TALLINN UNIVERSITY OF TECHNOLOGY
School of Business and Governance

Leyla Ozturk

THE RELATIONSHIP BETWEEN THE PRESENCE OF WOMEN ON THE BOARD AND THE ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORTING OF COMPANIES.

Master's thesis

International Business Administration

Supervisor: Natalie Aleksandra Gurvitš-Suits, PhD

Tallinn 2023

I hereby declare that I have compiled the paper independently and all works, important standpoints, anddata by other authors have been properly referenced, and the same paper has not previously been presented for grading.

The document length is 12812 words from the introduction to the end of the summary.

Leyla Ozturk …………………………….

(signature, date)

Student code: 214168TVTM

Student e-mail address: leyla.c.ozt@gmail.com

Supervisor: Natalie Aleksandra Gurvitš-Suits, PhD:

The paper conforms to requirements in force

……………………………………………

(signature, date)

Chairman of the Defence Committee:

Permitted to the defence

…………………………………

(name, signature, date)

TABLE OF CONTENTS

ABSTRACT

This thesis studies the relationship between the percentage of women on the board of directors and executive board with Environmental, Social, and Governance (ESG) disclosure scores for the Standard and Poor's (S&P) 500 companies. The aim is to investigate the impact of board gender diversity on ESG reporting. Existing literature reveals mixed findings thus making these findings a relevant addition. The empirical analysis is based on a sample of 364 S&P 500 companies with the exclusion of the "Utilities" and "Financial" sectors due to different ESG disclosure standards. The data is collected from the Bloomberg terminal throughout 2017-2021. Quantitative analysis method is used to investigate the relationship between female presence on the board and ESG rating. Descriptive statistics assesses and develops input figures of relevant variables to calculate Pearson's correlation coefficients. The correlation coefficients are estimated to study the correlation between the percentage of women on the board and ESG rating. Multivariate regression analysis is used alongside the correlation analysis to investigate the significance of the combined relationship between women on the board, executive board, and diversity rating with ESG disclosure rating.

The findings reveal a weak positive correlation between the presence of women on the board of directors and the ESG Disclosure Score. A significantly positive correlation between the presence of female executives on the board and ESG Disclosure Score. The significant positive correlation between female executive board members and ESG Disclosure reveals that a higher percentage of female executives are more influential in improving ESG rating than a higher percentage of female directors.

Keywords: Environmental, Social, and Governance, Reporting, Management Board, Board Gender Diversity, Corporate Social Responsibility, Disclosure

INTRODUCTION

Large capitalisation companies continue to face scrutiny over diversity in the boardroom. The topic spreads far across the globe, with developed countries actioning expectations by mandating diversity disclosure and instilling diversity quotas. In 2022, the Standard and Poor's (S&P) 500 companies hit a record of 32% of board seats being secured by women (Green, 2022). Board gender diversity is defined as the percentage of women present on the board of directors (Carter, 2002). With the development of regulations and quotas, it is evident that there is a gap that needs filling regarding boardroom diversity. There is a copious amount of past research that investigates the effect of gender diversity on financial performance. Post and Byron (2015) conducted a meta-analysis of 140 articles and found that gender diversity among directors are generally positively related to financial performance. However, with continued upward projection in the expectations and interest in companies' Environmental, Social, and Governance (ESG) disclosure, there is insufficient research covering this area. According to Kakabadse (2007), companies have surpassed their interest in just the bottom line and are now looking to improve their social and environmental actions by improving their corporate social responsibility (CSR). Aside from the social issues related to gender diversity, there is evidence that gender diversity is positively associated with a higher level of corporate governance and growth (Birken & Cigna, 2019).

Changes within the business environment have ascended as a result of the European Commission encouraging the improvement of corporate governance in order to reduce the effects of financial market downturns, especially after the 2008 financial crisis (Velte, 2016). ESG scores have become a widespread topic within the capital markets. Capital-market focused firms have been encouraged to improve the quality of their reporting therefore shifting a single-dimension focus which has always been on Shareholders (Velte, 2016). As regulators tighten their belts on ESG reporting expectations, there is significant emphasis on disclosure for large-cap companies. The importance of ESG as an evolving matter can be seen from the development and progression of interest in regulations, standards, principles, and rating methodology (Johnson, 2020). Cho & Patten (2007) studied the role of disclosure as a tool to prove a firm's legitimacy. The authors found that firms use financial reports and environmental disclosure to affirm their legitimacy.

Stakeholders play a significant role in solidifying a firm's legitimacy; therefore, companies need to find ways to become allies with their stakeholders for them to acknowledge the firm as a moral corporate citizen (Zhang et al. 2013).

The significance of this topic stems from the lack of research and inconsistent mixed results thus creating uncertainty on whether female representation within decision making positions like on the board of directors or the executive board, does impact ESG disclosure. HEß (2020), mentions the importance of gender equality used to establish the legitimacy of standards for an organisation. However, the under-representation of women remains an under-researched topic, partly due to insufficient data.

Himmer (2020) found a very weak positive relationship (almost negligible) between gender diversity amongst top management and CSR performance in Portugal. Contrary to this, other studies found a significantly positive relationship between board gender diversity and ESG disclosure. (Bear et al. 2010; Khemakhem et al., 2022; Ginglinger, Raskopf, 2021). Manita et al. (2018) studied the S&P 500 companies from 2010 to 2015. The authors found no significant relationship between board of directors' gender diversity and ESG disclosure; however, suggested that future researchers should also include female executives in their study. The board of directors is regarded as the board that is responsible for creating a strategic direction for the organization. In contrast, the executive board is responsible for executing the necessary steps and day-to-day action to reach the strategic direction (Barnett, 2023). This thesis has considered the recommendation from Manita et al. (2018) thus notably, including both the executive board and board of directors as they serve as critical decision-making members. Hence, this study will contribute to existing literature with the latest insights and findings. Moving forward the author will refer to both the board of directors and executive board as one collective, in this manner using the word "board" unless specification is necessary.

This thesis aims to investigate the relationship between board gender diversity and environmental, social, and governance disclosure. The study will examine the ESG disclosure score and the different ESG pillars presented in Bloomberg on the S&P 500 companies while comparing this to the percentage of women present on the director and executive board. The findings will indicate whether board gender diversity plays a role in improving a company's ESG reporting and disclosure. The author's career in finance has a significant focus on ESG-aligned projects and companies, making this topic an area of interest. The investigation will allow the author to conclude whether female representation on the board has a positive, negative, or uncorrelated relationship with ESG disclosure and which ESG pillars are impacted more significantly.

Research questions: What is the relationship between the percentage of women on the board of directors and ESG disclosure score?
What is the relationship between the percentage of women on the executive board and ESG disclosure score?
What is the relationship between the presence of women on the board and the different ESG pillars?

The research method used to investigate the respective values from 2017 to 2021 will be quantitative analysis. Pearson’s correlation will be conducted using descriptive statistics. These correlation coefficients will help the author examine the relationship between ESG reporting and management/executive board gender diversity. With this, a multivariate regression analysis will be used to assess the significance of board gender diversity on ESG disclosure.

The thesis is divided into three chapters. The first chapter will cover the literature review, which examines past literature, therefore, serving as comparative information for this topic. This section will give the reader a better understanding of ESG and its historical background, and ESG and CSR, as they are closely related topics. Accompanying this will be the significant role gender diversity plays in the corporate world and the relationship this has with ESG rating and performance. The following chapter will cover the hypotheses, research objectives, and research methods used to collect and sample the secondary data used for the investigation. This chapter will inform the reader about the variables and data used. The final chapter will present the descriptive statistical findings over five years and the respective calculations using Pearson's correlation coefficients. These outcomes will be presented using scatter plot graphs, and hypotheses will be rejected or accepted.

At the end of this thesis, the reader will understand whether there is a relationship between ESG disclosure and board gender diversity. These results will be interesting for professionals, scholars, and corporates interested in the topic of Environmental, Social, and Governance.

1. LITERATURE REVIEW

This chapter gives an overview of gender diversity and its growing importance in companies and for stakeholders. Alongside this, ESG and CSR disclosure will be discussed and jointly related to board gender diversity. As there are certain topics which tie to the Bloomberg terminal and rating agencies, these references may directly be referred to websites when authors have not been disclosed. The literature and prior studies on the relationship between ESG rating and the percentage of women present on the female board are discussed to provide the reader with a holistic theoretical background on this thesis.

1.1. Theoretical framework

1.1.1 Stakeholder Theory

There are paradoxical views on how firms can maximise their value. The shareholder theory suggests that the ultimate focus should be to maximise the returns for shareholders; contrary to this, the stakeholder theory believes there is significant value in striking the equilibrium by managing both the stakeholders' and shareholders' interests (Harjoto et al. 2015). Freeman's (1984) stakeholder theory suggests that any group or individual that can affect or be affected by a company's actions has a stake in that company and, therefore, must be given a right of concern. This is especially true as all stakeholders play a vital role in the success and existence of the firm. The stakeholder theory aims to bring forth the importance of management catering to shareholders and responding to stakeholders' needs (Parmer et al., 2010). Stakeholders have been categorised as employees, suppliers, shareholders, customers, the general society, and lenders (Parmer et al., 2010). The stakeholder theory does not disregard shareholder interests but recognises the importance of both the shareholder interests and all the other parties that fall under the stakeholder umbrella. The importance of these groups stems from the idea that with these vital third players, firms can achieve the objectives in place to achieve the results shareholders want to see (Parmer et al., 2010). According to Cornell & Shapiro (1987), firms engage in implicit and explicit contractual agreements with stakeholders, as stakeholders, aside from investors and managers, impact the firm's financial standing. Therefore, firms must align their corporate strategy accordingly. Jensen (2001) contends that the stakeholder theory is a deficient guide for achieving ultimate corporate success. Management should not necessarily fixate on the stakeholder theory concept but rather look to achieve long-run value, thus adopting the value maximisation proposition. Therefore, the enlightened stakeholder theory proposed by Jensen (2001) should look to create long-term market value by ensuring that costs do not exceed benefits when satisfying stakeholders' needs. Benson & Davidson (2010) further studied Jenson's (2001) stakeholder vs enlightened value maximisation proposition by investigating whether firms that fixate their attention on stakeholder welfare will compensate more in this area in comparison to firms that fixate their goal on maximising shareholder returns. The results reveal there is correspondence with the enlightened value maximisation proposition. Firms that focused on stakeholder needs were positively related to higher firm value. However, no relation to stakeholder management and compensation.

The stakeholder theory presents relevance concerning further unfolding matters within ESG as the Stakeholder Theory approach sheds light on ethical matters and their concerns with CSR (Friedman & Miles. 2002). ESG can be regarded as a descendant of CSR (Hvidkjær, 2017). CSR became relevant in the mid-1900s; however, it remained vague as its associations spread wide with other terms falling under this umbrella, including corporate citizenship, corporate social responsiveness, corporate governance, and more (Parmer et al., 2010). The Stakeholder Theory shed light on this in a more detailed manner, allowing it to serve as the foundation for a more structured idea for the concept of CSR (Parmer et al., 2010). CSR meant that companies could attract stakeholders by voluntarily publishing their activities covering environmental and social concerns (Branco & Rodrigues, 2007). This concept helps companies evaluate their activities and decisions beyond profit as it considers the decisions made, which could lead to adverse impacts on society and the environment (Branco & Rodrigues, 2007). With profit coming into play, CSR commitments were initially viewed as threats to profit margins; however, this has been proven untrue as these commitments have shown long-term benefits for firms (Branco & Rodrigues, 2007). According to Parmer et al. 2010, CSR and the Stakeholder Theory have been regarded as counterparts to one another as the Stakeholder Theory further analyses points that align with the concept of CSR (Branco & Rodrigues, 2007). The importance of this topic falls back on the significance of corporate ethics, which is mainly addressed by the concept of CSR. Corporate responsibility should be instilled in capitalism as it could limit the risks of financial downturns (Parmer et al., 2010).

The Stakeholder Theory demonstrates relevance to this topic due to stakeholders' vital role in influencing company decisions. The pressure put on companies to no longer only appeal to their shareholders but now also consider the interests of stakeholders allows ESG and board gender diversity to become relevant topics as they continue to grow in importance as we continue to evolve into the digital age.

1.1.2 Social Role Theory

The way in which sex is defined can be recognised in multiple ways depending on which discipline is defining it. Eagly & Wood (2016) explains biologists categorise sex differences as gonadal and hormonal variations, which enables us to differentiate sexes. Socialists see the broader view and consider the social constructs and their hierarchies. Economists take it from a monetary value perspective by analysing human capital. With various definitions, the discipline in question will have a slightly different take on how we define sex. Social theory, however, views sex from a psychological point of view. This theory analyses the differences and similarities in behaviour demonstrated by each gender based on the belief system carried. This belief system allows individuals to view gender roles in a particular way. The way in which gender roles are viewed will shape the perception of social roles and expectations that must be followed within the society and environment they are surrounded by (Eagly & Wood, 2016). Eagly & Karau (2002) proposes that two forms of prejudice occur towards female leaders: (1) The evaluation of leadership potential is less favourable due to the stereotypical belief that men garner superior leadership skills and (2) when put in a leadership position, female behaviour is moderated more critically, thus can be perceived as less desirable in females than in males. The first prejudice originates from descriptive norms, which stem from the traditional ascription of female traits. The second prejudice arises from the belief of how a woman ought to behave.

The social roles that men and women take on have evolved from physical differences visible in each sex. Men are usually stronger and bigger, thus taking on authoritative positions; women are more petite and gentler, thus taking on a caretaker role (Eagly & Wood, 2016). These physical differences have, over time, become less defining of the career one pursues as we have shifted from a primal hunter-gatherer lifestyle to a digital world. However, the evolution of work can still be tracked back to the physical differences, which, in the end, created a division in labour thus forming task specialisation for each sex (Eagly & Wood, 2016). Stereotyping is a natural cognitive process that all people tend to do based on societal views and norms (Skelly & Johnson, 2011). With these stereotypes, there is a large disparity in the likelihood of getting promoted for top-level female executives. According to Skelly & Johnson (2011) the glass ceiling that exists on a corporate level restricts the pace of progression for females as opposed to their male counterparts.

Rudman & Glick (2001) further investigated gender roles and their impact on women in leadership and hireability. The analysis found that women who possess traits that resemble a more agentic character, such as assertiveness and competitiveness (that which is stereotypically seen in a man) were devalued upon their social skills analysis during job interviews. The reasoning was due to the female candidates being viewed as "not nice". Contrary to this, male counterparts were less affected when demonstrating a social dominate style. The findings affirm and go beyond past literature, which validates that when agentic traits are possessed by women, they do not meet the stereotypical view of feminine niceness. However, agentic competence, which are traits such as ambition and independence, did not affect hireability. Post et al. (2009) studied the perception of how innovation, which is considered an agentic competence trait, interacts with relational skills between the genders and their promotability. Contrary to the anticipated assumption based on the social role theory, the authors found no gender difference in promotability ratings.

Figure 1 demonstrates the sex differences and similarities through biosocial processes (Eagly & Wood, 2016).

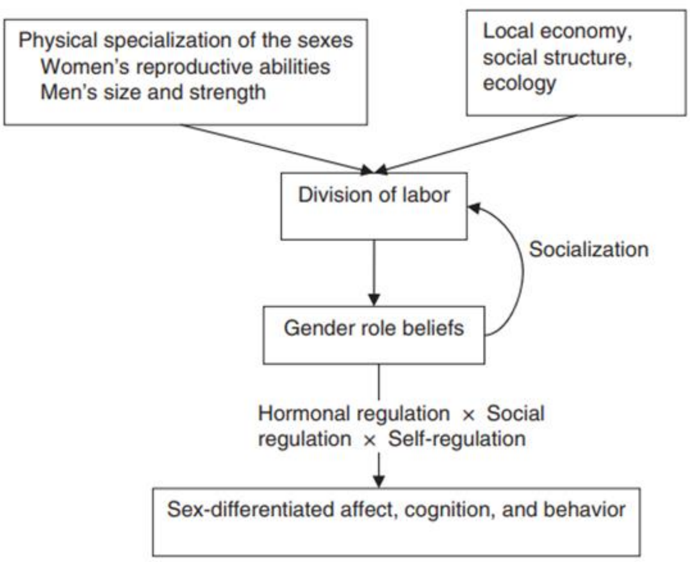

Figure 1: Gender roles guide sex differences and similarities through biosocial processes
Source: Eagly & Wood (2016)

According to figure 1, the division of labour will be determined as a result of the outcome from the task specialisation established from physical attributes plus the conditions experienced within the society in question. The beliefs that manifest from the idea of gender roles account for hormonal disposition, societal expectations, and one's standards/expectations. In most societies, the division of tasks between each gender has always resembled reflections from this physical attribute task specialisation idea, where men have yielded greater power as well as status. In societies that consist of a more non-hierarchical structure, it can be observed that there will be a more egalitarian relationship between the sexes. Patriarchal social structures develop when the physical attributes of men and women collide with technological and economic developments, thus fostering hierarchy according to sex (Eagly & Wood, 2016). The post-industrial era has allowed such nuances to break down over time. However, we can still see reflections of such divisions in societies today.

The study conducted by Eagly (1992) found that there is selective devaluation in the performance of female output as opposed to their male counterparts. This is mainly reflected truly in the manner in which females carried out their leadership or management role. Females that portrayed stereotypically masculine leadership traits, such as being more autocratic and indifferent, were perceived in much dimmer light. When men performed the evaluation, the devaluation of women was more significant when these women were placed in male-dominated roles. These findings mainly contend with the perception of leadership roles fulfilled by women and gender role congruence. Gender roles thus impact the form of leadership women are willing to adopt and the perception of their character they can handle. They face reaping negative evaluations when adopting such stereotypical male leadership styles or being placed in predominantly male environments when put in leadership positions. With this, women must demonstrate much higher levels of competence to receive access to promotions which would likely be easier accessed by their male counterparts (Eagly, 1992).

When connecting the Social Role Theory to female leadership, gender roles and their expectations from society can form a barrier for women aiming to become leaders. There may be pressure to conform to the norms established in that society, and conforming to such norms can set women back in adopting effective leadership styles. According to this, women will likely face backlash as opposed to their male counterparts when they deviate from the traditional outlook on gender roles. The severity of such backlash will depend on society, culture, level of development, and education. Therefore, recognising gender biases and stereotypes is an essential step within societies in breaking down such constructs.

1.2 The history of Environmental, Social and Governance (ESG)

The history of ESG can be traced back over a century ago (Morrison, 2021). According to Townsend (2020), the term ESG emerged from the idea of "Socially Responsible Investing" (SRI), which was linked to not only faith-based investing but also the civil rights movement and forward-thinking women (specifically female entrepreneurs, investors, and Catholic Sisters). The ethical dilemma that investors faced when investing in mandates that did not harmonise with their values contributed to the emergence of SRI. This allowed investors to reconsider their investments based on their values. As many historical changes occur from significant events, the matter of climate change as well as the Apartheid regime in South Africa, perpetrated concern and, therefore, sparked the SRI movement (Townsend, 2020). Debates regarding this topic have mainly danced around the idea that profit-seeking companies should focus on their shareholders' needs. However, this evolution has led to a new shift focusing on stakeholders (Morrison, 2021). ESG rating has become necessary for many regulatory agencies, including rating agencies, government agencies, financial groups, etc. The increased interest and higher expectations from such parties have put pressure on companies, shifting the perspective on this matter (Morrison, 2021).

According to Boffo & Patalano (2020), sustainable finance refers to investment decisions that consider the impact on ESG. Sustainable finance has shown tremendous growth as investors seek investment options that bring good returns while supporting environmental vitality and positive social impact. ESG often becomes a controversial matter as many areas can be argued for in both good and bad; this makes the concept of ESG problematic. It is challenging to standardise one universally acceptable criterion for assessing ESG as many controversies will suffice depending on the culture, area, and social norms (Morrison, 2021). For example, employee health insurance for abortions would be considered unacceptable for companies that have stronger religious roots. In contrast, this topic might not be as absurd in places like Scandinavia, where there is a much more liberal and alternative social approach (Morrison, 2021). There has been a call for ESG to be mandated by government agencies as there still needs to be a definitive framework for ESG from a regulatory perspective (Morrison, 2021).

According to Morrison (2021), the term “ESG” prevailed in written form for the first time in 2004, when it was published in a report on Global Compact by the United Nations. From then, the term blew up and became a buzzword, especially within boardrooms. The development of this term as of 2021 is astonishing. This term now has its field within many sectors as well as investment instruments, including Exchange-Traded Funds (ETFs), mutual funds, and more which report a high focus on ESG—enabling this investment area to retrieve an estimated $100 trillion for firms managing ESG-focused investments (Morrison, 2021). The matter of “sustainability” reporting is still just an act of volunteering from firms; however, the pressure that financial institutions and government officials are putting on company sustainability disclosure will likely change the nature in which reporting is currently done and might even mean mandatory “sustainability” reporting shortly (Morrison, 2021).

The use of ESG data and its availability has reportedly increased fourfold between 2010 and 2015 on Bloomberg (Ecceles & Stroehle, 2018). A meta-analysis of over 1000 studies published between 2015 and 2020 investigated the relationship between ESG and financial performance and found a positive relationship between ESG performance and financial performance when looking at their operational metrics, while only 6% of the studies found a negative impact (Whelan et al. (2021). According to Whelan et al. (2021), the conclusions drawn from this study include: (1) Financial performance is more noticeably improved over the long term due to ESG, (2) Generally speaking, ESG strategies perform better than negative screening approaches. (3) ESG investing strategies can provide protection against economic and social crisis, (4) Firms that engage in sustainability initiatives seem to drive financial performance, (5) firms that aim to manage their carbon emissions improve their financial performance, (6) ESG disclosure solely does not drive financial performance. There are many ESG assessment criteria available that cause the ratings and rankings to differ across the various methodologies (Ecceles & Stroehle, 2018). Rating agencies use a scoring system that differs depending on the methodology used; this provides the final score, which shows the ESG performance of the firm (Ecceles & Stroehle, 2018). Data analysts collect data on this matter in several ways, including company documents, surveys, sustainability reports, and AI, which scrapes data on the internet, et cetera (Ecceles & Stroehle, 2018). A wide range of data vendors have their own ESG assessment design and evaluation criteria. The most popular data vendors include Bloomberg, Sustainalytics, Thomson Reuters, MSCI, Standard, and Poors.

With a large number of data vendors present, ratings and their constructions often differ depending on the vendor. According to Ecceles & Stroehle (2018), there are two possible outlooks when considering the conjunction of ratings across various vendors from a social perspective, including “common theorization” and “commensurability”. Common theorisation can be described as discourse amongst vendors as their beliefs are shared. Commensurability describes the way specific ideas and beliefs are constructed in similar ways. If both these conditions are high, then it is likely that convergence will happen between vendors.

In 2010 the World Economic Forum identified ten significant concerns that should be addressed to mitigate economic risks. According to the KPMG 2020 report, out of these ten risks, seven are addressed by the ESG framework (Davé, 2010). The main topics in question revolve around climate change and social inequality, which makes this matter a crucial area for inspection by stakeholders (Davé, 2010). Despite the widespread importance of ESG reporting, organisations, regulators, and auditors tend to face challenges when it comes to assessing the different companies’ disclosure documents due to the lack of universally acceptable criteria (Davé, 2010).

In 2010 further discussion regarding standardisation evolved to tackle reporting issues. The International Business Council of WEF started working closely with accounting firms like KPMG to develop a universally accepted set of ESG metrics for companies (Davé, 2010). According to Davé (2010), these talks escalated further to create what she referred to as the “International Sustainability Standards Board,” which could work parallel to the International Accounting Standards Boards within the IFRS Foundation. The development of this division has continued to seek a standard set of universally comparable environmental and social metrics (Davé, 2010). According to Berg et al. (2021), past literature indicated no link between financial performance and ESG scores. However, recent studies have proven the positive link between ESG scores and financial performance. Cappucci (2018) explained that incorporating the right ESG strategies into investment decisions can indeed help retain a positive financial performance. Costs are incurred when involving and implementing ESG strategies; however, oftentimes these costs are offset (Cappucci, 2018).

According to Manita et al. (2018), three principal areas affect environmental information disclosure, including societal factors, which refer to the laws and regulations and the pressure inserted on companies by the general public who demand to see this information. The second area includes firm and industry, which would mean the firm needs to conduct its cost-benefit analysis to understand whether its actions are worth the environmental damage. The last factor includes the culture and attitude towards environmental issues. Some cultures acknowledge environmental issues much less than others. By assessing these three factors, a firm’s environmental information disclosure likelihood can be determined as these factors tap into the interests of stakeholders who play an influential role in organisations. With the progressing need for CSR activity disclosure, corporations can reap the benefits from doing voluntary disclosure, including a better public image, a much higher employee retention rate due to information transparency, and cost-saving opportunities due to better internal information gathering and controlling (Manita et al., 2018).

ESG reporting and disclosure have significantly evolved over the past decades. As this framework and general guidelines associated with ESG evolve, its relevance and importance will continue to increase. Policymakers continue to discuss the implementation of such regulations, therefore, hinting at the idea that this topic is relevant, meaningful, and influential for the general improvement of business within each pillar of the ESG framework. Policymakers implementing set regulations will allow us to analyse this topic on a more standardised foundation due to the consolidation and formality that regulation brings.

1.3 Board gender diversity and CSR disclosure

Cho and Patten (2007) studied the role of disclosure as a tool to prove a firm's legitimacy. The authors found that firms use financial reports and environmental disclosure to affirm a firm's legitimacy. Information disclosure has long been essential for economies to function and for firms to prove their legitimacy and attractiveness to shareholders and stakeholders (Alareeni & Hamdan, 2020). When firms limit their disclosure, they risk losing opportunities and opening gaps to engaging in unethical acts, which, in essence, impacts the economy and societies (Alareeni & Hamdan, 2020). Financial standards and government regulation have added extra layers of security, which puts pressure on firms to disclose their activities; however, we can still see gaps within the ESG space as many scandals have persisted over the years. Addressing ESG activities not only benefits firms and their stakeholders but also helps policymakers improve regulations that could better the economy (Bravo & Reguera-Alvarado, 2018). As disclosure provides the opportunity for firms to present their attractivity to stakeholders, this profit generation area can also have its consequences, especially when there is a lack of clarity when it comes to assessment which in some instances is the case for ESG (Utz, 2019).

The disclosure of ESG activities needs to be approved by the management board. Therefore, this topic of board gender diversity is relevant as the board members have the final say on whether ESG activities will be disclosed (Khemakhem et al., 2022). According to Oehmichen et al. (2012), the 2008 financial crisis opened the corporate world up to many discussions, including diversity in the boardroom, with significant emphasis on more seats being filled by women. Effective board decision-making can be challenging, especially in today's environment. According to Arayssi et al. (2020), having independent board members can be an effective way to make better board decisions which, in the end, could increase ESG disclosure. When the board consists of independent members, there is less room for biases brought forth by management or even decisions inflicted through micro-management. Arayssi et al. (2020) mentions that female and male executives tend to differ when it comes down to leadership style and organisational structures. Evidence shows that female executives tend to focus their attention on areas beyond the bottom line, including philanthropy, community welfare, and acts of service for the community. Women tend to possess personality traits that include being gentle and communicative, thus, leading to less information asymmetry, which in essence, allows stakeholders to know more about the company's activities.

An increasing amount of literature confirms that board gender diversity can be the reason for voluntary disclosure (Khemakhem et al., 2022). There are multiple areas of strength where female board members can bridge the gap. This includes catering to a unique set of needs and wants that consumers might be looking for, better reach in terms of ideas and thinking due to the diversity offered, and greater attention to stakeholder needs (Khemakhem et al., 2022). Khemakhem et al., (2022) conducted studies on Canadian-listed companies. Within this study, the researchers analysed the relationship between female representation on the management board and within the committees. They found a significantly positive relationship between female representation and ESG disclosure (Khemakhem et al., 2022). Findings from this study interestingly found a higher influence of female representation within committees in comparison to the management board which demonstrates the importance of representation within smaller units of decision making (Khemakhem et al., 2022).

Oehmichen et al. (2012) mentioned that two driving arguments explain the impact that female management could have on decision-making and performance. The first argument explains that the added human capital coming from a different gender provides a resonating voice for half of society. Extending this spectrum of intellect, knowledge, and experience enhances the quality of decision-making. The second argument is that having diversity within a decision-making panel paves the way for the exploration of unconventional ideas and thoughts brought to the table, thus providing more avenues for thought and assessment. As seen in the social role theory, the nature of women and men can be complementary. Women tend to possess social and people-oriented characteristics, whereas men tend to be more task driven and assertive. This theory supports the idea that women present a firm stand on encouraging social and environmental commitments while taking into account the company's profitability. With this, ESG activities would be considered a priority as well as disclosure.

Naveed et al. (2022) summarised the factors that affect sustainability efforts within a company as (1) external pressure, which relates to all the stakeholders involved, (2) Company-level factors, which are mainly concerned with the general demographics of and within the organisation therefore, age, diversity, firm size, (3) internal aspects, these traits mainly concern the people within an organisation. In this study conducted by Naveed et al. (2022), they collected data on 3736 A-share firms in China between 2010 and 2019. The key variables that were analysed included the board gender diversity, the quality of CSR disclosure, and green innovation performance. The green innovation indicator was measured based on the intellectual property that the companies in question had that related to being green and environmental. The study hypothesised that (1) there would be a positive relationship between Board Gender Diversity and Corporate Green Innovation Performance, (2) There would be a positive relationship between the quality of CSR disclosure and the company's green innovation performance and lastly, there would be a positive outcome when observing the quality of CSR disclosure and its relationship with the other two variables. The findings from this study confirmed all three of the hypotheses to be true. Therefore, concluding that Board Gender Diversity is not only positively associated with a higher level of Green Innovation but also with a higher quality of CSR disclosure (Naveed et al., 2022).

In a study conducted by Harjoto et al. (2015), the authors took the matter of diversity a step further and incorporated more diversity variables, including gender, race, age, external directors, expertise, power, and tenure. This study focused on board diversity while including all these metrics and analysed its relationship with CSR. The study found significant importance in diversifying the board and concluded that there is a positive association with CSR strengths; however, it found a negative association with CSR concerns. With this finding, it can be deduced that the overall CSR performance is higher. According to Harjoto et al. (2015), this finding was consistent with the stakeholder theory, which suggests that having an inclusive, diverse board of directors will result in higher social responsibility performance.

Himmer (2020) studied gender diversity in top management and CSR performance in Portugal. The findings reveal significant disparity in gender diversity in top management positions, with the highest average of 25% female executives. A weak correlation was found between female presence in top-management and CSR performance. The author points out the limitation of using a small sample set, with a total of 26 companies thus limiting significant findings. Manita et al. (2018), studied the S&P 500 companies between 2010 and 2015, the findings reveal no significant relationship between female presence on the board and ESG disclosure.

Katmon et al. (2019), analysed the effects of board gender diversity and CSR disclosure in Malaysia and emphasised the emerging markets aspect of this country. This study brings a new focus into play as the authors mention the more significant concerns with governance in emerging markets as there is a much lighter outlook on restrictions and regulations in emerging markets compared to developed countries. The study included a more comprehensive set of variables while making the gender variable the priority. It also included nationality, ethnicity, education background, education level, age, and tenure. The study concluded that the quality of CSR disclosure was positively associated with the presence of women on the board, coupled with knowledge and experience. According to Katmon et al. (2019), these findings were consistent with the Resource-Based View, which outlines the potential that having a mixed board improves the overall operation of the board.

Ginglinger and Raskopf (2021) assessed the relationship between female directors and Environmental and Social (E&S) performance. This study from Europe is fascinating as the authors studied companies that complied with the gender quota which was implemented in France. This quota was adopted in 2011, which stipulated that boards should consist of at least 20% women by the end of 2014 and 40% of women by the end of 2017. The study approached this data using a difference-in-differences estimation as it further investigated the changes that happened before and after the quota was implemented. In addition to this, they cleaned data from two databases (Vigeo-Eiris and Asset 4) in order to cross-validate results from companies in the US where such a quota has yet to implemented, as well as with the findings from France. According to Ginglinger and Raskopf (2021), the study found a significant increase in E&S performance in the French companies that were subject to regulations regarding gender quotas in comparison to the US sample set and the pre-quota French sample set. The authors further discussed these findings and concluded that a greater prevalence in E&S committees as well as female representation in these committees, is found when there is a more significant percentage of female representation on the board, which contributes to better E&S performance.

Nery and Morales (2022) analysed the quality of ESG disclosure and board gender diversity in the Philippines. The Philippines only adopted a set of ESG guidelines for companies to follow in 2019 (Nery & Morales, 2022). Before this, ESG disclosure was a voluntary act which meant that the level of detail and transparency was purely subjective. The guidelines in place are still lenient in the sense that they do not force companies to disclose their ESG activities; however, companies who wish to do so must follow a detailed set of guidelines which, as the authors mention, is a "comply or explain" outlook to ESG (Nery and Morales, 2022). The study looked at companies listed on the Philippines Stock Exchange from 2010 to 2019; this included between 220 and 266 companies. The authors studied four variables: board independence, women, CEO duality, and board size. The study found a rise in ESG disclosure. However, the Philippines still experiences an insufficient number of companies disclosing ESG activities. This may contribute to the strict guidelines in place for companies who choose to engage in ESG disclosure. The companies with CEO duality saw a higher ESG score, which is perhaps due to better company strategising. On average, the board size in all the companies ranged between 10 and 11, with an average of 3 independent members and one female. This similarity and a limited number of companies can be seen as a limitation in finding a significant pattern. The authors mention that more diversity within the boardroom might have led to higher ESG disclosure scores and performance (Nery & Morales, 2022).

1.4 Environmental, Social and Governance (ESG) scores

As with any scoring system, the ESG rating methodology is assessed based on a set of key performance indicators (KPIs) which determines how sustainable the company is (Bloomberg, 2020). KPIs can be seen as a box in view of a situation, as the set criteria do not consider all aspects of a company’s sustainability performance. Refinitiv is known for being one of the major ESG data providers. They track more than 630 ESG data points and cover nearly 85% of the global market (Refinitiv, 2022). Under the Refinitiv scoring umbrella, there are ten main themes that they focus on. To name a few, human rights, shareholders, environmental innovation, and more. With their rich database going back all the way to the early 2000s, they successfully produce historical data grading for companies on an A+ to D- scale.

The primary ESG themes are broken down and can be found in appendix 1. The environmental pillar covers emission, innovation, and resource use. The social pillar covers community, human rights, product responsibility, and workforce. The governance pillar covers CSR strategy, management, and shareholders. As mentioned prior, the 630 data points are refined to a subset of 186 points which can be comparable for all industries (Refinitiv, 2022). The 3 pillars are then weighted on a percentage scale from 0-100. Figure 2 provides a holistic view of the scoring weight based on the different ESG pillars.

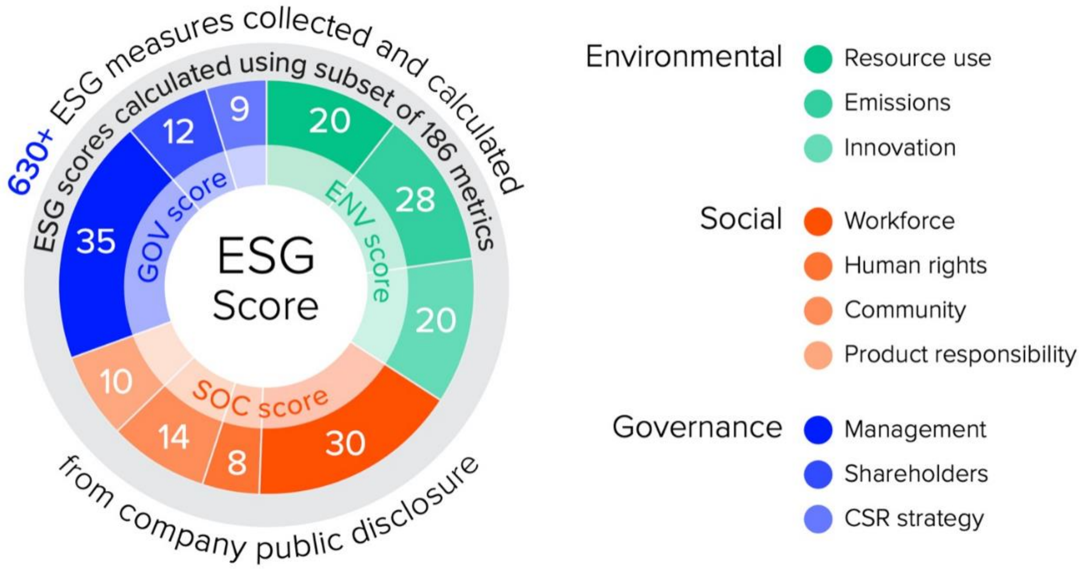

Figure 2: Scoring breakdown
Source: Refinitiv 2022

Figure 2 displays the 10 main components that are inspected when calculating the aggregate ESG score. The scoring is calculated based on the information disclosed by the company. This comes with the question of reliability which in essence, creates an obstacle for ESG rating agencies. This said, Refinitiv (2022) explains that if companies are caught in a scandal, or by a whistle-blower then this ultimately affects their ESG score and results in a rating penalisation. Another consequence of this is that large cap companies are often in the limelight and therefore, takes media attention from smaller companies (Refinitiv, 2022).

Table 1: A + to D – Refinitiv Scoring criteria.

Score Range	Grade	Description
0.0 < Score <= 0.083333 0.08333 < Score <= 0.166666 0.166666 < Score <= 0.25000	D- D D +	"D" poor ESG rating with insufficient obscure information
0.25000 < Score <= 0.333333 0.33333 < Score <= 0.416666 0.416666 < Score <= 0.50000	C- C C+	"C" moderately transparent information with a satisfactory ESG score
0.500000 < Score <= 0.583333 0.583333 < Score <= 0.666666 0.666666 < Score <= 0.750000	B- B B+	"B" good ESG score with an average transparency level
0.750000 < Score <= 0.833333 0.833333 < Score <= 0.916666 0.916666 < Score <= 1	A- A A+	"A" good to excellent ESG score with a high degree of transparency

Source: Refinitiv (2022)

Table 1 demonstrates the percentile score which are then concluded on a A+ to D- grade. When analysing the reported information retrieved from the companies, Refinitiv will attribute "1", "0" or "Null" while going through the predefined questionnaire they use to assess companies. This could be for example: "Does the company have a water efficiency policy?" (Refinitiv, 2022). If yes then they will receive "1", if no then "0".

Overall, the formulation of ESG scoring criteria is a complex methodology that may slightly differ depending on the methodology developer. Refinitiv is one the most notable ESG rating databases which makes it a conclusive database that provides rich information with many data points considered. This provides good insight into how ESG scoring is concluded for companies and what steps are taken to deduce whether a company is fulfilling ESG targets thus scoring higher.

1.5 Women in sustainability leadership roles and their limitations

The United Nations' action-based Sustainable Development Goals (SDGs) consist of 17 SDGs which were accepted by 193 member nations in order for us to accomplish economic growth while supporting environmental vitality and adhering to social justice (Franco et al., 2020). This section will focus on SDG 5, which specifically addresses the importance of "Gender Equality" in order to achieve the sustainability goals in place. According to Franco et al. (2020), there are gender-segregated industries that prevent sustainability leadership opportunities for women as well as career growth. In this case, extractive industries are assessed as they have traditionally been known for being male-dominant industries. Himmer (2020) found that the same was true in their study done in Portugal. Female executives accounted for only 10% of the total board in industries such as Construction and Real Estate as opposed to 40% in the health sector. Identifying and addressing these barriers is an essential step to understanding the key areas limiting women from entering leadership roles within such industries. Limiting factors, in this case, have been identified as being sociocultural, male-centric industries, and traditional organisational/governmental standards (Franco et al., 2020). Therefore, there is significant importance for organisations, governments, and educational institutions to promote equal opportunities for both genders (Franco et al., 2020). According to the power parity report by McKinsey (2015), gender equality would greatly benefit GDP growth. The report states that gender equality could add an additional $12 trillion to the global economy. With this, equipping women with the right tools to achieve employment advancement could add $2.1 trillion to the United States economy.

Heß (2020), studied the disparity of gender representation that exists within different industries in Germany. Gender representation is regarded as the percentage of female delegates present in developing organisations. The sample consisted of over 8000 companies and found a significant difference in the representation in companies that were from east and west Germany. Female under representation was found in industries like construction and engineering. The sample set revealed that on average women retained higher levels of education which according to the author could be due to the barrier to entry that women face thus needing to get a higher level of education to retain the same position as their male competitor. This study revealed significance in the region, industry and organization size.

Babugura (2017) suggests that the hindrance in gender equality emerges from poor enforcement of existing frameworks and commitments to achieving gender equality goals. According to Franco et al. (2020), androcentric policies play a significant role in this issue. The challenges that come into play regarding this matter include lack of training allowing women to advance into leadership positions; women going unrecognised for their efforts and contributions; inability for women to develop their skills which disables career growth, educational barriers, maternal responsibilities, and work-life balance resolution in this regard. All these factors essentially bring us further away from achieving SDG 5. According to Babugura (2017), the foundation for a successful transition towards a green economy is through solving the baseline issue of gender inequality. This originates from the idea that both genders possess valuable perspectives, experiences and knowledge. With this synergism, we could progress quicker in achieving sustainable development. The case study conducted by Franco et al. (2020) compared the perception of female tertiary scholars, professionals, and stakeholders in the extractive industry in Columbia and Chile. The study done on a university level found that the dominant interests in male development were evident early on within the educational sphere and only continued to persist and intensify on a career level. Skill and education disparities are the baseline gaps that promote distance between female and male development. On a greater scale, negative comments and condescending remarks made by superiors make it even harder for women to complete their studies and transition into the working environment confidently.

Historically speaking, it can be observed that there is an upward projection of leadership roles within sustainability becoming more androgynous; however, there is still the question of whether this is truly the case (Shinbrot et al., 2019). Shinbrot et al. (2019) conducted a study to analyse the perception of sustainability activists and the gender barriers that exist within this framework while analysing how women contribute to sustainability leadership roles when these barriers are overcome. The two-year study included 120 male and female participants that are deeply invested in this area within industries. The participants have backgrounds in academia, policy-making, and well-respected positions. They investigated the patriarchal structures that exist and how these impacts female representation in sustainable leadership roles.

When analysing the challenges incurred by female leaders within the sustainable development area, the most common challenge found was the perception and treatment of women. Male dominance is still notable and thus creates a shadowing effect on female knowledge and ability. Female respondents mentioned there is an unnoticeable amount of effort done to eliminate and address patriarchal hierarchies (Shinbrot et al., 2019). The second most common issue was work-life balance. There is an unequivocal expectation for women to be "supermoms" and hard-working office heroes. This said, there is an unbalanced division of household responsibilities, thus, putting immense pressure on women both personally and professionally. Male outliers responded that females face the same challenges that men do; however, there are multiple layers that need to be addressed, starting from patriarchal disparities all the way to unrecognised maternal expectations and efforts.

This said, the majority of participants acknowledge the male-dominated power structure that exists as well as limits women from attaining leadership positions. There are a plethora of barriers that need to be resolved in order for us to see female career progression within the management and leadership segment. The areas of contention include gender norms, self-esteem, especially in environments where this is taken away, work-life balance, and patriarchal structures (Shinbrot et al. (2019). With males and females reportedly having similar perceptions towards these issues, males can make a significant difference by serving as an ally for their female counterparts within such cases.

2. RESEARCH DESIGN AND METHODS

This chapter of the thesis will elaborate on the research design and methods used to conduct this thesis. This section will include information about the research hypotheses, objective, sampling, and data collections method used. The main indices used to perform the analysis include the ESG index and the percentage of women present on the board of directors and executive board. These will further be elaborated on in the following chapter.

2.1. Research Objective and Hypotheses

The objective of this thesis is to determine whether there is a relationship between the percentage of women on the boardand ESG performance for the S&P 500 companies by calculating their respective correlation coefficients for selected variables.

There has been significant attention on SDG 5 which has to do with gender equality. Similarly, there is tremendous importance on environmental action and achieving the SDGs by 2030. This need to take action to achieve net zero puts significant strain on big corporations to achieve ESG targets in order to receive good ESG scores which could be considered both advantageous and mandatory for companies in the future. The Stakeholder theory confirms that there is a shift in interest for companies to focus on their bottom line and shareholder interest no longer only but also consider the interests of stakeholders connected to the company. From previous studies mentioned in the literature review, there are inconsistencies concerning the findings as some studies found a positive link and some have found no link between the percentage of women present on the board and ESG score.

Considering the findings from past literature, the author has developed the following hypotheses which are intended to be accepted or rejected in Chapter 3:

H1: Percentage of women on the board of directors has a positive relationship with the comprehensive ESG Disclosure Score (Velte, 2016; Katmon et al. 2019);
H2: Percentage of women on the executive board has a positive relationship with the comprehensive ESG Disclosure Score (Manita et al. 2018);
H3: Percentage of women on the board has a positive relationship with the E&S pillars (Ginglinger and Raskopf, 2021);
H4: Percentage of women on the board has a positive relationship with the Governance pillar (Birken and Cigna, 2019);
H5: Diversity score has a positive relationship with the comprehensive ESG Disclosure Score (Bear et al. 2010);

In all the past literature, the variables that are mainly examined is the comprehensive ESG rating variable, and percentage of women present on the board of directors. However, the author finds relevance in also examining each individual ESG pillar in order to make comparisons on which areas within the ESG framework do female board members impact most. The diversity score presented in Bloomberg is an aggregate score which measures a group of diversity variables including gender, age, race and nationality. The author has additionally included the percentage of female executive's variable because decision making is a significant element within the executive's functions.

2.2. Data and Methodology

2.2.1 Sample

The sample used to conduct the analysis in this research included the S&P 500 companies. The S&P 500 companies represent a gauge for equity performance in the United States and represent an estimated 80-85% of the US stock market (Gunzberg and Edwards, 2018). Therefore, this list of companies was selected due to the importance of their impact on the global economy as well as the job market. In addition, these large-sized companies are often times put in the limelight of attention therefore, adding pressure to meet stakeholder expectations (Tata and Prasad, 2015).

According to the Corporate Finance Institute team (2023), the general conditions that are applicable for a company to be considered in the S&P 500 list includes:

- Must be a US registered company.
- Market capitalisation must be greater than $8.2 billion.
- Highly liquid shares.
- At least 50% of shares must be available to the public.
- The sum of earnings over four quarters must be positive.

The sample data is therefore standardised according to the above conditions. This study can be compared to Manita et al. (2018), who used the S&P 500 companies to conduct the same analysis during the period of 2010 to 2015. Manita et al (2018), excluded companies identified as financial companies (SIC codes 6000-6999) and Utility companies (SIC codes 4900-4999) as these companies follow a separate list of disclosure and accounting guidelines. This provided a final sample set of 364 companies. The data considered to perform the investigation looks at the ESG performance of these companies over a period of 5 years, the period considered is from 2017-2021. Within the data set, there are companies that do not have information regarding ESG score as they did not file ESG disclosure documents during that period. However, this changes over the period of 5 years which is considered in this study.

The author extracted data from 2017 to 2021, this raw data was then filtered in order to exclude missing data points and only include relevant variables/figures. In order to finalise the comprehensive dataset, the author chose to merge the filtered datasets over 5 years and finally use the merged dataset which can be found in appendix 1. The author used this dataset to perform the descriptive analysis, Pearson correlation between variables and the multivariate regression analysis.

2.2.2 Variables

Upon review of past research conducted by the author, the Bloomberg terminal is a key reservoir for data conducted on the variables which have been outlined as key variables for this research paper (Manita et al. 2018; Nollet et al., 2016; Romano et al. 2020). The data used to conduct this research were solely retrieved from the Bloomberg terminal in order to refrain from capturing data from numerous sources. Additionally, ESG Ratings found in Bloomberg are concluded by analysing data and ratings from SAM, MSCI, Sustainalytics or SCS (Emerick, 2021).

Table 2 provides more information about the different variables used to perform the investigation in Chapter 3.

Table 2: Variable definition

Variables	Definition	Measurement
ESG Score	Environmental, Social and Governance disclosure score	The overall ESG disclosure score presented in Bloomberg is and aggregate measure of the quality and complexity of information disclosed by companies.
ENV Score	Environmental disclosure score	Environmental disclosure score presented in Bloomberg.
SOC Score	Social disclosure score	Social disclosure score presented in Bloomberg.
GOV Score	Governance disclosure score	Governance disclosure score presented in Bloomberg.
%Wmnbd	Percentage of women on the board of directors	Percentage of women on the board of directors.
%FemlExecs	Percentage of women on the executive board	Percentage of women on the executive board.
Diversity Score	Diversity score	Comprehensive board diversity score measured on a scale of 0-10 captured in Bloomberg. This score weighs the gender, age, ethnicity, and nationality.
Bd Avg Age	Average board age	Average board age
Feml CEO	Female CEO	Dummy variable giving a value of 1 if the CEO is a female and 0 if not.
Duality	CEO Duality	CEO duality is a dummy variable giving a value of 1 if the CEO is also chairing the board of directors. and zero if not
Board Size	Total number of board members	Total number of board members

Source: Author (2023)

As seen in previous studies (Manita et al. 2018; Francoeur et al. 2019; Romano et al. 2020) the ESG disclosure variable forms as the dependent variable and the independent variables include all the subsequent variables except for board size, and CEO duality. Consequently, board size and CEO duality is regarded as a control variable (Velte, 2016; Arayssi, 2020).

2.2.3 Pearson's Correlation

Pearson's correlation is a statistical method used to determine directional strength of the linear relationship between two variables. A graphical scatter diagram is used to visually present the relation of data pairs. To determine the strength and direction, the correlation coefficient will vary between -1 and 1. When the value is positive, then this demonstrates that there is a tendency for both data pairs to increase or decrease together. When the value is negative, this demonstrates that there is a tendency for the data pairs to increase or decrease in opposite directions. The closer the values are to 0 the lower the association between the two variables. The closer the values are to -1 or 1, the stronger the linear association between the two variables (Kirch, 2008). According to Amadi & Obilor (2018), correlation coefficients that are below ± 0.4 signify a weak correlation. Correlation coefficients between ± 0.4 and ± 0.6 signify a moderate correlation. Correlation coefficients above ± 0.6 signify strong relationships.

Pearson's correlation coefficients are calculated using the following formula:

$$r_{xy} = \frac{\sum x_i y_i - n\overline{xy}}{(n-1)s_x s_y} \qquad (1)$$

where
r_{xy} - Pearson's correlation
coefficientn - number of
observations
$\bar{x}$ - arithmetic mean of all x_i
$\bar{y}$ - arithmetic mean of all y_i
s_x - standard deviation for all x_i
s_y - standard deviation for all y_i

2.2.4 Regression analysis

The Multivariate regression analysis is used complementary to the correlation analysis to test the hypotheses jointly, with ESG Disclosure being the dependent variable. The study investigates whether gender diversity on the board has an impact on the ESG Disclosure rating/performance. As discussed by Kutner et al. (2005), the assumptions of regression (linearity, homoscedasticity, normal distribution, and no multicollinearity) were tested. The regression analysis can be found in Table 5, with the following regression equation applicable:

$$\text{ESG Score} = \alpha + \beta1(\%\text{Wmnbd}) + \beta2(\%\text{FemlExecs}) + \beta3(\text{Diversity Score}) + \beta5(\text{Duality}) + \beta6(\text{Board size}) + \varepsilon \quad (2)$$

where
%Wmnbd – Percentage of women present on the board of directors
%FemlExecs – Percentage of women present on the executive board
Diversity Score – Bloomberg diversity score
Duality – Company duality
Board size – Total number of members present on the board

In order to capture the impact of board gender diversity on ESG performance, the dependent variable is the ESG Score, and the independent variables used to perform the regression analysis include Percentage of women on the board of directors, Percentage of women on the executive board, and Diversity score. The two control variables used include CEO Duality and Board size (Bear et al. 2010).

3. RESULTS AND DISCUSSION

This chapter presents an analysis of the data provided in the previous chapter. Descriptive statistics is used to evaluate the data set and provide comprehensive information on the distribution of the data. With this, the author compiles input figures to calculate Pearson's correlation coefficients. Pearson's correlation coefficients are then used to analyse the degree to which variables are correlated.

3.1. Descriptive Statistics

The descriptive statistics analysis shown in table 3 shows that the final dataset included 364 firms which were analysed over 5 years using one merged dataset. The ESG disclosure score which ranges from 0 to 100 had a Mean amount of 48.97 and Median amount of 48.44. This shows that the data distribution is uneven and slightly skewed to the right therefore, providing evidence that some companies are doing significantly better regarding their ESG Disclosure thus scoring a significantly higher ESG Disclosure score. The standard deviation for the ESG Disclosure variable shows that the data is mostly clustered around the Mean amount with most of the data being spread between around 41 and 56. The range for this variable is quite large which shows that the data is quite dispersed with some companies scoring significantly lower than others.

When we examine the ESG pillars individually, we can see that the Environmental and Social variables have performed significantly worse than the Governance variable. This clearly shows that companies have managed to improve their comprehensive rating with their Governance score. For all 3 variables, we can see that the Mean is slightly higher than the Median therefore showing that the distribution is slightly uneven and skewed to the right. The standard deviation for the Environmental variable is quite high which shows that the data for this variable is quite spread out across all the companies. This can also be seen from the range, which is 73.87. There is a significant difference in the Environmental performance for companies. With this we can see that the lowest scoring company scored 0 for their Environmental score.

The percentage of female presence on the board of directors ranged from 5.152 to 44.907 which shows a significant difference between the best performing company and worst performing company in terms of gender representation on the board of directors. On average we find that companies have 22.67% of women on the board of directors which is respectively quite low. The standard deviation is 6.15 therefore, showing that the data is mostly clustered between 17% and 28%. There is improvement in the percentage of female executives' performance. The data ranges from 30.54 to 71.35 therefore, showing quite a dispersed dataset. The standard deviation is 8.02 therefore, showing that the data is mostly clustered between 41% and 57%. The diversity score is rated from 1-10, on average companies scored 4.94 with the maximum score being 8.90. The average board age, board size, Duality and female CEO variables were added as additional variables for information purposes. From this we can see that female CEOs account for only 5% of CEOs serving in the S&P 500 companies. Interests in these variables were mainly included to see whether there is a correlation between these variables and ESG disclosure.

Table 3. Descriptive Statistics

Variable	**N**	**Mean**	**Median**	**Minimum**	**Maximum**	**St. Deviation**
ESG Score	364	48.97	48.44	30.20	71.44	7.56
ENV Score	364	29.86	28.21	0	73.87	14.86
SOC Score	364	26.95	25.82	8.53	59.262	9.19
GOV Score	364	88.50	88.23	73.30	97.50	3.18
%Wmnbd	364	22.67	22.79	5.15	44.907	6.15
%FemlExecs	364	48.57	47.50	30.54	71.35	8.02
Diversity Score	364	4.94	4.67	1.71	8.90	1.33
Bd Avg Age	364	43.39	43.03	27.22	63.88	6.91
Feml CEO	364	0.05	0	0	1	0.200
Duality	364	0.40	0	0	1	0.49

Board size	364	10.75	11	6	16	1.82

Source: Author's calculations based on appendix 2

The correlation coefficients for variables from the descriptive statistics table (3) above will be introduced in the next subsection.

3.2. Pearson's Correlation Coefficients

Table 4 illustrates the Pearson correlation matrix. From this we find a very strong positive correlation between the presence of women on the executive board and ESG Disclosure Score. A weak positive correlation was found between the presence of women on the board of directors and ESG disclosure score. Additionally, we find that the average age of the board has a strong positive correlation with the ESG disclosure score. Diversity score has a very weak positive correlation (almost negligible) with ESG disclosure score. This finding allows us to accept hypothesis 5 when we isolate Diversity Score and ESG Score.

Table 4. Pearson's Correlation Matrix

	ESG Score	ENV Score	SOC Score	GOV Score	%Wmnbd	%FemlExecs	Diversity Score	Bd Avg Age	Feml CEO	Duality	Board size
ESG Score	1.00										
ENV Score	0.90	1.00									
SOC Score	0.86	0.78	1.00								
GOV Score	0.65	0.59	0.59	1.00							
%Wmnbd	0.28	0.30	0.29	0.26	1.00						
%FemlExecs	0.96	0.96	0.91	0.69	0.31	1.00					
Diversity Score	0.18	0.23	0.24	0.15	0.77	0.23	1.00				
Bd Avg Age	0.95	0.94	0.90	0.69	0.47	0.99	0.35	1.00			
Feml CEO	0.06	0.08	0.09	0.06	0.23	0.08	0.21	0.12	1.00		

Duality	0.08	0.10	0.13	0.12	0.10	0.11	-0.03	0.12	-0.03	1.00	
Board size	-0.01	-0.05	0.00	0.05	0.00	-0.02	-0.03	-0.01	0.00	-0.07	1.00

Source: Author's calculations based on Table 3

The correlation coefficients presented above will allow the author to present the findings in the form of scatter plot diagrams, to provide a visual demonstration of the correlation magnitude.

3.3. Relationship between the presence of women on the board and ESG disclosure score

In this subchapter the outcomes presented in table form will be presented on the scatter plot diagrams for illustrative purposes. Each Pearson's Correlation Coefficient relating to female presence and ESG disclosure will be individually discussed, and the Hypothesis formulated in Chapter 2 will be either accepted or rejected.

Figure 3 illustrates the relationship between presence of women on the board of directors and ESG Disclosure Score.

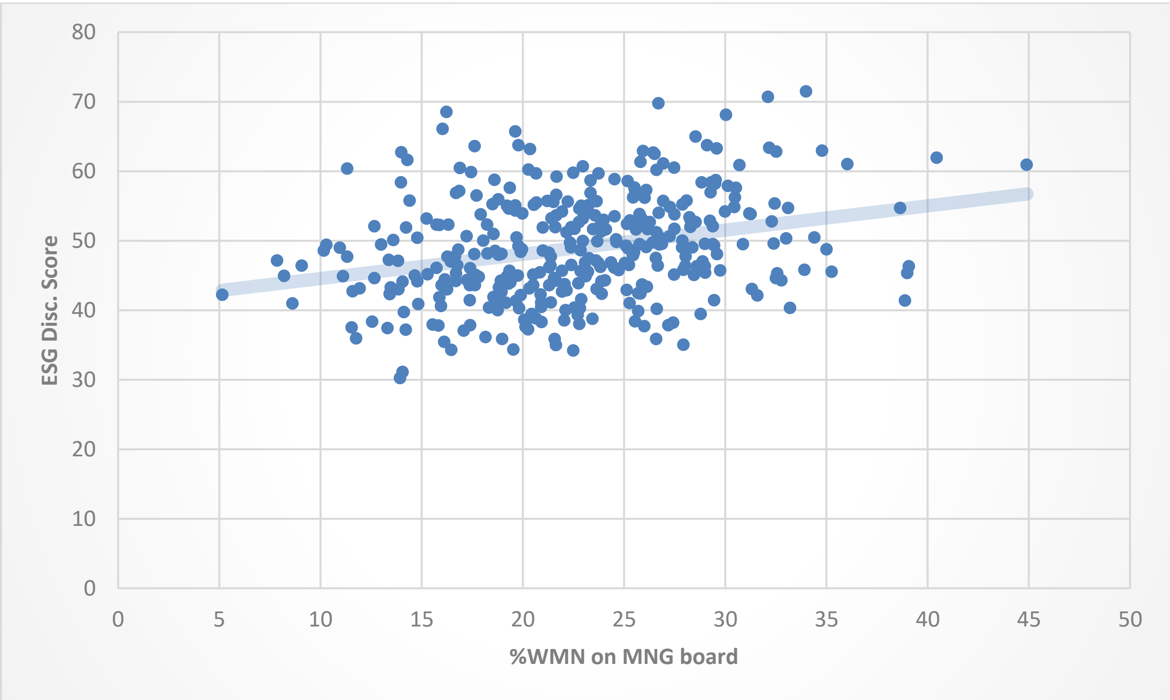

Figure 3. Scatter Plot Diagram illustrating the Relationship between presence of women on the board of directors and ESG Disclosure Score

Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.28) shows a very weak positive correlation between the presence of women on the board of directors and ESG Disclosure Score. With a 95% significance level the author can state that more females present on the board of directors will result in a higher ESG Disclosure Score. This statement confirms hypothesis 1: Percentage of women on the board of directors has a positive relationship with the comprehensive ESG Score.

Figure 4 illustrates the relationship between the presence of women on the executive board and ESG Disclosure Score.

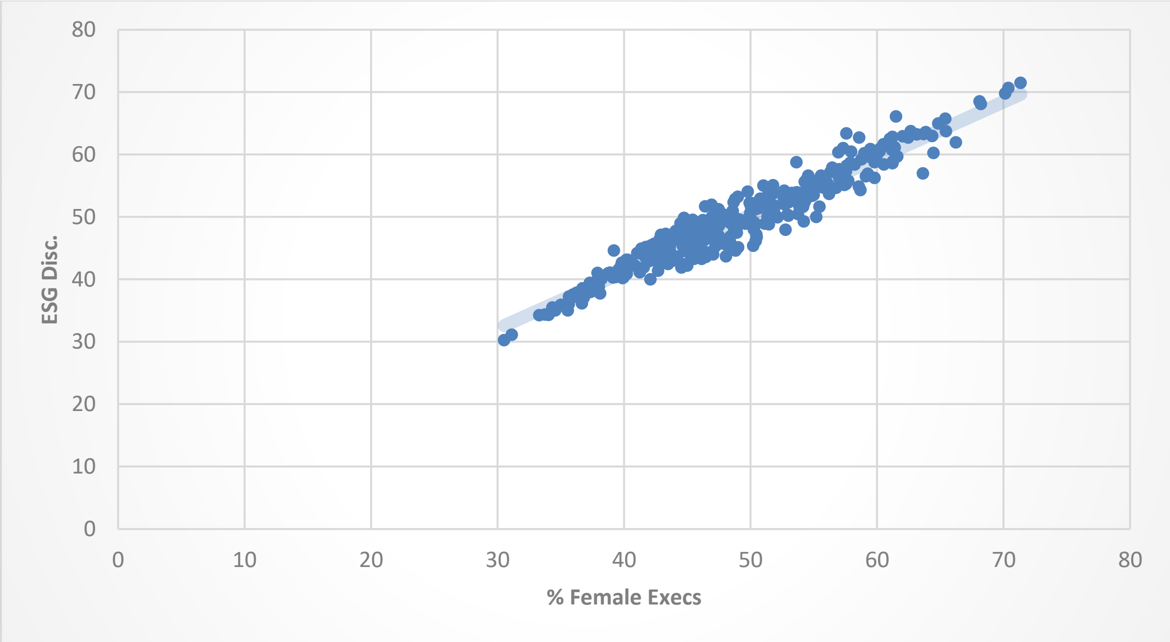

Figure 4. Scatter Plot Diagram illustrating the Relationship between presence of women on the executive board and ESG Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.96) shows a very strong positive correlation between the presence of women on the executive board and ESG Disclosure Score. With a 95% significance level the author can state that more females present on the executive board will very likely result in higher ESG Disclosure Score. This statement confirms the hypothesis 2: Percentage of women on the executive board has a positive relationship with the comprehensive ESG Disclosure Score.

Figure 5 illustrates the relationship between presence of women on the board of directors and Environmental Disclosure Score.

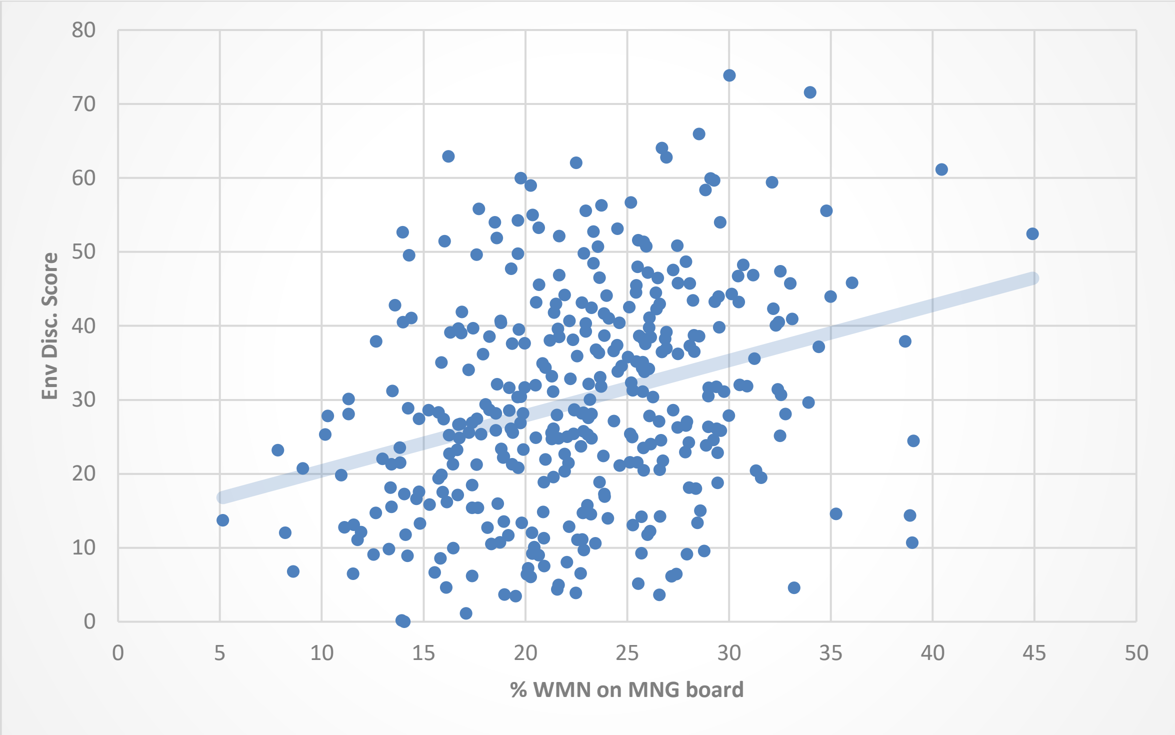

Figure 5. Scatter Plot Diagram illustrating the Relationship between presence of women on the board of directors and Environmental Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.31) shows a weak positive correlation between the presence of women on the board of directors and Environmental Disclosure Score. With a 95% significance level the author can state that more females present on the board of directors will result in a higher Environmental Disclosure Score. This statement confirms hypothesis 3: Percentage of women on the board has a positive relationship with the E&S pillars.

Figure 6 illustrates the relationship between presence of women on the board of directors and Social Disclosure Score.

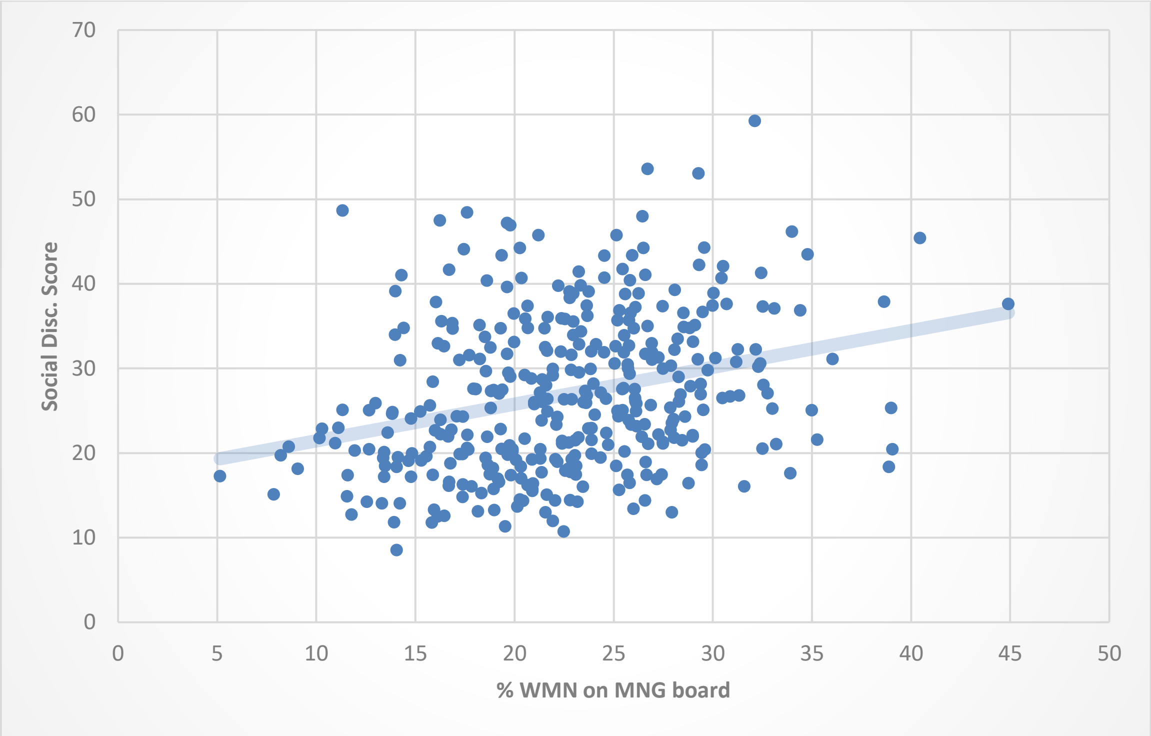

Figure 6. Scatter Plot Diagram illustrating the Relationship between presence of women on the board of directors and Social Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.29) shows a weak positive correlation between the presence of women on the board of directors and Social Disclosure Score. With a 95% significance level the author can state that more females present on the board of directors will result in a higher Social Disclosure Score. This statement confirms hypothesis 3: Percentage of women on the board has a positive relationship with the E&S pillars.

Figure 7 illustrates the relationship between presence of women on the board of directors and Governance Disclosure Score.

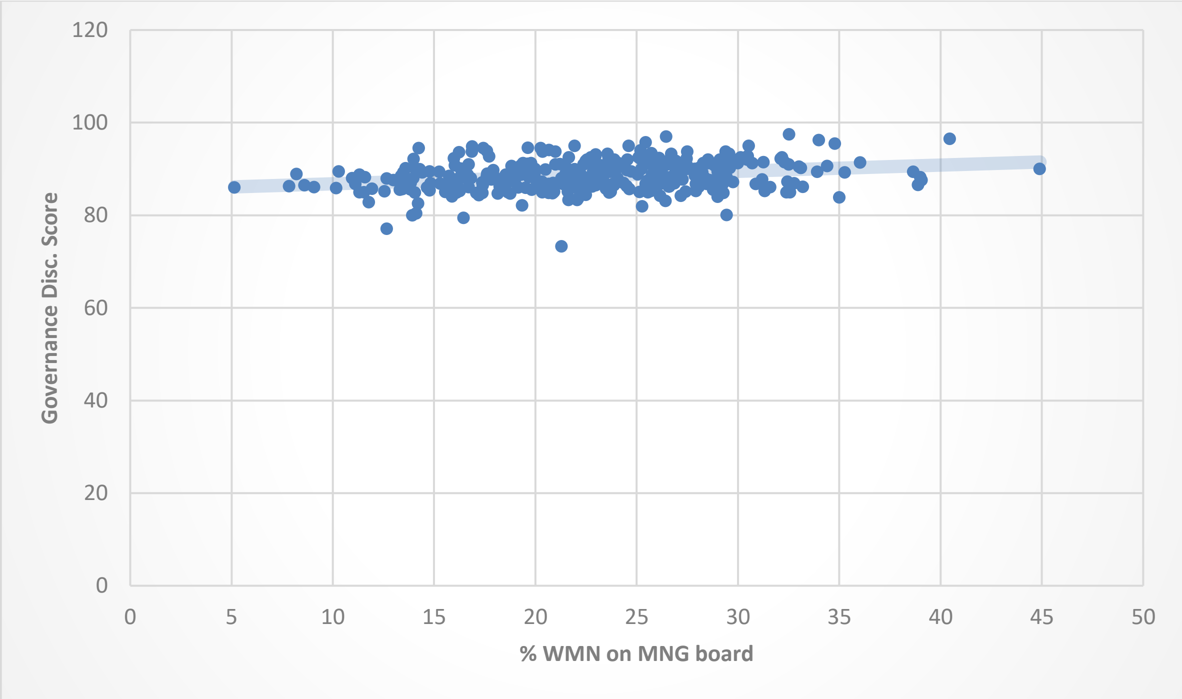

Figure 7. Scatter Plot Diagram illustrating the Relationship between presence of on the board of directors and Governance Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.26) shows a weak positive correlation between the presence of women on the board of directors and Governance Disclosure Score. With a 95% significance level the author can state that more females present on the board of directors will result in a higher Governance Disclosure Score. This statement confirms hypothesis 4: Percentage of women on the board has a positive relationship with the Governance pillar.

Figure 8 illustrates the relationship between presence of women on the executive board and Environmental Disclosure Score.

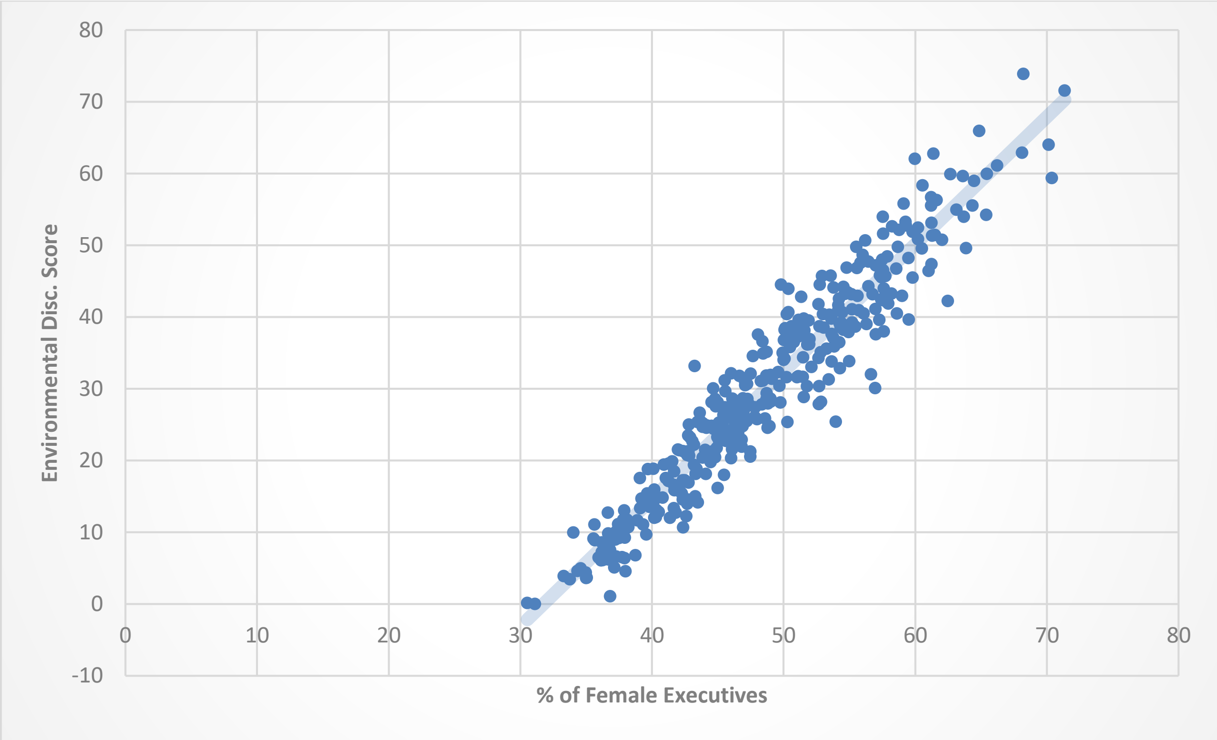

Figure 8. Scatter Plot Diagram illustrating the Relationship between presence of women on the executive board and Environmental Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.96) shows a very strong positive correlation between the presence of women on the executive board and Environmental Disclosure Score. With a 95% significance level the author can state that more females present on the executive board will very likely result in a higher Environmental Disclosure Score. This statement confirms hypothesis 3: Percentage of women on the board has a positive relationship with the E&S pillars.

Figure 9 illustrates the relationship between presence of women on the executive board and Social Disclosure Score.

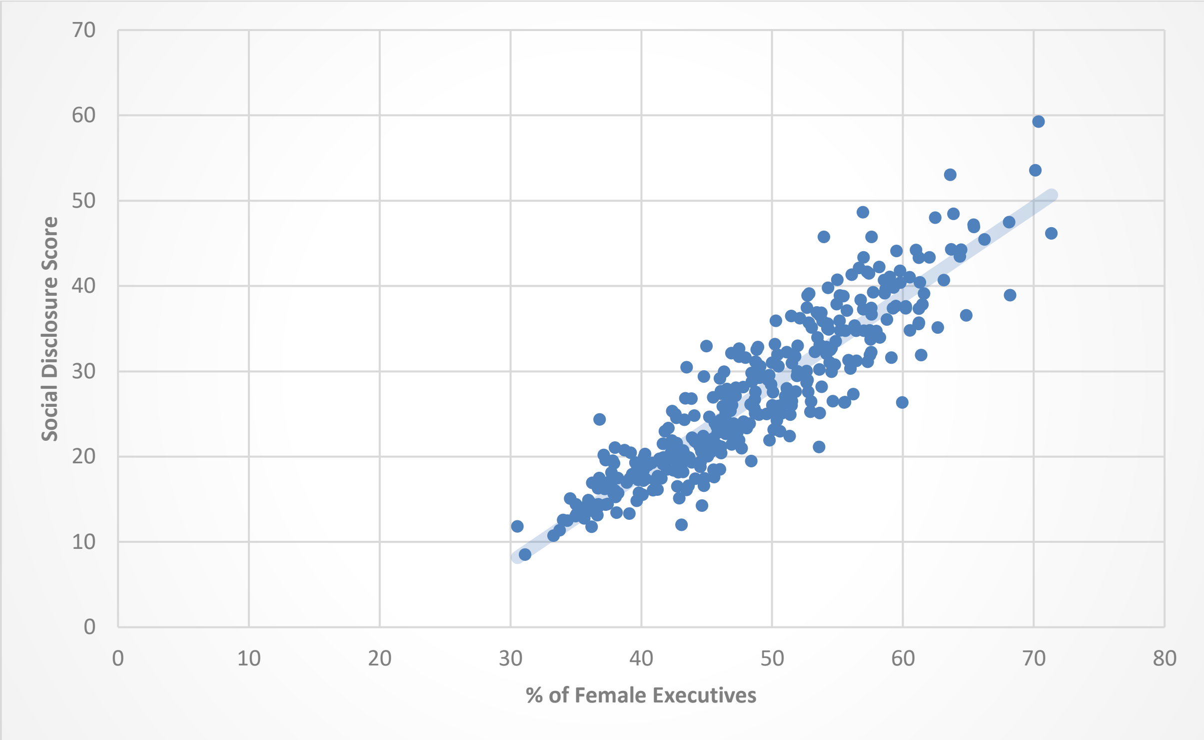

Figure 9. Scatter Plot Diagram illustrating the Relationship between presence of women on the executive board and Social Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.91) shows a very strong positive correlation between the presence of women on the executive board and Social Disclosure Score. With a 95% significance level the author can state that more females present on the executive board will very likely result in a higher Social Disclosure Score. This statement confirms hypothesis 3: Percentage of women on the board has a positive relationship with the E&S pillars.

Figure 10 illustrates the relationship between presence of women on the executive board and Governance Disclosure Score.

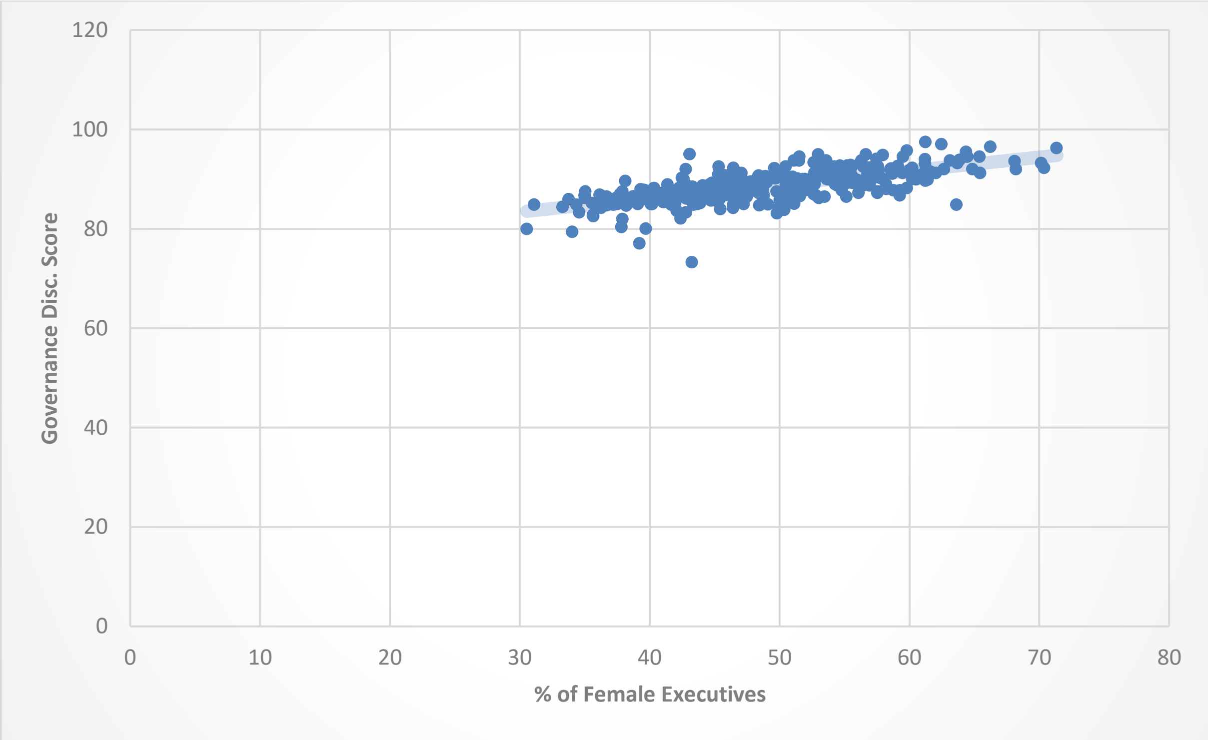

Figure 10. Scatter Plot Diagram illustrating the Relationship between presence of women on the executive board and Governance Disclosure Score
Source: Authors' calculations based on figures from Appendix 2 and results from Table 4.

Pearson's correlation coefficient (r=0.695142) shows a moderate to strong positive correlation between the presence of women on the executive board and Governance Disclosure Score. With a 95% significance level the author can state that more females present on the executive board will result in a higher Governance Disclosure Score. This statement confirms hypothesis 4: Percentage of women on the board has a positive relationship with the Governance pillar

3.3. Regression Analysis

The results from the multiple regression analysis can be seen in Table 5. The results reveal that based on a 0.05 significance level, ESG Disclosure is not significantly impacted by the percentage of women on the board, and board size. However, on a 0.1 significance level, we can reject the null hypothesis and conclude that there is a statistically significant relationship between the percentage of women on the board and ESG performance. Manita et al. (2018), recommended future researchers to include the percentage of women on the executive board. With this inclusion, we see that there is strong evidence against the null hypothesis and there is a highly significant relationship ($p < 0.01$) between the percentage of female executives and ESG performance. Contrary to past literature (Harjoto, 2015; Katmon et al. 2019) that confirms board diversity has a significant positive impact on ESG performance, we see that diversity is significantly negatively related to ESG performance.

Table 5: Regression analysis

Variables	Expected sign	Regression Coefficient	p-value
%Wmnbd	+	0.0442	0.105*
%FemlExecs	+	0.918	4.9084E-206***
Diversity Score	+	-0.441	0.0004***
Duality		-0.603	0.005***
Board size		0.012	0.832
R^2		0.934	
Significance F		4.1512E-208	

Source: Author (2023)
Note: Significance level: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Taken as a set this regression model is very significant based on the ‘Significance F’ result. The regression analysis used in conjunction with the correlation analysis shows the relationship between the numerous independent variables and ESG Disclosure. Diversity score resulted in a negative coefficient when we collectively look at this variable with percentage of women on the board of directors and percentage of female executives.

3.4. Summary of Findings and Limitations

The objective of this thesis was to determine whether there is a relationship between the presence of women on the board and the ESG performance for the S&P 500 companies by calculating their respective correlation coefficients for selected variables and conducting a multivariate regression analysis. Using Pearson's correlation coefficients as well as regression analysis, the author was able to study the relationship and its significance (if any) of the explanatory variables (Percentage of women present on the board of directors, executive board and board diversity score) and the ESG pillars. Manita et al. (2018) suggested that future researchers should incorporate the presence of female executives variable complementary to presence of women on the board of directors. With this addition, the most significant finding of the study was the very strong positive correlation between the relationship of female executives on the board and ESG Disclosure Score. In comparison to the weak positive (nearly insignificant) correlation between female presence on the board of directors and ESG Disclosure Score. When we collectively look at board diversity score with percentage of women on the board of directors and percentage of female executives, we find a significantly negative relationship between diversity score and ESG score.

The variables that resulted in a weak positive correlation include the presence of women on the board of directors and its correlation with the comprehensive ESG Disclosure Score, Social Disclosure Score and Governance Disclosure Score. From these results, we see that all the scatter plot diagrams prove that the presence of women on either on the board of directors or the executive board has a positive correlation (ranging from weak to very strong) to the comprehensive ESG Disclosure Score as well as the individual ESG pillars. Interesting finding is the stronger impact that female presence has on the Environmental Disclosure Score in comparison to the other two pillars.

The findings and results of this research which aimed to evaluate the impact of board gender diversity and ESG Disclosure found that female presence does generally improve ESG Disclosure. The noteworthy finding is the significantly positive correlation between female presence on the executive board and ESG Disclosure Score. This function of the company parallel to the board of directors plays an important role in leadership and decision making. However, in terms of which board gender diversity has a greater impact on ESG Disclosure Score, we can see that the executive board is more influential.

The limitations include having insufficient access to more data. The author recommends future researchers to include more control variables when running regressions to get more conclusive results regarding the external factors that may manipulate regression results. Future studies should consider increasing the limits by incorporating qualitative data thus analysing greater details of ESG reporting regulations, policies, and corporate culture. Furthermore, looking into the background of females on the board of directors and executive board in comparison to their male counterparts could provide supplementary data on the similarities or differences in the level of experience possessed by both genders in order to land a spot on the board. This research serves as a useful source of information for stakeholders, corporates, and investors as ESG rating has become an important indicator used by investors when making investment decisions. Corporates can also find these results informative when making decisions on board composition and gender equality within a workplace.

CONCLUSION

The coming of a new age has put significant emphasis on stakeholder approval contrary to the traditional stockholder satisfaction. This change in mentality has resulted in greater emphasis on fulfilling Environmental, Social, and Governance targets thus improving overall corporate ESG score. Parallel to the importance of ESG score, female representation in leadership has become a progressively vital topic. Especially with the announcement of the UN Sustainable Development Goals (SDGs), amongst the 17 SDGs, we see that gender equality represents SDG 5 which aims to empower women thus resulting in social, economic, and environmental sustainability outcomes.

This thesis studied the relationship between the presence of women on the board and the ESG disclosure for the S&P 500 companies. The research was done on the S&P 500 companies, with the exclusion of companies that fell into the categories of Utilities or Financial Services. This exclusion was made due to these firm's reporting according to a different set of ESG standards and guidelines. The purpose was to examine the impact of female representation in leadership on ESG disclosure. The author selected the following variables to perform the analysis: The comprehensive ESG Disclosure Score, Environmental Disclosure Score, Social Disclosure Score, Governance Disclosure Score, Percentage of women on the board of directors, Percentage of women on the executive board, and diversity score. Pearson's correlation coefficients were used to evaluate the strength of the relationship between board gender diversity and ESG Disclosure. The multivariate regression analysis was used in conjunction to the correlation analysis to further test the relationship between female presence on the board, female presence on the executive board, and the board diversity score with ESG disclosure.

The study outcomes indicated a weak positive correlation ($r=0.28$) between the presence of women on the board of directors and ESG Disclosure Score. A weak to moderately positive correlation ($r=0.31$) between the presence of women on the board of directors and Environmental Disclosure Score. With the addition of "female executives" variable, the most significant finding of the study was the very strong positive correlation between female presence on the executive board and ESG Disclosure Score. In comparison to the very weak positive correlation found between female presence on the board of directors and ESG Disclosure Score. Another interesting finding is the stronger impact that female presence has on the Environmental Disclosure Score in comparison to the other two ESG pillars. The author concludes that from these findings, the presence of women on both the executive and directors board, is positively correlated to the ESG Disclosure Score.

The author recommends future researchers to incorporate qualitative data thus complementing the quantitative data. Adding greater depths of qualitative research on company culture, reporting policies and guidelines, board member/executive backgrounds can provide a multifaceted investigation thus providing indications on how demographic and technical factors plays a role in the outcomes. The results of this study use the most recent data thus contributing to the pool of existing research on this topic. This information can be utilised by stakeholders and corporates who are interested in ESG rating and its improvement. Additionally, companies can use this information to evaluate their performance and make strategic decisions for the company.

REFERENCES

Arayssi, M., Jizi, M., & Tabaja, H. H. (2020). The impact of board composition on the level of ESG disclosures in GCC countries. Sustainability Accounting, Management and Policy Journal Vol. 11 No. 1, 137-161 https://doi.org/10.1108/SAMPJ-05-2018-0136

Alareeni, B. H., & Hamdan, A. M. (2020). ESG impact on performance of US S&P 500-listed firms. Corporate Governance, Vol. 20 No. 7, 1409-1428. https://doi.org/10.1108/CG-06-2020-0258

Amadi & Obilor (2018). Test for Significance of Pearson's Correlation Coefficient (r). International Journal of Innovative Mathematics, Statistics & Energy Policies 6(1):11-23

Barnett, 2023. What Is the Difference Between the Board of Directors & Management? Retrieved from: https://boardsurveys.com/what-is-the-difference-between-the-board-of-directors-management/#:~:text=While%20the%20board%20of%20directors,the%20board%2Dendorsed%20strategic%20plan. February 7, 2023

Babugura, A. (2017). GENDER EQUALITY: A CORNERSTONE FOR A GREEN ECONOMY. South African Institute of International Affairs. http://www.jstor.org/stable/resrep28351

Bear, S., Rahman, N., & Post, C. (2010). The Impact of Board Diversity and Gender Composition on Corporate Social Responsibility and Firm Reputation. Journal of Business Ethics, 97(2), 207–221. http://www.jstor.org/stable/40929405

Berg, F., Fabisik, K., & Sautner, Z. (2021). Is History Repeating Itself? The (Un)Predictable Past of ESG Ratings. European Corporate Governance Institute - Finance Working Paper, (708/2020). doi: 10.2139/ssrn.3722087

Benson, B. W., & Davidson, W. N. (2010). The relation between stakeholder management firm value, and CEO compensation: A test of enlightened value maximization. Financial Management, 39(3), 929-964

Birken, M. A. & Cigna, G. P. (2019). Gender Diversity on Boards: A Cause for Multilateral Organizations. Good Governance and Modern International Financial Institutions: AIIB Yearbook of International Law 2018, 25-43.

Bloomberg (2020). Environmental and Social (ES) scores. Retrieved from: https://data.bloomberglp.com/professional/sites/10/ESG_Environmental-Social-Scores.pdf

Boffo, R., and Patalano, R. (2020), “ESG Investing: Practices, Progress and Challenges”, OECD Paris, Retrieved from: www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf

Branco, M., C., Rodrigues, L. L. (2007). Positioning Stakeholder Theory within the Debate on Corporate Social Responsibility. EJBO Electronic Journal of Business Ethics and Organization Studies, 12(1).

Bravo, F. & Reguera-Alvarado, N. (2018). Sustainable development disclosure: Environmental, social, and governance reporting and gender diversity in the audit committee. Journal of Business Strategy and the Environment, 28(2), 418-429. https://doi.org/10.1002/bse.2258

Cappucci, M. (2018). The ESG integration paradox. Journal of Applied Corporate Finance, 30(2), 22-28. DOI: https://doi.org/10.3905/jesg.2022.1.054

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2002). Corporate governance, board diversity, and firm performance. Oklahoma State University Working Paper. Retrieved from https://ssrn.com/abstract=304499, March 2002.

Cho, C. H., & Patten, D. M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. Accounting, Organizations and Society, 32(7), 639-647. doi: 10.1016/j.aos.2006.09.009

Cornell, B. & Shapiro, A. (1987). Corporate stakeholders and corporate finance. Financial Management, Vol. 16, No. 1, 5-14

Corporate Finance Institute team (2023). S&P 500 Index. Retrieved from https://corporatefinanceinstitute.com/resources/equities/sp-500-index/, January 22, 2023.

Eagly, A. H. (1992). Gender and the evaluation of leaders: A meta-analysis. Psychological Bulletin, 111(1), 3-22.

Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. Psychological Review, 109(3), 573-598. https://doi.org/10.1037/0033-295X.109.3.573

Eagly, A. H., & Wood, W. (2016). Social Role Theory of Sex Differences.

Eccles, R. G., & Stroehle, J. (2018). Exploring social origins in the construction of ESG measures. Available at SSRN: https://ssrn.com/abstract=3212685 or http://dx.doi.org/10.2139/ssrn.3212685

Ehlers, T., Elsenhuber, U., Jegarasasingam, A., & Jondeau, E. (2022). Deconstructing ESG scores: How to invest with your own criteria. ISSN 1682-7678

Emerick, D. (2021). What is Bloomberg ESG? [Blog post]. ESG: The Report. Retrieved from: https://www.esgthereport.com/what-is-bloomberg-esg/#how-do-i-get-a-bloomberg-esg-score, 17 March 2020.

Davé, 2010. The evolution of ESG and disclosures. Retrieved from: https://assets.kpmg.com/content/dam/kpmg/ca/pdf/2020/11/the-evolution-of-esg-and-disclosures-roopa-dave.pdf, November, 2010.

Franco, I. B, Chatterji, T., Derbyshire, E., & Tracey, J. (2020). Actioning the Global Goals for Local Impact: Towards Sustainability Science, Policy, Education and Practice. 1st ed. 2020.

Francoeur, C., Labelle, R., Balti, S., & Bouzaidi, S. E. (2019). To What Extent Do Gender Diverse Boards Enhance Corporate Social Performance? Journal of Business Ethics, 155(2), 343–357. http://www.jstor.org/stable/45023065

Freeman (1984). Strategic management: A stakeholder approach. Boston: Pitman.

Friedman, A. L. and Miles, S. (2002), Developing Stakeholder Theory. Journal of Management Studies, 39: 1-21. https://doi.org/10.1111/1467-6486.00280

Ginglinger, E. & Gentet-Raskopf, C. (2020). Women Directors and E&S Performance: Evidence from Board Gender Quotas. European Corporate Governance Institute - Finance Working Paper No. 760/2021, Université Paris-Dauphine Research Paper No. 3832100. Available at SSRN: https://ssrn.com/abstract=3832100 or http://dx.doi.org/10.2139/ssrn.3832100

Green, J. (2022). Women Reach 32% of S&P 500 Board Seats for the First Time. Retrieved from: https://www.bloomberg.com/news/articles/2022-12-21/women-reach-32-of-s-p-500-board-seats-for-the-first-time#xj4y7vzkg, December 21, 2022

Gunzberg, J., & Edwards, T. (2018). Why is the S&P 500® relevant globally? [PDF document]. S&P Dow Jones Indices. https://www.spglobal.com/spdji/en/documents/education/talking-points-why-is-the-sp-500-relevant-globally.pdf

Harjoto, M. A., Laksmana, I., & Lee, R. P. (2015). Board diversity and corporate social responsibility. Journal of Business Ethics, 132(4), 641-660.

Heß, P. (2020). SDG 5 and the Gender Gap in Standardization: Empirical Evidence From Germany. Sustainability, 12(20), 8699.

Himmer, H. L. J (2020). Gender Diversity Within Top-Management and Corporate Social Responsibility in Portugal. [Dissertação de mestrado, Iscte - Instituto Universitário de Lisboa]. Repositório do Iscte. http://hdl.handle.net/10071/22174.

Hvidkjær, S. (2017). ESG investing: a literature review.

Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. Journal of Applied Corporate Finance, 14, 8-21.

Johnson Jr., E. C., Stout, J. H., & Walter, A. C. (2020). Profound Change: The Evolution of ESG. Business Lawyer, 75(4), 2567-2607.

Kakabadse, A.: 2007, 'Being Responsible: Boards are Reexamining the Bottom Line', Leadership in Action 27(1), 3-6.

Katmon, N., Mohamad, Z. Z., Norwani, N. M., & Al Farooque, O. (2019). Comprehensive Board Diversity and Quality of Corporate Social Responsibility Disclosure: Evidence from an Emerging Market. Journal of Business Ethics, 157(2), 447–481. http://www.jstor.org/stable/45181011

Khemakhem, H., Arroyo, P., Montecinos, J. (2022). Gender diversity on board committees and ESG disclosure: evidence from Canada. Journal of Management and Governance https://doi.org/10.1007/s10997-022-09658-1

Kirch, W. (2008). Pearson's Correlation Coefficient. Encyclopedia of Public Health, 1090–1091. https://doi.org/10.1007/978-1-4020-5614-7_2569

Kutner, M. H., Nachtsheim, C. J., Neter, J., Li, W. (2005). Applied Linear Statistical Models. McGraw-Hill Irwin.

Manita R., Bruna, M. G., Dang, R., Houanti, L. (2018). Board gender diversity and ESG disclosure: evidence from the USA. Journal of Applied Accounting Research, 19(2), 206-224. DOI 10.1108/JAAR-01-2017-0024

McKinsey Global Institute. (2016). The power of parity: Advancing women's equality in the United States. Retrieved from https://www.mckinsey.com/featured-insights/employment-and-growth/the-power-of-parity-advancing-womens-equality-in-the-united-states#/

Morrison, R. (2021). Environmental, Social, and Governance Theory: Defusing a Major Threat to Shareholder Rights. Available at SSRN: https://ssrn.com/abstract=3845709 or http://dx.doi.org/10.2139/ssrn.3845709

Naveed, K., Voinea, C. L., Roijakkers, N. (2022). Board Gender Diversity, Corporate Social Responsibility Disclosure, and Firm's Green Innovation Performance: Evidence from China. Frontiers in Psychology 13. DOI=10.3389/fpsyg.2022.892551

Nery, J. R., and Morales, M. K. (2022). Impact of Board Composition of Philippine Companies on the Quality of their ESG Disclosures. Phillippine Management Review, 29(1), 135-148.

Nollet, J., Filis, G. and Mitrokostas, E. (2016), Corporate social responsibility and financial performance: a non-linear and disaggregated approach, Economic Modelling, Vol. 52, Part B, 400-407, available at: www.sciencedirect.com/science/article/pii/S0264999315002667

Oehmichen, J., Rapp, M. & Wolff, M. Women on German management boards. (2012). Z Betriebswirtsch 82, 95–125 https://doi.org/10.1007/s11573-011-0541-0

Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & de Colle, S. (2010). Stakeholder theory: The state of the art. Academy of management annals, 4(1), 403-445.

Post, C., & Byron, K. (2015). WOMEN ON BOARDS AND FIRM FINANCIAL PERFORMANCE: A META-ANALYSIS. The Academy of Management Journal, 58(5), 1546–1571. http://www.jstor.org/stable/24758233

Post, C., DiTomaso, N., Lowe, S. R., Farris, G. F., & Cordero, R. (2009). A few good women:

Gender differences in evaluations of promotability in industrial research and development. Journal of Managerial Psychology, Vol. 24, No. 4, 348-371.

Refinitiv, 2022. Environmental, Social and Governance Scores from Refinitiv. Retrieved from: https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/refinitiv-esg-scores-methodology.pdf, May 2022.

Romano, M., Cirillo, A., Favino, C., & Netti, A. (2020). ESG (Environmental, Social and Governance) Performance and Board Gender Diversity: The Moderating Role of CEO Duality. Sustainability, 12(21), 9298. https://doi.org/10.3390/su12219298

Rudman, L. A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic women. Journal of Social Issues, 57(4), 743-762.

Shinbrot, X. A. Wilkins, K., Gretzel, U., Browser, G. (2019). Unlocking women's sustainability leadership potential: Perceptions of contributions and challenges for women in sustainable development. World Development 119(2):120-132

Skelly, J. and Johnson, J.B. (2011), Glass ceilings and great expectations: gender stereotype impact on female professionals. Southern Law Journal, Vol. 21, pp. 59-70.

Tata, J., & Prasad, S. (2015). CSR Communication: An Impression Management Perspective. Journal of Business Ethics, 132(4), 765–778. http://www.jstor.org/stable/24703561

Townsend, B. (2020). From SRI to ESG: The Origins of Socially Responsible and Sustainable Investing. The Journal of Impact and ESG Investing, 1(1), 10-25. doi: 10.3905/jesg.2020.1.1.010.

Utz, S. (2019). Corporate scandals and the reliability of ESG assessments: evidence from an international sample. Review of Managerial Science volume 13, 483–511. DOI 10.1007/s11846-017-0256-x

Velte (2016). Women on management board and ESG performance. Journal of Global Responsibility Vol. 7 No. 1, pp. 98-109.

Whelan, T., Atz, U., Van Holt, T., & Clark, C. CFA. (2021). ESG and financial performance: Uncovering the relationship by aggregating evidence from 1,000 plus studies published between 2015-2020. NYU Stern Centre for Sustainable Business and Rockefeller Asset Management. Retrieved from https://www.stern.nyu.edu/sites/default/files/assets/documents/NYU-RAM_ESG-Paper_2021%20Rev_0.pdf

Zhang et al. 2013. Board Composition and Corporate Social Responsibility:
An Empirical Investigation in the Post Sarbanes-Oxley Era. Journal of Business Ethics, Vol. 114 No. 3, pp. 381-392.

APPENDICES

Appendix 1. ESG themes

Pillars	Categories	Themes
Environmental	Emissions	Emissions Waste Biodiversity Environmental Management Systems
	Innovation	Innovation Green revenue, research and expenditure
	Resource Use	Water Energy Sustainable packaging Environmental supply chain
Social	Community	Equal weight for all industries
	Human Rights	Workers’ rights and human rights
	Product Responsibility	Marketing responsibly Product quality Data protection
	Workforce	Inclusion and Diversity Career Development/Training

		Working conditions Health and safety
Governance	CSR strategy	CSR reporting ESG reporting and transparency
	Management	Company structure Compensation
	Shareholders	Shareholder rights Takeover defences

Table 1: ESG Themes
Source: Refinitiv (2022)

Appendix 2. Research Sample

https://docs.google.com/document/d/1zhgIDa14JRscBhIu2Rm6xmYssMuKpTyT4Btf3dYv7CE/edit?usp=sharing

Appendix 3. Non-Exclusive Licence

A non-exclusive licence for reproduction and for granting public access to the graduation thesis[1]

I *Leyla Ozturk*

1. Give Tallinn University of Technology the permission (non-exclusive licence) for my thesis,

The relationship between the presence of women on board and the Environmental, Social, and Governance reporting of companies,

supervised by *Natalie Aleksandra Gurvitš-Suits, PhD*,

1.1 to be reproduced for the purposes of preservation and electronic publication of the graduation thesis, incl. to be entered in the digital collection of the library of Tallinn University of Technology until expiry of the term of copyright;

1.2 to be published via the web of Tallinn University of Technology, incl. to be entered in the digital collection of the library of Tallinn University of Technology until expiry of the term of copyright.

2. I am aware that the author also retains the rights specified in clause 1 of the non-exclusive licence.

3. I confirm that granting the non-exclusive licence does not infringe other persons' intellectual property rights, the rights arising from the Personal Data Protection Act or rights arising from other legislation.

16/04/2023 (date)

[1] *The non-exclusive licence is not valid during the validity of access restriction indicated in the student's application for restriction on access to the graduation thesis that has been signed by the school's dean, except in case of the university's right to reproduce the thesis for preservation purposes only. If a graduation thesis is based on the joint creative activity of two or more persons and the co-author(s) has/have not granted, by the set deadline, the student defending his/her graduation thesis consent to reproduce and publish the graduation thesis in compliance with clauses 1.1 and 1.2 of the non-exclusive licence, the non-exclusive license shall not be valid for the period.*