HOW BOARD CHARACTERISTICS INFLUENCE CSR ASSURANCE AND REPORTING QUALITY

Master thesis

Firms focus more and more on their environmental and social impact. Through corporate social responsibility (CSR) reporting firms disclose their CSR performances. To reduce the information asymmetry between the firm and its stakeholders, firms obtain assurance over their CSR reportings. As many previous studies have shown, obtaining assurance improves CSR reporting quality. This study tries to get better insight in how and why assurance improves CSR reporting quality by obtaining board characteristics as moderating variable. Through the framework of Fernando and Lawrence (2014) this study examines how board characteristics and board interlocks might influence the relationship between assurance and CSR reporting quality. For the dependent variable, this study uses Refinitiv's (2020) Environmental, Social and Governance (ESG) score. The results of the random effects analyses show that only board interlocks have a significant influence on the relationship between external assurance and CSR reporting quality.

Keywords: CSR reporting quality, assurance, board characteristics, board interlocks, ESG score

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1. Introduction

Due to increasing criticism, firms have been forced to focus on more than a firm's financial performance only; to focus not only on financial performance but also on their environmental and societal impact (Jones, 1980). Ethical behaviour has become important for firms and could make the difference in their existence (Joseph, 2001). Implementing this corporate social responsibility (CSR) can be done in various ways, based on different theoretical perspectives (McWilliams, Siegel, & Wright, 2006). Through CSR reporting, firms aim to disclose their CSR performance (Clarkson, Li, Richardson, & Vasvari, 2008). CSR reports are reports based on sustainability principles that a certain firm considers to follow. CSR reporting has the aim to inform stakeholders of an organization's economic, environmental and social performance. The disclosed information varies from small paragraphs to complete, annual reports (Hodge, Subramaniam, & Stewart, 2009). To verify and enhance communication about CSR performance to stakeholders, firms obtain independent assurance on their CSR reports (Clarkson, Li, Richardson, & Tsang, 2019). CSR assurance are assurance practices where an independent third party, the assurance provider, express their opinion towards CSR reporting users on CSR information through the process of objectively obtaining and evaluating evidence (Louwers, Ramsay, Sinason, Strawser, & Thibodeau, 2018; Zhang, 2017).

Most of the prior studies regarding CSR focus on the firm's determinants to obtain assurance of their CSR performance and capital market benefits of assuring CSR disclosures by auditors. This study will focus on which board characteristics influence the relationship between external assurance and CSR reporting quality. Prior research such as Michelon, Pilonato and Ricceri (2015) and Romolini, Fissi and Gori (2014) show contradicting results in the relationship between external assurance and the quality of CSR reporting. Michelon et al. (2015) argue that the assurance of CSR disclosures does not lead to a higher quality of information as compared to firms that do not obtain external assurance. On the other hand, Romolini et al. (2014) show that CSR disclosures lead to a higher quality and quantity of disclosed information. One way to verify the quality of voluntary CSR disclosures is by obtaining assurance on CSR reports (Moroney, Windsor, & Ting Aw, 2012). Several studies have examined the influence of assurance on the quality of CSR reports. Maroun (2019) examines how the assurance of new reporting standards for Environemental, Social and Governance (ESG) influence the reporting quality in South-Africa. The results of this paper show that an assurance with a bigger scope leads to higher quality reporting, especially when the assurance is provided by a Big 4 accounting firm. Moroney et al. (2012) take a stakeholder-agency perspective and show that the quality of environmental disclosures is higher for companies that use assurance and the quality improves over time. However, the authors find no difference in quality when the assurance is provided by accountants or consultants. Ballou, Chen, Grenier and Heitgher (2018) focus on how CSR assurance improves the CSR reporting quality and the role of accountants in this process. They use CSR restatements to measure this relationship. The paper finds a competitive advantage for firms that use accounting firms for the assurance of their CSR reports. In addition, the assurance of CSR reports has several economic benefits according to Simnett (2015).

Thus, the literature provides plenty of evidence that voluntary assurance improves the quality of CSR reports. However, it cannot always be measured how and why assurance improves the quality of CSR reporting (Maroun, 2019). This study tries to get better insight in how and why assurance improves CSR reporting quality by obtaining an additional variable that might influence the relation between external assurance (the independent variable) and CSR reporting quality (the dependent variable). This is a so-called moderator variable (Baron & Kenny, 1986).

Taking a closer look at CSR reporting quality, several studies have examined CSR reporting quality and the determinants for disclosing CSR information. There is a positive relation between a firm's environmental performance and the level of discretionary disclosures, which means that firms that have better environmental performance, provide better disclosures (Clarkson et al., 2008). Amran, Ping Lee and Susela Devi (2014) examined how the governance structure influences reporting quality. The authors especially focused on the role of the board of directors. Their paper indicates that when the organizational vision and mission is integrated with CSR, the reporting quality improves. The reporting quality also improves when a firm has a CSR committee or collaborates with NGOs. Some board characteristics that show a positive relationship on CSR reporting quality are the board size, board independence, board diversity and the extend of activity of the board (Vitolla, Raimo, & Rubino, 2020). The role of the CEO might play an important role within organizations to behave socially responsible or not. Tang, Qian, Chen and Shen (2015) investigate the moderating effect of CEO hubris on CSR. It shows that more hubristic CEOs are more likely to behave socially irresponsible than non-hubristic CEOs would.

The current literature shows that obtaining assurance will positively influence CSR quality (Maroun, 2019; Moroney et al., 2012; Ballou et al., 2018). In addition, the literature indicates how certain board characteristics influence CSR and CSR quality (Amran et al., 2014; Tang et al., 2015; Vitolla et al., 2020). How board characteristics influence the relationship between assurance and CSR reporting quality remains unclear. Therefore, this study contributes to the current literature by focusing on how certain board diversity characteristics influence the relationship between assurance (focusing on the assurance provider, scope and opinion) and the CSR reporting quality. This will be done by using board characteristics as a moderator variable to determine how board characteristics influence the relationship between assurance and CSR quality.

This leads to the following research question: how do board characteristics influence the relationship between assurance and corporate social responsibility (CSR) reporting quality? This research question will be investigated by performing a panel data analysis, which provides insight in whether the relationship between CSR reporting and external assurance will be influenced by board characteristics over time (Woolridge, 2013). The data to perform this analysis will be obtained from the Global Reporting Initiative (GRI) database, which gives insight in the external assurance of CSR reports (Global Reporting Initiative, 2020). Additional information will be obtained from Eikon (Thomson Reuters, 2020).

The remainder of the master thesis is structured as follows. Chapter 2 describes the literature and hypotheses development. It provides insight in the theoretical background of the most important theories and creates a theoretical framework on which this thesis is based on. Chapter 3 describes the method and data that will be used in this thesis. In addition, it describes the relevant variables for this thesis. Chapter 4 contains the results that were gathered during the quantitative research. This thesis ends with a discussion and conclusion in chapter 5. All supporting data and information will be included in the appendices.

2. Literature review and hypotheses development

2.1 Theoretical framework

When analysing the literature on CSR assurance, there are three theories that are commonly used to describe the demand for external assurance on CSR reporting: stakeholder theory, legitimacy theory and signalling theory (Zhang, 2017). As described by Hill and Jones (1992) stakeholder theory focuses on the relationship between managers and stockholders and the information asymmetry that exists in this relationship. Stakeholder theory and CSR are both seen as important concepts in business ethics. Some argue that CSR does not reduce the information asymmetry, Freeman and Dmytriyev (2017) try to take away this criticism by incorporating the stakeholder theory in CSR. Stakeholder theory offers the possibility to stimulate the dialogue between firms and stakeholders and therefore reduces the information asymmetry (Zhang, 2017).

Legitimacy theory expands on the stakeholder theory, but focuses more on the social acceptance of the firm (Zhang, 2017). This might thereby solve the issues of stakeholder theory that have been identified by Russo and Perrini (2010). Barkemeyer (2007) uses the legitimacy theory to describe some downturns of CSR. His main argument is that firms mainly focus on their primary stakeholders in their home country and therefore pay less attention to their social and environmental impact in developing countries.

The final theory that has been mentioned is the signalling theory. Signalling theory focuses on the argument that one party, the firm in this case, voluntarily makes the decision to disclose CSR information to reduce the information asymmetry between the firm and another party. Based on this theory, managers have motives to disclose positive and negative news to reduce the information asymmetry (Spence, 2002; Zhang, 2017). Bae, Masud and Kim (2018) applied signalling theory to get insight in the relationship between the role of the board and CSR disclosures. The authors show that the board faces mostly incentives to send positive signals to the market to reduce the information symmetry. This shows that firms are more subjective in which signals they send out to stakeholders to reduce the information asymmetry.

As mentioned by Zhang (2017), legitimacy theory expands the stakeholder theory. Fernando and Lawrence (2014) agree upon this statement, by arguing that authors should not use a single theory in their research, but combine them in a theoretical framework. They combine stakeholder theory and legitimacy with the institutional theory, as all three have the same background, to propose a new theoretical framework for research that focuses on CSR practices. CSR practices should legitimise the firm's existence. In addition, CSR practices should contribute to the firm's accountability towards its stakeholders. Third, the practices should be in line with norms and beliefs within the organization and its industry (Fernando & Lawrence, 2014). Therefore, this framework that combines legitimacy theory and stakeholder theory will be applied on this study.

2.2 External assurance of CSR reporting

Stakeholders argue that it is difficult to verify the credibility of CSR performance (Lajmi & Paché, 2020). An important instrument to verify the completeness and credibility of CSR reports can be found in external assurance. Assurance providers have to make sure that the information that has been disclosed provides a complete and accurate picture and stakeholders could rely on this assurance (Adams & Evans, 2004). According to Bagnoli and Watts (2017), a firm's decision to voluntarily disclose CSR reports and assure these reports are a result of the information asymmetry. Through signalling theory, the authors study whether a firm that takes external assurance on its CSR disclosures also decides on the level of assurance quality. Their study shows that firms behave more socially responsibly when they obtain external assurance and a higher quality of assurance leads to increased monitoring activities. Therefore, firms have incentives to obtain external assurance on their CSR disclosures (Bagnoli & Watts, 2017). Firms with a high level of CSR commitment obtain assurance for their CSR reports (Ballou et al., 2018; Clarkson et al., 2019; Maroun, 2019). Moroney et al. (2012) use the stakeholder theory perspective and also show supporting results that assurance improves the quality of CSR reports. However, the authors do not find a difference in quality when the assurance has been executed by auditors or by consultants. This will be taken into consideration in this thesis. This is contradicting with the study of Michelon et al. (2015), which through a legitimacy perspective indicates no relationship between assuring CSR reports and increasing the quality of CSR reports. These papers show that there are some contradicting results in the current literature on how external assurance influences CSR and CSR reporting. The results of Michelon et al. (2015) can be refuted for several reasons. First, the authors use a very small sample for their research, which makes it difficult to generalize their results. In addition, the authors only focus on whether a firm obtained assurance or not and do not focus on specific assurance characteristics. In conclusion, they show no relationship, but it is hard to build on their findings, because the results are based on a limited sample and the authors do not pay a lot of attention on the effects of certain assurance aspects on CSR reporting. This thesis builds further on the studies that show that external assurance indeed improves the quality of CSR reporting.

When focusing on the aspects of the assurance procedure itself in relation to CSR reporting, Clarkson et al. (2019) show that firms with higher CSR commitment are more likely to obtain a bigger assurance scope. Maroun (2019) verifies this, by showing that a larger scope leads to higher CSR reporting quality. In addition, assurances executed by Big 4 audit firms also improve the reporting quality. However, not all assurance services contribute to the quality, especially the assurance of disclosures about reporting systems, the environmental impact and human capital (Maroun, 2019). Rossi and Tarquinio (2017) show that the level of assurance will be influenced by certain characteristics of the company and assurance provider. Auditing firms perform more assurance assignments as compared to consulting firms, especially the four largest audit firms (Big4). These Big4 firms perform their assurance services in line with international assurance standards. However, the authors identified some shortcomings in the procedures of assurance providers, especially in the planning process. The corporate

governance structure of the assured firm plays an important role in the assurance processes, especially when the client firm has an CSR committee, which is in line with the legitimacy theory (Rossi & Tarquinio, 2017). Channuntapipat, Samsonova-Taddei and Turley (2019) use actor-network theory to shed some light on the different assurance services that have been provided. The authors show that assurance providers distinguish between different assurance practices. The authors make distinctions between social and environmental sustainability versus organizational sustainability and a holistic approach versus a procedural compliance approach, leading to four types of assurance approaches. These papers show that the influence of external assurance procedures cannot be covered in one single variable. Based on these papers, this thesis will take the different aspects of assurance services into account when examining the relationship between external assurance and CSR reporting quality.

Seguí-Mas, Bollas-Araya and Polo-Carrido (2015) use the stakeholder theory to investigate the characteristics of cooperatives that obtain assurance on their CSR reports. By making a distinction between stakeholder and shareholder-oriented countries, the authors show that shareholder-oriented countries provide assurance of a better quality as compared to stakeholder-oriented countries. The authors show in this study that country-level factors play an important role in the quality of CSR assurance (Seguí-Mas et al., 2015). This shows the importance of integrating contextual variables in this research. These may influence the relationship between external assurance and CSR reporting quality and will be considered in developing an empirical model. These effects will be included in the control variables. Refer to chapter 3 for a more detailed explanation.

Several studies examined the possible benefits of obtaining assurance on the CSR reports. One of these benefits is that when firms obtain external assurance on their CSR reports, their financial performance is higher as compared to firms that do not obtain assurance on their CSR reports (Kim, Cho, & Park, 2019). On the other hand, Lajmi and Paché (2020) show that the assurance on CSR reports has a negative effect on a firm's market value. They explain this result through the legitimacy theory, because assurance on CSR reports happen due to the power of stakeholders, this makes the provided assurance less valuable for the stakeholders. The results of these studies can be explained through the model of Fernando and Lawrence (2014). Obtaining external assurance reduces the information asymmetry between the firm and its stakeholders, focusing on the firm's accountability towards its stakeholders. This leads to the improvement in financial performance on one hand. On the other hand, it may lead to a lower market value when the costs of external assurance outweigh the benefits of obtaining external assurance (Kim et al., 2019; Lajmi & Paché, 2020). Based on this literature review, it can be concluded that when external assurance has been obtained on CSR reporting, the quality increases. This leads to the first hypothesis.

H1: External assurance is positively related to CSR reporting quality.

2.3 Role of the board

As mentioned by Rossi and Tarquinio (2017), the corporate governance structure plays an important role in obtaining assurance. Several studies have examined the role of the board of directors and what the impact of the board composition is on a firm's CSR commitment. For example, Chan, Watson and Woodliff (2014) show that firms that reveal more information in their CSR reports have a better score for their corporate governance performances. Other studies include, Feng, Groh and Wang (2020) focus on the board diversity, Amran et al. (2014) and Vitolla et al. (2020) who closely look at board characteristics and composition. Feng et al. test (2020) the relationship between CSR, gender diversity, tenure diversity, age diversity and executive compensation diversity. Amran et al. (2014) focus on how board size, board independence, gender diversity and CSR committee influence the firms CSR reporting quality. Vitolla et al. (2020) test the effect of the same characteristics as Amran et al. (2014). In contradiction towards Amran et al., Vitolla et al. (2020) test these characteristics as determinants on integrated reporting quality and hereby use the agency theory perspective. The papers show contradicting results in whether gender diverse boards have a positive influence on CSR (Amran et al., 2014; Feng et al., 2020; Vitolla, et al., 2020). According to Amran et al. (2014), board size and board independence do not influence the reporting quality, but a CSR committee influences the reporting quality positively. On the other hand, Vitolla et al. (2020) show a positive relation between board size, independence, gender diversity and board activity on integrated reporting quality. The tenure diversity and bonus and salary diversity show a positive relationship with CSR, while this does not apply to the age of board members (Feng et al., 2020). The positive relationship between gender-diversity and CSR reporting is also supported by Nekhili, Nagati, Chtioui and Nekhili (2017). Harjoto, Laksmana and Lee (2015) take another view, by looking at the diversity characteristics of the board members and thereby combining the stakeholder and shareholder theory. Their results are in line with the stakeholder theory and show that a more diverse board increases a firms CSR activity. When board members, especially CEOs, are overconfident, they might behave irresponsibly with respect to CSR performance (Tang, Qian, Chen, & Shen, 2015). These papers show that the different diversity aspects of a board influence the process of obtaining external assurance. The influence of this board diversity is also applicable to how board diversity influences CSR reporting. The influence of gender diverse boards demonstrates somewhat contradicting results, which will be analysed carefully in this thesis. These papers show that a more diverse board leads to an improvement in the CSR reporting quality. These findings can be explained through the model of Fernando and Lawrence (2014), indicating that the board plays an important role in improving the CSR reporting quality and thereby reducing the information asymmetry. This study expects that board characteristics have a moderating role on the relationship between assurance and CSR reporting quality. The moderating role of board characteristics will be examined by showing whether a diverse board strengthens or weakens the relationship between external assurance and CSR reporting quality.

The board plays an important role in disclosing CSR information and CSR committees play a mediating role between independent directors and CSR performance. From a stakeholder perspective, independent directors and CSR committees play an important role in CSR reporting (García-Sánchez, Gómez-Miranda, David, & Rodríguez-Ariza, 2019). In addition, Gennari and Salvioni (2019) investigated the role of demographic variables on the structure of CSR committees, showing that CSR committees gain attention within Europe, but that there is still room for improvement. They suggest that it is important to combine the country specific variables with corporate governance systems to determine the effectiveness of external pressure to push firms in a more sustainable direction.

Based on the literature that has been examined, this research hypothesizes that diverse boards strengthen the relationship between external assurance and CSR reporting for several reasons. García-Sánchez et al. (2019) focused on the mediating role of CSR committees, which explains the relationship between directors and CSR performance. This gives insight in what the relationship looks like, but not the relationship might strengthen or weaken by obtaining another, moderating variable. As mentioned earlier, this research expects that obtaining external assurance influences CSR reporting quality positively. This does not immediately define the moderating role of board diversity. However, the literature reveals that board diversity influences the CSR reporting quality positively as compared to boards that are not seen as diverse. An example of this is gender diversity. Vitolla et al. (2020) and Nekhili et al. (2017) show that gender diversity improves the CSR reporting quality. Orazalin and Baydauletov (2020) examined the moderating role of gender diversity on the relationship between CSR strategy and CSR performance. Their study shows that gender diversity positively influences CSR performance, but weakens the relationship between strategy and performance. When a board is more diverse, it will more likely focus on improving CSR reporting quality. One of the ways to do this is by obtaining external assurance. Therefore, this study assumes that a more diverse board strengthens the relationship between external assurance and CSR reporting quality. Combining these findings lead to the second hypothesis.

H2: A more diverse board strengthens the relationship between external assurance and CSR reporting quality.

Several authors examined the role of the organizations board by examining the governance structure and its influence on CSR reporting. Especially the role of so-called board interlocks has been examined in the literature. A board interlock occurs when someone is board member in at least two organizations. Organizations that share a board member are more likely to copy each other's CSR practices (Darus, Hamzah, & Yusoff, 2013; Sun, Li, Geng, Yang, & Zhang, 2019). Sun et al. (2019) show that firms are more likely to apply CSR reporting when these board interlocks occur. The experience of these interlocked board directors contributes to the strategy and an efficient implementation of CSR. Firms benefit from the network of board members and past experiences. Interlocked directors know how to

add more value to the firm and how to deal with pressure from stakeholders (Al-Dah, 2019; Sun et al., & Zhang, 2019). Additional research shows that interlocks within the same industry, other industries and firms that show high performances have a higher number of board interlocks (Lu, Yu, Mahmoudian, Nazari, & Herremans, 2021).

When board members participate in two or more firms, they might limit the effect of heterogeneous CSR that appears when board members have different ideologies or a different management style. Board members that participate in different boards know better how to create more homogeneous CSR. This leads to the third hypothesis.

H3: Board interlocks strengthen the relationship between external assurance and CSR reporting quality

3. Methodology and data

3.1 Data sample

To gain a better insight in whether the reporting quality changes over time, a period of several years will be observed. This means that this study applies a panel data analysis (Woolridge, 2013). The data will be obtained from several databases, depending on the variable that will be examined. CSR reporting quality will be measured by using the information that is available in the Eikon database. Eikon provides information about 8,000 listed companies, with respect to their CSR performance and governance that is based on self-reported information provided by the firms (Thomson Reuters, 2020).

To be able to measure the moderating role of board characteristics, data will be gathered from BoardEx and Eikon. Both databases give insight in the characteristics of board diversity. However, to be able to identify board interlocks, BoardEx will be used. A limitation of BoardEx is that it only focuses on the information of board members within Europe, which limits the data sample for this study.

Data about (external) assurance will be obtained from the GRI's reporting list as of March 2019. GRI has a database that contains more than 63,000 reports from more than 15,000 organizations. The database provides information about the CSR reports on whether the report has been (externally) assured and whether it is published in line with certain CSR reporting guidelines. This information has been translated into the GRI's reporting list, which will be helpful in identifying the assurance measurers (Global Reporting Initiative, 2020). In addition, Eikon will be used for information with respect to CSR reporting (Thomson Reuters, 2020). The GRI database shows reports from different firms over different periods. Therefore, it is important to select a sample that covers the reports of firms over the same period of time. As mentioned by GRI, data collection for the years 2018 and 2019 is not complete. The sample becomes smaller when focusing on a more recent period of time (Global Reporting Initiative, 2020). As it is important to measure the changes over the years, firms will be excluded from the final sample when there are no results over the entire research period. Therefore, these years will be excluded for the sample due to a lack of information.

The data with respect to the variables will be obtained from the various databases over the period 2013 – 2017. There are several reasons to use this period of time. As mentioned before, the data collection in the GRIs reports list is not complete over the period after 2018. In addition, investigating a period of several years will help in analysing how the moderating effect influences the relationship between assurance and CSR reporting quality over a longer period of time. This ultimately leads to a final sample of 3,385 firms.

3.2 Variables

This study focuses on how board characteristics influence the relationship between assurance and CSR reporting quality. This study examines how the moderating variable (board characteristics) influences the relationship between the independent (assurance) and dependent variable (CSR reporting quality).

Table 1, at the end of this paragraph, presents an overview of all the variables that will be used, including a clear description and the source of data.

3.2.1 CSR reporting quality – dependent variable

The dependent variable in this study is CSR reporting quality (*CSR_RQ)*. Many papers have examined the quality of CSR reports from different perspectives. Michelon et al. (2015) show that using a stand-alone CSR report to disclose CSR information does not necessarily lead to a higher quality of CSR disclosures as compared to CSR disclosures in a firm's annual report. Mandatory CSR reporting seems to influence the quality of financial reporting positively. It reduces the information asymmetry between management. Shareholders and earnings management (Wang, Cao, & Ye, 2018). Firms have the ability to disclose their CSR performances according to several reporting standards (Tschopp & Huefner, 2015; Michelon et al., 2015). The most commonly used standards are the GRI, AccountAbility's AA10000 series and the United Nations Global Compact's Communication on Progress (COP). As this study only focusses on GRI standards, this will be explained briefly. GRI takes a multi-stakeholder perspective in their standards and gives their users the opportunity to apply these standards on different levels. Assurance providers can play a role in verifying the level of application (Tschopp & Huefner, 2015). Although there are multiple reporting standards, this does not necessarily mean that the adoption of a standard like GRI improves the quality or transparency of firms (Michelon et al., 2015).

Measuring the quality of CSR reports can be done in several ways. One of the most frequently used measurers is the one of Clarkson et al. (2008). This model measures the quality of disclosures based on seven categories, leading to a total of 45 subcategories. This model covers a large scale of measures, however this model is not suitable to apply to a large dataset, because it is quite time-consuming. Several authors applied some self-created measurers to be able to measure CSR reporting quality. This is an indication that it is difficult to measure CSR reporting quality as one, single score. Maroun (2019) uses a survey from EY to measure reporting quality and states that most quality measures have been created to deal with CSR, but not specifically on reporting quality. This means that most authors that examine research quality use a so-called proxy variable. Michelon et al. (2015) measure the quality of CSR reporting by examining the reports, assurance and reporting guidance. The combination of these three aspects are used as a proxy to measure CSR reporting quality.

So, based on these papers, the easiest way to measure CSR reporting quality is by using a proxy for the dependent variable. This thesis uses the ESG score that has been calculated by Refinitiv and is available in the Eikon database. With this score, Refinitiv (2020) focuses on "transparency stimulation" (p. 3). Refinitive (2020) provide ESG scores ranging from A to D: ""A" score indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly" (p. 7). ""D" score indicates poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly" (Refinitiv, 2020, p. 7). Through this ESG score and its underlying measures, Refinitiv tries to provide insight in which firms are more transparent than others and how these firms

implement their ESG. This score is often used as an ESG performance score. It measures three different pillars (environment, social and governance), based on the disclosed information in CSR reports from companies. Each pillar can be divided into several categories, each having their own weight in the ESG score. The ESG score contains data from annual reports, CSR reports, websites and the news to create an up-to-date and standardized score. One of the components of this score is the CSR strategy score, which focusses on the company's CSR practices and its ability to communicate and integrate its ESG performance into the decision-making processes (Refinitiv, 2020).

When focusing on financial accounting, one of the goals of financial reporting is supporting the decision-making process of financial statement users. To determine whether financial statements are useful for decision-making, the reporting quality plays a central role. Reporting quality has to meet two criteria. Information has to be relevant and it should provide a faithful representation. Faithful representation means that the numbers represent the reality and should therefore be complete, free from errors and neutral (Kieso, Weygandt, & Warfield, 2018). As reporting quality focusses on the faithful representation of the information, the transparency of the information can be seen as a contribution to the reporting quality. The transparency of the ESG score helps the users of CSR reporting's in their decision-making processes. Therefore, this score will be used to be able measure CSR_RQ. In addition, it covers several items Clarkson et al. (2008) pointed out as important, making the ESG score a good alternative to use as a proxy.

3.2.2 Assurance – independent variable

As shown in the literature review, authors use different variables to measure the influence of assurance on CSR reporting quality in their research. This study combines the assurance-related variables that have been used in the papers of Ballou et al. (2018), Clarkson et al. (2019), Maroun (2019), Michelon et al. (2015) and Moroney et al. (2012) to be able to test the hypotheses. To measure these variables, data will be obtained from Eikon and the GRI reports list as of March 2019 which shows the output of the GRI database. The first variable is the assurance (*ASSURANCE*) of CSR reports itself. This will be measured by examining the data on whether firms obtain (external) assurance on their CSR information. For the analyses in this study, a dummy variable will be used, with a 1 for obtaining assurance and a 0 if not. To get a better picture of the assured CSR reports, this study uses four additional variables: assurance scope (*AS_scope*), assurance provider (*AS_provd*), whether assurance has been provided in accordance with certain assurance standards (*AS_as*) and the level of assurance the assurance provider obtained to provide an opinion (*AS_level*). AS_scope focuses on the scope of the assurance. Based on other research, it is assumed that a bigger assurance scope leads to higher CSR reporting quality (Clarkson et al., 2019; Moroney et al., 2012). Based on the data that has been collected for the sample, the scope can range from some sections up to the entire CSR report (Global Reporting Initiative, 2020). These outcomes will be translated into dummy variables to be able to run the regression analyses, with a 1 score standing for that the entire CSR report has been assured and 0 if not. With the variable

AS_provd, this study investigates the influence of certain assurance providers on CSR reporting quality. Literature shows that the assurance provided by auditors improves the quality of CSR reporting, especially Big4 audit firms play an important role in improving CSR reporting quality (Ballouet al., 2018; Clarkson et al, 2019; Maroun, 2019). Therefore, AS_provd will be measured by using a dummy variable where 1 stands for the assurance having been provided by a Big4 audit firm and 0 if not. With AS_rs, this study measures whether the CSR reporting quality increases when the assurance is provided according to certain reporting standards, as was identified by Michelon et al. (2015). The variable AS_as will also be measured by using a dummy variable. For this variable, a 1 means that the assurance has been provided according to certain assurance standards and a 0 means that the assurance has not been provided in line with assurance standards. The fourth variable, AS_level, measures the opinion of the assurance provider. In the used dataset, GRI uses the level of assurance to provide insight in the opinion of the assurance provider (Global Reporting Initiative, 2020). When the assurance provider gained enough evidence from the performed assurance procedures, the assurance provider will provide its assurance on the CSR report (Louwers et al., 2018). The GRI dataset identifies two scales for the level of assurance: it can be limited or reasonable (Global Reporting Initiative, 2020), which will be translated into a dummy variable. When the level of assurance is reasonable, it will get a score of 1 and 0 if not.

3.2.3 Role of the board – moderating variable

This study measures the moderating role of the board (*board characteristics*) in two ways. The moderating role of the board will be measured through board diversity, as mentioned in H2. In addition, the moderating role of the board will be measured through board interlocks, as mentioned in H3. This study uses the same measurers as have been used in the papers of Amran et al. (2014) and Vitolla et al. (2020). Board characteristics (*b_characteristics*) contains the board size, ratio between male and female board members, one-tier or two-tier structure, board independence, ratio of cultural diversity and whether a sustainability committee participates in the board. This study uses dummies for the board structure, board independence and the role of a sustainability committee. When the board is a two-tier structure, board independence can be identified and a CSR officer is part of the board, the score will be a 1. If this is not applicable, the score will be 0. The data for measuring these variables will be obtained from Eikon. To determine whether a board is diverse or not, these measurers will be combined into one single score. These scores for board diversity will be added up. As board size is an absolute number, this will be corrected in the calculation by transforming board size into a dummy variable. Larger boards will get a 1 and smaller boards a 0. The threshold for the board size will be the mean of all boards that are included in the data sample. The mean takes all individual observations into account and give them the same weight to come up to a final score. It controls more for outliers than the median would not do as there are fewer firms with very large boards compared to the higher amount of smaller (Blessing, 1996). The higher the score of this new measure, the more diverse the board will be. To be able to see

how board diversity influences the relationship between CSR reporting quality and external assurance, this study uses the combined score and the individual scores to examine the moderating effect.

H3 uses board interlocks (*B_interlocks*) as moderating variable to examine the influence of board interlocks on the relationship between external assurance and CSR reporting quality. Board interlocks will be measured by identifying the board members of the observed firms. In addition, this study compares the board members to see whether a certain board member participates in two or more boards of the sample. A dummy variable will be used to highlight the interlock with a 1 if an interlock occurs and a 0 if not. This will be done by using the available data from Eikon and BoardEx.

3.3.4 Control variables

The control variables focus on the background of a certain firm and are in line with prior research of Amran et al. (2014), Ballou et al. (2018), Maroun (2019), Moroney et al. (2012) and Vitolla et al. (2020). Country (C_*country*) is a control variable that concentrates on the country where a firm operates, which might influence the CSR performance. For example, South Africa has strict rules with respect to CSR (Maroun, 2019). The emissions score (*C_emission*) from Eikon measures a firm's performance and commitment towards reducing its environmental emission. This study uses two social-related control variables from the Eikon database: a workforce score and a human rights score. The workforce score (*C_workforce*) measures the company's commitment towards its workforce with respect to job satisfaction, the workplace, development opportunities and diversity. The human rights score (*C_HRS*) measures the effectiveness of a firm with respect to human rights (Thomson Reuters, 2020). A potential problem that might occur with these control variables is multicollinearity. This has been tested by running a correlation test. The results are presented in table 2 in the following chapter. The results show that multicollinearity might exist between CSR_RQ and the control variables C_emission, C_workforce and C_HRS. An additional Variance inflation factor test showed that the dataset for this study does not contain multicollinearity. As CSR focusses on social, environmental and economic firm aspects, the firm's return on asset (C_ROA) will be added as control variable. This variable controls for the firm's economic performance. Firm industry (C_*industry*) and firm size (*C_size*) might have a positive influence on the quality of CSR disclosures. Firm size will be measured by making a distinction between small, medium and large size entities. For example, Chan et al. (2014) show that firm disclosures as size, industry and creditor power have a positive effect on the reporting quality. Leaving these variables out of this study might influence the accuracy of the results. The control variables country, C_industry and C_size will be obtained from the GRI reports list.

Table 1: variable description

Variable name	Variable description	Variable source
CSR_RQ	CSR reporting quality is the dependent variable of this study. CSR_RQ focusses on whether CSR reports provide a true and fair view of the organization's CSR activities. This variable will be measured by using the ESG score as calculated by Refinitiv, which is included in the Eikon database.	Eikon
Assurance	Assurance focusses on whether a firm obtains (external) assurance on its CSR disclosures or not. This is measured by obtaining a dummy variable, where a 1 stands for obtaining assurance and a 0 for not obtaining assurance.	GRI reports list
AS_scope	Assurance scope measures the scope of the assurance. This is measured by obtaining a dummy variable, where a 1 stands for that the assurance covers the entire report and a 0 if not.	GRI reports list
AS_provd	Assurance provider focusses on which provider provided assurance. This study relies on the assumption that assurance provided by auditors improves CSR reporting quality. Based on this assumption, AS_provd will be measured through a dummy variable, where the 1 stands for a Big4 assurance provider and 0 for all other assurance providers.	GRI reports list
AS_as	The assurance is provided according to certain assurance standards. This is measured through a dummy variable, a 1 means that the assurance is provided according to certain reporting standards and a 0 means that it is not.	GRI reports list
AS_level	The opinion of the assurance provider focusses on the level of assurance the assurance provider could get based on the gathered evidence. This can be reasonable or limited, measured through a dummy variable with a 1 for reasonable and a 0 if not.	GRI reports list
B_sustainability committee	Sustainability committee measures whether there is a sustainability committee or not, by obtaining a dummy variable. 1 stands for the presence of a sustainability committee and 0 stands for the absence of a sustainability committee.	Eikon
B_Cultural diversity	Cultural diversity measures the percentage of cultural diversity in a board as a ratio, ranging from 0 to 1.	Eikon
B_Gender diversity	Gender diversity measures the ratio between male and female board members, ranging from 0 to 1.	Eikon
B_BoardSize	Board size will be measured by comparing the board size with the average mean of all observations. A dummy variable will be used to indicate whether the board size is larger or smaller than the average board. A 1 means that the board is larger than the average board and a 0 means that the board is smaller than the average board.	Eikon
B_Independent Members	Independent members measure the board independence through a dummy variable with a 1 for board independence and a 0 if there is no board independence.	Eikon
B Structure	Structure gives insight in which board structure a firm has. This can be a one-tier or two-tier structure. This will be measured through a dummy variable, a 1 means that the firm has a two-tier structure and a 0 means that the firm has a one-tier structure.	Eikon
B_characteristics	Board characteristics combines six indicators into one measure, based on the Eikon database. This variable measures the board size, gender diversity, cultural diversity, board structure, board independence and the role of a CSR officer. Dummies are used for measuring board size, board structure, board independence and the role of the CSR officer. Gender and cultural diversity are measured as percentages. These scores will be measured individually and add up together, leading to one single score. This score indicates that the higher it is, the more diverse the board will be.	Eikon

B_interlocks	Board interlocks occur when a board member participates in the board in two or more firms. This study uses a dummy variable to identify these interlocks, a 1 means that there is a board interlock and a 0 means that a board interlock does not occur.	BoardEx and Eikon
C_country	This control variable identifies the country a certain firm is located.	Eikon GRI reports list
C_industry	This is the control variable that identifies the firm's industry.	GRI reports list
C_size	This is the control variable that measures the size of the firm.	GRI reports list
C_ROA	This control variable measures the return on assets of a firm.	Eikon
C_emission	This control variable gives insight in a company's commitment towards reducing its emission.	Eikon
C_workforce	This control variable measures a firm's work-related effectiveness and development opportunities.	Eikon
C_HRS	This control variable measures how a company deals with human rights.	Eikon

3.3 Empirical model

Based on the hypotheses in chapter 2 and the variable description, this study will the following model. This model examines the moderating role of board characteristics and board interlocks on the relationship between assurance and CSR reporting quality:

$$CSR\ RQ = \beta_0 + \beta_1 ASSURANCE + \beta_2 AS_{scope} + \beta_3 AS_{provd} + \beta_4 AS_{as} + \beta_5 AS_{level} + \beta_6 board\ diversity + \beta_7 \Sigma assurance * board\ diversity + \beta_8 control\ variables + u_{i,t} + \varepsilon_{i,t}$$

As H1 only tests the relationship between assurance and CSR reporting quality, not the whole model will be applied. Where board characteristics has been mentioned, it can be replaced by board interlocks.

4. Results

4.1 Descriptive statistics

Before running regression analyses, it is important to take a closer look at the data that has been obtained for this study. The descriptive statistics for the variables of this study are presented in the table below, table 2. This table describes the number of observations in the dataset for each variable. In addition, this table provides the mean, standard deviation and the minimum and maximum score for the collected data. As shown in table 2, for most of the variables are observations missing. This will be solved in the regression analyses by obtaining the average score for the missing values. To test for the robustness of this method, two separate regression analyses will be obtained. The first regression analysis contains the actual observations and the second regression analysis contains the replacements. The relatively high standard deviations occur because the observations are not close to the mean of the variables.

Table 2: descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
CSR RQ	3152	59.035	17.962	1.36	95.01
AS ExternalAssurance	2818	.377	.485	0	1
AS Scope	1063	.397	.49	0	1
AS B4AssuranceProvider	1064	.814	.389	0	1
AS Standard	2817	.305	.46	0	1
AS Level	1064	.086	.28	0	1
B sustainabilitycommitte	3152	.774	.418	0	1
B CulturalDiversity	2004	.375	.299	.033	1
B Genderdiversity	3148	.243	.126	0	1
B BoardSize	3148	.516	.5	0	1
B IndependentMembers	3147	.655	.476	0	1
B Structure	3143	.436	.496	0	1
B Interlocks	3385	.736	.441	0	1
C Sectorcode	3385	16.759	8.693	1	36
C Size	3385	2.6	.511	1	3
C ROA	3305	5.964	12.759	-70.08	269.11
C emission	3151	65.666	26.488	0	99.83
C workforce	3151	76.691	19.865	.31	99.91
C HRS	3151	51.167	34.715	0	99.41

To verify whether the model can be used for testing the relationship between the variables, some assumptions must be met. These assumptions focus on aspects as homoscedasticity and no multicollinearity. The outcomes of the Breusch Pagan test, as presented in appendix A1, show that the prob > chi2 is below the threshold of 0.05. This indicates that the data that will be used for the regression analyses is heteroscedastic and therefore the variance of the error term changes. This problem will be

solved by correcting the heteroscedasticity in the regression analyses (Breusch & Pagan, 1979; Cook & Weisberg, 1983).

To test for multicollinearity, this study examines the correlations and the Variance inflation factor (VIF) for the variables. The results are presented in table 3 on the following page and appendix table A1. Multicollinearity might exist between two variables when the correlations are higher than 0.5 or lower than -0.5. When these variables are higher than 0.8 or lower than -0.8, the variables should be excluded from the sample (Studenmund, 2014). Table 3 shows the correlations between the variables. A positive correlation means that when one variable increases, the other variable will increase too. A negative correlation means that when on variable decreases, the other variable will increase. As shown in table 3, multicollinearity might exist between CSR_RQ and the control variables C_emission, C_workforce and C_HRS. As mentioned in chapter 3.2, these control variables are parts of the ESG score. This means that there is a higher risk for multicollinearity. Table 3 shows that the scores remain lower than 0.8 and higher than -0.8, which means that these control variables do not need to be excluded from this study. An additional correlation test has been performed to focus only on the dependent, independent and moderating variable. These results are presented in A2. The correlation matrix in table A1 does not show any significant differences as compared with table 3. All scores remain lower than 0.5, so there is no indication for multicollinearity in these variables. Table A3 describes the results for the VIF test. When the VIF is greater than 5 or the 1/VIF smaller than 0.2, the variables contain multicollinearity (Hair, Ringle, & Sarstedt, 2011). As shown in table A3, this is not the case, therefore the data that has been used does not contain multicollinearity. This means that no additional tests should be done to correct for multicollinearity.

Table 3: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1) CSR RQ	1.000																		
(2) AS ExternalAssurance	.	.																	
(3) AS Scope	0.080	.	1.000																
(4) AS B4AssuranceProvider	-0.012	.	0.060	1.000															
(5) AS Standard	0.033	.	0.056	0.242	1.000														
(6) AS Level	-0.056	.	-0.018	-0.095	-0.033	1.000													
(7) B sustainabilitycommitte	0.336	.	-0.035	0.041	-0.005	0.027	1.000												
(8) B CulturalDiversity	0.235	.	-0.089	-0.104	-0.060	-0.047	0.060	1.000											
(9) B Genderdiversity	0.192	.	0.014	-0.003	0.023	0.083	0.079	0.089	1.000										
(10) B BoardSize	0.105	.	-0.044	0.017	0.044	0.046	0.083	-0.097	-0.017	1.000									
(11) B IndependentMembers	0.172	.	0.123	-0.035	-0.030	-0.047	-0.036	0.165	0.226	-0.220	1.000								
(12) B Structure	-0.022	.	0.159	0.096	-0.084	-0.075	0.112	-0.211	0.133	-0.159	-0.004	1.000							
(13) B Interlocks	0.065	.	0.138	0.081	-0.046	-0.006	0.041	-0.125	0.032	0.044	-0.133	0.411	1.000						
(14) C Sectorcode	0.080	.	0.032	-0.024	-0.018	0.064	0.071	-0.001	0.066	-0.092	0.009	-0.099	-0.153	1.000					
(15) C Size	-0.075	.	0.066	-0.009	-0.027	0.025	-0.093	0.052	-0.036	-0.043	-0.017	-0.038	0.127	-0.067	1.000				
(16) C ROA	0.089	.	0.010	-0.018	-0.039	-0.024	0.029	0.008	0.041	-0.019	0.082	0.013	0.010	0.085	-0.019	1.000			
(17) C emission	0.662	.	0.090	0.003	0.070	0.040	0.286	0.122	0.143	0.117	0.043	-0.081	0.094	0.078	-0.006	-0.010	1.000		
(18) C workforce	0.582	.	-0.006	0.030	0.051	0.010	0.209	0.089	0.135	0.109	0.004	-0.061	-0.026	0.055	-0.057	0.046	0.529	1.000	
(19) C HRS	0.512	.	0.078	0.049	-0.003	-0.103	0.247	0.145	0.058	0.078	0.056	-0.008	-0.000	0.010	-0.056	0.138	0.257	0.259	1.000

4.2 Hypotheses testing

As mentioned before, the analyses will be performed through panel data. Woolridge (2013) distinguishes three main models for panel data analyses: pooled regression, fixed effects and random effects. When inspecting the firm observations, the data shows that firms change their reporting behaviour through the years. Due to the fact that the data can be determined as heteroscedastic, it is important to control for this issue. The best way to do this, is by using the fixed or random effects model. To test which model suits best for this study, a Hausman test has been performed. The b stands for the fixed effects model and the B for the random effects model. As shown in appendix A4, the probability is below 0.05, which means that the outcome is significant. The outcome shows that the Ha hypothesis will be rejected for the random effects model. Due to the time-invariant dimension of the variables, a fixed effects model will omit these variables. Therefore, the random effects analysis will be applied.

4.2.1 Assurance

The first random effects model tests the relationship between CSR reporting quality and assurance. The results are presented in table 4, model 1. The R-squared is 0.7209, which means that the obtained data explains the fit of the model for 72.09%, which is quite high. When examining the p-value, the coefficients for the variables AS_provd, AS_scope, AS_level and AS_as are higher than 0.05, this means that the coefficients can be seen as insignificant. Only the coefficient for Assurance remains significant after observing the influence of the p-value. So, for testing hypothesis H1, this study interprets only the results for Assurance on CSR_RQ. As predicted by H1, the relationship between obtaining external assurance and CSR reporting quality is positive. This positive relationship means that obtaining external assurance improves CSR reporting quality, which is in line with prior study of Michelon et al. (2015).

The p-value for the control variables C_country, C_sector and C_size are not significant, indicating that these variables do not influence the relationship between external assurance and CSR reporting quality. The p-value is significant for the control variables C_ROA, C_emission, C_workforce and C_HRS. The coefficient for the control variable ROA is negative. This means that when the ROA increases, the CSR reporting quality decreases. The coefficients for emissions score, workforce score and human rights score are positive. This means that when a firm's score increases with respect to emission, work force or human rights, the CSR reporting quality will increase too. This makes sense, because the firms CSR report reflects its CSR performance as mentioned by Clarkson et al. (2008). So, when a firm claims to perform good on for example, human rights, this leads to a higher CSR reporting quality.

Table 4: results of random effect regression analyses

Variable[1]	Model 1	Model 2a	Model 2b	Model 2i	Model 3	Model 3i
AS_External assurance	1.297* (2.11)	1.341* (2.21)	1.344* (2.18)	0.125* (0.13)	1.282* (2.08)	-0.106* (-0.12)
AS_Scope	-0.166 (-0.44)	-0.173 (-0.48)	-0.207 (-0.54)	-0.190 (-0.50)	-0.190 (-0.50)	-0.266 (-0.69)
AS_B4Assurance provider	-0.360 (-0.61)	-0.375 (-0.64)	-0.459 (-0.78)	-0.467 (-0.80)	-0.399 (-0.68)	-0.605 (-1.02)
AS_Standard	0.246 (0.53)	0.415 (0.90)	0.256 (0.55)	0.413 (0.90)	0.251 (0.54)	0.331 (0.71)
AS_Level	-1.031 (-1.49)	-1.057 (-1.55)	-1.056 (-1.52)	-1.091 (-1.60)	-1.045 (-1.51)	-1.083 (-1.57)
C_country code	0.116 (0.17)	-0.0231 (-0.36)	0.0182 (0.28)	-0.0234 (-0.36)	0.0147 (0.22)	0.0159 (0.23)
C_Sector code	-0.00256 (-0.07)	-0.0192 (-0.56)	0.00301 (0.09)	-0.0189 (-0.55)	0.00499 (0.14)	0.00637 (0.18)
C_Size	-0.173 (-0.28)	0.000605 (0.00)	-0.0686 (-0.12)	0.00136 (0.00)	-0.0134 (-0.22)	-0.175 (-0.29)
C_ROA	-0.0270* (-2.02)	-0.0328* (-2.50)	-0.0282* (-2.11)	-0.0332* (-2.53)	-0.0257 (-1.92)	-0.0258 (-1.93)
C_emission	0.225** (27.76)	0.223*** (27.75)	0.225*** (27.70)	0.223*** (27.75)	0.224*** (23.27)	0.224*** (27.56)
C_workforce	0.237** (23.27)	0.231*** (23.03)	0.234*** (22.98)	0.231*** (23.02)	0.237*** (23.27)	0.237*** (23.34)
C_HRS	0.181*** (35.13)	0.173*** (33.84)	0.180*** (34.72)	0.173*** (33.81)	0.181*** (35.02)	0.181*** (35.03)
B_sustainability committee		0.144 (0.40)		0.111 (0.30)		
B_Cultural diversity		4.088*** (6.15)		3.931*** (5.85)		
B_Gender diversity		9.08*** (7.49)		9.674*** (7.81)		
B_Board Size		-1.211*** (-3.49)		-1.303*** (-3.70)		
B_Independ board members		1.249*** (4.14)		1.143*** (3.69)		
B_Structure		-0.143 (-0.30)		-0.250 (-0.52)		
B_board diversity			0.606*** (4.11)			
inter_Assurance board diversity				0.407 (1.58)		
B_Interlocks					1.412* (1.98)	1.067 (1.46)
inter_Assurance interlocks						1.837* (2.23)
_cons	17.00*** (8.70)	14.00*** (7.30)	15.19*** (7.86)	14.26*** (7.42)	15.81*** (7.74)	16.10*** (7.86)
	N = 3,385	N = 3,385	N = 3,385	N = 3,385	N = 3,385	N = 3,385
	R^2 = 0.7209	R^2 = 0.7319	R^2 = 0.7300	R^2 = 0.7325	R^2 = 0.7210	R^2 = 0.7214

*Significance at 10% level, ** significance at 5% level and *** significance at 1% level.

[1] See table 1 for the variable description. AS stands for the assurance variables, B for board variables and C for control variables.

4.2.2 Board characteristics

Now this study has found some support for the positive relationship between obtaining external assurance and CSR reporting quality, this paragraph focuses on the moderating effects of board characteristics. This section focusses on the variable b_characteristics as described in chapter 3. The results are presented in table 5; model 2a, model 2b and model 2i. The following paragraph describes the moderating effects of b_interlocks. Model 2a describes the effects of the board characteristics separately and model 2b shows the results of the combined variable for all board characteristics (B_boarddiversity). Model 2i presents the results of the different board characteristics, including an error term. This error term focuses on the interaction between the variables B_boarddiversity and the variable Assurance.

Model 2a shows a R-squared of 0.7319. This means that obtaining the variables for board characteristics improves the fit of the model with 1.10%. The p-value is significant for the variables Assurance, cultural diversity, gender diversity, board size and board independence and for the control variables C_ROA, C_emission, C_workforce and C_HRS. The coefficients for cultural diversity, gender diversity and board independency are positive. This means that a more gender and/or culturally diverse board improve CSR reporting quality. A more independent board also improves CSR reporting quality. This is in line with the studies of García-Sánchez et al. (2019) and Harjoto et al. (2015). The coefficient for board size is negative, this means that a bigger board does not increase the reporting quality. This finding is in line with the study of Amran et al. (2014) The coefficient for Assurance increases slightly and remains significant.

Model 2b shows a R-squared of 0.7300. This means that replacing the seperate variables for board characteristics with one combined variable (B_diversity) leads to a decrease in the fit of the model with 0.19%. This decrease is very small and therefore negligible. The p-value is significant for the variables Assurance and B_characteristics and for the control variables C_ROA, C_emission, C_workforce and C_HRS. These results are in line with model 2a. The coefficient for board characters is positive, which means that when the score for B_characteristics increases, CSR_RQ also increases. This means that both models can be used for testing H2. However, to get better insight in the moderating effect of board characteristics, an additional analysis has been made by obtaining an interaction effect. The results are presented in table 5, model 2i.

The interaction effect between assurance and board characteristics (inter_Assurance board diversity) leads to a R-squared of 0.7325, this means that obtaining an error term improves the fit of the model with just 0.06%. The p-value remains significant for the variables Assurance, cultural diversity, gender diversity, board size and board independence and for the control variables C_ROA, C_emission, C_workforce and C_HRS. The p-value for the interaction term indicates that this variable is not significant. This is an indication that the interaction term does not influence the relationship between external assurance and CSR reporting quality. This contradicts the predictions of H2, indicating that board diversity weakens the relationship between external assurance and CSR reporting quality.

4.2.3 Board interlock

The final analyses focus on the moderating role of board interlocks. These are measured through dummy variables. The results are presented in 5, model 3 and model 3i. Model 3 describes the influence of board interlocks without error term. The p-value is significant for the variables Assurance and B_interlocks and for the control variables C_ROA, C_emission, C_workforce and C_HRS. The positive coefficient for board interlocks is an indication that when a board interlock occurs, the CSR reporting quality will increase. This is in line with the prediction that was made in H3, initiating that board interlocks strengthen the relationship between external assurance and CSR reporting quality.

To get better insight in the moderating effect of board interlocks, model 3i shows the interaction term between board interlocks and external assurance (inter_Assurance interlocks). This interaction term is positive and significant, initiating that board interlocks strengthen the relationship between external assurance and CSR reporting quality. However, after obtaining the interaction effect, the coefficient for external assurance becomes negative. This could indicate that board interlocks strengthen the relationship between external assurance and CSR reporting quality, which is in line with H3. But, the relationship between external assurance and CSR reporting quality becomes negative. This means that external assurance does not have a positive effect on CSR reporting quality and therefore does not support H1.

4.3 Robustness check

The robustness check focusses on whether measuring the population by replacing unknown scores with the mean can be seen as robust. To verify this robustness, two separate regression analyses have been made to compare the results with and without replacements. The results are presented in table 5.

The table shows that the R-squared increases with 8.69% when obtaining replacements. It furthermore improves the significance of the variables. In addition, the model with replacements shows a (significant) score for external assurance, while the model without replacements omits the variable external assurance. This problem is solved by obtaining the replacements.

Table 5: robustness check

Variable	Model with replacements	Model without replacements
AS_External assurance	1.309*	0
	(2.16)	(.)
AS_Scope	-0.197	0.362
	(-0.52)	(0.90)
AS_B4Assurance provider	-0.394	-0.612
	(-0.68)	(-0.75)
AS_Standard	0.423	-0.217
	(0.92)	(-0.45)
AS_Level	-1.077	-1.367
	(-1.58)	(-1.92)
C_country code	-0.0178	-0.0521
	(-0.27)	(-0.45)
C_Sector code	-0.0120	0.00616
	(-0.35)	(0.10)
C_Size	0.0506	-1.911
	(0.09)	(-1.76)
C_ROA	-0.0311*	0.0152
	(-2.37)	(0.74)
C_emission	0.221***	0.207***
	(27.54)	(10.43)
C_workforce	0.231**	0.206***
	(23.02)	(9.15)
C_HRS	0.173***	0.144***
	(33.75)	(12.46)
B_sustainability committee	0.234	1.813
	(0.64)	(1.66)
B_Cultural diversity	4.016***	3.693***
	(6.04)	(3.74)
B_Gender diversity	9.623***	9.393***
	(7.78)	(3.92)
B_Board Size	-1.300***	-0.187
	(-3.72)	(-0.27)
B_Independ board members	1.345***	1.317*
	(4.43)	(2.23)
B_Structure	-0.615	0.218
	(-1.20)	(0.21)
B_Interlocks	1.821*	2.469
	(2.45)	(1.47)
_cons	12.68***	24.52***
	(6.37)	(5.89)
	N = 3,385	N = 704
	R^2 = 0.7316	R^2 = 0.6447

5. Discussion and conclusion

The outcomes from the regression analyse provide some surprising results. Based on these results, this chapter gives answer to the research question and the underlying hypothesis.

5.1 Discussion

This study contributes to the literature by examining the relationship between assurance and CSR reporting quality by testing its strength through a so-called moderator variable. The moderating variable in this study is board characteristics. This study used the ESG score from Thomson Reuters (2020) as measurer for the dependent variable CSR reporting quality. The other variables have been measured by using data from Eikon, the Global Reporting Initiative and BoardEx.

This study uses the framework of Fernando and Lawrence (2014), but focusing on the combination of stakeholder theory with legitimacy and institutional theory as these theories share the same background. This study tests the firm's legitimacy with respect to CSR. CSR reporting helps firms to improve their accountability towards stakeholders. The assurance providers play an important role in verifying the quality of CSR reporting and help stakeholders to rely on the disclosed information (Adams & Evans, 2004). The moderating role of board characteristics helps building further on this theory. Rossi and Tarquinio (2017) showed the importance of CSR committees in the process of obtaining assurance. In addition, García-Sánchez et al. (2019) showed that through a stakeholder perspective, board independence and CSR committees fulfil an important role within the firm's decision-making process to provide CSR reporting. Therefore, these characteristics have been tested in this study. Other important characteristics that might influence CSR reporting quality focused on board diversity (Harjoto et al., 2015). This has been tested by obtaining variables for cultural diversity and gender diversity.

Through three different hypotheses, this study examined how board characteristics could influence the relationship between assurance and CSR reporting quality. The regression analyses showed some surprising results. In line with the expectations that obtaining external assurance will influence CSR reporting quality positively, model 1 in table 4 shows that only external assurance has a positive and significant effect on CSR reporting quality. The other variables with respect to obtaining assurance and the different characteristics of assurance are not significant, meaning that these characteristics do not influence CSR reporting quality.

Further, this study tested how several board characteristics could influence the positive relation between assurance and CSR reporting quality. The analyses in model 2a and 2b showed that several board characteristics have a significant influence on CSR reporting quality. The variables for cultural diversity, gender diversity and board independence are significant and positive. This is in line with the studies of García-Sánchez et al. (2019) and Harjoto et al. (2015). This could be seen as an indication that the results support H2. The results do not support the study of Rossi and Tarquinio (2017) as the influence of a sustainability committee is not significant. The next step for testing the moderating effect of board characteristics is obtaining an interaction term. The results showed that the obtained interaction

term between external assurance and the board characteristics is not significant. This means that the board characteristics do not support H2 and therefore do not strengthen the relationship between assurance and CSR reporting quality.

The final hypothesis, H3, focused on the moderating effect of board interlocks. In line with the study of Sun et al. (2019), this study finds that board interlocks have a significant positive relation with CSR reporting quality. Continuing with the moderating effect of board interlocks, this study shows that the interaction term between board interlocks and external assurance is positive and significant, indicating that board interlocks strengthen the relationship between external assurance and CSR reporting quality. However, the results show that the interaction term between board interlocks and external assurance leads to a negative relation between external assurance and CSR reporting quality. This means that board interlocks strengthen the negative relationship between external assurance and CSR reporting quality.

The results of this study come with some limitations. First, CSR reporting and external assurance are on a voluntarily basis. This means that companies have the freedom to decide what they report and what not, which has consequences for the obtained assurance and leads to an ongoing debate whether external assurance is valuable or not, which is shown in the contradicting results in the studies of Michelon et al. (2015) and Romolini et al. (2014). Second, the research sample only focuses on European countries. This makes it hard to draw conclusions and implement the results on a world-wide scale. An example of national differences is the study of Maroun (2019). In this study, the author examines the assurance of new reporting standards for ESG in South-Africa. South-Africa is one of the few countries that has implement assurance standards on a national level. Within Europe this is not applicable at the moment. Third, the measurer in this thesis for CSR reporting quality is the ESG score. Some see this score as a performance measurer instead of a CSR reporting quality measurer. As mentioned before, most authors that study reporting quality use their own measure or the model of Clarkson et al. (2008). Both ways are very time-consuming, especially within the time frame of a master thesis. Therefore, this study uses the ESG score as a proxy. This might be questionable. However, as shown in chapter 3.2.1, the ESG score can be seen as a usable proxy for measuring CSR reporting quality. Fourth, this thesis uses an interaction term that combines all board characteristics to examine the moderating effect. To get better insight in the specific influence of the separate characteristics, the interaction effect should be split into the different characteristics and analysed separately.

Based on these limitations, this study provides several recommendations for further research. This thesis can be seen as the starting point for expanding the research sample towards other regions. It might be interesting to compare the results of this study with countries that have implemented CSR reporting standards. In addition, it might be interesting to use the ESG score more often as proxy for reporting quality to see how it influences the results with respect to CSR reporting research. As most of the current measurers for CSR reporting quality are very time-consuming, future research can focus on creating a new, less time-consuming measurer that can be adopted in future studies. Finally, this study

uses a quantitative research method. To get more in-depth knowledge in how and why the results of this study work in practice, a case study can be performed to investigate the processes of how board members influence the relationship between obtaining external assurance and CSR reporting quality.

5.2 Conclusion

This study examined first the relationship between external assurance and CSR reporting quality. In addition, this study focused on how board characteristics might influence the relationship between external assurance and CSR reporting quality. This study tested three hypotheses to be able to answer the research question.

The results for the first hypothesis show that only external assurance has a significant effect on CSR reporting quality. The relationship between the variables is positive, indicating that obtaining external assurance improves the CSR reporting quality. This study accepts H1. As the other variables are not significant, it can be concluded that only obtaining external assurance will influence the CSR reporting quality positively. The scope of the assurance, the assurance provider or level of assurance do not play a role in improving CSR reporting quality. There are several assurance standards that assurance providers can use for their assurance, however, this study shows that these assurance standards do not influence CSR reporting quality. It might be seen as a sign that the voluntarily basis of providing CSR reporting won't improve if the decision to obtain assurance in line with assurance standards is also voluntarily.

The results for the second hypothesis show some mixed results when observing the different board characteristics separately. As mentioned in the discussion part, the variables cultural diversity, gender diversity and board independence are significant and positive and could support H2. However, after running a regression analysis with interaction effect, the effect is insignificant. Which means that this study rejects the second hypothesis. This is in contrast with prior studies that found a relationship between board characteristics and assurance and CSR reporting quality.

The third hypothesis examines the moderating effect of board interlocks. The results are positive and significant, which is in line with the prior study of Sun et al. (2019). By obtaining the interaction term, the coefficient for this interaction term remains positive which supports the third hypothesis. So, H3 will be accepted. However, in contrast with the prior analyse, the coefficient for external assurance becomes negative. This might be an indication that board interlocks strengthen a negative relation between external assurance and CSR reporting quality. A possible explanation for the changing score of external assurance might be that board members that participate in two or more firms, have a higher impact on the CSR reporting quality than external assurance has.

Overall this study shows that board characteristics that focus on the composition of the board do not influence the relationship between assurance and CSR reporting quality. Board interlocks, that focus on the network of board members, play a significant role in strengthening the (negative) relationship between external assurance and CSR reporting quality. Which is the opposite of what has

been assumed in the hypotheses development. This makes it interesting for other researchers to examine the moderating effect of board characteristics in further research.

References

Adams, C., & Evans, R. (2004). Accountability, Completeness, Credibility and the Audit Expectations Gap. *Journal of Corporate Citizenship, 14*, 97-115.

Al-Dah, B. (2019). Director interlocks and the strategic pacing of CSR activities. *Management Decision, 57*(10), 2782-2798.

Amran, A., Ping Lee, S., & Susela Devi, S. (2014). The Influence of Governance Structure and Strategic Corporate Social Responsibility Toward Sustainability Reporting Quality. *Business Strategy and the Environment, 23*, 217-235.

Bae, S., Masud, A., & Kim, J. (2018). A Cross-Country Investigation of Corporate Governance and Corporate Sustainability Disclosure: A Signaling Theory Perspective. *Sustainability, 10*, 1-16.

Bagnoli, M., & Watts, S. (2017). Voluntary Assurance of Voluntary CSR Disclosure. *Journal of Economics & Management Strategy, 26*(1), 205-230.

Ballou, B., Chen, P., Grenier, J., & Heitger, D. (2018). Corporate social responsibility assurance and reporting quality: Evidence from restatements. *Journal of Accounting and Public Policy, 37*, 167-188.

Barkemeyer, R. (2007). *Legitimacy as a Key Driver and Determinant of CSR in Developing Countries.*

Baron, R., & Kenny, D. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Blessing, R. (1996). Outlier Treatment in Data Merging. *Journal of Applied Crystallography, 30*, 421-426.

Breusch, T., & Pagan, A. (1979). A simple test for heteroskedasticity and random coefficient variation. *Econometrica, 47*(5), 1287-1294.

Chan, M., Watson, J., & Woodliff, D. (2014). Corporate Governance Quality and CSR Disclosures. *Journal of Business Ethics, 125*, 59-73.

Channuntapipat, C., Samsonova-Taddei, A., & Turley, S. (2019). Exploring diversity in sustainability assurance practice. *Accounting, Auditing & Accountability Journal, 32*(2), 556-580.

Clarkson, P., Li, Y., Richardson, G., & Tsang, A. (2019). Causes and consequences of voluntary assurance of CSR reports. *Accounting, Auditing & Accountability Journal, 32*(8), 2451-2474.

Clarkson, P., Li, Y., Richardson, G., & Vasvari, F. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society, 33*, 303-327.

Cook, R., & Weisberg, S. (1983). Diagnostics for heteroskedasticity in regression. *Biometrika, 70*.

Darus, F., Hamzah, E., & Yusoff, H. (2013). CSR Web Reporting: The Influence of Ownership Structure and Mimetic Isomorphism. *Procedia Economics and Finance, 7*, 236-242.

Feng, X., Groh, A., & Wang, Y. (2020). Board diversity and CSR. *Global Finance Journal*.

Fernando, S., & Lawrence, S. (2014). A theoretical framework for CSR practices: Integrating legitimacy theory, stakeholder theory and institutional theory. *The Journal of Theoretical Accounting, 10*(1), 149-178.

Freeman, E., & Dmytriyev, S. (2017). Corporate Social Responsibility and Stakeholder Theory: Learning From Each Other*. *Emerging Issues in Management, 1*, 7-15.

García-Sánchez, I., Gómez-Miranda, M., David, F., & Rodríguez-Ariza, L. (2019). Board independence and GRI-IFC performance standards: The mediating effect of the CSR committee. *Journal of Cleaner Production, 225*, 554-562.

Gennari, F., & Salvioni, D. (2019). CSR committees on boards: the impact of the external country level factors. *Journal of Management and Governance, 23*, 759-785.

Global Reporting Initiative. (2020). *Database*. Opgehaald van Global reporting: https://database.globalreporting.org/search/

Global Reporting Initiative. (2020). *Sustainability Disclosure Database* . Opgehaald van Global Reporting: https://www.globalreporting.org/media/m22dl3o0/gri-data-legend-sustainability-disclosure-database-profiling.pdf

Hair, J., Ringle, C., & Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-151.

Harjoto, M., Laksmana, I., & Lee, R. (2015). Board Diversity and Corporate Social Responsibility. *Journal of business ethics*, 641-660.

Hill, C., & Jones, T. (1992). Stakeholder-agency theory. *Journal of Management Studies, 29*(2), 131-154.

Hodge, K., Subramaniam, N., & Stewart, J. (2009). Assurance of Sustainability Reports: Impact on Report Users' Confidence and Perceptions of Information Credibility. *Australian Accounting Review, 50*(19), 178-194.

Jones, T. (1980). Corporate Social Responsibility Revisited, Redefmed. *California Management Review, 22*(3), 59-67.

Joseph, E. (2001). Corporate social responsibility. *Institute for Public Policy Research*, 121-123.

Kieso, D., Weygandt, J., & Warfield, T. (2018). Conceptual Framework for Financial Reporting. In D. Kieso, J. Weygandt, & T. Warfield, *Intermediate accounting IFRS edition* (Vol. 3th edition).

Kim, J., Cho, K., & Park, C. (2019). Does CSR Assurance A ect the Relationship between CSR Performance and Financial Performance? *Sustainability, 11*, 1-12.

Lajmi, A., & Paché, G. (2020). Relevance of voluntary environmental and social reporting in the French context: Does CSR assurance matter? *Environmental Economics, 11*(1), 54-64.

Louwers, T., Ramsay, R., Sinason, D., Strawser, J., & Thibodeau, J. (2018). In T. Louwers, R. Ramsay, D. Sinason, J. Strawser, & J. Thibodeau, *Auditing & Assurance Services.* McGraw-Hill.

Lu, J., Yu, D., Mahmoudian, F., Nazari, J., & Herremans, I. (2021). Board interlocks and greenhouse gas emissions. *Business Strategy and the Environment, 30*, 92-108.

Maroun, W. (2019). Does external assurance contribute to higher quality integrated reports? *J. Account. Public Policy, 38*, 1-23.

McWilliams, A., Siegel, D., & Wright, P. (2006). Corporate Social Responsibility: Strategic Implications. *Journal of Management Studies, 43*(1), 1-18.

Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting, 33*, 59-78.

Moroney, R., Windsor, C., & Ting Aw, Y. (2012). Evidence of assurance enhancing the quality of voluntary environmental disclosures: an empirical analysis. *Accounting and Finance, 52*, 903-939.

MSCI. (2020). *ESG Ratings*. Opgehaald van MSCI: https://www.msci.com/our-solutions/esg-investing/esg-ratings

Nekhili, M., Nagati, H., Chtioui, T., & Nekhili, A. (2017). Gender-diverse board and the relevance of voluntary CSR reporting. *International Review of Financial Analysis, 50*, 81-100.

Orazalin, N., & Baydauletov, M. (2020). Corporate social responsibility strategy and corporate environmental and social performance: The moderating role of board gender diversity. *Corporate Social Responsibility and Environmental Management, 27*, 1664-1676.

Refinitiv. (2020). *ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) SCORES FROM REFINITIV*.

Romolini, A., Fissi, S., & Gori, E. (2014). Scoring CSR Reporting in Listed Companies – Evidence from Italian Best Practices. *Corporate Social Responsibility and Environmental Management, 21*, 65-81.

Rossi, A., & Tarquinio, L. (2017). An analysis of sustainability report assurance statements. *Managerial Auditing Journal, 32*(6), 578-602.

Russo, A., & Perrini, F. (2010). Investigating Stakeholder Theory and Social Capital: CSR in Large Firms and SMEs. *Journal of Business Ethics, 91*, 207-221.

Seguí-Mas, E., Bollas-Araya, H., & Polo-Garrido, F. (2015). SUSTAINABILITY ASSURANCE ON THE BIGGEST COOPERATIVES OF THE WORLD: AN ANALYSIS OF THEIR ADOPTION AND QUALITY. *Annals of Public and Cooperative Economics, 86*(2), 363-383.

Simnett, R. (2015). Assurance on environmental, social and sustainability information. In D. Hay, R. Knechel, & M. Willekens, *The Routledge Companion to Auditing.*

Spence, M. (2002). Signaling in Retrospect and the Informational Structure of Market. *The American Economic Review, 92*(3), 434-459.

Studenmund, A. (2014). Studenmund, A. In A. p. econometrics. Harlow, England: Pearson Education Ltd.

Sun, W., Li, X., Geng, Y., Yang, J., & Zhang, Y. (2019). Board interlocks and the diffusion of CSR reporting practices: The role of market development. *Corporate Social Responsibility and Environmental Management*, 1333-1343.

Tang, Y., Qian, C., Chen, G., & Shen, R. (2015). HOW CEO HUBRIS AFFECTS CORPORATE SOCIAL (IR)RESPONSIBILITY. *Strategic Management Journal, 36*, 1338-1357.

Thomson Reuters. (2020). *Eikon*. Opgehaald van Refinitiv: https://www.refinitiv.com/en/products/eikon-trading-software#faqs

Tschopp, D., & Huefner, R. (2015). Comparing the Evolution of CSR Reporting to that of Financial Reporting. *Journal of Business Ethics, 127*, 565-577.

Vitolla, F., Raimo, N., & Rubino, M. (2020). Board characteristics and integrated reporting quality: an agency theory perspective. *Corporate Social Responsibility and Environmental Management, 27*, 1152-1163.

Wang, X., Cao, F., & Ye, K. (2018). Mandatory Corporate Social Responsibility (CSR) Reporting and Financial Reporting Quality: Evidence from a Quasi-Natural Experiment. *Journal of Business Ethics, 152*, 253-274.

Woolridge, J. (2013). In J. Woolridge, *Introductory Econometrics: A Modern Approach.*

Zhang, Y. (2017). Corporate Social Responsibility Assurance. *Encyclopedia of Business and Professional Ethics*, 1-5.

Appendices

A1: Breusch-Pagan / Cook-Weisberg test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of CSR_RQ

chi2(1) = 9.40

Prob > chi2 = 0.0022

A2: Matrix of correlations without control variables

Table A1: matrix of correlations without control variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) CSR RQ	1.000												
(2) AS ExternalAssurance	.	.											
(3) AS Scope	0.060	.	1.000										
(4) AS B4AssuranceProvider	-0.015	.	0.056	1.000									
(5) AS Standard	0.023	.	0.066	0.238	1.000								
(6) AS Level	-0.049	.	-0.019	-0.097	-0.034	1.000							
(7) B sustainabilitycommitte	0.251	.	-0.099	-0.102	-0.061	-0.043	1.000						
(8) B CulturalDiversity	0.209	.	0.012	-0.004	0.017	0.081	0.097	1.000					
(9) B Genderdiversity	0.087	.	-0.044	0.019	0.042	0.042	-0.101	-0.017	1.000				
(10) B BoardSize	-0.003	.	0.164	0.081	-0.079	-0.068	-0.196	0.137	-0.170	1.000			
(11) B IndependentMembers	0.202	.	0.107	-0.038	-0.029	-0.045	0.179	0.239	-0.222	0.009	1.000		
(12) B Structure	0.364	.	-0.030	0.036	0.001	0.028	0.070	0.089	0.074	0.118	-0.013	1.000	
(13) B Interlocks	0.088	.	0.134	0.052	-0.051	0.009	-0.101	0.036	0.012	0.439	-0.108	0.044	1.000

A3: Variance inflation factor test

Table A2: VIF

VIF	1/VIF
1.590	0.629
1.460	0.686
1.460	0.687
1.350	0.743
1.200	0.830
1.190	0.838
1.190	0.839
1.170	0.858
1.150	0.866
1.140	0.878
1.100	0.907
1.100	0.909
1.100	0.911
1.080	0.925
1.050	0.948
1.050	0.949
1.040	0.960
1.200	

A4: Hausman test

Figure 1: Hausman test

Hausman (1978) specification test

	Coef.
Chi-square test value	157.93
P-value	0.0000