Corporate governance and corporate social responsibility: evidence from Australia and New Zealand

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Abstract

Recently, a growing number of studies have focused on the relationship between board characteristics and corporate social responsibility (CSR) performance because the latter is beneficial for business/company performance, company reputation, protecting the environment and society and attracting customers and investors for companies. Most research that uses aggregate CSR scores or environmental performance to evaluate/represent companies' CSR performance and ignores social performance (e.g., De Villiers, Naiker & Van Staden, 2011). To address this issue, based on both agency and resource dependence theories, this dissertation conducts a multiple regression analysis to examine the effects of board attributes and executive compensation policy on companies' social and environmental performance separately, using a sample of 100 New Zealand (NZ) and Australian companies over the five years between 2015 and 2019. The findings of this dissertation demonstrate that independent directors, a large board size, more directors with specific skills on the board, more female directors on the board, multiple directorships (directors serving on many boards) and senior executive compensation linked to CSR targets can stimulate companies to participate in social and environmental activities so as to improve the social and environmental performance. In addition, short director tenure is associated with better environmental performance. These results are generally robust with respect to a number of additional tests. This dissertation contributes to the existing literature. For example, the findings strengthen the reliability and generalization of current literature in this field through analysing a sample from NZ and Australia. Moreover, the findings in this study also have implications for companies, shareholders and regulators. To be more specific, the findings could help companies to improve their competitive advantage, financial performance and reputation through formulating a strong corporate governance (CG) system. For shareholders, the findings suggest that their long-term interests will be better served through appropriate adjustments to the board structure.

1. Introduction and Motivation

The purpose of this study is to investigate the relationship between good corporate governance and CSR performance in an Australasian setting. The importance of CSR performance has been motivated in the literature and is covered next. Then the impact of corporate governance and how this is measured is discussed and also the relationship between corporate governance and CSR performance.

According to the previous literature, there are some reasons why companies and shareholders should start to consider corporate social responsibility (CSR) performance. Firstly, CSR performance plays a critical role in promoting business performance, competitive advantage, financial performance, brand image, attracting more customers, employees and investors, protecting the environment and bringing benefits for society. Secondly, nowadays, the active participation of companies in CSR activities is monitored by an increasing number of regulations like ISO14001 and ISO26000(De Villiers et al., 2011).

Raza, Ilyas, Rauf and Qamar (2012) suggested a strong positive correlation between CSR performance and companies' profitability, such as stock market value and accounting performance, which indicates that CSR performance can promote companies' competitive advantage. Moreover, Mishra (2017) demonstrated that companies with more innovation/growth opportunities tend to make more strategic investments in CSR activities to reduce financing constraints and build reputational resources. Therefore, when new products and services are launched, companies with a superior CSR performance may benefit from increased financing provided by socially conscious investors and better marketability, which may enhance firm value and shareholders' interests (Malik, 2015). Jo and Harjoto (2012) found companies that engage in CSR activities have a strong and positive influence on firm value.

Ng and Rezaee (2015) discovered that companies with superior CSR performance can reduce the costs of equity. Dam (2008) demonstrated that CSR performance can

improve financial performance in terms of return on assets (ROA) and return on equity (ROE). Conversely, social and environmental scandals may cause huge financial risks. For instance, following the Gulf of Mexico oil spill, BP suffered huge economic losses that led the company to trade at a 20% discount compared to its competitor, Royal Dutch Shell (De Villiers et al., 2011). Overall, companies that undertaking more CSR practices enjoy improved competitive advantage (Yeo, Choi, & Kwon, 2015), financial performance (Chung & Pruitt, 1994) and firm value (Jo & Harjoto, 2011).

In the last decade, CSR performance has become an important tool for investors to evaluate a company's value and decide whether to invest in the company (Hsu & Chen, 2015). Excellent CSR performance is more likely to attract the interests of investors. Indeed, Wang, Qiu and Kong (2011) showed that CSR performance (CSR crises) is positively (negatively) related to stock market returns. Schnietz and Epstein (2005) investigated the economic benefits of CSR by employing the 1999 Seattle WTO crisis as an exogenous shock to see whether CSR could work as a reserve of goodwill through bad times. The results confirmed that investors regarded CSR-related corporate reputation as a critical factor in their decision making, and this reputation successfully prevented firms from a dramatic decline in share prices. Overall, promoting CSR performance is more likely to attract investors, thereby increasing the capital market benefits.

CSR performance plays a vital role in reducing companies' risks, such as bankruptcy and a stock price crash, which in turn enhances the shareholders' wealth/value. Wu and Hu (2019) found that companies with a higher level of CSR performance are more likely to reduce the stock price crash risk. They also pointed out that there is an information asymmetry between companies and investors in the capital market, so when investors received bad news about companies that they support, they may not sell their shares immediately; rather, they may consider these companies' CSR performance and decide whether they will hold their shares. Therefore, higher CSR performance can avoid fluctuations in the stock price. Improving CSR performance can promote the long-term sustainability of companies in the same way as an intangible asset, thus is

beneficial for improving the credit rating (Attig, El Ghoul, Guedhami, & Suh, 2013). Furthermore, Hsu and Chen (2015) claimed that companies with a higher CSR performance are more likely to have a lower credit risk. A higher CSR performance can reduce costly legal sanctions because participating in social and environmental activities is more likely to help companies avoid the potentially dramatic costs associated with lawsuits (Hsu & Chen, 2015). In addition, Orlitzky and Benjamin (2001) also posited that a lower CSR performance may lead to a higher company risk.

Verwijmeren and Derwall (2010) documented that companies with policies protecting employees' rights have a lower bankruptcy risk than companies that do not have such policies. This is because companies with high employee benefits scores are more likely to issue stocks rather than debt when they need external financing and are more likely to repurchase debt rather than equity when they have a financing surplus. Additionally, companies providing a healthy and safe workplace for employees can reduce the risk of labour disruption (Chun & Shin, 2018).

Companies with superior CSR performance tend to better manage their CSR-related risks, such as environmental concerns. With this knowledge regarding the CSR performance of a firm, shareholders are able to reassess the risks associated with business operations from an ethical perspective and make a more accurate estimation of a firm's future financial performance. As such, superior CSR performance can ensure and improve the shareholders' value (Al-Tuwaijri, Christensen, & Hughes, 2004). Moreover, CSR strategies can reduce the company's specific risks and increase cash flows. To be more specific, companies that follow pollution prevention policies can reduce the risk of fines or clean-up costs (De Villiers et al., 2011).

CSR activities have an indirect and positive impact on a company's reputation because participating in CSR activities can ensure the company abides by social standards and, thus, achieve legitimacy (Zhu, Sun, & Leung, 2014). On the contrary, if a company cannot immediately deal with social and environmental issues, the company's

reputation will be affected. For example, since the BP Gulf of Mexico oil spill [1] and the Wilmar palm oil scandal[2], many companies have started to recognize that social and environmental scandals can sometimes cause substantial financial risks and destroy the reputation of companies.

CSR performance is regarded as an effective approach to maximize shareholders' interests and a company's value by enhancing stakeholders' loyalty. Martinez and Del Bosque (2013) pointed out that if a company operates responsibly, the risk of consumer boycotts or other punishments will be much lower, thereby the company becomes more appealing to the consumer. Conversely, poor CSR performance may motivate consumers to boycott the products of a company (Luo & Bhattacharya, 2006). Incidents caused by irresponsible behaviour may reduce stakeholders' trust and loyalty to the company (Garcia, Mendes-Da-Silva & Orsato, 2017). Further, whether companies carry out CSR policy and participate in community activities is considered as an important criterion for consumer purchasing decisions. Therefore, CSR activities are "marketing techniques that enable companies to pursue both economic and social goals simultaneously" (Friedman, 2009). Organizational success could be achieved in the long run if companies show concern and act in the interests of a diverse group of stakeholders, rather than just shareholders (Donaldson & Preston, 1995; Brown & Forster, 2013). Habaragoda (2018) suggested that CSR performance is positively associated with firm performance as a result of increased CSR-driven stakeholder engagement. Specifically, internal stakeholders such as employees could become highly motivated to achieve organizational goals when they perceive themselves to be valued and taken care of by firms, resulting in greater work efficiency. CSR activities may help maintain a better relationship with stakeholders such as customers or local communities, leading to improved public recognition and ultimately economic benefits. Flammer and Luo (2017) posited that companies participating in CSR activities

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[1] BP Gulf of Mexico oil spill was an industrial disaster that began on April 20, 2010.

[2] Wilmar is the world's most popular food and household companies that sells food, cosmetics and other everyday staples containing palm oil tainted by shocking human rights abuses in Indonesia.

involving the establishment of a healthy and safe workplace are more likely to increase the employees' productivity, thereby increasing the companies' productivity.

CSR performance plays a vital role in protecting the environment. For example, in order to improve CSR performance, companies have to control greenhouse gas emissions, thereby positively contributing to climate change (Sodano & Hingley, 2013). Moreover, Aimar (2019) found that companies following CSR standards could effectively reduce the pollution risk and protect water resources in the Maghreb region. Shahbaz, Karaman, Kilic and Uyar (2020) claimed that if energy sector carries out CSR policy, it can promote air quality and protect biodiversity. Furthermore, socially responsible behaviour of an organization brings benefits to society. For example, companies that undertake CSR activities can ensure quality resources for communities and improve the quality of life and overall societal wellbeing because they are more likely to follow legal guidelines when they formulate their business strategies (Mishra & Nigam, 2015). Participating in CSR activities is beneficial for achieving gender equality (Utting, 2007). Gazzola, Sepashvili, and Pezzetti (2016) also discovered evidence that CSR performance is an important tool for supporting gender equality. Newell and Frynas (2007) posited CSR activities are beneficial for reducing poverty. For example, in order to avoid conflicts with communities, some oil companies have fulfilled their social responsibility by investing funds in poorer regions (Idemudia, 2009).

Following the increasing number of scandals about social and environmental issues, policymakers and regulators have started to pay more attention to CSR performance. For example, with the introduction of ISO14001 and ISO 26000 by the Organization for Standardization, an international benchmark for environmental and social management systems has now been created (De Villiers et al., 2011). Scholars and practitioners strongly support the notion that standards used for evaluating companies should not be solely focused on their economic success, as their contributions are not only related to the global economy but also need to skillfully balance the interests of multiple stakeholders (Stuebs & Sun, 2015). Therefore, in order to follow these regulations, companies have, in recent decades, increasingly participated in various

social and environmental activities – including labour practices and community activities. This trend has gained popularity recently. Moreover, although CSR activities are not enforced in most countries, there is a trend towards formulating laws and regulations requiring companies to adhere to social standards. For example, in 2011, the United Nations (UN) endorsed the "UN Guiding Principles on Business and Human Rights" ("UNGPs"). The UNGPs "provided the first global standard for preventing and addressing the risk of adverse impacts on human rights linked to business activity." This policy was formulated to encourage companies to consider and observe the CSR standards.

Overall, CSR performance is beneficial for the development of companies, so it is important to study which factors influence environmental and social performance. My interest is mainly on how companies' corporate governance (CG) affects their CSR performance.

CG can influence a company's CSR decisions and agenda, thereby impacting the CSR performance (Giannarakis, 2014). The difference in CG attributes will lead to a different level of CSR performance, which is also related to the company's growth and sustainable development (Jo & Harjoto, 2012). Different CG mechanisms could have different effects on CSR fulfillment (Gill, 2008). The company goal of a traditional CG mechanism is ensuring that shareholders achieve profit maximization because their behaviour ultimately serve the interests of shareholders (Stuebs & Sun, 2015).

This study attempts to find out and analyse the influence of board characteristics, as one of a number of CG factors, on CSR behaviour. Given that most decisions related to CSR behaviour are determined by the board of directors. Therefore, it is important that I review the impact of board characteristics on CSR performance.

Walls, Berrone and Phan (2012) proposed that board members have total discretion on decisions around social and environmental agendas because the process of establishing a company's strategic goals is overseen by the board. The board of directors has

responsibility for risk management because board members represent the interests of shareholders in monitoring management (De Villiers et al., 2011). This view can be found in other prior literature. Rao and Tilt (2016) posited that board members can effectively monitor social and environmental risk and motivate companies to meet CSR objectives. Eccles, Ioannou and Serafeim (2014) noted that a successful board has strong cognition of business ethics and CSR. Hence, the board plays a vital role in determining a corporation's CSR activities (Jo & Harjoto, 2012).

The board of directors also can determine the policy of executive compensation. According to the incentivizing role of the board, the board of directors tend to establish a sustainable executive policy to promote self-serving executives; participation in CSR activities (Mahoney & Thorn, 2006). For example, executive management is less likely to invest funds in CSR activities because it is hard to achieve financial returns on CSR-related projects in the short term; however, executive compensation linked to CSR performance can motivate executives to consider and undertake a CSR agenda (Berrone & Gomez-Mejia, 2009). Moreover, Haque (2017) also found that a sustainable executive compensation policy has a positive influence on increasing CSR performance.

Although there is a reasonable consensus across the existing studies that board variables and sustainable executive compensation policy are driving factors for companies to undertake CSR practices and follow CSR standards (Kiliç, Kuzey, & Uyar, 2015), research on CG has mainly focused on the board attributes or sustainable executive compensation policy on CSR performance separately. Much less attention has been paid to the effect of both board attributes and executive compensation on CSR performance. It would be meaningful if this study can provide direct evidence as to whether board attributes and sustainable executive compensation policy can influence companies' CSR initiatives and eventually their CSR performance as evaluated by others.

This study is based on and expands upon De Villiers et al.'s (2011) research, which examined the relationship between environmental performance and board composition

based on agency theory and resource dependence theory in an era of increasing awareness of the importance of natural environments and associated strategic opportunities. Although these authors have taken the lead in suggesting that the board attributes may have an influence on CSR performance, their reported limitations and suggestions for future research provide me the opportunity to contribute to the literature.

First, De Villiers et al. (2011) only used data from 2003 to 2004, which is neither timely enough nor long enough to observe the actual relationship between board attributes and companies' sustainability performance. Second, CSR is no longer limited solely to environmental concerns because the concept now is defined as a company consciously fulfilling its responsibilities to employees, consumers, the environment and the wider society. However, the authors' study focused on companies' environmental performance only, ignoring the association between board directors and other CSR factors such as social performance. Third, although De Villiers et al. (2011) analysed many board characteristics including director independence, CEO-chair duality, directors appointed after CEO, CEO-director ownership, insider-director ownership and outsider-director ownership, their research also ignored some board attributes as well as executive compensation. Hence, my study investigates executive compensation and extra board characteristics, such as gender diversity. Fourth, this study collected data about environmental performance from the KLD database. In order to make the findings more robust, I used another index to evaluate CSR performance - that is, ESG performance from Thomson Reuters Eikon (Eikon). With the continuing development of the CSR performance rating system and databases, advances in tools allow us to provide more advanced and accurate experimental results. Research commonly applies a variety of different CSR indexes such as the KLD database, Bloomberg ESG database and Eikon database (De Villiers et al., 2011; Shahbaz et al., 2020). The Eikon database provides professional analysts with non-financial data such as ESG performance. This database has been commonly used to study the relationship between board attributes and CSR performance (Shahbaz et al., 2020). The fifth and final limitation, as suggested by Adnan, Hay and Van Staden (2018), is that there could be institutional and cultural

factors influencing the relationship between CG and CSR performance. As De Villiers et al.'s (2011) study solely focused on United States (US) companies, it is necessary and meaningful to investigate how that association plays out within a different geographic location and cultural context.

Moreover, when reviewing some of the most relevant literature (see Table 1), although there has been a growing number of research studies about board characteristics and CSR performance, few have been conducted on New Zealand (NZ) and Australian companies. Like De Villiers et al. (2011), most scholars tend to analyse US companies; the reason may be that there is more data available about US companies. However, in order to improve the generalization of findings, it is necessary to analyse the relationship between the board characteristics and CSR performance in other settings like NZ and Australia.

Hence, to address these limitations of De Villiers et al. (2011), this study expands upon prior literature by conducting a regression to investigate the effect of board characteristics and sustainable executive compensation policy on a company's CSR performance. Using the ESG scores from Eikon from 2015 to 2019, with the sample from the top 50 New Zealand Exchange (NZX 50) and Australia Securities Exchange (ASX 50), I provide a comprehensive picture of the association between those two factors. According to Hillman and Dalziel (2003) and De Villiers et al. (2011), the mechanism by which board characteristics could influence a company's CSR performance consists of two parts: one is the director monitoring function, which could be explained by agency theory; and the other is the resource provision function, based on resource dependence theory. From an agency theory perspective, board independence and incentive methods are beneficial for enhancing the awareness of the responsibility of a board to monitor management (Jensen & Meckling, 1976). In line with resource dependence theory, directors of diverse resources are more likely to put forward different perspectives and consider the interests of different shareholders, which ensures that social and environmental activities will be implemented.

As a result, based on prior literature, six board characteristics and the issue of executive compensation are identified for this study and hypotheses developed and tested. These characteristics are: independent directors; board size; directors with specific skills on the board; gender diversity; director tenure; and directors on multiple boards. In order to improve the reliability of these results, this study includes several control variables that the literature suggests may influence both CG and CSR, such as the company size, age, ROE, leverage and beta. Furthermore, the country fixed effect, industry and year fixed effect are also considered and included. To consolidate these results, supplementary analyses are conducted by applying alternative measures for dependent, independent and control variables. In addition, as the sample of this paper covers companies belonging to two different countries, I also conduct a supplementary regression to ascertain the findings are not affected by the country variable.

The findings of this study indicated that more directors on the board, higher concentration independence in directors, more multiple directorships, more directors with professional skills such as law and finance and more female directors on the board are positively correlated with the CSR scores. Also, if the board has a CSR-contingent executive compensation contract, the company's CSR performance will also be better. I also found that board tenure has a negative and significant influence on environmental performance. Overall, all results suggested that diversity and good board characteristics can improve social and environmental performance.

This study will make several contributions to the literature. First, for the empirical contribution, to the best of my knowledge, this is the only paper to investigate the relationship between board attributes, executive compensation and social and environmental performance using NZ and Australian samples. The results of this study also enhance the robustness and generalization in this field. It is both interesting and meaningful to study the association between board attributes, executive compensation and companies' CSR performance in Australia and NZ because NZ and Australian companies are regarded as excellent examples of promoting CSR; that is, CSR performance is more valued here in investors' decision-making processes.

Second, this study contributes to the CSR performance literature by focusing on a more comprehensive picture of CSR, rather than a niche part only. When analysing the relationship between board characteristics and companies' CSR performance, scholars have tended to focus on environmental performance only, thereby ignoring social performance (e.g., De Villiers et al., 2011; Birindelli, Dell'Atti, Iannuzzi, & Savioli, 2018). This study fills this gap and provides empirical evidence that some board attributes are related not only to companies' environmental performance but also to their social performance.

Apart from the above contributions to the literature, this study also has some practical implications. The findings contain useful insights for companies, shareholders and regulators. Companies should rationally select board members to reach an optimal board composition to improve CSR performance, thereby promoting competitive advantages and increasing the companies' value. Regulators and policymakers may consider establishing an appropriate CG structure, which may encourage firms to behave in a socially responsible way and ultimately achieve better financial performance as well as long-term sustainability.

The rest of the study is organized as follows. The next section introduces theoretical arguments and prior empirical findings regarding the interplay between board attributes, sustainable executive compensation policy and CSR performance to develop my hypotheses. Subsequently, I describe the research design by identifying the sample, model specifications and measures. After that, the empirical results will be reported and discussed. Finally, this paper concludes with a review of the main findings, contributions, limitations and directions for future research.

Table 1: Literature review - corporate governance and CSR performance

Authors	Country	Sample	Independent Variables	Findings
De Villiers, Naiker, and van Staden (2011)	USA	2,151 observations from 1,216 companies	Board size Board independence Legal experts CEO duality	Yes (Y)/Positive(P) Y/P Y/P No(N)
Alazzani, Hassanein and Aljanadi (2017)	Malaysia	303 companies listed on the main market in Bursa, Malaysia	Gender diversity	Y/P
Chang, Oh, Park, and Jang (2017).	Korea	293 companies	Board independence CEO-outside directors Board educational diversity Board tenure	Y/P Y/P N N
Velte (2016)	Germany and Austria	1,019 firm-year observations	Gender diversity	Y/P
Boulouta (2013)	US	126 companies drawn from the S&P500	Gender diversity	Y/P
Bear, Rahman, and Post (2010)	US	51 health care companies	Board diversity Gender diversity	Y/P Y/P
Kiliç, Kuzey and Uyar (2015)	Turkey	26 banks	Board size Board independence Gender diversity	Y/P N Y/P
Ismail, Adnan, Fahmi, Darus and Clark (2019)	Malaysia	200 Malaysian companies in FTSE Bursa Malaysia Emas Index	Board size Board diversity Board independence	Y/P Y/P Y/P
Giannarakis (2014)	USA	366 companies from Fortune 500	CEO duality Gender diversity Board age Board meeting Board size	Y/P N N N Y/P
Barako and Brown (2008)	Kenya	40 Kenyan banks	Foreign nationals Gender diversity Board independence	N Y/P Y/P
Siregar and Bachtiar (2010)	India	87 Indonesian Stock Exchange	Board size Foreign ownership	Y/P Y/P
Deschênes, Rojas, Boubacar, Prud'homme and Ouedraogo (2015)	Canada	60 companies in the S&P/TSX60 index	Gender diversity Board independence Board size Board compensation Board tenure Board ownership	Y/P Y/P N N N N

Naciti (2019)	46 different countries	Data from Sustainalytics and Compustat databases for 362 firms in 46 different countries	Board diversity Board independence CEO duality	Y/P N Y/P
Haque (2020)	UK	256 non-financial UK firms	Gender diversity Board independence Executive compensation	Y/P Y/P Y/P
Ikram, Li and Minor (2019)	US	S&P 500 companies	CSR-contingent compensation	Y/P

2. Literature Review and Hypotheses

2.1 CSR performance - related literature

CSR performance has appeared in accounting literature over the last two decades (Malik, 2015). When reviewing the literature about which factors can influence companies' CSR performance, it is apparent that traditional scholars have focused on financial factors. For example, it has been found that larger companies are more likely to consider CSR engagement because they have a bigger scale of operations and more resources to support them to invest in CSR activities (Børing, 2019). In addition, CSR has been revealed as negatively associated with both book leverage and market leverage because high leverage means companies do not have additional funds to support the CSR agenda (Sheikh, 2019). Previous literature has suggested that CSR performance can be influenced by companies' performance, customer orientation, sensitive industries, institutional context and financial crisis (e.g., Shahbaz et al., 2020; De Villiers et al., 2011; Kim, Amaeshi, Harris, & Suh, 2013). The latest trends suggest that customers support companies with high CSR. In order to attract more customers, companies are willing to participate in community activities, thereby improving their reputation (Galbreath & Shum, 2012). Moreover, De Villiers et al. (2011) indicated that environmentally sensitive industries are more likely to consider their environmental agenda because they come under more pressure from the media and the public. CSR has been shown to face different institutional contexts, such as different regulations, norms, cultures and behaviour, which influence the degree of CSR participation (Kim et al., 2013).

2.2 Board characteristics - related literature

According to the previous literature, board characteristics can influence a company's performance, audit fees, the integrity of financial accounting reports and earnings management (e.g., Wagner, Stimpert, & Fubara, 1998; Neal & Riley, 2002; Anderson,

Mansi, & Reeb, 2004; Saleh, Iskandar, & Rahmat, 2005). Wagner et al. (1998) argued, based on resource dependence theory, both internal and external boards are beneficial for improving a company's performance. Moreover, Pucheta-Martínez and Gallego-Álvarez (2019) revealed that board attributes such as size, independence and gender diversity have a positive association with the performance of companies. For example, with regards to accounting-based measures, Erhardt, Werbel and Shrader (2003) highlighted that the percentage of female directors in the boardroom is positively related to the company's financial returns measured by ROA and return on investment (ROI), based on a sample of 127 major US corporations. From a capital markets perspective, Carter, Simkins and Simpson (2003) found that companies with more independent directors are associated with higher company values proxied by Tobin's Q in Fortune 1000 organizations. Also, Ejoh, Oko and Okpa (2019) documented that independent boards correlate with ROA and cash flows.

Furthermore, Hermanson, Neal and Riley (2002) noted that companies with strong board characteristics, such as more independent directors and more directors with expertise, are more likely to have a higher demand for audit quality to improve their brand image and reduce the costs of lawsuits (which means that these companies need to pay extra audit fees for a Big 6 auditor). The board of director's characteristics correlate with the integrity of financial accounting reports. Specifically, independent directors effectively monitor managers' opportunistic practices, for example, providing misleading financial statements for shareholders or the public (Anderson et al., 2004). Saleh et al. (2005) posited that multiple directorships play a vital role in monitoring earnings management practices, thereby reducing the losses of companies. Companies with larger boards and more independent directors have better reputations than their counterparts without such features. For example, outside directors are more likely to consider the majority of shareholders' interests and adopt certain procedures to gain social legitimacy. Taken together, these studies mainly study the effect of board characteristics on financial performance.

2.3 Association between board characteristics, executive compensation policy and CSR performance

The increasing importance of CSR performance has led to a debate about which factors can influence CSR performance. Jo and Harjoto (2012) found that CG is positively associated with a company's environmental strengths. Moreover, superior CG can influence the transparency of CSR and improve CSR performance because standards of a sound and effective CG are based on leadership, direction, transparency and accountability attributes (Yaseen, Isk, Ajina, & Hamad, 2019).

Studies into the relationship between CG and CSR performance have followed two main approaches. One has focused on board characteristics, including board size, gender diversity, outside directors, age and CEO (De Villiers et al, 2011). The second approach has considered CG with reference to CSR or long-term specific policies or strategies (Grinblatt & Titman, 2016)

Within the previous literature, there are many papers that focus on board characteristics and CSR performance. Huang and Hilary (2018) claimed that board members are more likely than the CEO to improve CSR performance in many European countries. The board's characteristics, such as independence of the board, tenure and size, and board diversity, such as gender, specific skills and cultural and educational background, should be considered when analysing CG issues (Brown & Caylor, 2006). The growing number of independent directors who come from outside the companies are a benefit for those companies participating in philanthropic and environmental activities. That is because the supervisory function of independent directors can ensure management observe the law and ethical standards and defend minority shareholders' interests (Rao & Tilt, 2016).

With reference to board diversity, Bhagat and Black (2001) claimed that the diversity of the board can enhance social performance because diversity can increase sensitivity to social issues. Diverse boards are more likely to provide complex, varied and

professional advice and suggestions in board discussions, which in turn improves the sensitivity to differences and wider society's concerns and effectively deals with the social and environmental issues. For example, female directors and multiple directorships have been shown to have more sensitivity to the CSR engagement of the company (Post et al., 2011). This indicates that diversity among the board of directors has indirectly promoted board effectiveness and, thereby, improved CSR performance (Harjoto, Laksmana, & Lee, 2015). Board of directors' values, beliefs and knowledge are likely to influence board discussions relating to CSR engagement; therefore, social and environmental activities are more likely to be considered in a diverse board (Hemingway & Maclagan, 2004). Similarly, Rao and Tilt (2016) demonstrated that a board of directors with a diverse educational background is associated with better CSR performance.

On the contrary, homogeneous boards are likely to have similar views, which means different perspectives are less likely to be considered, so the quality and variety of boardroom debate may be limited (Velte, 2016). Hafsi and Turgut (2013) posited that a board with different types of directors is more likely to consider the range of shareholders' interests, thereby positively impacting on CSR performance. Williams (2003) suggested that diverse boards are positively associated with higher CSR performance. For example, Enron[3]'s CG lacked non-executive directors, young directors or true independence, which caused the company to be unable to deal with accounting controversies in a timely fashion and decreased its CSR performance (Vinten, 2002). However, board diversity may result in ineffective monitoring of management performance because diverse opinions induce conflict in board decisions and it is a challenge to reach a board consensus (Harjoto et al., 2015).

Ji (2015) proposed that executive compensation is determined by the board of directors. Therefore, it is a CG issue. Specifically, the board of directors have a responsibility to

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[3] Enron Corporation was an American energy, commodities and services company based in Houston, Texas.

design an incentive compensation structure to ensure the management worked for the shareholders' interests, thereby reducing monitoring costs. Regarding the relationship between CG-linked long-term strategies and specific policies and CSR performance, scholars primarily have paid more attention to executive compensation and CSR performance. For example, Haque (2017) introduced evidence, based on a UK sample, that the executive compensation linkage to CSR performance is positively related to improving carbon performance. Additionally, Ikram, Li and Minor (2019) documented that the CSR-contingent executive compensation policy is more likely to motivate managers to consider the long-term value of companies, which in turn means that social and environmental performance is more likely to be present in the company's strategies. The reason for this may be that a sustainable compensation policy could motivate self-serving executives to undertake social and environmental activities to improve their compensation. Therefore, sustainable compensation policy plays an incentive role in promoting CSR performance.

2.4 Theory

The theoretical basis of this study draws on Hillman and Dalziel (2003), De Villiers et al. (2011) and Haque (2017) and holds that boards both monitor (agency theory) and provide resources to (resource dependence theory) the company. De Villiers et al. (2011) used both theoretical frameworks to analyse the relationship between board characteristics and a company's environmental performance. Moreover, Haque's (2017) study revealed a correlation between the executive compensation policy and environmental performance using agency theory.

Agency theory argues that there is a conflicting relationship between shareholders and management due to managements' opportunistic behaviour. Sometimes, the pursuit of self-interest on the part of managers may be at the expense of shareholders' interests. For example, managers seldom consider the long-term interests of companies, such as those arising from social and environmental activities, because these strategies require significant investment in preparatory work and the rewards from these activities may

be a long time coming. However, under agency theory, this conflicting relationship is addressed through directors' monitoring management behaviour and decisions. For example, directors with effective and intense monitoring of management are more likely to reduce opportunistic behaviour and avoid the information asymmetry (Jensen & Meckling, 1976). If boards intensively monitor the managers, the latter will exhibit a positive attitude toward risk and conflicting goals with owners, such as investment in unprofitable projects and participation in social and environmental activities (Shahbaz et al., 2020). Furthermore, Kassinis and Vafeas (2002) proposed that although boards exert real power over decision making, board monitoring is useful for improving companies' corporate social and environmental strategy. Therefore, board monitoring promotes CSR performance due to its ability to align managers' interests with the long-term goals of both shareholders and stakeholders. In addition, based on agency theory, executive compensation linked to CSR performance is an essential mechanism to mitigate agency problems like agency costs (Cordeiro & Sarkis, 2008).

Resource dependence theory introduces the concept that the board of directors can provide critical resources to companies including legitimacy, advice, counsel and channels for communicating information for companies (Hillman & Dalziel, 2003). These board resources offer support for companies to more effectively manage CSR issues. From the resource dependence perspective, companies are more likely to undertake environmental practices when board resources are provided; therefore, the CSR issues are better managed (Hillman & Dalziel, 2003). Evidence suggests that board members with mixed capabilities not only focus on financial performance but also pay attention to non-financial performance (Bear, Rahman, & Post, 2010). More diverse directors on the board provide a superior range of specialized human capabilities and experience; they can offer professional and high-level advice on CSR issues (Hafsi & Turgut, 2013). A board with directors from different gender, ethnic and cultural backgrounds might provide some suggestions that would not be considered within a board comprising directors with a more traditional background (Rao & Tilt, 2011). Consistent with these arguments, De Villiers et al. (2011) stated that a board of

directors with diverse expertise and educational background is more likely to care about environmental issues and be more able to deal with them immediately.

Based on both agency theory and resource dependence theory, I focus on the six most relevant factors representing board characteristics: the independence of the board; board size; gender diversity; directors with specific skills; multiple directorships (directors serving on many boards); board tenure; and senior executive compensation. As a result, seven main hypotheses are developed reflecting director monitoring and incentives (based on agency theory) and resource provision (based on resource dependence theory) separately.

2.5 Hypotheses development

2.5.1 Monitoring role

1. Independent directors

From an agency viewpoint, it is assumed that independent oversight is an effective way to regulate any manager's self-serving behaviour. It is necessary to monitor those management behaviour and decisions as there is a conflict between the interests of shareholders and management (Chang, Oh, Park, & Jang 2017). This can cause an increase in the self-serving behaviour of managers and a reduction in social and environmental engagement. Management is often more inclined towards investing in projects that can recoup funds in the short-term, whereas independent directors favor activities with a long-term orientation (Hillman & Dalziel, 2003). Therefore, enhancing the outside directors' monitoring is more likely to foster CSR performance (De Villiers, 2011). Independent directors play an important role in promoting social and environmental activities because a higher percentage of independent directors are more likely to intervene in managers' opportunistic behaviour (Post et al., 2011). This is consistent with Haque (2017), who argued that independent outside directors are a benefit for improving social and environmental performance since managers' self-

seeking behaviours are more likely to be avoided through their monitoring. In light of these considerations, independent directors have a significant and positive impact on social and environmental performance, achieving the long-term success of the company and enhancing the stakeholder orientation. However, empirically, independent directors have an ambiguous influence on CSR performance. Galbreath (2017) claimed, based on 300 Australian companies, that an increase in the concentration of inside directors causes a negative influence on CSR performance (from KLD database) because inside directors are more concerned with short-time values, which in turn ignores long-term values, such as the CSR agenda. Nevertheless, outside directors have less competitive pressures from their counterparts, which encourages them to consider the long-term values and advocate CSR activities. Using a sample from 1614 US companies, De Villiers et al. (2011) supported the view that there is a relationship between the proportion of independent directors and environmental performance (KLD database). Moreover, more recently, Shahbaz et al. (2020) found that the proportion of independent directors has a positive association with ESG performance, using a sample from the energy sector. However, Birindelli et al. (2018) proposed that outside directors have a negative association with ESG performance, based on studying 108 banking companies in Europe and the US from 2011 to 2016. Additionally, Walls, Berrone and Phan (2012), using 313 companies in the S&P 500 from 1997 to 2005, posited that the number of independent directors has no significant influence on environmental performance. Overall, according to the previous literature, there are inconsistent findings about the relationship between independent directors and social and environmental performance. Therefore, to make the previous results more robust, this study aims to reassess the relationship between independent directors and social and environmental performance.

Based on these arguments, the following hypothesis is formed:

H1: A higher proportion of independent directors on the board promotes companies' social and environmental performance.

2. Sustainable executive compensation policy

There is an increasing number of companies which have put a spotlight on senior executive compensation linked to CSR targets. For example, some companies' executive compensation policies have been linked with CSR performance since 2008 (Hansen, Ibarra, & Peyer, 2013). For example, Alcoa[4] carried out a sustainable executive compensation policy that indicated 20% of the executive bonus should be linked to carbon dioxide reduction and other environmental and safety-related targets (Haque, 2017). Many other companies, such as American Electric Power, have instituted similar incentive policies (Hansen, Ibarra, & Peyer, 2013). Based on agency theory, incentive-based mechanisms are introduced as a driving factor for achieving consistent interests between shareholders and managers and facilitating management to work hard. This thereby reduces agency costs, increases companies' cash flow and meets the interests of shareholders (Haque, 2017). In addition, applying this executive compensation policy has been advocated by practitioners as it judges the effort of managers according to both financial and non-financial performance (Ikram et al., 2019). This is especially relevant in the context where companies with uncertain financial performance may encourage managers to pay more attention to projects with a long-term value such as social and environmental activities (Ikram et al., 2019).

However, despite executive compensation linked to CSR targets playing a vital role in CSR performance, in the initial studies only the effect of total CEO compensation on CSR performance was analysed (Jian & Lee, 2015). The correlation between executive compensation being linked to sustainability targets and CSR performance is ambiguous, so it is necessary to study their association. Haque (2017) conducted a study of 256 non-financial companies from the UK between 2002 and 2014 and found there is a relationship between the sustainable executive compensation contract and carbon

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[4] Alcoa is a major producer of primary aluminum, fabricated aluminum and alumina combined as a result of its active and growing participation in all major aspects of the industry: technology, mining, refining, smelting, fabricating, and recycling.

performance. The reason may be that the firm's incentive mechanism is more likely to attract executives with environmental and social experience, which mitigates environmental risks and enhances environmental and financial performance. Campbell, Johnston, Sefcik, and Soderstrom (2007) supported the claim that the environment-related compensation scheme is a benefit for a firm's environmental performance with a study of 131 companies from 1988 to1991; executives have to compensate for exposure to environmental risks. Ikram et al. (2019) discovered, using S&P 500 companies from 2009 to 2013, that offering CSR-contingent compensation has a significant and positive impact on CSR performance, especially, in a sensitive environmental industry such as oil, mining and utility industries where this relationship was found to be relatively strong. Similarly, the authors also supported the position that this compensation system encourages executives to follow social standards. If a company expects to achieve sustainable development, they have to directly link the senior executive compensation to environmental and social targets, such as reducing carbon emissions and satisfying the demands of stakeholders (Welsh, 2014). Sustainable executive compensation policies are more likely to promote the future CSR performance of companies, especially for companies with low CSR ratings.

According to the above, the hypothesis is formed as follows:

H2: The senior executive compensation policy linked to CSR targets promotes companies' social and environmental performance.

2.5.2 Resource dependence role

1. Board size

Resource dependence theory places an emphasis on the proposal that larger boards are beneficial for addressing social and environmental issues; CSR is thereby improved. Specifically, more directors on the board indirectly bring sufficient knowledge and experiences to deal with environmental issues (De Villiers et al., 2011). Compared to a small board, novel decisions that are contrary to conventional decisions will be made

in a large board, as it can include more directors with diverse gender and educational background. Therefore, a social or environmental agenda is more likely to be promoted by directors on a large board.

However, there are some debates in the existing literature regarding the relationship between board size and CSR performance. Some studies have emphasized that large boards are more likely to recruit more directors who have professional experience and skills to manage environmental issues (De Villiers, et al., 2011). For example, Dunn and Sainty (2009) found that CSR performance is positively affected by board size, using the data from 50 Canadian listed companies. Yaseen, Isk, Ajina and Hamad (2019) suggested that board size plays a vital role in increasing the overall CSR dimensions, informed by data from 89 companies in France from 2012 to 2015. Using 108 US and European listed banks, Birindelli et al. (2018) proposed that board size has a positive association with social and environmental performance. De Villiers et al. (2011) demonstrated, through a sample from 1216 US companies, that board size is significantly and positively related to the extent of CSR performance. However, other scholars have argued against a large board size having a positive influence on CSR performance because a larger board of directors does not have cohesive decision-making. This can impede coordination and inhibit quick decisions (Lipton & Lorsch, 1992). In other words, a small board can function as an effective monitor for management because they have strong cooperation and communication and take a short time to make a decision (De Villiers et al., 2011). El-Bassiouny (2019) found that the board size does not influence CSR performance in developed countries because the companies already have well-established institutional systems and high levels of awareness regarding social and environmental issues.

Therefore, the next hypothesis is as follows:

H3: A larger board size promotes companies' social and environmental performance.

2. Board skills

Resource dependence theory holds that a wide range of professional knowledge and skills motivate different opinions, which in turn contribute to challenging the majority of directors' conventional decisions. Directors with extensive expertise on a board provide a comprehensive understanding of the company's operational strategies, giving advice and feedback on legal and regulatory issues and building a satisfactory relationship with the community. They also meet the interests of internal and external stakeholders by effectively investing in financial and non-financial projects (De Villiers et al., 2011). Hence, having directors with specific skills on the board has a positive impact on CSR performance. Social and environmental performance can be improved by directors with diverse knowledge and skills because they can enhance the breadth of perspectives and overall problem-solving capacity, which reduces the risk of social and environmental issues (Jo & Harjoto, 2012). CSR activities are more likely to be ignored by directors with fewer skills. For example, directors who only have a financial background on the board find it hard to effectively deal with some social and environmental issues, thereby the CSR performance of companies faces a challenge. In order to improve ESG performance, board members should have multiple skills, which promotes discussion on legal, financial, moral and technical issues (Birindelli et al., 2018).

Empirical studies have evidenced that having more directors with specific skills is positively related to CSR performance. Some studies have pinpointed lawyers in particular. De Villiers et al. (2011) suggested that having legal experts on the board has a positive association with environmental performance because directors with a legal background enable managers to enhance their awareness of risks of damaging environments and lawsuits. Agrawal and Knoeber (2001) asserted that companies are more likely to follow social and environmental standards when companies have directors with a legal background. Hazlett, McDonald and Westphal (2003) provided strong evidence for the idea that directors' specific skills have an important effect on

dealing with social issues. Directors with no special skills have no capacity to manage future social scandals and cannot provide innovative advice. On the contrary, directors with wide-ranging skills, including finance, law and engineering, architecture and art and science, who are unfamiliar with the company and the industry are more likely to accept change and consider the interests of new stakeholders (Haque, 2017). In sum, board directors with specific skills are more likely to consider social and environmental activities. Thus, the following hypothesis is advanced:

H4: A higher proportion of directors with specific skills on the board promotes companies' social and environmental performance.

3. Gender diversity

According to resource dependence theory, female characteristics differ from those of males in terms of morals and ethics, psychological traits, educational background and expertise; therefore, a higher percentage of female directors on the board is more likely to bring innovative opinions and advice to board discussions (Barako & Brown, 2008). Boulouta (2013) stated that female directors increase board effectiveness and improve social and environmental performance as they are able to address complicated CSR issues through utilizing their unique and valuable skills and approach. Environmental lawsuits are minimal in companies with female directors because female representation promotes more philanthropy and more attention to welfare than male representation (Birindelli et al., 2018). Extensive and in-depth empirical research has been conducted in different countries regarding the association between gender diversity and CSR performance. Bear et al. (2010) demonstrated that the number of female directors has a positive association with CSR performance and a great influence on improving corporate reputation. Using a sample of 1019 companies from Germany and Austria over a five-year period from 2010 to 2014, Velte (2016) claimed there is a positive relationship between the percentage of female members on the board and ESG performance. Using a sample from 1489 US companies, Harjoto et al. (2015) showed that female representation on corporate boards makes a positive contribution to CSR

performance and reputation ratings. Isidro and Sobral (2015) conducted studies on 500 European companies and suggested that the proportion of female directors has an indirect and positive impact on company values and compliance with social and ethical standards. Williams (2003) conducted studies on 185 companies from Fortune 500 and proposed that women are more sensitive to social initiatives and tend to avoid more violations of organizational policy than men. Women are more concerned about charitable giving and philanthropy than men. For example, in general, the social agenda is more likely to be considered by boards that have female directors, largely because female directors have more experience in communication and service organizations (Glass, Cook & Ingersoll, 2016). Alazzani, Hassanein and Aljanadi (2017) suggested, using a sample from Malaysian companies, that the percentage of women on the board is positively related to social performance, whereas gender diversity does not influence the environmental performance, so female directors may be more concerned about social activities than environmental activities.

On that basis, the following hypothesis is proposed:

H5: A higher proportion of female directors on the board promotes companies' social and environmental performance.

4. Director tenure

Although prior literature has noticed the effects of director tenure on CSR performance, the results are inconclusive. For example, Galbreath (2017) found that board tenure is positively related to social and environmental performance as long-tenured directors have more experience with the company and are more willing to confront the CEO. Therefore, these directors are more likely to provide sound advice about environmental and social issues. Shahbaz et al. (2020) proposed that long-tenured directors are more likely to promote environmental initiatives since those with unique resources and capabilities are more familiar with a company's operating processes. The application of such knowledge provides a solid foundation for directors when they provide

suggestions to management about the environmental agenda (De Villiers et al., 2011). El-Bassiouny's (2019) study supported this positive relationship between long-serving directors of over 15 years and reducing the number of negative events surrounding CSR activities.

In contrast, Walls (2012) posited that the quality of social and environmental performance may decline when companies recruit more directors with longer tenures on the board. This is because long-term cooperation between directors may weaken their incentives to monitor, supervisor and control the executive or management. Moreover, Hafsi and Turgut (2013) found, based on a sample from 95 companies in the S&P 500, there is no significant relationship between the board tenure and CSR performance They suggested that directors with longer terms may be too familiar with managers and are more likely to avoid any disputes in the decision-making process, while directors with shorter terms may be too shy to express their opinions.

Because of the conflicting results, I develop the next hypothesis:

H6: More directors with longer tenures on the board promote companies' social and environmental performance.

5. Multiple directorships

Despite multiple directorships having been a concern of academics and policymakers, scholars seldom link it with CSR performance (Barako & Brown, 2008). Following resource dependence theory, board members holding multiple directorships could gain more experience and knowledge from different companies as well as establish a broader networking base which may facilitate their access to information (El-Bassiouny, 2019). Additionally, membership of multiple boards is more likely to enable learning and the acquisition of more information related to the environment (De Villiers et al, 2011). Therefore, the social and environmental agenda could be considered by multiple directorships, and more social and environmental issues could be addressed effectively. Overall, board members with multiple directorships pay more attention to the

environmental and social agenda and also provide strategy suggestions which foster environmental and social performance. However, Ahn, Jiraporn and Kim (2010) posited the "busyness hypothesis" , which demonstrates that due to the time and capacity diverted from one company to another, the capacity of multiple directorships' to monitor management behaviour is more likely to be limited and the quality and quantity of advice may decrease. As Mallin and Michelon (2011) argued, when directors hold more board seats in other companies, they may become too busy to deal with specific tasks in each firm and devote less commitment/ time to each directorship.

There are inconclusive results on the effect of multiple directorships on social and environmental performance. Kassinis and Vafeas (2002) showed that multiple directorships have a positive and significant impact on reducing the number of lawsuits about environmental scandals, which indicates multiple directorships can increase the awareness of protecting environmental issues. However, Haque (2017) indicated that multiple directorships play a negative role in reducing carbon dioxide emissions because directors serving on more board seats in other companies may reduce their enthusiasm for participating in board meetings. Mallin and Michelon (2011) also discovered that there is no evidence for the relationship between multiple directorships and CSR performance. De Villiers et al. (2011) also suggested that there is no significant relationship between multiple directorships and environmental performance.

Based on the above discussion, the empirical evidence of the effectiveness of multiple directorships and CSR performance is inconsistent. Hence, the following hypothesis is formed:

H7: More directors with multiple directorships on the board promote companies' social and environmental performance.

3. Method

3.1 Sample selection

The sample for this study consists of two countries that have been largely ignored in previous literature: NZ and Australia. In order to improve the generalisation of previous studies in this field, I analysed a sample from these two countries. The initial sample consisted of 500 observations from the NZX 50 and ASX 50 over the five years between 2015 and 2019. However, the final sample only included 414 firm-year observations, because those observations without board governance data, financial data and social and environmental performance data were eliminated, which caused a reduction in the number of observations. The number of observations in 2014 is lower than other years as the information about board characteristics in 2014 was incomplete. Table 2 presents an overview of the final sample and shows an imbalance in the yearly observations.

In my research, the sample of NZX 50 and ASX 50 is valuable because together they represent a collective proxy for the largest, investable and most liquid companies and are also one of the most used benchmark indices for the NZ and Australian markets. In other words, studying the board characteristics and the sustainable executive compensation policy of these companies may have a signaling effect for other listed companies in NZ and Australia. This is due to the investors focusing on these companies.

In the current research, the independent variables and control variables were collected from 2014 to 2018, while CSR performance was collected from 2015 to 2019. The independent variables and control variables were lagged because the effect of board characteristics takes some time to have an influence on CSR performance (Bear et al., 2010). In addition, Birindelli et al. (2018) posited that lagging one year between board variables and ESG scores is a relatively valid way to lessen endogeneity problems.

Board characteristics data, financial data and CSR performance were collected from Thomson Reuters[5]. Thomson Reuters is a comprehensive database that provides financial statements, corporate news, fundamental data and ESG performance for all listed companies. In addition, the Eikon database covered more than 7000 companies' ESG performance globally (Thomson Reuters, 2019). Thomson Reuters' ESG ratings are regarded as a metric of ESG performance based on three main dimensions: environmental, social and governance (Shahbaz et al., 2020). The ESG performance includes governance performance that consists of the board and shareholders' characteristics and CSR strategy, so board characteristics data can be collected from the Eikon. This database has been widely used in studying CSR performance (e.g., Velte, 2016). Therefore, it is deemed reasonable and reliable to collect all variables from the Eikon database.

Table 3 shows how the sample was distributed by sectors. Following the study carried out by Rao and Tilt (2016), the industry classification used in this study was the Global Industry Classification Standard (GICS). The real estate and financial sectors are the most represented in the sample (68 companies respectively), followed by industrials (52 companies), health care and materials and utilities (43 and 37 companies), energy, consumer discretionary, consumer staple and consumer services (32, 19, 23 and 19 companies), while information technology (9 companies) is the sector least represented in the sample. Therefore, there is a slight bias in the number of different sectors. In addition, as prior research (De Villiers et al., 2011; Rao & Tilt, 2016) does not state that any industry sectors should be excluded, this study included all 11 industry sectors in the two countries.

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[5] Eikon datastream contains historical, global coverage of equities, indices, stock markets, derivatives, commodities, futures, currencies, options, bond markets, exchange rates, company financials and economic data.

Table 2: The number of the final sample

Year	5 years	2014	2015	2016	2017	2018
Final sample	414	58	81	90	94	91

Table 3: Sample breakdown by Sector over five years

Industry	Number
Consumer services	19
Consumer discretionary	23
Consumer staples	21
Energy	32
Financials	68
Healthcare	43
Industrials	52
Information technology	9
Materials	43
Real Estate	68
Utilities	36
Total	414

3.2 Measurement of variables

3.2.1 Dependent variables

The dependent variables established for this study are the social and environment scores (SOC and ENV), and the separate social and environmental scores were collected from Eikon. The SOC and ENV is regarded as a proxy for CSR performance. According to the current literature, most studies have focused on analysing the dimensions of CSR, such as the specific elements of the social score (e.g., Mishina, Dykes, Block, & Pollock, 2010) and the environment score (e.g., De Villiers et al., 2011) because, as with the social and environmental scores, the aggregate CSR scores are not necessarily related to each other. For example, a company which pays attention to social activities but ignores environmental performance, such as carbon emissions, may have the same CSR score as a company which has low social performance, such as making community donations, but focuses on the environmental agenda. Hence, using the aggregate CSR score to evaluate social and environmental performance is not credible and reliable (Wang, Tong, Takeuchi, & George, 2016). The social and environmental scores have different attributes. Specifically, the criteria for the social score consist of workforce, human rights, community and product responsibility. The criteria for the environmental score include resource use, emissions and innovation (Thomson Reuters, 2019). In other words, if a company pays more attention to protect the rights of employees and customers and observes business ethics, this company will have a higher social score. In addition, if a company strives to avoid excessively emitting carbon dioxide and participates in more environmental activities, this company's environmental pillar score will be improved. Therefore, analysing the individual social and environmental scores can increase the reliability of results.

The Eikon platform is comprehensive and is used for "establishing customizable benchmarks (e.g., sector and country) for the assessment of corporate performance. Annually, 400 data points are used as inputs to a default equal-weighted framework to calculate 70 key performance indicators (KPIs), to be further organized into 10

categories within three pillars (social, environmental and governance scores)" (Thomson Reuters, 2019). Eikon's KPIs, categories, and pillars are calculations of equal weight relative to a company's performance, against which is the Eikon Corporate universe. These ratings are Z-scored, which benchmark each company's performance against that of the rest of the companies in the universe (Thomson Reuters, 2019). In addition, each category score is the equally weighted sum of all relevant indicators for each industry used to create it, and the range of social and environmental performance is from zero to one hundred. Higher social and environmental scores represent better performance (Thomson Reuters, 2019). Some studies have used ESG scores to study the relationship between board characteristics and CSR performance. For example, Shahbaz et al. (2020) and Birindelli et al. (2018) studied the correlation between board variables and social and environmental performance using ESG scores from Eikon in the energy and banking sectors separately. Moreover, Haque (2017) analysed the relationship between sustainable executive compensation and environmental performance using the ESG scores with a sample from non-financial UK companies.

3.2.2 Independent variables

The independent variables include independent directors, senior executive compensation, board size, gender diversity, directors with specific skills, board tenure and multiple directorships. This data was collected from governance information using Eikon.

The director's independence (INDE) is measured as the percentage of independent board members, which is used to measure the director's independence by most scholars in this field. For example, following previous studies, Haque (2017) reported that the percentage of independent directors has a positive and significant correlation with carbon performance. In accordance with the monitoring role of the board, De Villiers et al. (2011) demonstrated that the higher percentage of independent directors on the board can influence environmental performance. In addition, Shahbaz et al. (2020)

showed that the percentage of independent directors has an effect on ESG performance in the energy sector.

Sustainability executive compensation (COMPEN) is a dummy variable. If senior executive compensation is linked to CSR targets then that is 1, otherwise it is 0. This measurment method is consistent with previous literature. For example, Haque (2017) also applied a dummy variable to analyse whether the executive compensation policy linked to CSR performance can improve social and environmental performance. In addition, Ikram et al. (2019) also used a dummy variable to analyse whether the executive compensation is linked with CSR performance, and the result indicated that the CSR-contingent executive compensation contract is more likely to facilitate CSR performance.

The board size (BSIZE) is regarded as the number of board members. According to existing studies, the number of directors on the board is widely regarded as a measurement method to analyse the relationship between board size and CSR performance (e.g., Shahbaz et al., 2020; De Villiers et al., 2011). For example, Shahbaz et al. (2020) documented that the number of directors on the board is correlated with ESG scores. Meanwhile, De Villiers et al. (2011) found a positive and significant relationship between the number of board directors and environmental strengths.

Board specific skills (SKILLS) is measured as the percentage of board members who have either an industry-specific background or a strong financial background. This measurement method is consistent with Ramón-Llorens, García-Meca and Pucheta-Martínez (2019). They showed that the percentage of directors with specific skills, such as law, insurance and industrial knowledge, has a positive and significant influence on motivating companies to undertake CSR activities, thereby satisfying the interests of the shareholders.

Gender diversity (GEND)，measured as the percentage of females on the board，is another widely used variable in previous studies. For example, Haque (2017)

demonstrated that a higher percentage of female directors on the board is positively associated with carbon performance. Moreover, Glass et al. (2016) claimed that companies with a higher proportion of female leaders may lead to more effective corporate strategies on environmental protection and more successful advocation of innovation in sustainability policies.

Board tenure (TENURE) is quantified as the average number of years the firm's directors have served on the board. This measurement method follows De Villiers et al. (2011) and Deschênes, Rojas, Boubacar, Prud'homme, and Ouedraogo, (2015). They argued that the average number of tenure years of directors could be regarded as a measurement method to research the relationship between board tenure and social and environmental performance.

Multiple directorships (MULTIPLE) is refers to the average number of other corporate affiliations that board members have, and follows the studies carried out by Haque (2017) and De Villiers et al. (2011). They used the average corporate affiliations of board members to analyse the relationship between multiple directorships and social and environmental performance.

3.2.3 Validity of the independent measures

I collected the independent variables from the Eikon, which collects data on these and provides governance measures. Collectively, these measures are used to determine the governance score (GOV). To test the validity of the individual board characteristic variables, I check for correlation with the GOV measure and acquired the results illustrated in Table 4. The results show that all the board variables are significantly (at 1% level) and positively, correlated with GOV. The correlation coefficients vary from R=0.146 to R=0.426 (0.216-0.402 for Spearman).

3.2.4 Control variables

Appropriate control variables play a vital role in ensuring reliable results (Callan & Thomas, 2009). Based on the previous literature (e.g., Rao & Tilt, 2016; De Villiers et al., 2011), the control variables of this study include firm size, firm age, firm's financial profitability such as ROE, firm's risk such as BETA and leverage, country, year and socially and environmentally sensitive industries. The data for all control variables were collected from the Eikon database.

Firm size has been widely included in the field of CSR performance and regarded as a vital control variable because the media and shareholders tend to monitor the larger companies and expect to see improved CSR performance (Rao & Tilt, 2016). Also, the board structure can be impacted by firm size (De Villiers et al., 2011). In addition, Clarkson, Richardson and Vasvari (2008) demonstrated that, compared with small companies, larger companies are more likely to participate in environmental activities since larger companies have enough funds to support environmental activities. Consistent with prior literature, the association between firm size and CSR performance is expected to be positive. The variable of firm size (SIZE) is measured by the natural logarithm of total assets, as the firm's assets are not normally distributed, which follows De Villiers et al. (2011) and Shahbaz et al. (2020). They used the logarithm of total assets as a control variable to analyse the relationship between board characteristics and CSR performance.

Company age (AGE) is calculated, as in previous studies, by years of operation since the company foundation. Chang et al. (2017) demonstrated that company age is related to CSR performance. The reason is that "reputation and history of involvement in social responsibility activities can become entrenched" (Roberts, 1992, p. 605) such that public expectations of mature companies' CSR performance are raised; thus mature companies are compelled to participate the CSR activities. Moreover, D'Amato and Falivena (2020) pointed out that company age is regarded as a moderating variable in terms of influencing CSR performance. Company age is a firm-specific characteristic,

which is related to the firm's experience and brand image (Stinchcombe, 1965). To be more specific, compared with older companies, younger companies lack experience in how to deal with social and environmental issues, which causes them to have a lower CSR performance. In addition, younger companies need a lot more time and funds than older companies to establish their reputation, which means that younger companies' CSR performance cannot be improved immediately (Flanagan & O'Shaughnessy, 2005). As a result, it is essential to control for this variable and, in this study, the relationship between company age and CSR performance is expected to be positive.

A company's financial performance is regarded as ROE, calculated by the net income before ordinary items divided by total equity. It reflects how effectively management is using a company's assets to create profits (Simpson & Kohers, 2002). Profitability has been demonstrated to have an effect on CSR practices (e.g., Simpson & Kohers, 2002). Since CSR activities are not cost-free, only highly profitable companies are in a position to afford the associated costs. Hence, companies with higher profitability tend to invest in social and environmental activities. Haniffa and Cooke (2005) showed that profitability measured as ROE is a vital factor in relation to the dissemination of social information by companies. Compared with ROA, ROE is more focused on the interest of shareholders, so this study used the ROE as a control variable (Vitezić, 2011). The relationship between ROE and CSR performance is expected to be positive.

Leverage (LEV) is measured as total debt divided by total assets. According to the current literature, most empirical studies have evidenced that leverage is positively correlated with CSR performance. For example, Birindelli et al. (2018) demonstrated that the leverage level is positively associated with environmental performance. Furthermore, Shahbaz et al. (2020) posited that leverage measured by the proportion of total debt to total assets has a positive and significant relationship with environmental performance. On the other hand, Haque (2017) argued that higher leverage may reduce free cash flows and financial resources, which impacts the decision-making process of investing in environmental activities. Additionally, due to higher leverage, managers may pay more attention to the companies' short-term operations and investment,

thereby ignoring the long-term interests of companies such as CSR performance. Although leverage has been calculated by the same measurement method in previous studies, the opposite results were found.

Beta (BETA) is constructed as the company's common stock price volatility relative to market price volatility. This measured method follows De Villiers et al.'s (2011) study. Companies with low finical risks have the ability to participate in social activities for improving economic performance (Cormier & Magnan, 2004). This is consistent with the study by Roberts (1992). This author claimed that companies with a high CSR performance contributes to a decline in the companies' financial risks. Herremans, Akathaporn and McInnes (1993) proposed that a superior CSR performance can effectively influence a company's risks such as beta. However, De Villiers et al. (2011) documented that the variable of beta has no relationship with environmental performance. Clearly, there are inconsistent results in the previous studies. Hence, beta should be considered.

My sample was drawn from Australian and NZ companies yet Australian companies account for 58% of the all sample; thus, the sample was determined by the fact that more than half the companies in the sample were from one country. Hence, it is necessary to consider whether the findings may be influenced by the country variable. This follows El-Bassiouny's (2018) study, which used the country variable to examine the relationship between CG and CSR performance with a sample from three countries (Egypt, Germany and the US). The country (COUNTRY) is measured by a dummy variable, if the company is from Australia that is 1, otherwise it is 0.

The industry classification used in this study relies on GICS, which was obtained from Eikon. The rationale is that different industries are affected by a different set of stakeholders, with different agendas and interests (Griffin & Mahon 1997). Compared with normal industries, the sensitive industry sectors are more likely to involve social taboos, moral debates and political pressure, thereby companies in sensitive industries tend to pay more attention to CSR activities (Garcia, Mendes-Da-Silva, & Orsato,

2017). Richardson and Welker (2001) stated that environmentally sensitive industries include oil, gas, paper, chemical, mines, metals and forestry products. Patten's (2002) industry classification was the same aside from not including forestry products. Environmentally sensitive companies are more likely to consider their environmental performance (Kilian & Hennigs, 2014). De Villiers et al.'s (2011) list of environmentally sensitive industries is the most extensive and includes: forestry, metal mining, coal mining and oil and gas exploration, paper and pulp mills, chemicals, pharmaceutical and plastics manufacturing, iron and steel manufacturing, electricity, gas and wasted water. Using a US sample, the authors found that environmentally sensitive industries are more likely to consider the environmental agenda (De Villiers et al., 2011).

For socially sensitive industries, Useem (1988) pointed out that industries with high levels of public contact, such as retailing, banking and insurance, have a greater need for a positive image, thus are more likely than other industries to consider social issues. Garcia et al.'s (2017) definition of socially sensitive industries includes tobacco, gambling, weapons and alcohol. Baron, Harjoto and Jo (2011) also proposed that the socially sensitive industries include these four harmful industries.

The classification system used in the present research was modeled on the system used by Garcia et al. (2017) and Richardson and Welker (2001), but some changes were made based on changes in GICS classification. The most recent GICS classification includes 11 sectors: 1) energy; 2) materials; 3) industrials; 4) consumer discretionary; 5) consumer staples; 6) health care; 7) financials; 8) information technology; 9) telecommunication services; 10) utilities; and 11) consumer service. The current sample included companies from all 11 sectors. Four sectors - materials, energy, industrials and utilities - are categorized as environmentally sensitive industries; two sectors - financials and consumer staples – are categorized as socially sensitive industries. In the current research, the socially sensitive industry (SOC IND) is treated as a dummy variable, where a score of 1 represents socially sensitive industries, a score

of 0 otherwise. The same method is applied to the environmentally sensitive industry (ENV IND).

This study involved longitudinal research, so it was necessary to analyse the significant changes over the years. The year fixed effect was also included. The year trend (Year) is measured as follows: 1 is 2014, 2 is 2015, 3 is 2016, 4 is 2017 and 5 is 2018.

3.3 Empirical model

To test my hypotheses as to whether board characteristics or sustainable executive compensation policy can influence environmental and social performance, I estimated the regression model by including all relevant variables, as specified below:

CSR performance $_t$= β_0 + β_1 BODATTRIBUTES$_{t-1}$+ β_2 SIZE$_{t-1}$ + β_3 AGE$_{t-1}$ +β_4 ROE$_{t-1}$ + β_5 LEV$_{t-1}$ +β_6 BETA$_{t-1}$ + β_7 COUNTRY+β_8 SOC IND (ENV IND) +β_9 YEAR + ε

Where:

1) The proxies for CSR performance are SOC and ENV.

2) The proxies for BODATTRIBUTES are INDE, COMPEN, BSIZE, SKILLS, GEND, TENURE, MULTIPLE.

Table 4: Correlation between independent variables and corporate governance score (GOV)

	INDE	COMPEN	BSIZ	SKILLS	GEND	TENURE	MULTIPLE
GOV	.426	.339	.373	.319	.321	.146	.254
GOV	.363	.333	.402	.300	.339	.216	.284

Note: Significant correlations are indicated by significant P-values, * at the 5% and bold at the 1% levels, respectively. Pearson correlation coefficients are in the first line. Spearman's rho coefficients are in the second line.

Table 5：Summary of variables and definitions

Dependent Variables	Designations	Definitions	Source
Social score	SOC	Social performance	Thomson Reuters
Environment score	ENV	Environmental performance	Thomson Reuters
Independent variables			
Independent directors	INDE	The percentage of board members who are independent	Thomson Reuters
Sustainability compensation incentives	COMPEN	If senior executive compensation linked to CSR targets that is 1, otherwise 0	Thomson Reuters
Board size	BSIZE	The number of board members	Thomson Reuters
Board specific skills	SKILLS	The percentage of board members who have either an industry-specific background or a strong financial background	Thomson Reuters
Gender diversity	GEND	Percentage of females on the board	Thomson Reuters
Board tenure	TENURE	The average number of years that the firm's directors have served on the board	Thomson Reuters
Multiple directorships	MULTIPLE	Average number of other corporate board affiliations for the board members	Thomson Reuters
Control variables			
Firm size	SIZE	Natural logarithm of total assets	Thomson Reuters
Firm age	AGE	The years of a firm has been founded	Thomson Reuters

Return on equity	ROE	Net income before ordinary items divided by total equity	Thomson Reuters
Leverage	LEV	Total debt divided by total assets	Thomson Reuters
Beta	BETA	The measure of a company's common stock price volatility relative to market price volatility	Thomson Reuters
Country	COUNTRY	A dummy variable, where a score of 1 represents Australia, and a score of 0 represents New Zealand	Thomson Reuters
ENV industry	ENV IND	A dummy variable, where a score of 1 represented socially sensitive industries (materials, energy, industrials, utilities), a score of 0 otherwise	Thomson Reuters
Soc Industry	SOC IND	A dummy variable, where a score of 1 represents socially sensitive industries (financials and consumer staples), a score of 0 otherwise.	Thomson Reuters
Year trend	YEAR	Year trend is measured as 1 is 2014, 2 is 2015, 3 is 2016, 4 is 2017 and 5 is 2018	Thomson Reuters

4. Results and Discussion

This section provides the results of the descriptive statistics, correlation table and regression analyses of all variables. It then describes and explains the findings and discusses these in relation to the previously published literature.

4.1 Descriptive statistics

Table 6 illustrates the descriptive statistics for all variables used in this study. The descriptive statistics in Table 6 include the number of observations, mean, median, standard deviation (SD) and correlation, minimum, maximum and the 10th and the 90th percentiles.

For dependent variables, the mean of the social score was higher than the environmental score (51.70, 41.60), which may indicate companies pay more attention to social performance than environmental performance. The mean of independent directors was 74.30 percent, which is beneficial for improving the board monitoring effectiveness. However, the minimum of independent directors was 0, suggesting that the boards of some companies do not follow a structure of independence. Senior executive compensation linked to CSR targets does not appear to be popular in Australia and NZ companies as the mean was 0.31. In regard to the board of directors, the boards had an average of 8 directors in the sample, although according to the SD, this number ranged from 4 to 16. The mean of the board's specific skills and gender diversity were 46.59 percent and 26.31 percentage respectively, which indicates that some companies' directors have specific skills, such as law and IT, and the percentage of female directors is lower than the percentage of male board members. For companies' financial characteristics, the average natural logarithm of total assets (SIZE) was 18.98, and the mean of actual total assets was $45,834 million.

Table 7 shows descriptive statistics for social and environmental performance and independent variables over the five years. The means of the environment and social

scores showed a significant increasing trend from 2015 to 2019. The mean of independent directors and directors with specific skills on the board indicated a growth during the five years. However, there was a slight decrease in the mean of board size between 2014 to 2018 (from 8.81 to 7.89). The means of the board tenure and multiple directorships were almost the same for each year. The highest proportion of females appeared in 2018, with the lowest in 2016. Overall, the board variables and sustainable executive compensation revealed no significant variations from 2014 to 2018 because the mean of the independent variables showed no significant increase or decline in any of those years.

Table 8 presents the sample distribution by country, almost 58% of observations were from Australia. Differences between the social and environment scores of NZ and Australia were apparent, with a mean of 35.72 and 25.22 for NZ and 66.16 and 56.41 for Australia. The results revealed a significant difference between the independent variables of the two countries, specifically in the mean of board size and the percentage of directors with specific skills, with 6.89 and 39.50 for NZ and 8.98 and 52.25 for Australia. Also, the mean of the percentage of females and sustainable compensation in Australian companies were higher than the companies in NZ.

Table 6: Descriptive statistics

Variable	N	Mean	Median	SD	Min	Max	P10	P90
SOC	414	51.70	50.98	25.52	0.00	97.46	17.24	87.76
ENV	414	41.60	41.96	29.08	0.00	97.05	.08	83.78
INDE	414	74.30	80.00	19.87	0.00	100.00	45.45	92.31
COMPEN	414	0.31	0.00	0.46	0.00	1.00	0.00	1.00
BSIZE	414	8.06	8.00	1.80	4.00	16.00	6.00	10.00
SKILLS	414	46.59	46.15	19.70	0.00	100.00	3.66	9.09
GEND	414	26.31	25.00	11.77	0.00	71.43	14.29	40.00
TENURE	414	6.26	5.73	2.84	0.29	21.31	3.66	9.09
MULTIPLE	414	1.15	1.00	0.60	0.00	3.38	0.50	2.09
SIZE	414	18.98	19.86	2.54	12.21	23.28	15.32	21.88
AGE	414	3.51	3.50	0.97	0.00	5.14	2.48	4.68
ROE	414	0.15	0.14	0.39	-1.73	7.04	0.02	0.3
LEV	414	0.25	0.25	0.13	0.00	0.72	.06	0.41
BETA	414	1.05	0.98	0.47	-0.2	2.4	0.54	1.71
COUNTRY	414	0.58	1.00	0.50	0.00	1.00	0.00	1.00
SOC IND	414	0.25	0.00	0.43	0.00	1.00	17.24	87.76
ENV IND	414	0.18	0.00	0.39	0.00	1.00	0.00	1.00
YEAR	414	3.00	3.00	1.41	0.00	5.00	0.00	1.00
Panel B: Actuals								
SIZE	414	45834	4297	1.46	3.00	772447	3.00	73879

Note: The N is the number of the sample, SD is the standard deviation; Min is minimum; Max is maximum; 10 percentiles is the 10th and 90 percentiles is the 90th. In panel B, SIZE is measured in US dollars (USD) and expressed in millions.

Table 7: Descriptive dependent and independent variables in different years

Variables	2015(Mean)	2016(Mean)	2017(Mean)	2018(Mean)	2019(Mean)	All years (Mean)
SOC	48.36	49.29	50.67	54.00	55.99	51.70
ENV	38.91	39.88	40.22	42.94	44.57	41.60
	2014(Mean)	2015(Mean)	2016(Mean)	2017(Mean)	2018(Mean)	All years (Mean)
INDE	71.97	72.78	74.02	75.58	76.22	74.30
COMPEN	0.50	0.24	0.20	0.18	0.46	0.31
BSIZE	8.81	8.10	7.87	7.87	7.89	8.06
SKILLS	46.32	42.45	47.40	46.91	49.39	46.59
GEND	24.33	24.28	27.03	28.31	26.75	26.31
TENURE	6.23	6.25	6.32	6.28	6.19	6.26
MULTIPLE	1.16	1.11	1.15	1.17	1.16	1.15

Table 8: Descriptive dependent and independent variables in different countries

	Australia		NZ			
	N	Mean	N	Mean	T-test	Sig
SOC	244	66.16	221	35.72	15.826	0.000
ENV	244	56.41	221	25.22	13.589	0.000
INDE	244	74.55	194	73.99	0.288	0.074
COMPEN	244	0.43	194	0.14	7.140	0.004
BSIZE	244	8.98	194	6.89	14.715	0.000
SKILLS	243	52.25	194	39.49	7.106	0.027
GEND	244	27.68	194	24.58	2.679	0.008
TENURE	244	6.06	181	6.51	-1.596	0.112
MULTIPLE	244	1.33	194	0.92	7.612	0.000

4.2 Correlation results

Table 9 presents the Pearson (parametric) and Spearman (non-parametric) correlation for the dependent, independent and control variables. The Pearson correlations showed that social and environmental performance is significantly and positively associated with board size, sustainable compensation, independent directors, diversity of board skills and gender and multiple directorships, but the environmental performance and board tenure revealed a significantly negative relationship ($p < .01$). The significant positive correlation between board characteristics, sustainable executive compensation and social and environmental performance provides initial support for the hypotheses of this study.

Table 9 also shows the correlation coefficients between the independent variables and control variables. The largest correlation coefficient observed across independent and control variables in Pearson and Spearman correlations is between firm size and board size (0.086). Gujarati (2003) suggested that a multicollinearity problem may happen when the correlation is over 0.80. To confirm whether the assumption is reliable, the variance inflation factor (VIF) and tolerance were also considered. A value of VIF more than 5 and tolerance lower than 0.2 indicates that multicollinearity is present (Gujarati, 2003). Multicollinearity was not a concern in this regression model as no predicator had a VIF value greater than 5 and tolerance lower than 0.2.

Table 9: Correlations between variables

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(1) SOC		**.801**	**.174**	**.327**	**.494**	**.242**	**.209**	-.081	**.374**	**.499**	**.330**	**.151**	-.081	.001	**.596**	**.225**	.010	.110*
(2) ENV	**.804**		**.167**	**.280**	**.473**	**.178**	**.231**	**-.144**	**.344**	**.478**	**.368**	.094	-.066	.084	**.536**	.041	.117*	.082
(3) INDE	**.211**	**.208**		.027	.025	-.007	**.208**	-.116	**.136**	.071	.051	.045	-.058	.095	.014*	**.129**	**.142**	.076
(4) COMPEN	**.326**	**.284**	.082		**.297**	**.273**	.085	-.105	**.278**	**.272**	-.003	-.037	-.031	-.055	**.313**	.114*	**.125**	-.003
(5) BSIZE	**.520**	**.498**	-.033	**.298**		**.137**	.016	-.114*	**.236**	**.515**	**.267**	-.031	-.054	**-.133**	**.576**	.117*	**.193**	**-.140**
(6) SKILLS	**.254**	**.195**	.050	**.274**	**.170**		.004	.124*	**.133**	**.259**	-.067	.017	-.032	.047	**.322**	.074	.095	.086
(7) GEND	**.242**	**.285**	**.251**	.057	.078	.039		**-.210**	**.176**	**.211**	.074	**.134**	-.039	.060	**.131**	**.194**	.045	.100
(8) TENURE	.046	**-.127**	-.109	**-.132**	-.098	**.120***	**-.206**		**-.185**	-.107	**.175**	.044	-.037	**-.121***	-.077	-.028	-.100	-.003
(9) MULTIPLE	**.373**	**.319**	**.183**	**.302**	**.270**	**.149**	**.239**	**-.157**		**.310**	**.114**	-.011	-.011	.056	**.334**	**.137**	.039	.012
(10) SIZE	**.526**	**.502**	.086	**.276**	**.562**	**.273**	**.238**	-.109	**.332**		**.353**	-.036	-.043	-.062	**.621**	.089	**.191**	-.014
(11) AGE	**.324**	**.380**	.035	.008	**.269**	-.048	.082	**.161**	.123*	**.319**		-.034	**-.134**	-.051	**.305**	.005	.118*	.054

Table 9: Correlations between variables (Continued)

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
(12) ROE	**.149**	.063	.060	-.069	-.049	.016	**.134**	.030	.103*	.090	**.219**		**.255**	-.052	-.034	.038	.056	-.034
(13) LEV	**.182**	**.278**	**.152**	**.192**	**.195**	**.162**	**.125**	.034	**.200**	**.202**	.052	**.167**		-.055	-.044	-.025	-.022	-.001
(14) BETA	.049	**.128**	**.140**	-.029	-.074	.038	.081	-.063	-.002	-.045	.020	-.067	.072		-.050	-.023	-.057	.000
(15) COUNTRY	**.598**	**.542**	.018	**.313**	**.621**	**.318**	**.149**	-.088	**.346**	**.727**	**.317**	.027	**.202**	-.031		**.137**	**.127**	**.001**
(16) SOC IND	**.226**	.110*	**.141**	.114	.114	.090	**.176**	**-.171**	**.164**	.099	.016	**.166**	**.140**	.013	**.137**		**.274**	.001
(17) ENV IND	.009	**.302**	.092	**.125**	**.125**	.063	.094	.056	.024	**.201**	.078	**-.232**	-.004	-.058	.127	**-.274**		.001
(18) YEAR	.108	.088	.105	.009	.009	.089	.106	.009	-.001	.005	.045	.033	-.060	-.001	.001	.001	.001	

Note: Significant correlations are indicated by significant P-values, * at the 5% and bold at the 1% levels, respectively. Pearson correlation coefficients are above the diagonal. Spearman's correlation coefficients are below the diagonal.

4.3 Regression results

Tables 10 and 11 report on the results for Equation (1). This study employed six different board measures and sustainable executive compensation, and the regression results based on each of the separate board measures and sustainable executive compensation are displayed in columns 1–7. In addition, this study regressed social and environment scores on all hypothesized variables, and the control variables in one model are shown in the column 8 of Tables 10 and 11. The column 9 is testing the aggregated impact of GOV on CSR performance.

4.3.1 Social performance

Table 10 contains the results for social performance and different board measures and sustainable executive compensation. The adjusted R^2 of the regression analyses range is between 42.6% and 44.1%, suggesting that independent variables collectively captured a substantial variation in the dependent measure. It should be recalled that my independent variables were divided into directorial monitoring and incentive variables. For directorial monitoring, independent directors have a positive influence on social score ($\beta = 0.122$, $p < 0.001$). Hence, H1 should be accepted. In addition, this finding supports the monitoring role of the board; this is consistent with previous literature. For example, Shahbaz et al. (2020) found that independent directors can promote social performance in the energy sector. Meanwhile, the result in column 2 of Table 10 shows that the total social performance was significantly related to senior executive compensation that is linked to CSR targets ($\beta = 6.639$, $p < 0.001$). Therefore, H2 should be accepted. This finding is consistent with Ikram et al.'s (2017) study, which found that CSR-contingent compensation helps to improve companies' social performance because it is beneficial for managers to pay more attention to long-term shareholder value rather than financial performance. Overall, directorial monitoring plays a vital role in motivating companies to pay more attention to social issues.

From a resource dependence viewpoint, H3 suggests a significant positive correlation between social performance and board size. The hypothesis is supported (β= 2.643, p < 0.001). This reinforces the argument that large boards in Australia and NZ, which represent diversified stakeholders' interests, are more likely to focus on social issues for improving the reputation of companies. Next, I found a positive and significant relationship between directors with specific skills (β = 0.080, p < 0.05) and the percentage of female directors on the board and social performance (β = 0.203, p < 0.05). These findings provide strong support for H4 and H5 respectively, which is consistent with the study by Hafsi and Turgut (2013) and Isidro and Sobral (2015). Hafsi and Turgut (2013) claimed that directors with different professional skills and knowledge are more likely to consider social activities because different skills and experiences may influence directors' attitudes for social performance. Isidro and Sobral (2015) proposed that having female members on the board may play a critical role in CSR performance because women are more likely than men to take into account social performance such as human rights and be less influenced by an economic orientation. Similarly, H7 predicts a positive relationship between social performance and multiple directorships. This confirms that multiple directorships provide opportunities for directors to learn about diverse companies' strategies and governance issues, such as CSR practice and performance (Rao & Tilt, 2016). This hypothesis is supported by the result (β = 6.077, p < 0.001). Finally, the social score was insignificantly correlated with board tenure (β = 0.359, p > 0.1). H6 is, therefore, not supported. Overall, companies with stronger boards and sustainable executive compensation are more likely to increase social performance than their rivals with weaker boards of directors. Additionally, according to the column 9, the GOV confirms its positive impact on the social performance is significant.

The results for the control variables indicated that company age, ROE, country and socially sensitive industry are positively related to social performance (p<0.01). The relationship between board attributes and social performance was shown to be more significant in Australian companies than in NZ companies. The socially sensitive

industries were found to have a more unambiguous impact on social performance than normal industries. This finding is consistent with the study by Shahbaz et al. (2020), which found that different industries may face a different degree of pressure from the media and shareholders, which causes industries to have different attitudes towards, and motivations for social performance.

4.3.2 Environmental performance

Table 11 illustrates that environmental performance was generally higher in companies with: more independence of boards (column 1); senior executive compensation contracts more focused on CSR targets (column 2). a larger board size (column 3); more directors who have specific skills and more female members on the board (columns 4 and 5); directors who have shorter board tenures (column 6); directors who have more occupations in other companies (column 7); and the adjusted R^2 of the regression analyses ranged between 40.1% and 42.5%. The findings suggest that my independent variables collectively capture a substantial variation in the environment scores.

Regarding the board's monitoring role, the relationship between environment score and directors' independence was positive and significant. It showed $\beta = 0.101$, $p < 0.05$, which indicates H1 can be accepted. This result follows that of Fama and Jensen (1983); they found that having a mix of directors on the board, particularly independent directors, is more likely to bring diversity of experience and advice. The independent directors can improve the objectiveness of decisions, which in turn protects the long-term interests of companies (Fama & Jensen, 1983). Additionally, the senior executive compensation contract was shown to be important for pushing companies towards participating in environmental activities ($\beta = 7.774$, $p < 0.01$), which is in agreement with H2. Haque (2017) found a positive relationship between sustainable executive compensation and reduced greenhouse gas emissions; my empirical finding is in line with this.

With respect to boards based on dependence resources, consistent with the prediction of H3, there was a positive and significant relationship between board size and the level of environmental performance ($\beta = 3.966$, $p < 0.01$), so the hypothesis should be supported. Columns 4 and 5 in Table 11 show a positive and significant relationship between environment score and board specific skills and gender diversity ($\beta = 0.011$, $p < 0.1$; $\beta = 0.313$, $p < 0.01$), so H4 and H5 cannot be rejected. The result for board specific skills is similar to that found by Siregar and Bachtiar (2010): professional experience can be determined by different specialized skills. For example, directors who are skilled in law are more likely to avoid social and environmental risks (Kassinis & Vafeas, 2002). For the gender diversity result, although there is a small percentage of women directors in NZ and Australian companies, having more female directors on Australian and NZ boards also can promote environmental performance. The association of gender diversity with CSR performance has been investigated by scholars. For example, Fernandez-Feijoo, Romero and Ruiz-Blanco (2014) provided empirical evidence that the presence of women directors can promote environmental performance. Furthermore, multiple directorships had a positive and direct association with environmental performance ($\beta = 5.806$, $p < 0.01$). Hence, H7 cannot be rejected. This finding is consistent with prior research. Haque (2017) documented that the inter-organizational linkages and knowledge-intensive services of directors can facilitate interactions among companies, thereby helping the companies to acquire critical resources like green technologies. This confirms that multiple directorships provide opportunities for directors to learn about diverse companies' strategies and governance issues (De Villiers et al., 2011). However, H6 should be rejected because the board tenure was revealed as having a negative influence on the environment score ($\beta = -1.370$, $p < 0.05$). The result of column 9 indicates the aggregated CG is statistically positively connected with environment score.

The effect of control variables on companies' environmental performance was generally consistent with the findings from De Villiers et al. (2011) and Haque (2017). Firm age had a significant impact on environmental performance. Moreover, leverage

was positively associated with total environmental performance ($p < 0.01$). There is a more significant relationship between board characteristics and executive compensation and environmental performance in Australian companies than NZ companies. Additionally, environmentally sensitive industries are positively and significantly related to environmental performance. Most of them are in line with my expectations.

Table 10: Regression of the social score on independent variables

SOC	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
INDE	0.122***							0.124***	
COMPEN		6.639***						5.514***	
BSIZE			2.643***					2.880***	
SKILLS				0.080**				0.082**	
GEND					0.203**			0.204**	
TENURE						0.359		0.125	
MULTIPLE							6.077***	4.632***	
GOV									0.638***
SIZE	0.005	0.200	0.209	0.039	0.073	0.163	0.202	0.492	0.017
AGE	2.665***	3.137***	3.509***	3.314***	3.452***	3.167***	3.590***	3.223***	3.340***
ROE	2.307***	1.027***	1.226***	1.890***	2.353***	1.669***	1.046***	1.255***	1.549***
LEV	-0.001	-0.003	-.001	-0.554	-0.001	-0.004	-0.001	-0.006	-0.635
BETA	0.868	0.773	0.372	0.932	0.535	0.070	0.739	0.648	0.231
COUNTRY	2.711***	2.904***	2.763***	2.744***	1.544	2.077***	2.984***	2.231***	2.566***
SOC IND	2.588**	2.642***	2.249**	2.131*	2.376**	2.177**	2.095**	2.937**	1.039**
YEAR	0.629	0.198	0.281	0.079	0.391	0.241	0.321	0.081	0.324
N	428	428	427	428	416	428	428	414	414
Adjust R^2	0.446	0.433	0.426	0.432	0.425	0.441	0.436	0.473	0.519
F-stat	31.684***	30.032***	29.164***	29.922***	28.360***	31.091***	30.468***	32.509***	41.622***
Highest VIF	2.499	2.227	2.337	2.224	2.175	2.320	2.317	2.817	2.430

Notes: GOV is Governance Pillar Score. P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively, all one-tailed. N is the number of the sample.

Table 11: Regression of the environment score on independent variables

ENV	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
INDE	0.101**							0.133***	
COMPEN		7.774***						4.708****	
BSIZE			3.966***					2.954***	
SKILLS				0.011*				0.089*	
GEND					0.313***			0.320***	
TENURE						-1.370**		-0.671**	
MULTIPLE							5.806***	2.711***	
GOV									0.760***
SIZE	0.763	1.000	1.053	0.313	0.810	0.992	1.053	0.591	0.379
AGE	2.155***	2.818***	2.061***	2.791***	2.175***	2.864***	2.385***	2.100***	2.188***
ROE	2.834	1.353	1.613	2.484	2.441	1.968	2.332	2.231	2.802
LEV	0.035***	0.034***	0.036***	0,036***	0.038***	0.032***	0.035***	0.034***	0.046***
BETA	0.350	0.869	0.338	0.684	0.529	0.978	0.648	0.291	0.692
COUNTRY	3.434***	2.527***	2.873***	2.402***	2.383***	2.831***	2.354***	2.181***	3.523***
ENV IND	1.502**	1.670**	1.639**	1.582**	1.011**	2.630**	2.484**	2.533**	1.617**
YEAR	0.953	0.391	0.493	0.123	0.654	0.387	0.237	0.034	0.013
N	428	428	427	428	416	428	428	414	414
Adjust R^2	0.429***	0.401***	0.426***	0.407***	0.425***	0.404***	0.405***	0.473***	0.455
F-stat	29.641	26.987	29.164	27.157	28.360	26.822	26.901	24.707	32.590
Highest VIF	2.388	2.377	2.337	2.425	2.175	2.374	2.304	2.392	2.271

Notes: GOV is Governance Pillar Score. P-values preceded by *, ** and *** represent significance levels at the 10%, 5%, and 1% levels, respectively, all one-tailed. N is the number of the sample.

5. Supplementary Analysis

In order to confirm the robustness of the main findings of this study, four supplementary analyses were conducted and are explained in this section. First, this study covered a sample comprising two countries. For this reason, it is necessary to analyse whether the relationship between the board characteristics and sustainable executive compensation and social and environmental performance may be affected by the specificity of certain countries. Second, according to previous literature, the board attributes also are related with the ESG and ES scores. Hence, I used the alternative measurement of the dependent variables such as the ESG score and the ES score to test whether the results are consistent. Third, in order to test the robustness and the reliability of the findings, the independent variables were measured by alternative methods. The purpose of doing this was to prove the authenticity of the relationship between board attributes and social and environmental performance. Finally, I tested the main independent variables again by using different control variables.

5.1 The results from the sub-sample

This study re-ran the main model by splitting the sample into two sub-samples. The first sub-sample consisted of Australian companies with a total of 237 observations, while the second sub-sample included the NZ companies with a total of 178 observations. The results of these additional regressions were consistent with the main findings. The "Australia" column of Table 12 shows that social and environmental performance was statistically positively connected with board size, independent directors, directors with specific skills, female directors, multiple directorships and the CSR-contingent executive compensation contract, while board tenure had a negative impact on environmental performance. Compared with the results based on regression with the whole sample, the "NZ" column shows the relationship between independent directors and female directors and social and environmental performance revealed a significant decrease, while that the relationship between the CSR-contingent executive

compensation contract and environmental performance showed a significant increase. Overall, these results strengthen the relationship between the board attributes and sustainable executive compensation and social and environmental performance. Sustainable executive compensation was shown to play a bigger role in NZ.

5.2 The alternative measurement of CSR performance variables

Previous research by Shahbaz et al. (2020) and Birindelli et al. (2018) indicated that board attributes play a vital role in enhancing the ESG and ES scores. Therefore, to add to the robustness of my results, I conducted a complementary analysis based on the different dependent variables such as ESG and ES scores. The ESG score (ESG) is measured as the total ESG score including social, environmental and governance scores from Eikon, and the ES score (ES) is calculated by the average sum of social and environment scores. When considering only ESG performance, Table 13 illustrates little difference from the ES score. Interestingly, although independent directors and gender diversity were significant for the ESG and ES scores, the ESG was more significant than the ES score. Directors with specific skills generally appeared to be more important for the ESG score than ES performance. Board size was a variable that could influence all types of CSR performance such as the ESG and ES scores, which indicates that companies with more directors are significantly positively related to CSR performance. While not a perfect result, tenure had no significant relationship between ESG and ES scores, but had a negative association with environmental performance, which is consistent with the mixed results in previous literature (De Villiers et al, 2011). Overall, using alternative measurements showed that the results of dependent variables are robust.

5.3 The alternative measurement of board variables

Prior empirical studies have provided diverse measurement methods to study the correlation between CSR performance and board composition. Fuente, García-Sanchez and Lozano (2017) observed that a growing number of outside directors increase

sustainability performance. Birindelli et al. (2018) demonstrated that companies that recruit more directors with different experiences and skills have a stronger influence on CSR performance than their rivals. There is an inconsistent result in the relationship between the number of female directors on the board and CSR performance. For example, Konrad, Kramer and Erkut (2008) suggested that a token number of female directors on the board is not enough to make a difference in terms of decision-making; they proposed that at least three women on the board could have an impact on CSR performance. Post et al. (2011) assessed the relationship between board gender diversity and CSR performance with a sample of Fortune 1000 corporations in the electronic and chemical sectors. They found companies with at least three female directors are related to a higher KLD strength score in the environment dimension as females tend to express more concerns over environmental issues than males (Post et al, 2011). In addition, this finding is consistent with Konrad et al. (2008), who posited that merely having one or two female directors on the board does not enable companies to undertake social and environmental activities. However, Schwartz-Ziv (2017) claimed that if companies ensured female representation on the board amounting to three or about a third of the total directors, the effect of female directors on the bank's sustainability performance would be reduced. Therefore, following the existing literature, INDE 2 is measured as the number of independent directors and SKILLS 2 is calculated by the number of directors with specific skills. GEND 2 and 3 are regarded as the number of female directors and a dummy variable, which is equal to 1, if boards have at least three women, 0 otherwise. Table 14 displays the results, which are very similar to those presented in the previous section four. The INDE 2, SKILLS 2 and GEND 2 were significant at higher confidence levels than in the former variables, whereas the GEND 3 was insignificant. The more independent directors, directors with specific skills and female members on boards are more likely to promote social and environmental performance. These findings support the accuracy of the main results. Overall, these findings indicate that these results hold with different measurements of independent variables.

5.4 The alternative measurement of control variables

In order to ensure the robustness of the main findings, I added different measurement methods of control variables including MACP, ROA, LEV 2, TOBIN'S Q, DIV SCORE, CSR Committee and year dummy to the main model. According to the previous literature, companies with high market capitalization may have stronger pressure from society and the media, which causes them to observe social and environmental standards and exercise social responsibility. This indicates that companies with higher market capitalization are more likely to focus on CSR performance to satisfy social expectations. El-Bassiouny (2016) used market capitalization as a control variable to analyse the relationship between board variables and CSR performance. To ensure the variable of market capitalization keeps normal distribution, market capitalization (MACP) is calculated by the natural logarithm of market capitalization. Leverage negatively impacts CSR performance because, based on agency theory, to avoid creditor scrutiny, the companies that have higher leverage have to reduce CSR activities (Hus & Chen, 2015). However, El-Bassiouny (2016) found that the leverage variable does not influence CSR performance. Hence, it is important to analyse whether the leverage variable can influence CSR performance. The debt ratio (LEV 2) is regarded as the total debt divided by total equity. The link between profitability and CSR performance is complex. Most scholars have argued that higher profitability can improve CSR performance, whereas some studies have failed to find a relationship between the profitability level and CSR performance. Therefore, this study added ROA to ensure the reliability of results. The ROA is measured as the ratio of net income (after taxes) to total assets, following the studies of Shahbaz et al. (2020) and De Villiers et al. (2011). Moreover, Campbell (2007) demonstrated that CSR performance is negatively related to Tobin's q. Following Shahbaz's (2020) study, Tobin's q ratio (TOBIN'S Q) is calculated by the firm's total market capitalization and total debt, dividing the sum by the total assets. Diversity score (DIV SOC) is measured by a company's commitment to, and effectiveness in maintaining a gender diverse workforce and board member cultural diversity. A CSR committee can provide

professional advice and suggestions for helping managers to deal with social and environmental issues (Michelon & Parbonetti, 2012). Companies that establish a CSR committee can enhance their awareness of participating in social and environmental activities (Hussain, Rigoni, & Orij, 2018). Shahbaz et al. (2020) empirically demonstrated that CSR committees have a positive and significant relationship with social and environmental performance. In line with Shahbaz et al. (2020), CSR committee (CSR Committee) is measured as a dummy variable, 1 represents a company that has established a CSR committee, 0 otherwise. This paper collected five years' data, so in order to analyse whether the year-specific effect may influence the final results, I add the variable of year dummy. 2015 YEAR is a dummy variable. If the data belongs to the 2015 YEAR it is 1, 0 otherwise, as set out in Rao and Tilt's (2016) paper. That is similar for the 2016 YEAR, 2017 YEAR and 2018 YEAR. It can be seen in Table 15 that board size, independent board, multiple directorships, board specific skills and the CSR-contingent executive compensation policy were positively related to social performance. However, there was a difference when compared with the main findings: gender diversity showed no statistical significance. Table 16 shows that: board size, independent directors and sustainability executive compensation positively correlated with environmental performance; board tenure was negative and significant with regard to environmental performance; and gender diversity and directors with specific skills had no significant influence on environmental performance. These results enhance the robustness of the main findings because the main findings are almost consistent with these results. Overall, the different measurement methods of control variables have only a slight impact on the relationship between the board characteristics and sustainable executive compensation and social and environmental performance.

Table 12: Different countries on SOC and ENV

	AUS		NZ		Main results	
	SOC	ENV	SOC	ENV	SOC	ENV
INDE	0.125**	0.149**	0.173**	0.127*	0.124***	0.133***
COMPEN	5.018**	5.206*	8.886*	9.623***	5.514***	4.708***
BSIZE	3.099***	3.031***	3.560**	5.818***	2.880***	2.954***
SKILLS	0.011*	0.028*	0.139*	0.274*	0.082**	0.089*
GEND	0.346***	0.437**	0.038*	0.256*	0.204**	0.320***
TENURE	0.951	-0.241*	0.921	-1.148*	0.125	-0.671**
MULTIPLE	4.441**	2.492*	6.285*	0.714*	4.632***	2.711***
SIZE	0.825	0.252	0.791	0.702	0.492	0.591
AGE	3.452**	6.599***	3.487	5.462***	3.223***	2.100***
ROE	2.450***	2.396	3.326	-2.392	1.255***	2.231
LEV	-0.002	0.044***	-0.023	-0.037	-0.006	0.034***
BETA	0.116	0.820	0.423	0.451	0.648	0.291
COUNTRY					2.231***	2.181***
SOC IND	3.177*		3.276		2.937**	
ENV IND		2.186**		3.445**		2.533**
YEAR	0.362	0.147	0.964	0.028	0.081	0.034
N	237	237	178	178	414	414
Adjust R^2	0.307	0.347	0.273	0.312	0.509	0.473
F-stat	12.475	13.581	7.908	9.451	23.817	24.707
Highest VIF	1.290	1.385	1.582	1.552	2.716	2.392

Notes: P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively. The independent variables of AUS, NZ and all countries are all one-tailed. The AUS is the sample from Australian companies and NZ is the sample from New Zealand companies. N is the number of the sample.

Table 13: Regression results - ESG and ES scores

	Additional tests		Main results	
	ESG	ES	SOC	ENV
INDE	0.140***	0.75*	0.124***	0.133***
COMPEN	4.218***	4.933**	5.514***	4.708***
BSIZE	2.217***	2.793***	2.880***	2.954***
SKILLS	0.126***	0.099**	0.082**	0.089*
GEND	0.197***	0.037*	0.204**	0.320***
TENURE	0.332	-0.216	0.125	-0.671*
MULTIPLE	1.474***	3.744**	4.632***	2.711***
SIZE	0.233	0.069	0.492	0.591
AGE	2.252***	2.820***	3.223***	2.100***
ROE	2.808***	3.895***	1.255***	2.231
LEV	-0.324	0.07	-0.006	0.034***
BETA	0.624	0.491	0.648	0.291
COUNTRY	2.084***	2.635***	2.231***	2.181***
SOC IND	2.314*	2.276**	2.937**	
ENV IND	2.147*	2.422*		2.533**
YEAR	0.451	1.095*	0.081	0.034
N	414	414	414	414
Adjust R^2	0.607	0.58	0.509	0.473
F-stat	29.372	26.527	23.817	24.707
Highest VIF	2.785	2.769	2.716	2.392

Notes: P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively, the independent variables of ESG and ES are two-tailed, but the independent variables of all countries are all one-tailed. The ESG score (ESG) is measured as the total ESG score including social, environmental and governance scores from Eikon, and the ES score (ES) is calculated by the average sum of social and environment scores. N is the number of the sample. The ESG score includes the governance score, and the independent variables are significantly correlated with the governance score, which may enhance the relationship between the ESG score and independent variables.

Table 14: Regression of different independent variables on SOC and ENV

Variables	SOC				ENV			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
INDE		0.142***	0.145***	0.155***		0.093*	0.096*	0.113**
INDE2	1.659***				1.355**			
COMPEN	6.762***	6.587***	7.310***	6.592***	4.933***	6.704***	6.841***	6.821***
BSIZE	2.051**	2.707***	2.113***	3.127***	2.793***	2.935***	2.729***	3.446***
SKILLS	0.097*		0.098*	0.094*	0.099**		0.119**	0.116*
SKILLS 2		1.284**				1.633**		
GEND	0.201**	0.196**			0.037***	0.283***		
GEND 2			2.336**				3.378***	
GEND 3				1.218				3.340
TENURE	0.30	0.43	0.195	0.81	-0.216**	-0.934**	-0.951	-1.084**
MULTIPLE	5.586***	5.645***	5.721***	5.909***	3.744	3.250*	3.244*	3.722*
SIZE	0.340	0.357	0.223	0.169	0.069	0.183	0.231	0.455
AGE	3.844***	3.926***	3.354***	4.004***	3.820***	3.321***	2.299***	3.373***
ROE	2.808***	2.808***	2.112***	2894***	2.895	2.418	2.819	3.927
LEV	-0.004	-0.003	-0.004	-0.005	0.007***	0.033***	0.033***	0.032***
BETA	0.513	0.374	0.621	0.627	0.491	0.272	0.619	0.634
COUNTRY	1.664***	2.722***	1.667***	1.674***	2.635***	1.137***	3.949***	1.053***
SOC IND	1.143*	1.261**	1.227**	1.999**				
ENV IND					1.276**	1.104**	1.167**	1.122**
YEAR	0.480	0.441	0.567	0.677	1.095*	0.552	0.535	0.856
N	414	414	414	414	414	414	414	414
Adjust R^2	0.491	0.502	0.492	0.485	0.479	0.489	0.488	0.477
F-stat	25.056	25.227	23.319	24.488	24.913	24.849	24.770	23.739
Highest VIF	2.654	2.371	2.109	2.303	2.328	2.334	2.324	2.707

Notes: P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively, all two-tailed. INDE 2 is the number of independent directors; SKILLS 2 is the number of directors with specific skills; GEND 2 is the number of female directors on the board; GEND 3 is a dummy variable, equal to 1 if boards have at least three women, 0 otherwise. N is the number of the sample.

Table 15: Regression of different control variables on SOC

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
INDE	0.141***	0.123**	0.123***	0.142***	0.136***	0.214***	0.173***
COMPEN	5.299**	4.060**	3.426*	4.766**	5.476***	5.294***	5.272***
BSIZE	3.125***	2.495***	2.400***	3.048***	2.728***	2.321***	2.002***
SKILLS	0.077**	0.081*	0.076*	0.721*	0.070*	0.013*	0.014*
GEND	0.191**	0.013	0.188	0.188**	0.017	0.023	0.047
TENURE	0.258	0.571	0.755	0.418	0.396	0.047	0.032
MULTIPLE	5.540***	4.776***	5.180***	5.192***	4.854***	4.962***	3.276***
SIZE	0.344*	0.625	0.457				
MACP				1.027***	2.147***	2.371***	2.353***
AGE	3.450***	3.947***	2.189***	3.003***	2.537***	3.003***	2.204***
ROA	1.266***	1.994***		2.368***	2.485***		
ROE			3.672***			2.579***	2.326***
TOBIN'S Q	-1.459**	-1.681***		-1.862**	-2.351**	-2.168**	-1.816**
LEV 1	0.028***						0.018***
LEV 2		-3.170**	-2.887**	-4.675***	-3.421***	-2.238***	
BETA	0.799	0.027	0.602	0.032	0.226	0.412	0.028
DIV SCORE		0.555***	0.436***		0.283***	0.269***	0.303***
CSR Committee		1.433	0.472		0.699	1.580	2.447
COUNTRY	1.049***	2.151**	1.863***	0.452***	1.379***	1.302***	1.379***
SOC IND	1.030*	1.129*	1.133**	1.703*	0.307*	2.072*	1.241*
2015 YEAR		1.211	1.170		1.416	1.492	1.622
2016 YEAR		1.293	1.291		1.419	1.555	1.746
2017 YEAR		2.296	1.261		1.904	2.831	1.957
2018 YEAR		2.054	1.615		0.948	0.805	1.068
YEAR	0.519	0.886	0.432	0.340	0.958	0.414	0.046
N	414	410	410	414	410	410	410
Adjust R^2	0.474	0.551	0.489	0.493	0.547	0.536	0.463
F-stat	23.550	29.643	24.968	26.347	29.480	26.115	24.437
Highest VIF	2.336	2.494	2.498	2.394	2.722	2.761	2.729

Note: P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively, all two-tailed. MACP is market capitalization calculated by the natural logarithm of market capitalization; ROA is return on assets calculated by the ratio of net income (after taxes) to total assets; TOBIN'S Q is calculated by the firm's total market

capitalization and total debt, dividing the sum by the total assets. LEV 2 is debt ratio calculated by the total debt divided by total equity ; DIV SCORE is measured as a company's commitment to, and effectiveness in maintaining gender diverse workforce and board member cultural diversity; CSR Committee is a dummy variable, if a company has a CSR committee it is 1, 0 otherwise; 2015 YEAR is a dummy variable, if the year is 2015 that is 1, 0 otherwise; 2016, 2017 and 2018 are similar to 2015. N is the number of the sample.

Table 16: Regression of different control variables on ENV

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
INDE	0.087**	0.048**	0.061**	0.087**	0.062**	0.012**	0,042**
COMPEN	0.291**	5.164**	5.037**	6.238**	5.079**	4.481*	2.938*
BSIZE	3.684***	2.783***	2.854***	3.579***	2.987***	0.575***	2.173***
SKILLS	0.121	0.103	0.105	0.111	0.111	0.091	0.084
GEND	0.291***	0.057	0.030	0.236	0.062	0.048	0.037
TENURE	-0.905**	-0.695*	-0.763*	-1.061*	-0.804*	-1.082**	-0.947*
MULTIPLE	3.144***	2.068***	3.609***	4.354**	3.463*	0.088	0.073
SIZE	1.104	0.625	0.457				
MACP				9.787***	9.127***	9.281***	6.340***
AGE	7.309***	7.849***	7.109***	5.916***	6.549***	5.803***	5.804***
ROA	2.108	3.776		2.368	2.485		
ROE			1.686***			0.293**	0.176**
TOBIN'S Q	-1.911***	-2.081***		-2.266***	-2.351***	-2.168***	-1.816***
LEV 1	0.028***						0.018***
LEV 2		-4.170**	-2.887	-0.451	-0.421	-0.238	
BETA	0.306	1.027	0.602	0.032	0.926	0.232	0.048
DIV SCORE		0.447***	0.436***		0.283***	0.269***	0.303***
CSR Committee		1.350	1.503		2.299*	2.152*	1.093*
COUNTRY	1.149***	2.392**	1.863***	0.922**	2.689**	3.392**	4.909**
ENV IND	1.170**	3.562**	1.133**	1.503**	2.307**	2.072**	3.271**
2015 YEAR		1.752	1.617		1.703	1.864	1.048
2016 YEAR		1.661	1.558		1.570	1.857	1.972
2017 YEAR		1.952	1.644		1.458	1.465	1.756
2018 YEAR		0.009	0.027		1.546	1.682	1.268
YEAR	0.287			0.900			
N	414	410	410	414	410	410	410
Adjust R^2	0.501	0.532	0.518	0.486	0.524	0.433	0.440
F-stat	24.924	25.414	24.372	24.873	25.392	23.973	22.836
Highest VIF	2.433	2.494	2.498	2.394	2.722	2.761	2.729

Note: P-values preceded by *, ** and *** represent significance levels at the 10%, 5% and 1% levels, respectively, all two-tailed. MACP is market capitalization calculated by the natural logarithm of market capitalization; ROA is return on assets calculated by the ratio of net income (after taxes) to total assets; TOBIN'S Q is calculated by the firm's total market

capitalization and total debt, dividing the sum by the total assets. LEV 2 is debt ratio calculated by the total debt divided by total equity; DIV SCORE is measured as a company's commitment to, and effectiveness in maintaining gender diverse workforce and board member cultural diversity; CSR Committee is a dummy variable, if a company has a CSR committee it is 1, 0 otherwise; 2015 YEAR is a dummy variable, if the year is 2015 that is 1, 0 otherwise; 2016, 2017 and 2018 are similar to 2015. N is the number of the sample.

6. Conclusions

The existing literature suggests that good corporate governance could play a critical role in monitoring managers' behaviour and providing diverse resources for companies, thereby improving CSR performance. This study investigated the correlation between board characteristics (size, independence, gender diversity, skills, multiple directorships and board tenure) as well as senior executive compensation and CSR performance in a sample of 415 observations in various industrial sectors across five years from 2015 to 2019. The initial idea for this research arose from studying the research of De Villiers et al. (2011), Shahbaz et al. (2020) and Haque (2017), who unanimously agreed that certain board characteristics or a sustainable executive compensation policy may have a significant effect on improving companies' social and environmental engagement, based on agency theory and resource dependence theory.

This study provides evidence to support both theories with regard to board roles and sustainable executive compensation policy. Specifically, in relation to agency theory, it was found that a higher concentration of independent directors and establishing a CSR-contingent executive compensation policy encourage companies to undertake social and environmental activities. These findings are consistent with previous research which has demonstrated that independent directors play a vital role in monitoring management's behaviour. The CSR-contingent executive compensation policy is beneficial for reducing agency costs and ensuring that executives actively undertake CSR activities. In terms of resource provision, this study showed that companies that have a larger board size, more directors with specific skills, more female directors and multiple directorships on the board are more likely to promote social and environmental performance. These findings suggest that boards and companies with rich resources are more likely to motivate a strong social and environmental agenda, since directors with different professional experience and skills can provide professional and substantial advice regarding the social and environmental agenda. Moreover, board tenure can only influence environmental performance. Taken together,

these empirical findings indicate that board compositions and sustainable executive compensation policy have a strong and positive influence on social and environmental performance. In addition, the supplementary analyses have strengthened the main findings.

The empirical findings of my study thus contribute to the CSR performance literature in several ways. First, this study contributes to the current literature on CSR performance and board characteristics by providing more detailed evidence and explanations as to how board variables can influence social and environmental performance effectively. More specifically, in order to validate the reliability of results, I adopted various measurement methods of dependent, independent and control variables. Second, the prior literature has tended to apply a combination of agency and resource dependence theories to study the association between board characteristics and environmental performance and CSR performance, but it has focused less on social performance (De Villiers et al., 2011). Therefore, this study advances the previous literature by showing the importance of using these theories to study how board characteristics and sustainable executive compensation policy impact on social performance. Third, following a multiple-theoretical perspective, this study provides evidence that emphasis should be placed on promoting social and environmental performance by strengthening the monitoring role of boards and providing them with diverse resources. Forth, this study ensures the generalisation of the results because it conducted analyses on a sample from NZ and Australia. These companies were seldom regarded as a sample in prior research in this field.

Although this study is novel in some aspects and may make some noteworthy contributions to the literature, I am fully aware that there are also some limitations. Such limitations could also shed light on several future research opportunities. First, the variable of directors' nationality was difficult to collect from the Eikon database. Due to the minimal amount of data about directors' nationality, this study was unable to study the relationship between the cultural diversity of directors and social and

environmental performance. Future research could collect a more complete dataset from other databases to discover whether this variable has an influence on CSR performance. Second, this study selected sample companies from AXS 50 and NZX 50. Although these companies are representative to a certain extent, the limited sample influenced the generalisability of results. Therefore, future research could select the AXS 100 and NZX 100 listed companies and replicate this study to discover whether the board attributes benefit CSR performance.

In summary, the findings of this study will have important implications, especially for managers and regulators. My findings indicate that directors should not be appointed haphazardly; rather, a board design should be established in line with these results to promote CSR performance. To be more specific, from a shareholder point of view, in order to improve social and environmental performance, it is important to recruit more independent directors, female directors and directors with specific skills. Additionally, this study indicates that a CSR-contingent executive compensation policy is a highly strategic tool to ensure that executives are more likely to consider the CSR agenda. For regulators, my results reveal how to strengthen corporate governance principles for NZ and Australian companies with regard to CSR performance and activities.

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Appendix

Literature review-corporate governance and CSR and firm performance

Authors	Country	Sample	Independent variables	Findings
CSR performance				
De Villiers, Naiker, and van Staden (2011)	USA	2,151 observations from 1,216 companies	Board size Board independence Legal experts CEO duality	Yes (Y)/Positive(P) Y/P Y/P No(N)
Alazzani, Hassanein and AljanadI (2017)	Malaysia	303 companies	Gender diversity	Y/P
Chang, Oh, Park, and Jang (2017)	Korea	293 companies	Board independence CEO-outside director Board educational diversity Board tenure	Y/P Y/P N N
Velte, (2016)	Germany and Austria	1,019 firm-year observations	Gender diversity	Y/P
Boulouta, (2013)	US	126 companies drawn from the S&P500	Gender diversity	Y/P
Bear, Rahman, and Post (2010)	US	51 health care companies	Board diversity Gender diversity	Y/P Y/P
Kiliç, Kuzey and Uyar （2015）	Turkey	26 banks	Board size Board independence Gender diversity	Y/P N Y/P
Ismail, Adnan, Fahmi, Darus and Clark (2019)	Malaysia	200 Malaysian companies in FTSE Bursa Malaysia Emas Index	Board size Board diversity Board independence	Y/P Y/P Y/P

Giannarakis (2014)	USA	366 companies from Fortune 500	CEO duality	Y/P
			Gender diversity	N
			Board age	N
			Board meeting	N
			Board size	Y/P
Barako and Brown (2008)	Kenya	40 Kenyan banks	Foreign nationals	N
			Gender diversity	Y/P
			Board independence	Y/P
Siregar and Bachtiar (2010)	Indian	87 Indonesia Stock Exchange	Board size	Y/P
			Foreign ownership	Y/P
Deschênes, Rojas, Boubacar, Prud'homme and Ouedraogo 2015)	Canada	60 companies in the S&P/TSX60 index	Gender diversity	Y/P
			Board independence	Y/P
			Board size	N
			Board compensation	N
			Board tenure	N
			Board ownership	N
Naciti (2019)	46 different countries	Data from Sustainalytics and Compustat databases for 362 firms in 46 different countries	Board diversity	Y/P
			Board independence	N
			CEO duality	Y/P
Haque (2020)	UK	256 non-financial UK firms covering	Gender diversity	Y/P
			Board independence	Y/P
			Executive compensation	Y/P
Ikram, Li and Minor (2019)	US	S&P 500 companies	CSR-contingent compensation	Y/P

CSR disclosure

El-Bassiouny and El-Bassiouny (2019)	Egypt, German and the US	EGX 30 index, DAX 30 index and Dow Jones 30 index.	Board size	Y/P(German/US)/N(Egypt)
			CEO duality	Y/P(German/US)/N(Egypt)
			Board independence	Y/P in German/US/Egypt
Rao and Tilt (2016)	Australia	115 Australia companies	Board size	Y/P
			Board tenure	N
			Board independence	Y/P
			Multiple directorships	Y/P
			Gender diversity	Y/P
Haji (2013)	Malaysia	85 firms listed on Bursa Malaysia	Board size	Y/P
			Board meeting	N
			Board independence	N

Barako and Brown (2008)	Kenya	40 Kenyan banks	Gender diversity	Y/P
			Board independence	Y/P
Cucari, Esposito De Falco and Orlando (2018)	Italia	54 Italian companies from the Milan Stock Exchange	Board size	N
			Board independence	
			Gender diversity	Y/P
			CSR committee	
				Y/N (Negative)
				Y/P
Bae,Masud , Kaium and Kim (2018)	Banglades h, India and Pakistan	16 Bangladesh companies, 271 Indian companies and 39 Pakistani companies	Board size	Y/P
			Board independence	Y/P
Khan and Saeed (2019)	Pakistan	86 firms listed in Pakistan Stock Exchange	Board size	N
			Board independence	N
			Board tenure	Y/P
			Board age	Y/N
			Gender diversity	Y/P
			Board Education background	N
			Board specific skills	Y/N
			Board culture	Y/P
Kiliç, Kuzey and Uyar （2015）	Turkey	26 banks	Board size,	Y/P
			Board independence	N
			Gender diversity.	Y/P
Giannaraki s (2014)	The US	366 companies from Fortune 500 in the USA	CEO duality	Y/N
			Gender diversity	N
			Board age	N
			Board meeting	N
Katmon, Mohamad, Norwani and Al Farooque (2019)	Malaysia	200 listed firms in Bursa Malaysia	Board education level	Y/P
			Board education background	N
			Board age	Y/N
			Board tenure	Y/P
			Board nationality	Y/N
			Board ethnicity	N
Fuente, García- Sanchez and Lozano	Spain	98 non-financial Spanish companies quoted on the Madrid Stock Exchange for	Board independence	Y/P
			Board diversity	Y/P
			Board size	Y/P
			Board subcommittees	Y/P

Finical performance

Cheng (2008)	Global	1,252 firms representing 58 two-digit SIC code industries	Board size	Y/P
Kabir and Thai (2017)	Vietnam	524 Vietnamese listed firms	Board size Board independence	Y/P Y/P
Isidro and Sobral (2015)	Global	922 observations representing 16 countries	Board size Gender diversity	Y/P Y/P
Jamin, Kerstin and Karin (2013)	German	151 listed firms	Gender diversity	Y/P
Chapple and Humphre (2014)	Australia	557 firms listed on S&P/AXS 300	Gender diversity	N
Liao, Lin, and Zhang (2018)	China	2054 firm-years of Chinese listed companies	Board size Gender diversity Board duality Board meeting	Y/P Y/P Y/P N