021; Arayssi, 2020). The ESG score is generalized and not industry-specific, as indicators relevant to specific industries are excluded from the calculation (Refinitiv, 2021). The individual E, S, and G dimensions are based on a subset of disclosure metrics, counting 68 on environmental, 62 on social, and 56 on governance. Five different ESG disclosure scores have been selected as dependent variables: 1) the overall ESG disclosure, 2) the environmental disclosure score, 3) the social disclosure score, 4) the governance disclosure score, and 5) the ten underlying categorical disclosure scores.<sup>2</sup>All disclosure scores range from 0 to 100, varying from not disclosing ESG information to providing complete information.

### 5.3 Independent and Control Variables

Board gender diversity, tenure, and independence represent the explanatory variables applied in our study. This is based on their importance documented in previous literature (Rao & Tilt, 2016). The ratio of women on board was used to measure board gender diversity. Board independence was measured by the number of independent board members reported by the company, and board tenure was measured by the average years each board member has been on the board.

More factors than just diversity may determine the board's decision-making. Thus, to avoid biased results and strengthen the consistency of the study, six control variables have been incorporated due to the potential effect on ESG disclosure (Rao & Tilt, 2016). The first group relates to firm characteristics and consists of financial metrics: size, proxied by the natural logarithm of total assets; risk, proxied by the leverage ratio of the firm; performance, proxied by return on assets; firm efficiency, proxied by asset turnover and growth rate, proxied by the price-to-earnings (P/E) ratio. Firm size has been a significant determinant in ESG disclosure studies. Larger companies face greater scrutiny from stakeholders on their operations due to the higher considerable impact on society. Therefore, size can potentially yield higher ESG disclosure levels to

---

<sup>2</sup>For category definitions, see Table 1, Appendix A2

mitigate external pressure (Zahid et al., 2020). The extent of scrutiny from stakeholders, particularly creditors, rises as the firm's leverage ratio increases. Levered firms experience more stimulation to provide information about their current financial status to meet the creditor's expectations (Qureshi et al., 2020). However, financial constraints of leverage will limit their possibility of investing in ESG activities (Arayssi et al., 2020). On the contrary, profitable companies have greater access to financial and economic resources. This can create pressure from both the external and internal environment to contribute to environmental and social concerns (Giannarakis et al., 2014). Therefore, profitability may yield higher ESG engagement.

The second type of control variables relates to the composition of the board, particularly the board size, proxied with the total number of board members at the end of the fiscal year. Board size is considered one of the critical elements of the corporate governance mechanism for overseeing the management and their activities (Said et al., 2009). Board size can affect ESG disclosure as more sizeable boards benefit from a broader range of expertise, skills, education, networks, and backgrounds. This may result in more in-depth conversations and enhance the board's monitoring. The relationship between board size on the level of sustainable disclosure is positive and significant in recent studies (Zahid et al., 2020; Said et al., 2009). However, Jensen et al. (1993) have found that large boards may result in less effective communication, decision-making, and coordination. In the same sequence, Eisenberg et al. (1998) stated that small boards are more likely to mitigate agency conflicts between shareholders and managers. Therefore, board size is considered essential as a control variable since it may affect decision-making.

#### **5.4 Model Specification**

The hypotheses are tested using fixed-effect (FE) models with lagged board variables produced with R, a software environment for statistical computing and graphics. To examine the influence of board diversity on ESG disclosure scores, we have applied five regression models. We used a stepwise approach to the regression to test for industry-wide effects. The effects were tested on the overall ESG score, first by including only the control variables, then including

variables of board diversity. The models are presented below, where  $i$  denotes firms in the sample and  $t$  refers to time periods. Finally, all regressions contain dummies to control variations across industries and countries, the classical error term, which is assumed to be independent and identically distributed  $\epsilon_{i,t}$  and an unobserved firm fixed effect  $\psi_t$ .

*Model Diagnostics.* Several academic and empirical evidence highlight that board structure is endogenous (Hermalin et al., 1998). This endogeneity problem may create estimation problems in our model. According to Adams et al. (2010), governance structures are derived endogenously, as the structure is chosen in response to issues the firm faces. Consequently, the representation of independent directors, experienced directors (tenure), and women on the corporate board can be deliberately selected. The estimation model is determined by considering omitted variables and reverse causality. We acknowledge that variables measuring corporate culture, or the election process of female and independent directors on the corporate board, might be possible sources of omitted variables influencing the ESG disclosure. Regarding the problem with reverse causality, the consensus in academic literature is to apply a fixed-effect model (Wooldridge, 2010). On the contrary, a fixed-effects model will not be sufficient to solve the endogeneity problem and reverse causality. Consistent with Liu et al. (2014), we have extended the FE model by including one-year lagged board diversity variables. Board diversity characteristics require time to influence ESG disclosure, which will, to an extent, recognize the endogeneity problem. However, diversity variables are relatively constant across time; thus, the analysis should be further extended to deal with endogeneity efficiently.

Multicollinearity has been investigated by conducting the VIF test. The results imply no multicollinearity among the independent and control variables, as all VIF values are lower than the critical threshold of 10. Furthermore, the possible existence of heteroscedasticity and autocorrelation was investigated by Breusch-Pagan and Durbin-Watson tests, where both were satisfied.

$$\begin{aligned}
ESGDS_{i,t} = & \beta_0 + \beta_1 WOB_{i,t-1} + \beta_2 BINDEP_{i,t-1} \\
& + \beta_3 BTENURE_{i,t-1} + \sum_{k=i}^6 \beta_k CONTROLS_{i,t} \\
& + \psi_t + \epsilon_{i,t}
\end{aligned} \tag{1}$$

$$\begin{aligned}
ENVDS_{i,t} = & \beta_0 + \beta_1 WOB_{i,t-1} + \beta_2 BINDEP_{i,t-1} \\
& + \beta_3 BTENURE_{i,t-1} + \sum_{k=i}^6 \beta_k CONTROLS_{i,t} \\
& + \psi_t + \epsilon_{i,t}
\end{aligned} \tag{2}$$

$$\begin{aligned}
SOCDS_{i,t} = & \beta_0 + \beta_1 WOB_{i,t-1} + \beta_2 BINDEP_{i,t-1} \\
& + \beta_3 BTENURE_{i,t-1} + \sum_{k=i}^6 \beta_k CONTROLS_{i,t} \\
& + \psi_t + \epsilon_{i,t}
\end{aligned} \tag{3}$$

$$\begin{aligned}
GOVDS_{i,t} = & \beta_0 + \beta_1 WOB_{i,t-1} + \beta_2 BINDEP_{i,t-1} \\
& + \beta_3 BTENURE_{i,t-1} + \sum_{k=i}^6 \beta_k CONTROLS_{i,t} \\
& + \psi_t + \epsilon_{i,t}
\end{aligned} \tag{4}$$

$$\begin{aligned}
CATDS_{i,t} = & \beta_0 + \beta_1 WOB_{i,t-1} + \beta_2 BINDEP_{i,t-1} \\
& + \beta_3 BTENURE_{i,t-1} + \sum_{k=i}^6 \beta_k CONTROLS_{i,t} \\
& + \psi_t + \epsilon_{i,t}
\end{aligned} \tag{5}$$

where,

*ESGDS* = ESG disclosure score

*ENVDS* = Environmental (E) disclosure score

*SOCDS* = Social (S) disclosure score

*GOVDS* = Governance (G) disclosure score

*CATDS* = Category scores for E, S and G

*WOB* = Percentage of women on board

*BINDEP* = Percentage of independent board members

*BTENURE* = Number of years members has been on the board

*CONTROLS* = Control variables, defined as follows

*FSIZE* = Logarithm of total assets

*FRISK* = Leverage ratio

*ATURNOVER* = Amount of revenues generated per unit of assets

*ROA* = Return on assets

*P/E* = Price – to – earnings ratio

*BSIZE* = Number of board members at the end of the fiscal year



## 6 Discussion of Results

This section contains a presentation and discussion of our empirical results. We aim to facilitate our discussion beyond merely establishing the relationship. Firstly, we present and discuss the descriptive statistics and correlation matrix, focusing on board diversity measures and ESG scores. Secondly, we elucidate the industry-wide effects of our sample. Thirdly, we examine the regression findings for the board diversity measures and ESG disclosure. Subsequently, we investigate the relationship further by incorporating results on board diversity measures against the underlying categories of each E, S, and G dimensions. Lastly, we consider our results from the control variables (board size and firm characteristics) on the overall ESG disclosure.

### 6.1 Descriptive Statistics and Correlation Analysis

*ESG Disclosure Scores.* Table 6.1 represents the descriptive statistics for variables incorporated in the model. The overall ESG disclosure score indicates a mean of 52.06, with a variation of approximately 20 points. The E, S, and G disclosure scores shows a mean value of 44.19, 54.34, and 54.80 out of 100, with considerable deviation.

**Table 6.1:** Descriptive statistics for variables

Variables	Mean	Max	Min	St.Dev
ESG Score	52.06	90.78	5.07	19.89
E Score	44.19	96.98	0.00	26.71
S Score	54.34	93.91	2.00	22.31
G Score	54.80	95.96	4.56	21.24
Women on Board	0.34	0.67	0.00	0.12
Board Independence	0.66	1.00	0.00	0.24
Board Tenure	6.06	16.67	0.83	2.78
Board Size	7.76	15.00	4.00	2.30
Firm Size	2.30	2.50	2.08	0.08
Asset Turnover	0.91	4.51	0.00	0.57
Firm Risk	0.20	1.70	0.00	0.20
Firm Performance	0.08	0.41	0.00	0.06
P/E	43.26	988.57	3.00	79.06

The findings show a relatively higher variation for the environmental (E) disclosure score, thus, suggesting that the sample contains a broad range of corporate environmental performance. The results may be biased as a minimum

score below five percent might result from missing data or poor reporting rather than a low disclosure score.

*Board Diversity.* Nordic firms have, on average, 34.15 percent women on board, as shown in Table 6.1. This is lower than the EC legislation proposal of the under-represented gender among non-executive board members of 40 percent. An average corporate board comprises 65.56 percent independent members. This highlights that an average firm in the Nordic region has a more significant share of independent directors on the corporate board. Concerning board tenure, the UK Corporate Governance Code requirement proposes that chairs should not remain in positions for longer than nine years (Spencer Stuart, 2020). Our findings show that directors' average tenure is significantly lower than nine years, as the results denote an average of six years. This indicates that directors of Nordic companies serve shorter than US directors (7.7 years) and more prolonged than UK directors (5.7 years) (SpencerStuart, 2021).

*Correlation Analysis.* Table 6.2 illustrates the correlations between the dependent and independent variables, including the statistical significance. The table shows that the correlation coefficient between the explanatory variables is lower than the critical value of 0.8, indicating no multicollinearity (Gujarati, 2009). An interesting observation is the significant negative correlation coefficient between women on board and board tenure. This reflects that women on board are less likely to be highly tenured. Similarly, a highly tenured board member is less likely to be independent, as the correlation coefficient is significantly negative. Furthermore, the table indicates that boards with a higher share of women and independence have a higher ESG Score, as they have a positive and significant correlation. The findings may also illustrate that firms with relatively higher ESG scores are more inclined to have more female and independent directors. Thus, the results can also reflect endogeneity.

Table 6.2: Correlation analysis

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)
1) ESG_DS												
2) S_DS	0.91***											
3) G_DS	0.77***	0.54***										
4) E_DS	0.86***	0.75***	0.50***									
5) WOB	0.25***	0.20***	0.25***	0.19***								
6) BIndep	0.14**	0.04	0.29***	0.02	0.03							
7) BTen	0.03	0.06	-0.04	0.05	-0.19***	-0.14**						
8) Bsize	0.49***	0.51***	0.35***	0.43***	0.03	-0.22***	0.07					
9) Fsize	0.66***	0.59***	0.50***	0.62***	0.17**	-0.05	0.08	0.53***				
10) Aturn	-0.08	-0.05	-0.07	-0.07	-0.14*	-0.09	0.06	-0.02	-0.27***			
11) Frisk	-0.01	-0.02	-0.01	0.02	0.08	-0.01	-0.10	0.04	0.29***	-0.24***		
12) ROA	-0.02	-0.03	-0.03	0.02	-0.10	-0.02	0.13*	-0.06	-0.16**	0.10	-0.36***	
13) P/E	-0.21***	-0.19***	-0.16**	-0.25***	-0.06	-0.03	-0.07	-0.16**	-0.28***	-0.09	-0.29***	-0.09

## 6.2 Industry-wide Effects

Previous studies have exhibited that some industries publish more ESG information in their corporate sustainability disclosure. The close relationship with the government and consumers pushes the firms to increase the transparency level towards the society (Giannarakis, 2014). The Consumer Staples industry is consumer-oriented and evident to the final buyers. This industry achieves the highest mean ESG disclosure score across the sample from Table 6.3, in line with our expectations. Health Care achieved a mean ESG disclosure score of 50.69. This is lower than expected, as the reputation of Health Care companies is dependent on patients' trust and thus might create a rationale for improving the ESG performance to meet social expectations.

**Table 6.3:** Descriptive statistics for industries

Industries	n.	Mean	Max	Min	St.Dev
Information Technology	47	42.34	90.32	6.35	20.30
Industrials	105	51.31	90.78	5.07	18.88
Health Care	37	50.69	88.02	6.77	22.22
Energy	8	52.62	80.61	23.71	24.01
Real Estate	24	49.87	83.39	14.30	18.32
Financials	8	45.84	66.96	20.54	18.18
Communication Services	17	54.56	82.69	26.80	19.25
Consumer Staples	21	62.14	89.77	40.07	12.65
Utilities	4	58.52	75.69	30.31	20.83
Consumer Discretionary	42	55.93	89.77	22.82	15.50
Materials	26	61.73	88.36	11.09	24.86

Furthermore, our findings show that Information Technology (IT) has the lowest average ESG score of 42.34. IT is traditionally associated with fewer women on the corporate board (Sava, 2022). As our findings show that women on board positively affect the ESG disclosure score, we may argue that this is partially why IT, on average, achieves a worse ESG score than the other industries. Our findings in Table 2, Appendix A1, also show that Utilities have a significant negative effect on social score, and Industrials, Real Estate, and IT on governance score. This indicates that firms in these industries may be less likely to adequately disclose the impact of their operations in the social (S) and governance (G) dimensions. This may further suggest that industry characteristics influence the firm's adoption of ESG disclosure initiatives and

can provide sufficient knowledge for greater policymaking to improve sustainable corporate governance within each E, S and G dimensions.

Firm risk is found to be an industry-wide effect in the Real Estate industry, as shown in Table 1, Appendix A1. This is the only industry with a significant (negative) effect on the overall ESG score, controlling for firm characteristics and board size. Several researchers have confirmed this relationship. Firstly, our findings suggest that Real Estate has a systematically higher leverage ratio. Our results are supplemented by Giambona et al.'s (2014) findings, as they propose a positive relationship between leverage and tangibility for the real estate collateral. This emphasizes the additional borrowing capacity for Real Estate firms and their relatively higher leverage compared to other industries. Next, Kempeneer et al. (2021) suggests that the importance of ESG issues for investors is underdeveloped in the Real Estate industry due to the unclear relationship with financial performance. In line with our results, this implies that the board of directors focuses less on ESG initiatives as higher financial returns is more important for shareholders. This assertion is in accordance with the Stakeholder theory, as the board monitors the management in line with stakeholders' interests. Lastly, Khatun's (2021) findings shows that increased free cash flow (FCF) is positively associated with increased investments in ESG initiatives. Accordingly, Bauer (2010) found a lack of relation between governance and Real Estate industry performance due to higher leverage and less FCF. In line with empirical evidence, our results suggest that the worse ESG performance in the Real Estate industry is typically related to less FCF. Moreover, by introducing board diversity in the regression (Model 4 in Table 1, Appendix A1) the significance of Real Estate on ESG score is reduced. This confirms that the differences in the overall ESG score is mainly explained by board diversity and indicates no substantial differences across industries.

### **6.3 Board Gender Diversity**

*Overall ESG Disclosure Score.* The regression results from Table 6.4 show that a higher percentage of female directors on the corporate board significantly increases the ESG performance. For instance, Table 6.1, shows that the average share of women on board for our sample is 34 percent. Thus, a corporate board

with this percentage of female directors is typically expected to improve the overall ESG disclosure score with 0.89 percent ( $0.26 \times 0.34$ ). Our results support hypothesis H1, and supplement findings from previous literature (Nicolò et al., 2021; Yarram, 2021; Tamimi & Sebsatianelli, 2017; Rao & Tilt, 2016; Wasiuzzaman & Wan Mohammad, 2020).

The findings can be justified by both Resource Dependency and Stakeholder theories. Board gender diversity has the potential to provide the corporate board with appropriate perspectives and skills that may improve business strategies and decisions. Women's increased attendance reinforces the capability to meet stakeholders' expectations and reduces information asymmetry through building trust in relationships (Ouni et al., 2020; Gul et al., 2013). Thus, in line with EC's Sustainable CG strategy proposal, we suggest women on board as a policy to reduce the non-financial information gap between stakeholders and management. However, the relationship might be influenced by the increased number of legal frameworks and the complexity of the reporting requirements. Firms are more inclined to secure a sufficient gender balance by being subject to higher social and political measurements.

Model 2), 3), and 4) show that board gender diversity also exerts a positive and significant relationship with the environmental (E), social (S), and governance (G) disclosure scores, supporting hypotheses H2, H3, H4, and H5. This increase the overall ESG score. These findings support the robustness of our study, as the E, S, and G dimensions have the same inference as the overall ESG score. Each pillar is investigated in the following discussion.

**Table 6.4:** Regression analysis of ESG score and related pillars (E, S and G)

	<i>Dependent variable:</i>			
	ESG Score	E Score	S Score	G Score
	(1)	(2)	(3)	(4)
WOB	0.261*** (0.066)	0.216** (0.098)	0.254*** (0.082)	0.291*** (0.081)
B_Indep	0.142*** (0.035)	0.006 (0.051)	0.043 (0.043)	0.351*** (0.043)
B_Tenure	0.002 (0.003)	0.0004 (0.004)	0.002 (0.003)	0.001 (0.003)
F_size	0.153*** (0.014)	0.194*** (0.021)	0.144*** (0.018)	0.121*** (0.017)
B_size	0.019*** (0.004)	0.016** (0.006)	0.026*** (0.005)	0.016*** (0.005)
F_risk	-0.153*** (0.050)	-0.153** (0.074)	-0.177*** (0.062)	-0.111* (0.061)
ROA	0.066 (0.129)	0.255 (0.189)	-0.066 (0.159)	0.093 (0.157)
A_Turnover	0.013 (0.016)	-0.005 (0.023)	0.015 (0.020)	0.019 (0.019)
P/E	-0.0002 (0.0002)	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0002 (0.0003)
Constant	-1.283*** (0.141)	-1.773*** (0.207)	-1.163*** (0.175)	-0.993*** (0.173)
Observations	340	340	340	340
Adjusted R <sup>2</sup>	0.571	0.487	0.475	0.437
F Statistic (df = 22; 317)	21.498***	15.637***	14.950***	12.982***
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

*Environmental Disclosure Score (E)*. The significant and positive relationship between women on board and environmental disclosure score (E) in Model 2, Table 6.4, establishes that board gender diversity may be a crucial corporate governance variable that enables the firms to address environmental threats better. This supports the necessity for a proactive gender diversity policy to enhance the performance of Environmental disclosure (Rao & Tilt, 2016; Qureshi et al., 2020; Wasiuzzaman & Wan Mohammad, 2020). This is further confirmed by the positive relationship in the environmental disclosure categories, Emission and Resource Use, summarized in Model 1 and 3, Table 6.5.

Firstly, the results emphasize that women on board often are more environmentally oriented, resulting in a higher propensity to disclose environmental information and improve the board's sensitivity towards climate challenges and pollution (Nicolò, 2021; Rao & Tilt, 2016). Secondly, the Resource Dependence theory highlights that a higher percentage of women on board might lead to a more qualified commitment towards the environment. The assertion builds upon women being more inclined to implement full transparency and accountability to access the required resources for existence, as female directors tend to be more sensitive to sustainability and social responsibility issues (Rao & Tilt, 2016; Nicolò, 2021; Yarram & Adapa, 2021; Wasiuzzaman & Wan Mohammad, 2020).

Concerning the last category of the environmental disclosure score, Innovation, we expected that the presence of women on board would positively impact the innovation level since women bring unique value and expertise (Miller & Triana, 2009; Selby, 2000). This is interesting, as, from the regression results in Model 2, Table 6.5, we observe that women on board is non-significant. However, this might result from missing data rather than having no effect. From Table 2, Appendix A2, we observe that the mean of Innovation is 30.83 – significantly lower than the mean of the rest of the categorical variables.

*Social Disclosure Score (S)*. Model 3, Table 6.4, suggests that women on board are more inclined to address the social and human aspects of ESG and thus improve the overall ESG disclosure score. This is based on the attributes of women being more supportive of ethical and social issues (Nadeem et al., 2017; Nicolò et al., 2021; Williams, 2003). Accordingly, our findings imply that



women on board appreciate a more favorable social reputation (Adams et al., 2015; Terjesen et al., 2009; Post & Byron, 2016).

By examining the underlying category scores of the social (S) dimension, only Workforce has a significant and positive relationship with women on board, as shown in Table 6.6. The Workforce score has data points linked to the number of women employees in the firm. Modiba and Ngwakwe's (2017) findings suggest that women on board are positively associated with the company's overall number of female employees. Given the positive relationship, women on board may impact the social (S) disclosure score since they assist firms in achieving gender equality employment goals. On the contrary, this could also be a sign of endogeneity, as women that are compassionate about ESG performance might prefer to sit on corporate boards with a developed ESG culture. Accordingly, organizations prefer board members who share their values and objectives regarding ESG initiatives. There are reasons to assume reverse causality in this relationship (Adams & Ferreira, 2009). The implication is that sustainable, responsible firms might be more likely to increase the number of women on board and therefore, significantly increase their ESG performance.

*Governance Disclosure Score (G).* We find evidence that a higher percentage of women on corporate boards significantly influences the disclosure performance on governance (G) aspects of ESG, as shown in Table 6.4. This supports previous literature, where gender balance on boards improves board discussion and increases transparency (Rao & Tilt, 2016; Wasiuzzaman & Wan Mohammad, 2020). Additionally, it empowers the firm's governance mechanisms in terms of monitoring (Nicolò, 2021; Arayssi et al., 2020; Tamimi & Sebsatianelli, 2017). By examining the underlying categories of governance (G) disclosure score, women on board is found to have a positive and significant relationship with CSR Strategy and Management in Table 6.7, Model 1 and 2. Firstly, the positive relationship with the Management score indicates that the female representation exhibits good corporate governance practices. In accordance with our findings, Adam and Ferreira (2009) suggest that women are more likely to be assigned monitoring committees on corporate boards. Thus, we propose that gender diverse boards are more inclined to allocate more effort to monitoring. The consensus in the literature supports this assertion. Women provide different

values and experiences than men, thus enhancing decision-making and enabling the board to strengthen the monitoring activities (Boulouta, 2013). This improves the overall ESG disclosure performance.

Furthermore, our results illustrate that female directors are incentivized to take the CSR strategy more seriously, complementing previous research (Eagly & Carli, 2003; Nicolò et al., 2021; Hyun et al., 2016). The categorical measure of CSR strategy reflects a company's ability to communicate the integration of financial, social, and environmental dimensions in their internal processes. Our findings suggest that women tend to have more robust moral orientations and reputational motives and may be compelled to pay more attention to ESG-related strategies in their day-to-day decision-making. Women hold valuable competence in topics like human resource management and other soft topics that overlap with corporate sustainable responsibility issues (Hyun et al., 2016; Ibrahim et al., 2009; Zelechowski & Bilimoria, 2003). Justified by their reputational motives, we suggest that women on board are incentivized to improve their expertise in sustainable corporate governance issues and show greater interest in the associated strategy in the boardroom.

The skewed bias towards "soft issue topics" may result in female directors encountering difficulties establishing integrity in more technical areas of a firm. Kowalenwska (2019) argued that the bias might be a consequence of gender stereotypes (e.g., women are "nice", men are "assertive") and opaque selection procedures. Konrad et al. (2008) suggest that companies that achieve a "critical mass" of women on board (over 25 percent of the leadership team) have a more significant probability of bringing women's issues into the agendas, thus leading to adopting female-friendly practices and policies at the firm level. Our findings complement theirs, as we suggest that a "critical mass" of female directors' may positively influence firm policies towards improved ESG disclosure performance. This strengthens the necessity for greater legislative requirements for companies to achieve gender diversity in their leadership structures.

**Table 6.5:** Regression analysis of environmental (E) category scores

	<i>Dependent variable:</i>		
	Emission	Innovation	Resource Use
	(1)	(2)	(3)
WOB	0.353*** (0.108)	0.030 (0.142)	0.265** (0.123)
B_Indep	-0.013 (0.057)	0.055 (0.074)	-0.007 (0.064)
B_Tenure	0.001 (0.005)	0.0004 (0.006)	0.001 (0.005)
F_size	0.225*** (0.023)	0.156*** (0.030)	0.210*** (0.026)
B_size	0.016** (0.007)	0.008 (0.009)	0.019** (0.008)
F_risk	-0.185** (0.082)	-0.242** (0.107)	-0.177** (0.092)
ROA	0.153 (0.210)	0.269 (0.274)	0.295 (0.237)
A_Turnover	0.001 (0.026)	-0.003 (0.034)	-0.008 (0.029)
P/E	-0.0004 (0.0004)	-0.0003 (0.0005)	-0.0003 (0.0004)
Constant	-1.986*** (0.230)	-1.470*** (0.301)	-1.892*** (0.260)
Observations	340	340	340
Adjusted R <sup>2</sup>	0.472	0.240	0.419
F Statistic (df = 22; 317)	14.791***	5.856***	12.127***
Country FE	YES	YES	YES
Sector FE	YES	YES	YES

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

**Table 6.6:** Regression analysis of social (S) category scores

	<i>Dependent variable:</i>			
	Community	Human Rights	Product Res.	Workforce
	(1)	(2)	(3)	(4)
WOB	0.207*	0.269**	0.253*	0.294***
	(0.120)	(0.134)	(0.137)	(0.091)
B_Indep	0.073	0.058	0.024	0.007
	(0.063)	(0.070)	(0.072)	(0.048)
B_Tenure	0.0001	0.007	0.008	-0.006
	(0.005)	(0.006)	(0.006)	(0.004)
F_size	0.162***	0.188***	0.084***	0.142***
	(0.026)	(0.029)	(0.029)	(0.020)
B_size	0.028***	0.028***	0.027***	0.016***
	(0.008)	(0.009)	(0.009)	(0.006)
F_risk	-0.323***	-0.215**	0.006	-0.148**
	(0.091)	(0.101)	(0.103)	(0.069)
ROA	-0.200	-0.141	-0.141	0.218
	(0.233)	(0.260)	(0.265)	(0.177)
A_Turnover	-0.007	0.066**	-0.008	0.017
	(0.029)	(0.032)	(0.032)	(0.022)
P/E	-0.001*	0.0004	0.0001	-0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0003)
Constant	-1.371***	-1.651***	-0.634**	-1.002***
	(0.256)	(0.285)	(0.291)	(0.194)
Observations	340	340	340	340
Adjusted R <sup>2</sup>	0.364	0.337	0.182	0.360
F Statistic (df = 22; 317)	9.820***	8.828***	4.433***	9.675***
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

**Table 6.7:** Regression analysis of governance (G) category scores

	<i>Dependent variable:</i>		
	CSR Strategy	Management	Shareholders
	(1)	(2)	(3)
WOB	0.365*** (0.115)	0.328*** (0.101)	0.118 (0.136)
B_Indep	0.073 (0.060)	0.456*** (0.053)	0.185*** (0.071)
B_Tenure	0.010** (0.005)	0.003 (0.004)	-0.012** (0.006)
F_size	0.197*** (0.025)	0.136*** (0.022)	0.020** (0.029)
B_size	0.025*** (0.007)	0.019*** (0.006)	-0.001 (0.009)
F_risk	-0.113 (0.087)	-0.107 (0.076)	-0.124 (0.102)
ROA	-0.003 (0.223)	0.102 (0.195)	0.128 (0.263)
A_Turnover	-0.003 (0.027)	0.023 (0.024)	0.019 (0.032)
P/E	-0.0004 (0.0004)	-0.0002 (0.0003)	-0.0002 (0.0004)
Constant	-1.930*** (0.245)	-1.214*** (0.214)	0.369 (0.289)
Observations	340	340	340
Adjusted R <sup>2</sup>	0.445	0.417	0.031
F Statistic (df = 22; 317)	13.344***	12.036***	1.490*
Country FE	YES	YES	YES
Sector FE	YES	YES	YES

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

## 6.4 Board Independence

*Overall ESG Disclosure Score.* In line with our expectations, board independence positively and significantly influences the overall ESG disclosure score, as shown in Table 6.4. The decisive point is that the average board is expected to increase the ESG disclosure score by  $0.66 \times 0.14 = 9.24$  percent, including 66 percent independent board members. This positive relationship supports hypothesis H1 and complements evidence from prior empirical studies (Cheng et al., 2006; Huafang et al., 2007; Jizi et al., 2013, Liao et al., 2014). Independent directors on the board tends to be more sensitive to society and stakeholders' needs and more interested in compliance with regulations and responsible behavior (Zahra et al., 1989). We suggest that independent directors exhibit greater sensitivity to sustainable corporate responsibility merely because they are outsiders. Independent directors can assess management performance more objectively than executive directors, who tend to be more closely related to operational activities and competitive pressure (Jizi et al., 2013). This can be explained in the light of the Resource Dependence theory, as independent directors strengthen the board's ability to reduce dependency on the CEO's goodwill and businesses linked to the firm (Cheng et al., 2006). This will induce effectiveness in corporate governance by mitigating the agency conflict that results from the separation of ownership and control (Fama & Jensen, 1983).

In general, empirical evidence has found that companies operating in civil law countries, as the Nordic region, implement a stakeholder-oriented management model with more focus on sustainable corporate governance (Ortas et al., 2017). This is in concurrence with our findings, indicating that independent directors on corporate boards act as a positive driver of the ESG disclosure score. Furthermore, our findings partially support hypotheses H2, H3, H4 and H5, as shown in Table 6.4. Board independence exerts a positive and significant relationship with the governance (G) disclosure score, improving the overall ESG disclosure score. Board independence exerts a non-significant relationship with the environmental (E) and social (S) disclosure scores. This indicates that corporate boards with a high share of independent directors do not necessarily prioritize resources in the E and S dimensions, thus moderating the overall ESG performance.

*Governance Disclosure Score (G)*. As our results indicate that the independent board members are positively associated with sustainable corporate governance, we suggest that the more independent the board is, the greater governance disclosure. Independent directors are considered important for the company's corporate credibility. Drawing parallels to Stakeholder theory, they are responsible for meeting shareholders' expectations and monitoring the management. As a result of our findings and empirical evidence, we suggest that corporate boards with a greater portion of independent directors are more likely to disclose higher-quality sustainability reports, thus enhancing the overall ESG disclosure performance.

In Table 6.7, model 3, our findings show that board independence exerts a significant and positive relationship with the Shareholder score. The score reflects two aspects. Firstly, the score measures the company's treatment of shareholders. Our findings reflect that independent boards encourage firms to disclose more ESG information in coherence with stakeholders' interests (Rao & Tilt, 2016; Solal et al., 2019). Complying with regulations and providing transparency about the firm's sustainable corporate responsibility can enhance reputation and goodwill. We argue that independent directors might be more sensitive to critics and demands from shareholders due to reputational matters, as it impacts the probability of being selected for other boards (Aguilera et al., 2006; Kolk et al., 2010; Lorenzo et al., 2009). This may be confirmed with reputation being derived from contextual factors, as the increased attention for ESG in society increases the reputation risk if not performed or reported aligned with stakeholders' interests.

The second determinant of the Shareholder score is the use of anti-takeover devices. Our findings indicate a trend where independent board members increase the level of disclosure of anti-takeover devices to minimize asymmetry between insiders and outsiders. This is justified by empirical evidence, as independent directors are suggested to facilitate a comparatively higher degree of voluntary disclosure (Johnson et al., 1999; Li et al., 2010). However, the empirical evidence is contradictory as some researchers suggest an inverse relationship between anti-takeover devices and ESG disclosure scores. According to Palmer (2021), prioritizing strategies to avoid a hostile takeover can

significantly reduce shareholder value. This will moderate the governance (G) disclosure score, as the resources are assigned to anti-takeover defenses instead of focusing on sustainable corporate governance. To conclude, the Shareholder score will improve the overall disclosure score as long the prioritizing of ESG initiatives are in line with shareholders' interests.

Our findings from Table 6.7, Model 2, suggest that board independence exerts a positive relationship with Management score, describing companies' commitment and effectiveness towards following best practice corporate governance principles. Consequently, we argue that if the board's independence declines, the firm may be less likely to engage in ESG initiatives (OECD, 2015; Johnson et al., 1999). Furthermore, this Management score reflects data points of compensation schemes. In line with our findings, Ryan Jr et al. (2004) argues that boards with more independent directors tend to have more equity-based compensation, more closely aligned with shareholder wealth maximization. If the board loses independence, the CEO's bargaining power increases, and the equity-based compensation is reduced, nonaligned with shareholders' interests. The monitoring incentive for the independent directors reduces as the impediments strengthen, causing possible agency conflicts and less probability that the corporate board will engage in ESG initiatives. This indicates that independent board members are vital in mitigating possible agency conflicts. Thus, independent directors drive the Management score performance up, resulting in an improved overall ESG disclosure performance.

Moreover, Table 6.7, Model 1, also shows that board independence has no significant effect on the presence of CSR strategy. This is not in line with expectations, as board independence from empirical evidence is argued to have a positive relationship with engagement in internal CSR strategies (Rao & Tilt, 2016). However, the insignificance can be reasoned from the independent directors not being involved in the organization's day-to-day operations. This insignificant result raises questions about independent directors' influence on internal corporate sustainability reporting and establishes a potential for future research, particularly in the Nordic region.



## 6.5 Board Tenure

Our findings illustrate an insignificant relation between board tenure and overall ESG score, as shown in Table 6.4. Thus, for the board diversity measure tenure, we reject the respective hypotheses. In prior empirical evidence, board tenure has shown varying results regarding ESG disclosure. Hafsi et al. (2013) suggest that such inconclusive result exhibit that both longer and shorter tenure negatively relates to sustainable corporate governance. Longer tenure board members can create familiarity with the firm's management strategy, thus captivating the management. In contrast, shorter tenure board members may lack the courage to share their perspectives. This creates an absence of leadership, which may negatively affect engagement and disclosure performance in the environmental (E) and social (S) dimensions. Accordingly, we argue that this moderates the overall ESG score. On the other hand, the insignificance relation provides essential information as it can indicate the ability of directors to change continuously with regulations.

## 6.6 Control Variables

*Firm Size.* Table 6.4 shows that firm size significantly and positively affects ESG disclosure score and the distinct E, S, and G disclosure scores. Firm size is also significant with underlying categorical disclosure scores in Table 6.5, 6.6, and 6.7. This indicates that firm size may be an essential explanation variable of ESG disclosure. Larger firms are more visible in political concerns, attracting more attention from the government and stakeholders (Artiach et al., 2010). Thus, we underscore the importance of behaving responsibly. Additionally, larger firms are expected to generate more prominent environmental imprints because of their scale and importance of their activities. This suggests that there will be severe negative reputational consequences if the firm is non-compliant with ESG measures. Accordingly, in line with our evidence, previous literature finds that accountability and visibility are two crucial reasons large companies publish more ESG information (Giannarakis, 2014; Khan, 2010; Rahman et al., 2009). Therefore, our findings suggest that larger firms provide more ESG information to demonstrate active commitment toward corporate sustainability responsibility, thus improving the overall ESG performance.

*Board Size.* Table 6.4 imply that a greater board size positively affects ESG disclosure score and the distinctive pillars (E, S, and G). A larger board can contain a more comprehensive range of ideas and experiences, thus leading to broader discussions and potentially engaging in ESG-related activities. In relevance to RDT, firms should benefit from larger boards as they provide access to a greater number of resources (e.g., external network and ESG knowledge). However, larger boards can also be subject to coordination and interaction problems, resulting in board ineffectiveness. From Table 6.1, we observe that the average board in the sample comprises eight members, which is relatively low, as large boards may be defined with 14 or more board directors (Troy, 2022). Thus, an average board composition in our sample is not too large to be effective. Regardless of the size, we suggest that the efficiency for boards mainly depends on the board members' features and the overall heterogeneity. Therefore, board size can be argued to improve ESG disclosure performance jointly with other variables, particularly board independence and women on board.

*Firm Risk.* Table 6.4 indicate that high firm risk may lead to a decline in ESG initiatives in the respective E, S, and G dimensions, typically moderating the overall ESG disclosure performance. As we expected, higher leverage forces the management to take a short-term perspective in operations since firms with leverage have less free cash flow (FCF) due to allocating resources to service their debt (Artiach, 2010; Haque, 2017; Sutiono, 2020). As shown in Table 6.7, Model 1, the categorical measure CSR strategy, underlying the G dimension, also moderates the overall ESG performance. This is not in line with our expectations, as higher leverage is anticipated to increase the level of an internal corporate sustainability strategy to avoid scrutiny from creditors, reduce agency costs, and avoid other penalizations (Ho & Taylor, 2007; Sutiono, 2020; Alaseed, 2006).

---

## 7 Conclusion

This master thesis recognizes the impact of board diversity on sustainable corporate governance and ESG disclosure score in Nordic countries. This region has recently been exposed to several board diversity regulations and measurements and promotes non-financial disclosures in political and social concerns (Jourova, 2016; European Commission, 2012, 2014, 2020, 2021; UN, 2015; Nadeem et al., 2017; Furlotti et al., 2019; Nicolò et al., 2021). Accordingly, this thesis investigates and improves the understanding of how board diversity influences ESG disclosure performance.

### 7.1 Main Findings

By collecting ESG disclosure and board diversity data from 340 listed firms in the Nordic context, including industry-wide effects, our study has provided substance for empirical evidence. The results support the assumption that diversity contributes to sufficient heterogeneity in the board of directors, which positively affects the transparency and disclosure of ESG. Our main findings highlight the positive relationship between board gender diversity and ESG disclosure, the overall ESG disclosure score, the distinctive environmental (E), social (S), and governance (G) dimensions, and the underlying categorical disclosure scores. The presence of women on corporate boards may provide the board with sensitive and supportive features relevant to transparency and maintaining societies' needs. This emphasizes the need for gender balance in corporate boards, as women implement essential aspects for long-term value add. Furthermore, we find evidence that board independence has shown to be an essential feature of the board of directors. They provide an unbiased view of outsiders and detachment to the firm's resources and operative management, aligning stakeholders' interests. By combining independence and female directors, the board may satisfy the features desirable for sustainable corporate governance as both illustrate essential features of diverse perspectives. Following this, we found that board tenure shows no significant relationship with the overall ESG disclosure. The insignificant relation may provide important information as it can indicate the ability of directors to change continuously with regulations. Alternatively, it can provide an aspect for further research

regarding how leadership characteristics can affect ESG disclosure performance. Our findings also highlight the relevance of board size, firm size, and risk, as some of the variations of ESG disclosure seems to be explained by these variables. Finally, we found small significant differences between the different industries and the extent of ESG disclosure levels. The differences in the overall ESG score are mainly explained by the diversity of boards and the control variables. However, our findings highlight an interesting relationship where firm risk is an industry-wide effect in the Real Estate industry. The industry analysis implicates that corporate boards, especially in the Real Estate, Utilities, Industrials, and IT industries, ought to adopt ESG disclosure initiatives and enhance the knowledge relative to the features of the industry for better policymaking.

## **7.2 Sustainable Corporate Governance Implications**

This study forms several potential theoretical and policy implications for the ESG literature. Our findings are valuable for companies to recognize the importance of implementing board diversity to meet the expectations of stakeholders and society to ensure accountability and transparency in ESG initiatives. For policymakers and regulators, this study reinforces the importance of maintaining measures and regulations that encourage heterogeneous boards and non-financial disclosures in the Nordic region. This ensures sustainable and responsible corporate governance across industries.

## **7.3 Limitations and Future Research**

The study contains several aspects of limitations, which provides the opportunity for further research. The first limitation is regarding the quality dimension of information in ESG disclosure. The analysis consists of one provider of ESG disclosure score, which may skew the analysis towards their methodology and perspectives. A possible solution to reach more generalized results could include additional providers and aggregate their methodology into a summarized score. The limitation also raises the question regarding increasing the quantity. However, considering possible delays in integrating regulations on sustainable corporate governance, the applied scores contribute to the most

credible perception of how companies report on the topic compared to previous years, where the amount of missing data is relatively larger. Secondly, it would be valuable to explore the determination of ESG disclosure in different regions compared to the Nordic countries. In this way, it would be able to verify whether the cultural perspective influences engagement in sustainable corporate governance. The significance of this study could be further enlarged by increasing the scope of variables of qualitative data integrated, such as seniority, type of management, maturity, organizational culture, and director profile. Together with a comparison against other regions, this could provide global investors, policymakers, and companies with generalized information to improve future research on sustainable corporate governance.

## References

- Abd Rahman, N. H. W., Zain, M. M., and Al-Haj, N. H. Y. Y. (2011). Csr disclosures and its determinants: evidence from malaysian government link companies. *Social Responsibility Journal*.
- Adams, R., de Haan, J., Terjesen, S., and Van Ees, H. (2015). Board diversity: Moving the field forward. *Corporate Governance*, 23:77–82.
- Adams, R. B., Hermalin, B. E., and Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of economic literature*, 48(1):58–107.
- Amran, A., Lee, S. P., and Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. *Business Strategy and the environment*, 23(4):217–235.
- Anderson, R., Mansib, S., and Reeb, D. (2004). Board characteristics, accounting report integrity, and the cost of debt. *Journal of Accounting and Economics*, 37(3):315–342.
- Aquileria, R. V., Williams, C. A., Conley, J. M., and E., R. D. (2006). Corporate governance and social responsibility: A comparative analysis of the uk and the us. *Corporate Governance: An International Review*, 14(3):147–158.
- Arayssi, M., Jizi, M., and Tabaja, H. H. (2020). The impact of board composition on the level of esg disclosures in gcc countries. *Sustainability Accounting, Management and Policy Journal*, 11(1):137–161.
- Artiach, T., Lee, D., Nelson, D., and Walker, J. (2010). The determinants of corporate sustainability performance. *Accounting Finance*, 50(1):31–51.
- Bauer, R., Eichholtz, P., and Kok, N. (2010). Real estate economics real estate economics full access corporate governance and performance: The reit effect. *Real estate economics*, 38(1):1–29.
- Bhojraj, S., Lee, C. M., and Oler, D. (2003). What’s my line? a comparison of industry classification schemes for capital market research. *Journal of Accounting Research*, 41:745–774.
- Boulouta, I. (2013). Hidden connections: The link between board gender diversity and corporate social performance. *Journal of business ethics*, 113(2):185–197.
- Byron, K. and Post, C. (2016). Women on boards of directors and corporate social performance: A meta-analysis. *Corporate Governance : An International Review*, 24(4):428–442.
- Campbell, K. and Mínguez-Vera, A. (2008). Gender diversity in the boardroom and firm financial performance. *Journal of business ethics*, 83(3):435–451.
- CFA (2022). *Board Independence Independent Board of Directors*. CFA Institute. <https://www.cfainstitute.org/en/advocacy/issues/board-independencesort=%40pubbrowsedate%20descending>.
- CFI (2022). *What is an Independent Director?* Corporate Finance Institute.

- <https://corporatefinanceinstitute.com/resources/careers/jobs/independent-director/>.
- Cheng, E. and Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. *The International Journal of Accounting*, 41:262–289.
- Cho, C. H. and Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, organizations and society*, 32(7-8):639–647.
- Cornell, B. and Shapiro, A. C. (1987). Corporate stakeholders and corporate finance. *Financial management*, pages 5–14.
- Cucari, N., Esposito de Falco, S., and Orlando, B. (2018). Diversity of board of directors and environmental social governance: Evidence from italian listed companies. *Corporate Social Responsibility and Environmental Management*, 25(3):250–266.
- de Villiers, C. and Dimes, R. (2021). Determinants, mechanisms and consequences of corporate governance reporting: a research framework. *Journal of Management and Governance*, 25(1):7–26.
- Deegan, C., Cooper, B. J., and Shelly, M. (2006). An investigation of tbl report assurance statements: Uk and european evidence. *Managerial Auditing Journal*.
- Deloitte (2021). *Women in the boardroom a Global perspective*. Deloitte. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/gx-women-in-the-boardroom-seventh-edition.pdf>.
- Eagly, A. H. and Carli, L. L. (2003). Finding gender advantage and disadvantage: Systematic research integration is the solution. *The Leadership Quarterly*, 14(6):851–859.
- EC (2012). *Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on improving the gender balance among non-executive directors of companies listed on stock exchanges and related measures*. European Commission. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52012PC0614>.
- EC (2020). *Inception impact assessment ‘sustainable corporate governance’*. European Commission. <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance>.
- EC (2021). *Mainstreaming sustainable energy finance and integrating energy performance in EU sustainable finance criteria and standards*. European Commission. <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/life-2021-cet-mainstream>.
- EC (2022). *Sustainable corporate governance*. European Commission. [https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance<sub>en</sub>](https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12548-Sustainable-corporate-governance_en).

- Endrikat, J., De Villiers, C., Guenther, T. W., and Guenther, E. M. (2021). Board characteristics and corporate social responsibility: A meta-analytic investigation. *Business & Society*, 60(8):2099–2135.
- Esa, E. and Ghazali, N. A. M. (2012). Corporate social responsibility and corporate governance in Malaysian government-linked companies. *Corporate Governance: The international journal of business in society*.
- Euronext (2021). *Euronext guidelines to issuers for ESG reporting*. Euronext. <https://www.euronext.com/en/about/esg-empowering-sustainable-growth>.
- Fama, E. F. and Jensen, M. C. (1983). Separation of ownership and control. *The journal of law and Economics*, 26(2):301–325.
- Fernandez, W. D., Burnett, M. F., and Gomez, C. B. (2018). Women in the boardroom and corporate social performance: negotiating the double bind. *Management Decision*.
- Ferreira, D. (2010). Board diversity. *Corporate governance: A synthesis of theory, research, and practice*, 8:225.
- Ferreira, D. and Adams, R. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, pages 291–309.
- Francoeur, C., Labelle, R., Balti, S., and EL Bouzaidi, S. (2019). To what extent do gender diverse boards enhance corporate social performance? *Journal of Business Ethics*, 155(2):343–357.
- Furlotti, K., Mazza, T., Tibiletti, V., and Triani, S. (2019). Women in top positions on boards of directors: Gender policies disclosed in Italian sustainability reporting. *Corporate Social Responsibility and Environmental Management*, 26(1):57–70.
- Giambona, E., Golec, J., and Schwienbacher, A. (2014). Debt capacity of real estate collateral. *Real Estate Economics*, 42(3):578–605.
- Giannarakis, G. (2014). The determinants influencing the extent of CSR disclosure. *International Journal of Law and Management*.
- Gompers, P., Kaplan, S. N., and Mukharlyamov, V. (2016). What do private equity firms say they do? *Journal of Financial Economics*, 121(3):449–476.
- Griffin, D., Li, K., and Xu, T. (2021). Board gender diversity and corporate innovation: International evidence. *Journal of Financial and Quantitative Analysis*, 56(1):123–154.
- Guest, P. M. (2009). The impact of board size on firm performance: evidence from the UK. *The European Journal of Finance*, 15(4):385–404.
- Gujarati, D. N., Porter, D. C., and Gunasekar, S. (2012). *Basic econometrics*. Tata mcgraw-hill education.
- Hafsi, T. and Turgut, G. (2013). Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of business ethics*, 112(3):463–479.
- Hambrick, D. C., Cho, T. S., and Chen, M.-J. (1996). The influence of top



- management team heterogeneity on firms' competitive moves. *Administrative science quarterly*, pages 659–684.
- Handajani, L., Subroto, B., Sutrisno, T., and Saraswati, E. (2014). Does board diversity matter on corporate social disclosure? an Indonesian evidence. *Journal of economics and sustainable development*, 5(12):8–16.
- Haque, F. (2017). The effects of board characteristics and sustainable compensation policy on carbon performance of UK firms. *The British Accounting Review*, 49(3):347–364.
- Hermalin, B. E. and Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, pages 96–118.
- Higgs, D. et al. (2003). Review of the role and effectiveness of non-executive directors.
- Hillman, A. J., Cannella Jr, A. A., and Harris, I. C. (2002). Women and racial minorities in the boardroom: How do directors differ? *Journal of management*, 28(6):747–763.
- Hillman, A. J., Shropshire, C., and Cannella Jr, A. A. (2007). Organizational predictors of women on corporate boards. *Academy of management journal*, 50(4):941–952.
- Hillman, A. J., Withers, M. C., and Collins, B. J. (2009). Resource dependence theory: A review. *Journal of management*, 35(6):1404–1427.
- Holtz, L. and Sarlo Neto, A. (2014). Effects of board of directors' characteristics on the quality of accounting information in Brazil. *Revista Contabilidade & Finanças*, 25:255–266.
- Huafang, X. and Jianguo, Y. (2007). Ownership structure, board composition and corporate voluntary disclosure: Evidence from listed companies in China. *Managerial Auditing Journal*.
- Humphery-Jenner, M. (2014). Takeover defenses, innovation, and value creation: Evidence from acquisition decisions. *Strategic Management Journal*, 35(5):668–690.
- Hussain, N., Rigoni, U., and Oriij, R. P. (2018). Corporate governance and sustainability performance: Analysis of triple bottom line performance. *Journal of business ethics*, 149(2):411–432.
- Hyun, E., Yang, D., Jung, H., and Hong, K. (2016). Women on boards and corporate social responsibility. *Sustainability*, 8(4):300.
- Ibrahim, N., Angelidis, J., and Tomic, I. M. (2009). Managers' attitudes toward codes of ethics: are there gender differences? *Journal of Business Ethics*, 90(3):343–353.
- Ibrahim, N. A. and Angelidis, J. P. (1995). The corporate social responsiveness orientation of board members: Are there differences between inside and outside directors? *Journal of business ethics*, 14(5):405–410.
- Ismail, A. M., Latiff, I. H. M., et al. (2019). Board diversity and corporate

- sustainability practices: Evidence on environmental, social and governance (esg) reporting. *International Journal of Financial Research*, 10(3):31–50.
- Jackson, G., Bartosch, J., Avetisyan, E., Kinderman, D., and Knudsen, J. S. (2020). Mandatory non-financial disclosure and its influence on csr: An international comparison. *Journal of Business Ethics*, 162(2):323–342.
- Jamali, D., Safieddine, A. M., and Rabbath, M. (2008). Corporate governance and corporate social responsibility synergies and interrelationships. *Corporate governance: an international review*, 16(5):443–459.
- Jhunjhunwala, S. and Mishra, R. (2012). Board diversity and corporate performance: The indian evidence. *IUP Journal of Corporate Governance*, 11(3):71.
- Jizi, M. I. and Dah, M. A. (2018). Board independence and the efficacy of social reporting. *Journal of International Accounting Research*, 17(1):25–45.
- Jizi, M. I., Salama, A., Dixon, R., and Stratling, R. (2014). Corporate governance and corporate social responsibility disclosure: Evidence from the us banking sector. *Journal of business ethics*, 125(4):601–615.
- Johnson, R. A. and Greening, D. W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of management journal*, 42(5):564–576.
- Jourova, V. (2016). *Gender Balance on Corporate Boards: Europe Is Cracking the Glass Ceiling*. European Commission. [https://www.meuselbach-seminare.de/files/meuselbach/newsletter/newsletter-2016-03/Gender-balance-on-corporate-boards\\_factsheet\\_wob2016.pdf](https://www.meuselbach-seminare.de/files/meuselbach/newsletter/newsletter-2016-03/Gender-balance-on-corporate-boards_factsheet_wob2016.pdf).
- Kempeneer, S., Peeters, M., and Compennolle, T. (2021). Bringing the user back in the building: An analysis of esg in real estate and a behavioral framework to guide future research. *Sustainability*, 13(6):3239.
- Khatun, A., Islam, S. M. T., and Ghosh, R. (2021). Slack resources, free cash flow and corporate social responsibility expenditure: evidence from an emerging economy. *Journal of Accounting in Emerging Economies*.
- Kolk, A. and Pinkse, J. (2010). The integration of corporate governance in corporate social responsibility disclosures. *Corporate social responsibility and environmental management*, 17(1):15–26.
- Konadu, R., Ahinful, G. S., Boakye, D. J., and Elbardan, H. (2022). Board gender diversity, environmental innovation and corporate carbon emissions. *Technological Forecasting and Social Change*, 174:121279.
- Konrad, A. M., Kramer, V., and Erkut, S. (2008). The impact of three or more women on corporate boards. *Organizational dynamics*, 37(2):145–164.
- Kowalewska, H. (2020). Bringing women on board: The social policy implications of gender diversity in top jobs. *Journal of Social Policy*, 49(4):744–762.
- Krüger, P. (2009). Corporate social responsibility and the board of directors. job market paper. *Toulouse: Toulouse School of Economics*.
- Kulik, C. T., Ali, M., and Ng, Y. L. (2014). Board age and gender diversity:

- A test of competing linear and curvilinear predictions. *Journal of Business Ethics*, 125(3):497–512.
- Kumar, P. and Sivaramakrishnan, K. (2008). Who monitors the monitor? the effect of board independence on executive compensation and firm value. *The Review of Financial Studies*, 21(3):1371–1401.
- Kyaw, K., Treepongkaruna, S., and Jiraporn, P. (2022). Board gender diversity and environmental emissions. *Business Strategy and the Environment*.
- Leatherman, S. and McCarthy, D. (1999). Public disclosure of health care performance reports: experience, evidence and issues for policy. *International Journal for Quality in Health Care*, 11(2):93–98.
- Li, S., Fetscherin, M., Alon, I., Lattemann, C., and Yeh, K. (2010). Corporate social responsibility in emerging markets. *Management international review*, 50(5):635–654.
- Liao, L., Luo, L., and Tang, Q. (2015). Gender diversity, board independence, environmental committee and greenhouse gas disclosure. *The British Accounting Review*, 47(4):409–424.
- Liu, Y., Wei, Z., and Xie, F. (2014). Do women directors improve firm performance in china? *Journal of corporate finance*, 28:169–184.
- Manita, R., Bruna, M. G., Dang, R., and Houanti, L. (2018). Board gender diversity and esg disclosure: evidence from the usa. *Journal of Applied Accounting Research*.
- Matten, D. and Moon, J. (2008). “implicit” and “explicit” csr: A conceptual framework for a comparative understanding of corporate social responsibility. *Academy of management Review*, 33(2):404–424.
- Miller, T. and del Carmen Triana, M. (2009). Demographic diversity in the boardroom: Mediators of the board diversity–firm performance relationship. *Journal of Management studies*, 46(5):755–786.
- Modiba, E. M. and Ngwakwe, C. C. (2017). Women on the corporate board of directors and corporate sustainability disclosure.
- Nadeem, M., Zaman, R., and Saleem, I. (2017). Boardroom gender diversity and corporate sustainability practices: Evidence from australian securities exchange listed firms. *Journal of Cleaner Production*, 149:874–885.
- Nerantzidis, M., Tzeremes, P., Koutoupis, A., and Pourgias, A. (2022). Exploring the black box: Board gender diversity and corporate social performance. *Finance Research Letters*, page 102987.
- Nicolò, G., Zampone, G., Sannino, G., and De Iorio, S. (2021). Sustainable corporate governance and non-financial disclosure in europe: does the gender diversity matter? *Journal of Applied Accounting Research*.
- OECD (2015). *G20/OECD Principles of Corporate Governance*. OECD. <https://www.oecd.org/corporate/principles-corporate-governance/>.
- Ortas, E., Álvarez, I., and Zubeltzu, E. (2017). Firms’ board independence and corporate social performance: A meta-analysis. *Sustainability*, 9(6):1006.

- Ouni, Z., Ben Mansour, J., and 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.
- Palmer, B. (2021). *Corporate Takeover Defense: A Shareholder's Perspective*. Investopedia. <https://www.investopedia.com/articles/stocks/08/corporate-takeover-defense.asp>.
- Pfeffer, J. and Salancik, G. R. (2003). *The external control of organizations: A resource dependence perspective*. Stanford University Press.
- Prado Lorenzo, J. M., Garcia Sanchez, I. M., and Gallego-Alvarez, I. (2009). Characteristics of the board of directors and information in matters of corporate social responsibility. *Revista Espanola de Financiacion Y Contabilidad-Spanish Journal of Finance and Accounting*, 38(141):107–135.
- Qureshi, M. A., Kirkerud, S., Theresa, K., and Ahsan, T. (2020). The impact of sustainability (environmental, social, and governance) disclosure and board diversity on firm value: The moderating role of industry sensitivity. *Business Strategy and the Environment*, 29(3):1199–1214.
- Rao, K. and Tilt, C. (2016a). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics*, 138(2):327–347.
- Rao, K. and Tilt, C. (2016b). Board diversity and CSR reporting: an Australian study. *Meditari Accountancy Research*.
- Refinitiv (2021). *Environmental, Social and Governance Scores from Refinitiv*. Refinitiv. <https://www.refinitiv.com/en/sustainable-finance/esg-scoresmethodology>.
- Robeco (2021). *What are the most sustainable countries in the world? Country Sustainability Ranking*. Robeco. <https://www.robeco.com/en/key-strengths/sustainable-investing/country-ranking/>.
- Robinson, G. and Dechant, K. (1997). Building a business case for diversity. *Academy of Management Perspectives*, 11(3):21–31.
- Ryan Jr, H. E. and Wiggins III, R. A. (2004). Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, 73(3):497–524.
- Sarhan, A. A., Ntim, C. G., and Al-Najjar, B. (2019). Board diversity, corporate governance, corporate performance, and executive pay. *International Journal of Finance & Economics*, 24(2):761–786.
- Sava, J. (2021). *Percentage of women on boards of directors in the information technology (IT) industry worldwide from 2015 to 2021*. Statista. <https://www.statista.com/statistics/1251338/share-female-board-directors-it/>.
- Scholtens, B. (2009). Corporate social responsibility in the international banking industry. *Journal of Business Ethics*, 86(2):159–175.

- Scislaw, K. E. (2015). The value premium within and across gics industry sectors in a pre-financial collapse sample. *Cogent Economics & Finance*, 3(1):1045214.
- Solal, I. and Snellman, K. (2019). *Why Investors React Negatively to Companies That Put Women on Their Boards*. Harvard Business Review. <https://hbr.org/2019/11/why-investors-react-negatively-to-companies-that-put-women-on-their-boards>.
- SpencerStuart (2020). *2020 Nordic Spencer Stuart Board Index*. Spencer Stuart. <https://www.spencerstuart.com/research-and-insight/nordic-board-index/board-composition>.
- Stuart, S. (2021a). *2021 U.K. Spencer Stuart Board Index*. Spencer Stuart. [spencerstuart.com/-/media/2020/october/ukbi2020/ukbi-highlights-2021.pdf](https://www.spencerstuart.com/-/media/2020/october/ukbi2020/ukbi-highlights-2021.pdf).
- Stuart, S. (2021b). *2021 U.S. Spencer Stuart Board Index*. Spencer Stuart. <https://www.spencerstuart.com/-/media/2021/october/ssbi2021/usbi2021-highlights.pdf>.
- Sutiono, N. (2020). *Board Gender Diversity, ESG, and Corporate Performance*. Western Michigan University. [https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=4331context=honors\\_theses](https://scholarworks.wmich.edu/cgi/viewcontent.cgi?article=4331context=honors_theses).
- Tamimi, N. and Sebastianelli, R. (2017). Transparency among s&p 500 companies: An analysis of esg disclosure scores. *Management Decision*.
- Troy, S. (2022). *Evaluating the Board of Directors*. Investopedia. <https://www.investopedia.com/articles/analyst/03/111903.asp>.
- UN (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. United Nations. <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>.
- Wasiuzzaman, S. and Wan Mohammad, W. M. (2020). Board gender diversity and transparency of environmental, social and governance disclosure: Evidence from malaysia. *Managerial and Decision Economics*, 41(1):145–156.
- Wiersema, M. F. and Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management journal*, 35(1):91–121.
- Williams, R. J. (2003). Women on corporate boards of directors and their influence on corporate philanthropy. *Journal of Business Ethics*, 42(1):1–10.
- Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data mit press*. Cambridge, MA, 108(2):245–254.
- Yarram, S. R. and Adapa, S. (2021). Board gender diversity and corporate social responsibility: Is there a case for critical mass? *Journal of cleaner production*, 278:123319.
- Zahid, M., Rahman, H. U., Ali, W., Khan, M., Alharthi, M., Qureshi, M. I., and Jan, A. (2020). Boardroom gender diversity: Implications for corporate sustainability disclosures in malaysia. *Journal of Cleaner Production*, 244:118683.
- Zahra, S. A. and Pearce, J. A. (1989). Boards of directors and corporate financial performance: A review and integrative model. *Journal of management*, 15(2):291–334.

- Zelechowski, D. D. and Bilimoria, D. (2003). The experience of women corporate inside directors on the boards of fortune 1,000 firms. *Women in Management Review*.
- Zoega, H., Furu, K., Halldórsson, M., Thomsen, P. H., Sourander, A., and Martikainen, J. E. (2011). Use of adhd drugs in the nordic countries: a population-based comparison study. *Acta Psychiatrica Scandinavica*, 123(5):360–367.

# Appendix

## A1 Industry-wide Effects

**Table A1.1:** Regression analysis - development of Real Estate

	<i>Dependent variable: ESG Score</i>			
	(1)	(2)	(3)	(4)
WOB			0.271*** (0.067)	0.261*** (0.066)
B_Indep				0.142*** (0.035)
B_Tenure				0.002 (0.003)
F_size	0.187*** (0.011)	0.195*** (0.012)	0.158*** (0.014)	0.153*** (0.014)
B_size			0.016*** (0.004)	0.019*** (0.004)
F_risk	-0.222*** (0.048)	-0.156*** (0.053)	-0.162*** (0.051)	-0.153*** (0.050)
ROA	0.025 (0.134)	0.053 (0.136)	0.056 (0.131)	0.066 (0.129)
A_Turnover	0.016 (0.015)	-0.004 (0.016)	0.003 (0.016)	0.013 (0.016)
P/E	-0.0004 (0.0002)	-0.0004* (0.0002)	-0.0003 (0.0002)	-0.0002 (0.0002)
Real Estate		-0.135*** (0.048)	-0.094** (0.047)	-0.081* (0.046)
Constant	-1.311*** (0.124)	-1.374*** (0.138)	-1.193*** (0.142)	-1.283*** (0.141)
Observations	340	340	340	340
Adjusted R <sup>2</sup>	0.571	0.487	0.475	0.437
F Statistic (df = 22; 317)	21.498***	15.637***	14.950***	12.982***
Country FE	NO	YES	YES	YES
Sector FE	NO	YES	YES	YES

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Table A1.2:** Regression analysis with industries

	<i>Dependent variable:</i>			
	ESG Score	E Score	S Score	G Score
	(1)	(2)	(3)	(4)
Consumer Discretionary	0.010 (0.039)	0.210*** (0.057)	0.025 (0.048)	-0.071 (0.048)
Consumer Staples	-0.025 (0.044)	0.154** (0.065)	-0.034 (0.055)	-0.083 (0.054)
Energy	-0.055 (0.059)	0.069 (0.086)	-0.077 (0.073)	-0.031 (0.072)
Financials	-0.091 (0.061)	-0.142 (0.090)	-0.074 (0.076)	-0.097 (0.075)
Health Care	-0.010 (0.039)	0.088 (0.058)	0.025 (0.049)	-0.083* (0.048)
Industrials	-0.057 (0.036)	0.094* (0.052)	-0.044 (0.044)	-0.097** (0.044)
Information Technology	-0.049 (0.038)	0.080 (0.056)	-0.046 (0.047)	-0.102** (0.047)
Materials	-0.018 (0.042)	0.176*** (0.062)	-0.018 (0.052)	-0.091* (0.051)
Real Estate	-0.081* (0.046)	0.112 (0.068)	-0.054 (0.058)	-0.188*** (0.057)
Utilities	-0.111 (0.075)	0.048 (0.110)	-0.263*** (0.093)	0.042 (0.091)
Observations	340	340	340	340
Adjusted R <sup>2</sup>	0.571	0.487	0.475	0.437
F Statistic (df = 22; 317)	21.498***	15.637***	14.950***	12.982***
Country FE	YES	YES	YES	YES
Sector FE	YES	YES	YES	YES

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01



## A2 Refinitiv Category Scores

Table A2.1: Description of category scores

Category	Definition
Resource Use Score (E)	The resource use score reflects a company's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
Emissions Reduction Score (E)	The emission reduction score measures a company's commitment and effectiveness towards reducing environmental emissions in its production and operational processes.
Innovation Score (E)	The innovation score reflects a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes, or eco-designed products.
Workforce Score (S)	The workforce score measures a company's effectiveness in terms of providing job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce.
Human Rights Score (S)	The human rights score measures a company's effectiveness in terms of respecting fundamental human rights conventions.
Community Score (S)	The community score measures the company's commitment to being a good citizen, protecting public health and respecting business ethics.
Product Responsibility Score (S)	The product responsibility score reflects a company's capacity to produce quality goods and services, integrating the customer's health and safety, integrity and data privacy.
Management Score (G)	The management score measures a company's commitment and effectiveness towards following best practice corporate governance principles.
Shareholders Score (G)	The shareholders score measures a company's effectiveness towards equal treatment of shareholders and the use of anti-takeover devices.
CSR Strategy Score (G)	The CSR strategy score reflects a company's practices to communicate that it integrates economic (financial), social and environmental dimensions into its day-to-day decision-making processes.

\* The table lists the category scores and their definitions. Each score is defined as either E, S, or G, illustrating which pillar they belong to.

**Table A2.2:** Descriptive statistics for categories variables

Category	Mean	Max	Min	St.Dev
Emission score	51.64	99.31	0.00	29.24
Innovation score	30.83	99.64	0.00	31.87
Resource Use score	48.49	99.62	0.00	31.54
Community score	46.67	99.82	1.25	29.61
Human Rights score	56.69	97.25	0.00	32.37
Product Responsibility score	52.70	99.17	0.00	29.66
Workforce score	60.41	98.64	0.10	22.39
CSR score	48.09	98.46	0.00	30.36
Management score	56.44	99.56	4.30	25.87
Shareholder score	53.81	99.56	0.15	27.06