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Master Thesis

MSc Accounting, Auditing and Control

Is high sustainability performance associated with better financial reporting quality?

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Contents

Abstract

This paper investigates the association between sustainability performance and three indicators of financial reporting quality being value relevance, accuracy and accounting conservatism. Additionally, this paper investigates whether sustainability performance has a mediating affect in the relationship between corporate governance and these three indicators of financial reporting quality. No positive relationship was empirically found between sustainability performance and financial reporting quality. Regarding mediation, this paper finds a positive association between corporate governance and sustainability performance. Results, however, indicate that sustainability performance has no mediating effect on the relationship between corporate governance and financial reporting quality. Main implication of this study is that companies, which take interests of a wider group of stakeholders into account by improving their sustainability performance, do not at same time reduce of financial information asymmetry through higher quality of financial reporting. Conversely this study does find some empirical support for a potentially negative relationship to exist for two measures of financial reporting quality used in the study. This lends support to the theory that managers might use the multiple objectives of stakeholders as an opportunity to increase financial information asymmetry. Further research, however, is recommended as this study has important limitations with respect to operationalisation of the main concepts of sustainability and financial reporting quality as well as in regards of sampling and methodology.

Key words:

Sustainability performance, financial reporting quality, corporate governance

1.Introduction

The interest of stakeholders in the sustainability performance of companies has drastically increased over the past years. In a conducted survey, KPMG (2020) revealed that around 80% of the sampled 5200 companies now report on sustainability. The report furthermore indicates that independent third-party assurance of sustainability information has exceeded 50 percent for the first time since the KPMG survey began in 1993. However, the impact that the increased attention on sustainability has on the quality of the financial reports is not well understood. Do better sustainability performance and reporting also lead to better quality of financial reporting or do managers use the increased emphasis on sustainability for their own purposes? Companies seem to be providing greater transparency in their sustainability performance. Agency theory, however, has taught that managers as agents do not automatically act in the interest of shareholders, leading to conflicts between agents (managers) and shareholders (Donaldson and Preston 1995). On the other hand, stakeholder theory maintains the importance of alignment between management and stakeholders on multiple goals as a condition for long term resource access. Does such alignment also have a positive influence on the quality of the financial reporting? Financial reports are key tools in reducing information asymmetry between management and outside stakeholders (Healy and Palepu 2001). The value relevance theory (Ball and Brown 1968; Nichols and Wahlen 2004) points out that current earnings are used as a proxy for future dividend flows to assess the value of the shares. Hence, the higher the quality of the reported earnings, the more investors will likely rely on financial reporting to establish the value of the shares. Research on the relationship between financial reporting quality and sustainability has been limited and most empirical studies performed also approach financial reporting quality only from the angle of earnings management. Establishing the nature of the relationship is of academic interest as a mechanism to potentially reduce agency conflicts and information symmetry. The nature of the relationship is also of practical interest to users of the financial reports, such as investors and lenders in establishing the reliance they will be able to put on the quality of the financial report.

This paper will investigate the nature of the relationship between sustainability performance and the quality of financial reporting. The fundamental research question of this paper is therefore as follows:

Is high sustainability performance associated with better financial reporting quality?

Sustainability performance will be defined widely to encompass not only environmental but also social and governance aspects. Financial reporting quality will be approached from several angles used in academic literature such as accounting conservatism (LaFond and Watts 2008), true and accurate representation of the financial position of the company (Herath and Albarqi 2017) and relevance of the financial statement to its users (Ohlsen 1995). The paper will also investigate the importance of board independence and board composition, as mechanisms of corporate governance, on the researched relationship. The underlying theoretical approach, which will be used to answer the research questions is the stakeholder theory, which holds that the capacity of companies to generate sustainable wealth is determined by their relations to different relevant groups of stakeholders.

The scientific contribution of this study comes from providing further insight into the nature of the relationship between sustainability performance and quality of financial reporting, which is little researched and with conflicting outcomes. Furthermore, this study distinguishes itself in putting forward value relevance as a fundamental measure of financial reporting quality (FRQ) rather than earnings managements as is most often used as measure of FRQ. The paper furthermore provides a foundation for follow up research on the role that corporate governance mechanisms play in the relationship between sustainability performance and financial reporting quality.

Practical relevance of the paper lies in provision of an additional tool to shareholders and other stakeholders to achieve greater transparency of a company's financial disclosures.

The outline of this study is as follows: In section 2 as part of the literature review the main theoretical concepts and relationships will be outlined. Section 3 contains the hypothesized relationships which will be operationalised in section 4. Section 5 then contains the results of the empirical investigation. Conclusions and limitations are outlined in section 6.

2.Literature Review

2.1 Sustainability

The concept of sustainability has evolved over time and is currently often used interchangeably with corporate social responsibility. Bansal and Song (2017) state that corporate responsibility and sustainability research originally emerged from different paradigms, but that over time the distinction between responsibility and sustainability has been lost. In their analysis responsibility research started from a normative basis. It flagged the social issues and unfair practices as result of laissez faire capitalism such as child labour, gender inequality and fair trade. Sustainability research, however, found its origin in the effect of economic development on natural resource systems and therefore concentrated on ecological sustainability. Over time the two concepts merged where sustainability broadened to encompass social aspects and corporate responsibility encompassed environmental issues. Cheng et al (2014) for example describe CSR as "the voluntary integration of social and environmental concerns", thereby explicitly including sustainability elements. On the other hand, Hart and Dowell (2011) argue that sustainable development is "not restricted to environmental concerns but also involves focusing on economic and social concerns". In line with Hart and Dowell (2011), this study takes the wider definition of sustainability as a basis in which sustainability is determined by the achievement of three conditions environmental integrity, economic prosperity, and social equity (Bansal 2005). Sustainability is thus defined as ''the extent to which a firm embraces economic, environmental, social and governance factors into its operations, and ultimately the impact they exert on the firm and society". (Artiach et al 2010).

The extent to which sustainability is achieved is the result of the company's responsiveness to above mentioned environmental and social factors, taking into accounts the interests of a wider group of stakeholders than just shareholders. The drivers behind such responsiveness to consider interests of stakeholders are connected to different views in literature on stakeholder theory. Martinez-Ferrero et al. (2015) stated that the concrete meaning of stakeholder theory is that the capacity of companies to generate sustainable wealth is determined by their relations to different relevant groups of stakeholders, instead of the society in general". In the instrumental view of stakeholder management (Donaldson and Preston 1995) stakeholders are managed to the extent necessary to ensure certain financial outcomes. Artiach et al. (2010) maintain that the responsiveness is a function of a stakeholder's power to control a firm's access to scarce resources. Firms manage their relationship with key stakeholders to ensure that access to resources is maintained. Corporate sustainability according to authors is aimed to secure the reputation of the firm and to prevent stakeholder and regulatory action. Authors find empirical evidence for this theory in that the leaders in corporate sustainability are often the largest firms in each industry as these firms are more visible and thereby impact a wider range of external stakeholders. Similarly, Martínez-Ferrero and Frias-Aceituno (2015) pointed to resource availability, associated with higher levels of financial performance, as an important explanatory variable for promotion economic, social, and environmental activities. Donaldson and Preston (1995), however, maintain that the instrumental view of stakeholder management is not sufficient. Authors instead stress the normative aspect of the stakeholder theory. Authors define stakeholders as persons or groups with legitimate interests in the activity of the company which are of intrinsic nature in that they need to be considered on its own merit and not just because they help the interests of another group, such as the shareholders. In their paper authors define the implication for management as that "managers should acknowledge the validity of diverse stakeholder interests and should attempt to respond to them within a mutually supportive framework, because that is a moral requirement for the legitimacy of the management function". In this study the distinction between stakeholder management for instrumental or moral reasons will not be made. Whether for instrumental or moral reasons an increase in sustainability and sustainability reporting is taken as recognition by management of the legitimate interests of stakeholders.

Finally, there is a distinction between sustainability reporting and sustainability performance. It revolves around the question whether more extensive sustainability reporting (the talk) also reflects a higher sustainability performance (the walk). This is the central question posed by Papoutsi and Sodhi (2020), authors carried out a factor analysis on both environmental and social sustainability and concluded that for the two rating agencies investigated (Bloomberg and Dow Jones), sustainability reports appear to indicate actual sustainability performance. Drempetic et al (2020), however, find a positive empirical relationship between firm size and resource availability, implying the ESG scores favour larger companies which can devote more resource to reporting. This study will not make the distinction between ESG score and sustainability performance, thereby assuming higher ESG scores reflect higher sustainability performance.

2.2 Financial Reporting Quality

Financial reporting is one of the principle means to reduce information asymmetry between managers and outside investors. Healy and Palepu (2001) state that the demand for financial reporting and disclosure arises from information asymmetry between managers and outside investors. Authors state that information asymmetry exists when firms have better information than outside investors about the economic performance of the firm and have incentives to overstate the value.

The quality of the financial reporting is therefore measured by the extent in which the financial reporting reduces the existence of information asymmetry between a firm and the users of the financial statements. According to the International Accounting Standards Board (IASB), Financial Reporting Quality (FRQ) represents financial statements that provide accurate and fair information about the underlying financial position and economic performance of an entity. For information to be accurate and fair it needs to meet certain qualitative requirements. Herath et al (2017) list the following characteristics, the information provided needs to be relevant and timely to influence users of the statements in their economic decisions. Clear presentation and classification are required such that the information is easily understandable. It needs to be a faithful and reliable representation of the real economic position of the company, for example being free from bias and material mistakes. Lastly, financial information provided needs to be comparable both in time and between companies.

There are many motives given in the papers studied for firms to increase their FRQ. A number of these are financial by nature. Authors Healy and Palepu (2001) found that access to capital markets to be an important factor whereby high disclosure quality was found to be correlated to a high frequency of public debt offerings.

There are many ways in which companies can positively or negatively influence the FRQ. Herath et al (2017) in their literature review point to corporate governance, internal controls and audit amongst main measures to positively influence FRQ. In the literature the presence of earnings management is often seen as one of the main factors negatively influencing FRQ. Earnings management in this context is defined as the altering of the reported economic performance of a firm by insiders to either ''mislead some stakeholders'' or ''influence contractual outcomes'' (Healey and Wahlen 1999). Following the method of Jones (1991), or of a variant thereof, e.g., Dechow et al. (1995), the presence of discretionary accruals is used as evidence of the intent to manage earnings.

In recent times, the validity of this operationalisation of earnings management is, however, being questioned in literature. McNichols and Stubben (2018) maintained that general discretionary accruals models do not provide an adequate basis for valid inferences about earnings management. In their opinion they are "noisy proxies of earnings" and biased due to measurement error. Authors recommended certain improvements such as researchers making more specific predictions about where discretionary accruals might appear in the financial statements and adjusting the research design accordingly. Chen et al (2018) observed that discretionary accrual models often use the two stage regression methods, in which the residuals are used as the dependent variable in a second regression. Authors concluded that this procedure generates biased coefficients and standard errors which can lead to both Type I and Type II errors. Using the relationship between three variables of interest -auditor size, small profit firms, and balance sheet- and discretionary accruals in 31 different combinations, they found that more than half led to type I or type II errors. Finally, Jackson (2018) maintained that discretionary accruals only inform us of the deviation from industry averages and are not evidence of earnings management. Author also questioned the relationship between the size of discretionary accruals and association with known cases of earnings manipulation. Finally, the author analysed the case of Enron and questioned the predictive power of the discretionary accrual models.

In another stream of thinking, the quality of FRQ can be measured by its value relevancy to its users. The studies of Ball and Brown (1968) and Nichols and Wahlen (2004) empirically proved that earnings and earnings changes are value relevant. By undertaking event studies of earnings announcements, a relationship between earnings and stock prices was found whereby stock markets reacted to earnings announcements. In both studies annual stock returns were found to significantly relate to the sign of annual earning changes. Companies which showed high earnings persistence experienced higher positive abnormal returns than companies with lower earnings persistence. The theoretical underpinning of the found relationship was found in the signalling function of earnings. Nichols and Wahlen (2004) outlined that current period earnings laid the basis of expected future earnings. These expected future earnings determined the expectation around future dividends, which in turn were reflected in the current share price. Figure 2.2.1 outlines graphically the relationships between earnings and share price according to Nichols and Wahlen (2004).

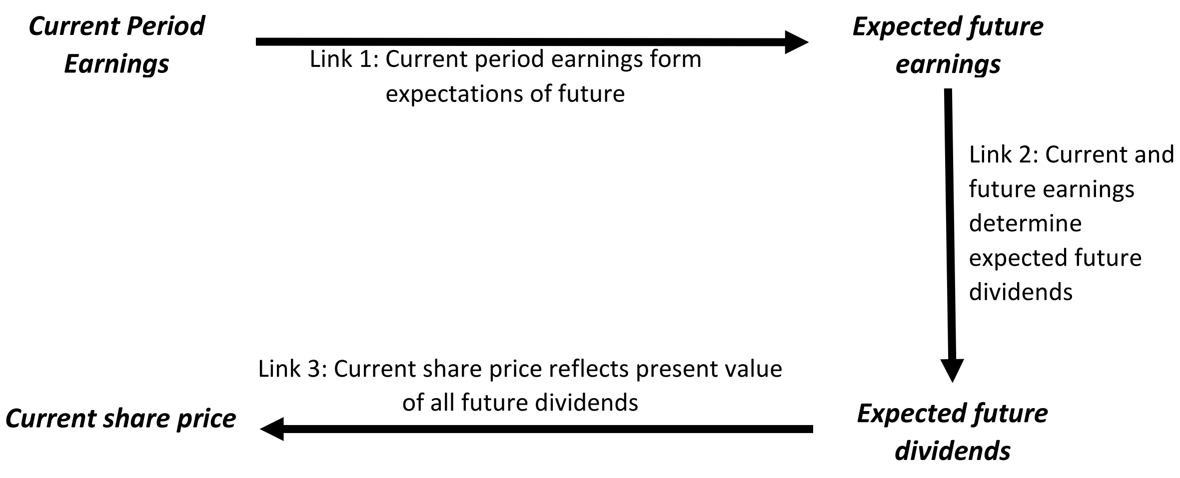

Figure 2.2.1 Libby box of Nichols and Wahlen (2004) links between earnings and share price

Dechow (1994) found that earnings are more strongly associated with stock returns than cash flows. The difference between the two concern the making of accruals. Empirical evidence provided in the study showed that the making accruals improved measurement of firm performance as result of the application of the matching principle and of revenue recognition.

In line with the thinking of Dechow (1994) and Nichols and Wahlen (2004), value relevance models maintain that accounting information provide an accurate summary of a firm's value as a result of the application of accounting principles. These principles give management the opportunity to convey their knowledge of the state of the company through the making of discretionary accruals. Users of financial statements use the value relevance of the financial reports as a basis for decision making. Thus, the quality of the financial statement is measured by its usefulness to investors in their decision-making in assessing the value of the company (Lont et al.,2010). Hence the measure of the quality of the financial statements of a company lies in the correlation between the reported earnings and the value of its shares. Authors Beest et al (2009) state that annual reports are paramount in determining the level of relevance. Annuals reports are paramount in this as they disclose forward-looking information, more specifically information about business opportunities and risks. Additionally, Beest et al (2009) state that annual reports provide feedback on how major market events and significant transactions affect entities.

2.3 Sustainability and Financial Reporting Quality

Although not widely researched, several studies have been undertaken on the relationship between sustainability and FRQ. Most of the papers studied (Chih et al. 2008; Kim et al. 2011; Andersen et al 2012; Martinez-Ferrero et al. 2015) point to a positive relationship between the two concepts while others find a negative (Prior et al 2008; Salewski and Zulch 2014) or no relationship (Sun et al. 2010) between the two.

The papers establishing a positive relationship between sustainability and FRQ are predominantly based upon the normative of instrumental interpretation of the stakeholder theory (Donaldson and Preston 1995). In both these interpretations, managers recognise the need to balance the interests of all stakeholders, irrespective of whether these are financial or not financial. Andersen et al (2012) e.g., states that a firm's overall corporate social performance can be reflected in how clearly that firm's financial information is presented to its stakeholders. Based upon past and own empirical evidence, the authors concluded that socially responsible firms provide greater financial reporting transparency. Higher quality accruals, measured by the strength of its relationship to cash flow, were taken by the authors as the measure of finance reporting transparency. Social responsibility was measured in terms of strengths and concerns on community, customers, and employee relationship also on the environment. Martinez-Ferrero et al. (2015) found empirical support for a complementary relationship between FRQ and disclosure of sustainable information. Authors used several measures of FRQ such as the absence of earning management, accounting conservatism and accrual quality. Explanation given by authors is that companies with good quality financial information have incentives to reveal all kind of information such as CSR information in order to gain competitive advantage. Chih et al. (2008) were primarily concerned with the existence of earnings management, of which three kinds were investigated: earnings smoothing, earnings aggressiveness, and avoidance of losses or earnings decreases. Authors found that an increase in CSR decreased the extent of earnings management. Main explanation given by the Chih et al. (2008) was that CSR-minded companies are focused not only on increasing current profits but also on nurturing future relationships with stakeholders. Similarly, Kim et al. (2011) found a negative relationship between CSR performance and earnings management. The study found that managers of socially responsible companies tended to manage earnings to a lesser extent as managers were motivated to be honest, trustworthy and ethical. This led them to be look after the interest of all stakeholders and take a long-term view in providing financial transparency.

However, there are also studies, which find a negative relationship between sustainability and financial reporting quality. The most thorough theoretical basis for such a negative relationship between FRQ and CSR lies in the multiple objectives' argument put forward by Jensen (2001). This argument contends that the existence of multiple objectives means in practice no clear objective will be pursued which can be challenged. In the view of Jensen, stakeholder theory plays into the hands of special interests such as those of managers that have an interest in using the resources of firms for their own purposes. Stakeholder theory then provide managers with the apparent legitimate access to divert resources without the opportunity by shareholders to challenge such diversion, which ultimately leads to lower value creation for society. Like Martinez et al (2015), Salewski and Zulch (2014) measured financial reporting quality into 3 operational elements: the degree of earnings management, accounting conservatism and the quality of accruals. Sampling European blue chips companies, authors found CSR to be negatively related to accounting conservatism and accrual quality and positively associated with earnings management. The theoretical explanation the authors gave for such relationship was that companies that increase CSR reporting are likely trying to divert attention from their attempts to manage earnings rather than to behave in a more responsible manner.

Along a similar line of reasoning, Prior et al (2008) warned that sudden improvements in a firm's CSR may be connected to earnings management. Earnings management in this study was measured through the existence of large discretionary accruals. In their empirical study authors found a positive impact between such improvements and earnings management, particularly in situations when managers are likely to find themselves under scrutiny from shareholders, which was operationalised through an entrenchment variable. Authors offered two related explanations for the found relationship. The first one was that agency problems between owners and managers are aggravated when managers act on behalf of non-shareholder stakeholders. Managers in that case use to interests of other stakeholders to further their own benefits. The second argument was that in an environment of conflicting stakeholder objectives managers, who face pressure from shareholders due to earning management practices may secure their position by making CSR improvements to get the support from other stakeholders.

Finally, there are also studies which do not find a relationship: The study of Sun et al. (2010) explored the relationship between environmental disclosure and earnings management from three different theories. According to the authors, in the signalling theory environmental disclosure is used to signal the quality of its management and earnings and could therefore be used by managers to hide earnings management. Consistent with this, in the agency theory managers involved in earnings manipulations will increase environmental disclosure to try to pursue their own interests. Lastly in the stakeholder theory managers use CSR to improve relationships with shareholders, suppliers, creditors and other groups of stakeholders to build trust, which might be used to hide earnings management practices. Although authors hypothesised the relationship to be positive under all three theories, they did not find empirical evidence for one of the theories.

2.4 Role of Corporate governance on FRQ and sustainability

Corporate governance has been identified in the literature as one of the key mechanisms in ensuring the alignment of interests between management and shareholders. John and Senbet (1998) define corporate governance as "the mechanisms by which stakeholders of a corporation exercise control over corporate insiders and management such that their interests are protected." Authors continue in stating that the main reason for corporate governance lies in the separation of ownership and control, which leads to an agency relationship between management and shareholders. Jensen and Meckling (1976) defined the agency relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent" They furthermore noted that under the assumption of utility maximisation, it is likely that the agent will not always act in the best interests of the principal. Corporate governance in that case improves a company's capability to handle the agency conflicts. Fama and Jensen (1983) point to the role of boards in ratifying and monitoring a firm's most important decisions and thereby separating decision management from decision control. More specifically towards reducing information asymmetry type of agency conflict, as described in section 2.1, corporate governance also plays an important role in securing the quality of the financial reporting. Kent et al. (2010) affirmed this by stating that the key aim of corporate governance is to provide controls on compliance such that financial reports reflect the financial affairs of the company fairly.

The relationship between corporate governance and FRQ has been relatively well researched empirically, particularly the relationship between corporate governance and earnings management. In these studies, various corporate government mechanisms are distinguished. John and Senbet (1998) surveyed the empirical and theoretical literature on the mechanisms of corporate governance and found independence, size and composition of board to be amongst the principal ones in handling agency conflicts, also around information asymmetry. More recent empirical studies point to the same mechanisms: Kent et al. (2010) concluded that independence of the audit committee and of the board were negatively related with the formation of abnormal accruals. The study established that these effects were most pronounced when either the board or the audit committee consisted of a minority of outside directors. Davidson et al. (2005) also studied the role internal governance structures played in constraining earnings management, which was measured by the absolute level of discretionary accruals. They concluded that the composition of the board and of the audit committee were related to earnings management. In a sample of some 400 listed Australian firms, the presence of most non-executive directors on the board and on the audit-committee resulted in a significantly lower level of discretionary accruals.

The relationship between corporate governance and sustainability has been much less researched. However, following the stakeholder theory framework, studies performed point to board composition and independence to be positively related with a higher level of sustainability since external board members will be less subject to pressure from shareholders and will represent external views. Walls et al. (2012) found that firms with more independent boards and higher gender diversity exhibit higher environmental performance. The study by Johnson and Greening (1999) investigated the social element of sustainability. They found a positive relationship between outside director representation and the development of quality products and services and a positive environmental reputation. The explanation given by authors is that outside directors likely feel commitment to the long-term interests of shareholders. Finally, Hussain et al (2018) separated sustainability performance into economic, environmental, and social dimensions and investigated which corporate governance variables were related to which dimensions of sustainability performance. Overall, with exception of the economic dimension, their empirical results supported the stakeholder theory that external stakeholders represent the view of shareholders and of a wider variety of other stakeholders. In terms of corporate governance variables their study showed that the establishment of a CSR committee and an active board- measured by meeting frequency – with a higher proportion of independent directors positively impacted both environmental and social performance. Board diversity, however, was found to enhance the social dimension only.

However, there are also studies, which did not find a relationship between corporate governance and sustainability. Rodrigue et al. (2013) studied the link corporate governance and environmental performance by companies by taking a sample of environmentally sensitive firms. Authors found that environmental governance is mostly symbolic and did not result in significant environmental improvements. This is consistent with the finding of Prado Lorenzo and Garcia-Sanchez (2010) that independent board members do not play a significant role in the volume of information published on sustainability.

3. Hypothesis development

3.1 Hypothesis 1

Most of the papers reviewed in section 2 (Chih et al. 2008; Kim et al. 2011; Andersen et al. 2012; Martinez-Ferrero et al. 2015) found a positive relationship between sustainability and FRQ. The existence of this positive relationship fundamentally lies in the stakeholder theory, whereby managers recognize the need to balance the interests of all stakeholders. This could be for instrumental reasons such as continued access to resource, or for moral reasons as the fundamental beliefs by management in respect as the basis for the legitimacy of their management (Donaldson and Preston 1995). Because of this balancing of stakeholder interests, managers will increase their sustainability performance and provide greater transparency on their environmental, social and financial performance to these stakeholders. This will then lead to an increase in both sustainability performance and FRQ. This is consistent with the empirical study of Chih et al. (2008) that companies with high corporate responsibility scores also provide financial transparency and nurture long term relationships with stakeholders rather than concentrate on short term profits. It is also evidenced in study by Kim et al. (2011) which concentrated on moral reasons. This study found that managers of socially responsible companies are motivated to be honest, trustworthy and ethical and therefore tend to manage earnings to a lesser extent, leading to an improved FRQ.

Quality of the financial information is impacted by its relevancy, timeliness and by the faithful and reliable representation of the financial position of the company, free from bias and material mistakes (Herath and Albarqi 2017). Concerning bias, LaFond and Watts (2008) found accounting conservatism to be a significant feature of financial reporting quality in reduction of information asymmetry between in and outsiders, thereby decreasing the managers 'ability to manipulate earnings. Concerning faithful representation and presence of material mistakes, Herath and Albarqi (2017) note that restatements are considered the clearest evidence of improper accounting.
In terms of relevancy and timeliness, Herath and Albarqi (2017) furthermore note that securities analysts often use reported financial information to forecast earnings and cash flows of an entity. This is in line with the value relevancy theory of Ball and Brown (1968) and Nichols and Wahlen (2004) as discussed in section 2.4. Thus, value relevance in terms of usefulness to investors in their decision-making in assessing the value of the company is a key characteristic to measure FRQ

Following the hypothesized positive relationship between sustainability and FRQ three hypotheses are derived, each representing a different dimension of FRQ:

H1a: performing better sustainably is associated with higher value relevance of the financial statements.

H1b: performing better sustainably is associated with higher accuracy (less restatement) of the financial statements

H1c: performing better sustainably is associated with more accounting conservatism of the financial statements

3.2 Hypothesis 2

The papers of Fama and Jensen (1983) and Michelon and Parbonetti (2012) found corporate governance to be a major alignment mechanism between managers and shareholders and other stakeholders. Board independence and composition of the board are principal mechanisms by which this alignment is established (John and Senbet 1998). Subsequent studies (Kent 2010; Davidson et al. 2005) confirmed the positive relationship between corporate governance and FRQ by concluding that board independence constrains the occurrence of earnings management, hence positively impacting FRQ.

Other studies on the relationship between corporate governance and sustainability also found the corporate governance mechanisms of board independence and board composition (gender) to be positively correlated with sustainability performance (Walls et al. 2012; Johnson and Greening 1999; Hussain et al. 2018).

Following these studies independent directorship rather than internal stakeholder management is hypothesized to explain the positive relationship between sustainability and the dimensions of FRQ. In this line of thinking external board members represent the view of shareholders and of a wider variety of other stakeholders and by this representation have a positive impact on both sustainability and FRQ of the company. Board independence and composition as corporate governance mechanisms therefore are the independent variables with ESG having a role as mediator variable explaining the positive relationship between sustainability and FRQ. Thus, the following is the second hypothesis:

H2a: The positive association between corporate governance and the value relevance of the financial statements is mediated through sustainability performance

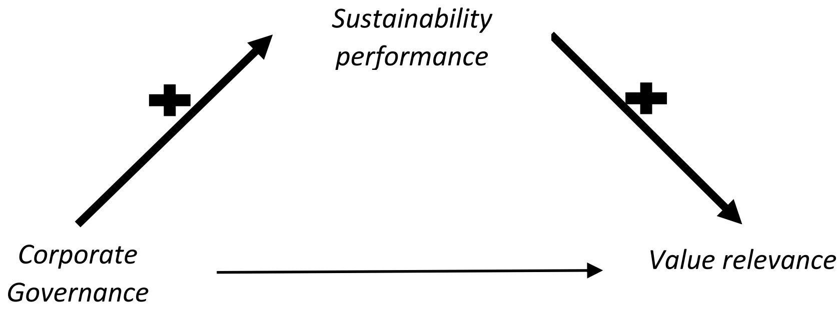

Figure 3.2.1 Hypothesis 2a libby box

H2b: The positive association between corporate governance and the accuracy (less restatement) of the financial statements is mediated through sustainability performance

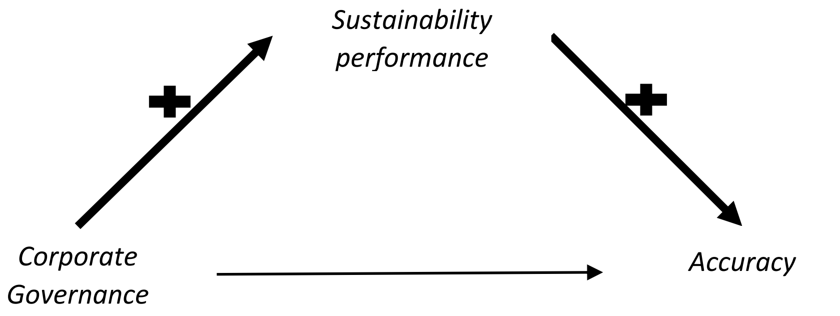

Figure 3.2.2 Hypothesis 2b libby box

H2c: The positive association between corporate governance variables and the level of accounting conservatism in the financial statements is mediated through sustainability performance

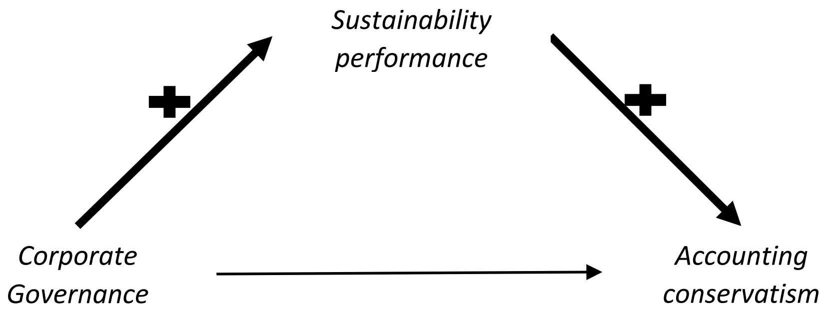

Figure 3.2.2 Hypothesis 2c libby box

4. Data and Methodology

4.1. Research population, sampling and data collection

The theoretical domain of the research question includes all publicly listed companies. For reasons of data availability, the study was restricted to listed companies in Western Europe for a six-year period from 2015 to 2020. The selection was made using Eikon, Worldscope and DataStream databases.

After checking each company on completeness for all independent, control and dependent variables, a total of 615 companies remained, which are listed on European exchanges from years 2015-2020. In total there are 3546 firm year observations.

Despite the large data sample, due to the data restrictions sampling was not random and this remains one of the limitations of the study in terms of the sample being representative of all publicly listed companies.

4.2 Variable selection and measurement

In order to answer the research question, different variables were evaluated and chosen to measure the main concepts: Sustainability performance, FRQ and corporate governance.

4.2.1 Sustainability performance

Sustainability performance will be measured through use of the Refinitiv ESG score. According Escrig-Olmedo et al. (2019) Refinitiv (formerly Thomson Reuters) is amongst the eight most important and commonly used providers that are the most representative of the European and USA SRI market and provides rankings in 87 countries. Authors furthermore note Refinitiv belongs to the group of rating agencies, which -despite their merger and acquisition processes- have maintained their assessment structures at least since 2008 allowing comparison over time. Drempetic et al (2020) state their reason for use that the database contains over 6000 companies and that it serves as a database for many research articles.

Table 4.2.1 - Refenitiv ESG score overview

Pillars	Social	Environmental	Governance
Categories	Workforce	Resource use	Management
	Human rights	Emissions	Shareholders
	Community	Innovation	CSR strategy
	Product responsibility		

The Refenitiv ESG score is based on a ranking system, thus the performance of others impacts the scoring of any company. The overall distribution of ESG scores is flat due to the use of percentile ranking and thus, the standard deviation is not relevant as it is ranked based. The following is the calculation when ranking at each datapoint for any company:

$$\boldsymbol{ESG\ score} = \frac{\boldsymbol{no.of\ companies\ with\ worse\ value} + (\frac{\boldsymbol{no.of\ companies\ with\ same\ value}}{\boldsymbol{2}})}{\boldsymbol{no.of\ companies\ in\ total}}$$

Percentage scores are converted by Thomson to letter grades as per figure 4.2.2 to allow easier interpretation how companies are performing relative to their peers. Given a maxim score of 1 in 12 grades, the width of each grade around 0,083. In this study the percentage scores rather than letter grades are used to measure performance. The width of the letter grade of 0,083 will be used to measure the significance of the change over time.

Table 4.2.2 - Refenitiv ESG scores grading system

Grade	ESG score	
	>	<=
D-	*-*	*8.333*
D	*8.333*	*16.666*
D+	*16.666*	*25*
C-	*25*	*33.333*
C	*33.333*	*41.666*
C+	*41.666*	*50*
B-	*50*	*58.333*
B	*58.333*	*66.666*
B+	*66.666*	*75*
A-	*75*	*83.333*
A	*83.333*	*91.666*
A+	*91.666*	*100*

Looking past calculating the score, the following are the weights of each datapoint in the Refenitiv ESG score:

Table 4.2.3 - Weights in ESG scoring

Pillar	Category	indicators	Weights
Social	Workforce	*29*	*16%*
	Human rights	*8*	*4.5%*
	Community	*14*	*8%*
	Product Responsibility	*12*	*7%*
	Sub total		*35.5%*
Environmental	Resource use	*20*	*11%*
	Emissions	*22*	*12%*
	Innovation	*19*	*11%*
	Subtotal		*34%*
Governance	Management	*34*	*19%*
	Shareholders	*12*	*7%*
	CSR strategy	*8*	*4.5%*
	Subtotal		*30.5%*
	Total	178	100%

As can be seen from *table 4.2.3*, the ESG score is evenly influenced by each of the 3 pillars. Specifically, the environmental pillar constitutes 34%, the social pillar 35.5% and governance pillar 30.5% of a company's ESG score.

Measuring sustainability performance regarding hypothesis 1a, the value relevance of earnings takes a different approach. Measuring an increase in sustainability performance in hypothesis 1a uses a pooled sample approach, this means that observations are split into 2 samples, lowest and highest ESG observations per company. In both samples, all observations in both samples originate from the same companies and thus making the output of the value relevance model comparable between both samples. The following table further illustrates how this split works.

Table 4.2.4 - Illustrative example of measuring sustainability performance regarding hypothesis 1a

Panel A) illustrative sample before splitting into lowest and highest ESG score samples		
Company	Year	ESG score
A	2016	70
A	2019	75
A	2020	80
B	2019	30
B	2018	60

Panel B) illustrative split of sample into lowest and highest ESG scores using observations in panel A					
Low ESG score sample			High ESG score sample		
Company	Year	ESG score	Company	year	ESG score
A	2016	70	A	2020	80
B	2019	30	B	2018	60

4.2.2 Financial reporting quality

In line with section 3.1, FRQ will be measured alongside 3 dimensions: value relevance, accounting conservatism and accuracy.

In measuring, the value relevance of reported earnings and book value of assets is used in explaining the market value per share. The Ohlsen model (Ohlsen, 1995) detects the value relevance of earnings and equity data in a time period. The following is the described model:

$$(1)\; MVPS = \beta_0 + \beta_1 BVPS + \beta_2 EPS + \varepsilon$$

Where MVPS is market value per share, BVPS is the book value of equity per share and EPS is earnings per share. A higher R^2 of the Ohlson model indicates that a high value relevancy of the financial report is and thus the higher quality the financial statement is (Collins et al.,1997).

In addition to value relevancy, two alternative variables are used in this study to measure FRQ.

Herath and Albarqi (2017) in their literature review noted that the frequency of financial restatements is considered an appropriate measure of the quality of financial reporting. Herath and Albarqi (2017) mention accounting conservatism as another measure literature has used to measure financial reporting quality. According to authors LaFond and Watts (2008) accounting conservatism is a significant feature of financial reporting quality. To add to this, Watts (2003) stated that accounting conservatism reduces the ability of managers to manipulate earnings. Thus, conservatism as a proxy for reporting quality lies in the reduction in occurrence of overstatement of earnings. Watts (2003) mentioned as a measure for accounting conservatism the market to book-ratio, which is calculated by dividing the market value of equity with the book value of equity. The market value of equity is equal to the share price multiplied by shares outstanding. The share price represents the present value of expected future cash flows per share. The book value of equity is obtained from the annual report. A company is considered to account conservatively when the book value will be lower than the market value.

Therefore, a ratio higher than one indicates a bias towards accounting conservatism (Beaver and Ryan 2000).

4.2.3 Corporate Governance

In line with section 3.2 the first variable used by this study to measure the quality of corporate governance is board independence as measured by the percentage of independent directors on the board. The studies by Hussain et al. (2018) and Klein (2002) are used to operationalize corporate governance. Hussain et al (2018) found that independence of the board was amongst the corporate governance variables most positively related with two aspects of environmental and social performance. Klein (2002) similarly concluded that presence of outside directors on the audit committee and on the board were positively related with reporting quality.

The second measure used in this study is board diversity, which is operationalised as the percentage of ethnic minorities and women on the board. Hussain et al (2018) found board diversity to especially enhance the social dimension of sustainability.

The measurement for the level of corporate governance in hypothesis 2a, regarding value relevance, takes the same pooled sample approach discussed in section *4.2.1,* measuring sustainability performance regarding value relevance. Instead of splitting the sample based upon lowest and highest ESG scores, the split is conducted based upon the lowest and highest corporate governance score. This corporate governance score is calculated by summing independent board and board gender rates.

4.2.4 Control variables

Based upon previous studies, FRQ is correlated with several variables other than sustainability. Consequently, these variables might also impact the relationship between FRQ and sustainability, either strengthening or decreasing it. To minimise this risk, this study will introduce these as control variables.

Collins et al. (1997) concluded that value relevance of earnings can be influenced by the firm specific factor of firm size. Given lack of current profitability with smaller and fast-growing companies investors may place greater weight on book values compared to bigger companies. In addition, Martínez-Ferrero and Frias-Aceituno (2015) in their study stated that larger companies have more resources than smaller companies. These companies can therefore dedicate more resources to improve reporting and environmental disclosures. This study will use firm size measured by market value as a firm specific control variable.

The study of Chalmers et al. (2011) applied the value relevance theory to accounting standard changes with the introduction of IFRS. Authors found that find that earnings became more value-relevant with the introduction of IFRS. Given the differences between IFRS and non IFRS, this study will introduce this as another firm specific control variable.

Chalmers et al. (2011) also recognised industry sector as a relevant control variable. Each sector of industry will have specific sustainability and earnings characteristics as result of different risk-reward structures. Differences in sample selection on industry specification might therefore cause distortions. This study will use the Worldscope industry group classification to measure industry sector.

4.3 Methodology

4.3.1 Hypothesis 1

To test the relationship on the first measure of FRQ, the number of observations is reduced to companies which have experienced a persistent increase in ESG of 4 years or more and an increase of

10 in ESG score over the period. This means that in the definition of Refenitiv these companies have moved at least one grade category. Out of this list of observations, the highest and lowest ESG score will be selected thereby creating two sample groups of identical companies. Out of the 615 companies, 201 are identified to meet the criteria outlined above. One sample measures the minimum ESG score of each company and the other measures the maximum ESG score of each company. Given for both samples the list of companies are identical, the requirements for the three control variables are met.

The Ohlson model will be ran within each of the groups and the correlation coefficient (R^2) will be calculated. To measure hypothesis 1a, the R^2 of both samples will be compared. If the R^2 is higher in the maximum ESG score sample than the minimum ESG score sample, this would indicate that there is a positive association between sustainability performance and the value relevancy of a company's financial statement. This pooled sample analysis is utilized in the study by authors Dechow (1994).

To test hypothesis 1b, an OLS regression will be utilized. Hypothesis 1b addresses how conservatively a company accounts. The following is the OLS regression utilized:

$$(2)\ MTB = \beta_0 + \beta_1 ESG + \beta_2 MV + \beta_2 Accounting\ standard + \beta_3 Industry + \ \varepsilon$$

Where MTB is the market to book ratio, ESG is the ESG score and MV is market value. A positive β_1 indicates that an increase in sustainability performance is associated with an increase of accounting conservatism.

As for the hypothesis 1c, a probit regression will be performed. Hypothesis 1c addresses the third measure of sustainability performance, whether a company restates their financial report or not. The following is the probit regression that is to be performed:

$$(3)\ Restatement = \beta_0 + \beta_1 ESG + \beta_2 MV + \beta_3 Accounting\ standard + \beta_4 Industry + \ \varepsilon$$

A positive β_1 indicates that an increase in sustainability performance is associated with an increased probability of company restating their financial statement.

4.3.2 Hypothesis 2

As per section 3.2 Hypothesis 2 addresses whether the corporate governance mechanisms of board independence and board gender are the independent variables explaining the positive relationship between sustainability and FRQ with sustainability having a role as mediator variable. To this effect there is a lot of overlap in the methods used in hypothesis 1 when tackling how address hypothesis 2

In order to test whether sustainability performance is a mediator of relationship between corporate governance and financial reporting quality the method laid out by authors Baron and Kenny (1986) is used. The general steps for this method are as follows. Firstly, one must regress the independent variable by the dependent variable to gauge the general relationship. Applying this to the second and third measures of financial reporting quality, the following regressions are explored in the first step:

$$(4)\ MTB = \beta_0 + \beta_1 independent\ board\ + \beta_2 board\ gender + \beta_3 MV + \beta_4 Accounting\ standard + \beta_5 Industry + \ \varepsilon$$

$$(5)\ Restatement\ = \beta_0 + \beta_1 independent\ board\ + \beta_2 board\ gender + \beta_3 MV + \beta_4 Accounting\ standard + \beta_5 Industry + \ \varepsilon$$

Where β_1 and β_2 in both equations are the coefficients of interest.

Secondly, in order to assess whether sustainability performance has a mediating effect on the relationship, there must be a significant relationship between corporate governance and sustainability performance. This is explored by regressing the ESG score by the corporate governance variables:

$$(6)\ ESG = \beta_0 + \beta_1 independent\ board\ + \beta_2 board\ gender + \beta_3 MV + \beta_4 Accounting\ standard + \beta_5 Industry + \ \varepsilon$$

Where β_1 and β_2 are the coefficients of interest.

Lastly, a multivariate regression is implemented where both variables for financial reporting quality are regressed by corporate governance and sustainability performance:

$$(7)\ MTB = \beta_0 + \beta_1 independent\ board\ + \beta_2 board\ gender + \beta_3 ESG + \beta_4 MV + \beta_5 Accounting\ standard + \beta_6 Industry + \ \varepsilon$$

$$(8)\ Restatement = \beta_0 + \beta_1 independent\ board\ + \beta_2 board\ gender + \beta_3 ESG + \beta_4 MV + \beta_5 Accounting\ standard + \beta_6 Industry + \ \varepsilon$$

To test whether sustainability has a mediating effect, the β_1 and β_2 in equations (4) and (5) are compared to (7) and (8) respectively. If the magnitude of β_1 and β_2 in equations (7) and (8) is smaller than in equations (4) and (5), this indicates that sustainability performance is a mediating variable.

5.Results

This section provides deeper insight to how the data is distributed and discusses the results of the methodology discussed in the previous section. The first Hypothesis and its sub hypotheses are explored and discussed, thereafter the second hypothesis and its sub-hypotheses follow suit.

5.1 Data descriptive analysis

Table 5.1 - Descriptive analysis of variables

Variable	N	Mean	SD	min	max	Median	Skew.	kurtosis
ESG	3546	59.58	19.05	0.70	94.49	62.50	-0.56	-0.30
Price	3546	410.44	4156.52	0.015	88400	30.31	16.58	291.46
EPS	3546	23.25	107.51	0	2034	2.81	11.77	171.59
Book value per share	3546	218.71	2462.	-353.7	60141	14.59	19.51	414.90
Restatement	3546	0.20	0.40	0	1	0	1.51	0.27
Market to book	3546	22.34	445.62	-962.28	13790	1.68	24.53	623.27
Independent board	3546	59.36	25.16	0	100	60.00	-0.31	-0.39
Board gender	3546	27.63	13.61	0	75	28.67	-0.14	-0.37
Accounting standard	3546	0.82	0.38	0	1	1	-1.66	0.76
Market value	3546	12671	23686.38	1.74	299832	4964.18	5.31	39.92

Table 5.1 does not include industry fixed effects

Notable outcomes from exploring the data are as follows. Firstly, the distribution of observations regarding price, EPS, book value per share, market to book and market value are heavily right tailed and there is a large concentration of observations around the mean for these observations. Additionally, the standard deviation for these variables is large. The heavy right skewedness and large standard deviation are a result of large outliers. To combat the bias these outliers may cause observations with a Z-score larger than 2.326 and lower than -2.326 are removed which resulted in the removal of 69 firm year observations. The descriptive statistics after removal of the outliers is shown in Appendix A.

5.2 Hypothesis 1

Table 5.2 - Regression coefficient output for hypothesis 1a, 1b and 1c.

Panel A) hypothesis 1a				
	Value relevance Ohlson model			
	Low ESG scoring sample		High ESG scoring sample	
	coef.	Sig.	coef.	Sig.
Adjusted R^2	0.479		0.442	
EPS	0.169	0.589	0.479	0.184
Book value per share	1.351	<0.001	1.822	<0.001

Panel B) hypothesis 1b and 1c				
	Restatement		Market to book	
	coef.	sig	Coef.	Sig.
ESG	0.002	0.087	-0.059	0.015
Accounting standard	-0.311	<0.001	0.825	0.457
Market Value	0.000	0.677	0.000	0.730

Table 5.2 does not include output for industry fixed effects

Addressing hypothesis 1a, results show that there is a positive association between the market price and earning indicators for both the low and high ESG samples as seen in panel A in *table 5.1*. The adjusted R^2 of the model varies between the lowest and highest ESG score samples, 0.479 and 0.442 respectively. For both samples it can be observed that the book value per share plays a more significant role in predicting price than EPS, the significance for the book value per share coefficients is much higher than EPS in both samples. Results indicate that a sustainability performance potentially has a negative association with the value relevance of earnings due to the decrease in the adjusted R^2 between the lowest and highest ESG score samples.

Panel B in *table 5.2* shows results relating to Hypothesis 1b, investigating the relationship between sustainability performance and probability of restatements present in the financial statements. Looking at panel B, results show that the ESG has a weak positive relationship with restatement, an increase of 1 in the ESG score is associated with an increase of .002% chance in restatements occurring. However, the finding is not statistically significant as the α exceeds 0.05 (0.087). In investigating the relationship between sustainability performance and restatements of the financial statements, no relationship can be concluded.

Hypothesis 1c explores the relationship between sustainability performance and how conservative a company's accounting practice is, the second part of panel B in *table 5.1* shows the results of investigating said sub-hypothesis. Results in panel B relating to relating the market show a negative relationship between sustainability performance and market to book ratio, the coefficient for ESG is -0.059, thus the model suggests that an increase of 1 in ESG score is associated with a decrease of 0.059 in the market to book ratio. This finding is significant as the α of the ESG coefficient does not exceed 0.05 (0.015). This paper finds a significant negative association between sustainability performance and accounting conservatism.

Conclusion is that hypothesis 1, which hypothesized a positive relationship between sustainability and financial results quality must be rejected as in all measures no positive relationship can be concluded. This paper indicates a potentially negative association between sustainability performance and the value relevance. However, this cannot be said with any measurement of certainty due to the limitations of measuring significance regarding comparing adjusted R^2 between samples. Secondly, this paper finds no association between sustainability performance and the accuracy in the financial statements due to the lack of significance in the findings. Lastly, this paper finds a significant negative association between sustainability performance and accounting conservatism.

5.3 Hypothesis 2

Hypotheses 2a, 2b and 2c investigate whether sustainability performance is a mediator in the relationship between corporate governance and a measure for the quality of the financial statement. The following table displays the result of investing hypothesis 2.

Table 5.3 - Regression coefficient output for hypothesis 2a, 2b and 2c

Panel A) OLS regression of ESG regressed by independent board and board gender				
			Collinearity Statistics	
	Coef.	Sig.	Tolerance	VIF
Independent board	0.128	<0.001	0.853	1.172
Board gender	0.385	<0.001	0.882	1.134
Market value	0.000	<0.001	0.858	1.165
Accounting standard	5.956	<0.001	0.937	1.067

Panel B) hypothesis 2a				
Value relevance Ohlsen model				
	Low corporate governance sample		High corporate governance sample	
	Coef.	Sig.	Coef.	Sig.
Adjusted R^2	0.445		0.464	
EPS	0.131	0.684	0.504	0.157
Book value per share	1.366	<0.001	1.812	<0.001

Panel C) hypothesis 2b and 2c								
	Restatement				Market to book			
	Pre-ESG Introduction		Post-ESG introduction		Pre-ESG Introduction		Post-ESG Introduction	
	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.	Coef.	Sig.
Independent board	0.001	0.415	0.001	0.493	0.015	0.395	0.025	0.171
Board gender	0.005	0.008	0.005	0.019	0.004	0.911	0.032	0.350
ESG	-	-	0.001	0.548	-	-	-0.075	0.004
Market value	0.000	0.545	0.000	0.713	0.000	0.447	0.000	0.811
Accounting standard	-0.296	<0.001	-0.301	<0.001	0.622	0.554	1.117	0.323

Table 5.3 does not include output for industry fixed effects

To establish whether sustainability performance mediates the relationship between corporate governance and financial reporting quality, it must be established that there is a relationship between corporate governance (independent variable) and sustainability performance (mediating variable). If there is no relationship, then sustainability performance cannot be a mediator. Panel A in *table 5.3*, shows the results of regressing ESG (sustainability performance) by independent board and board gender (corporate governance). Looking at panel A, the results show that there is as significant positive relationship between both indicators of corporate governance and sustainability performance. An increase of 1 in board independence and board gender is associated with a respective increase of 0.128 and 0.385 in ESG score. This finding is significant as the α for the coefficients of both independent board and board gender does not exceed 0.05. Additionally, Panel A addresses multicollinearity concerns between corporate governance and ESG score due to the management component when calculating the ESG score. The collinearity statistics indicate evidence for a lack of multicollinearity between both measures of corporate governance and ESG score. The tolerance for independent board and board gender variables is high, 0.853 and 0.882 respectively, and the VIF is low, 1.172 and 1.134 respectively. Results support that there is a positive association between corporate governance and sustainability performance

Results displayed panel B of *table 5.3* address hypothesis 2a, which investigates whether sustainability performance is a mediator in the relationship between corporate governance and the value relevancy of earnings. To this effect the same observations by company of hypothesis 1a are divided into low and high governance scores. Looking at panel B, results show that the R^2 of the Ohlson model varies between the lowest and highest corporate governance samples, 0.445 and 0.464 respectively. Like results regarding hypothesis 1, results show that book value per share plays a more significant role in predicting price than EPS. The significance of the book value per share coefficients is much higher than the EPS coefficients in both samples. The results indicate a potential positive association between corporate governance and value relevance due to the increase in R^2. Findings regarding hypothesis 1a, panel A and B in *table 5.3* indicate that sustainability performance does not potentially mediate in the relationship between corporate governance and value relevance. This observation deduced as for sustainability performance to possibly mediate, corporate governance must have a similar association with value relevance to the association sustainability performance has with value relevance. The findings in hypothesis 1a find a potential negative association between sustainability performance and value relevance while findings regarding hypothesis 2a find a potential positive association between corporate governance and value relevance. This however cannot be stated in any capacity of certainty due to the same limitations of measuring significance regarding comparing adjusted R^2 between samples. Furthermore, the lack of capacity for certainty is further increased due to limitations of not being able to directly introduce sustainability performance as an additional variable.

Panel C explores hypothesis 2b, whether sustainability performance has a mediating effect in the relationship between corporate governance and the probability of restatements occurring in the financial statement. Results shown in panel C suggest that ESG has no mediating effect in the relationship between corporate governance and the probability of restatements occurring. The magnitude for the independent board variable does not change before and after introducing ESG, however this finding is not significant as the α for the independent board coefficient exceeds 0.05 before and after introducing ESG. When looking at the coefficients for board gender variable, the same conclusion is drawn, the magnitude of the board gender coefficient does not change before and after introducing ESG. However, unlike the observation made in independent board the finding for board gender is significant. The α for the board gender coefficient in both *figure 5.6.*1 and *figure 5.6.*2 is smaller than 0.05. Concluding exploration into hypothesis 2b, results suggest that sustainability performance has no mediating effect in the relationship between corporate governance and the probability of restatements occurring in the financial statement.

The second part of Panel C investigates hypothesis 2c, whether sustainability performance is a mediator in the relationship between corporate governance and accounting conservatism. Interpreting results from the right side of Panel C suggest that ESG is not a mediating variable in the relationship between the two corporate governance indicators and the market to book ratio. The magnitude of the coefficients for independent board and board gender rates increases after introducing ESG into the regression. Before introducing ESG the coefficients for independent board and board gender are 0.015 and 0.004. After introducing ESG the coefficients become 0.025 and 0.032 respectively. However, this finding is not conclusive as the coefficients for both independent board and board gender rates are not statistically significant before and after introducing ESG as the α for all findings exceeds 0.05. Results regarding hypothesis 2c find that sustainability performance does not mediate the relationship between corporate governance and accounting conservatism as there was no significant association between corporate governance and accounting conservatism found. In addition to this, if observations regarding the association between corporate governance and accounting conservatism were significant, the conclusion would still be the same as the mediation criteria is not upheld. The magnitude of the corporate governance coefficients increases in magnitude after introducing sustainability performance, additionally corporate governance (independent variable) and sustainability performance (mediator) do not have a similar association with accounting conservatism (dependent variable). Findings in hypothesis 1c and 2c find a negative association between sustainability performance and accounting conservatism while findings in hypothesis 2c find a positive association between corporate governance and accounting conservatism

Reflecting on findings regarding hypothesis 2, this paper finds that sustainability performance does not mediate the relationship between corporate governance and the quality of financial reporting. Even though a significant positive association between corporate governance and sustainability performance was established, results regarding hypothesis 2 find the lack of mediating effect of sustainability performance in the relationship between corporate governance and all three measures of financial reporting quality. The lack of mediation effect of sustainability performance was a result of no evidence supporting a relationship between corporate governance and financial reporting quality and the lack of uniform signage in both the relationship between corporate governance and financial reporting quality and the relationship between sustainability performance and financial reporting quality.

6.Conclusions

6.1 Research Summary

Financial reporting is an important instrument to reduce the information asymmetry between management and shareholders. Over recent years the interest of stakeholders in the sustainability performance of companies has drastically increased. Companies have responded in providing greater transparency in their sustainability performance. However, research on the relationship between financial reporting quality and sustainability has been limited and most empirical studies performed also approach financial reporting quality only from the angle of earnings management. Instead, this study looked at various dimensions of financial reporting quality and has used value relevance, accuracy and accounting conservatism to measure financial reporting quality. The central question of this study investigates whether higher sustainability performance is associated with better financial reporting quality. The theoretical framework for this relationship is found in the stakeholder theory, whereby management aligns itself with the genuine interests of a wider group of stakeholders, both financial and non- financial, for instrumental or moral reasons. This greater alignment results in an increase in quality of financial reporting. At the same time the role of corporate governance is researched as an external mechanism in aligning interests between management and stakeholders. Independent boards and board gender rather than management are hypothesized to be the main factor behind the positive association between sustainability performance and financial reporting quality.

By undertaking empirical research on the relationships between sustainability, corporate governance and financial reporting quality, based upon a sample of over 600 listed companies over a six-year period from 2015-2020, this paper has contributed to filling above mentioned gaps.

No positive relationship was empirically found between sustainability and the value relevance, accuracy and accounting conservatism of the financial report. This finding implies that increased sustainability performance as result of alignment of interests between management and stakeholders does not lead to a reduction of information asymmetry between managers and outside investors for financial reporting. The theoretical implication of this paper findings contradicts earlier studies performed (Chih et al. 2008; Kim et al. 2011; Andersen et al 2012; Martinez-Ferrero et al. 2015). These studies maintain that stakeholder theory will lead to a positive association between quality financial information and sustainability for moral reasons (Kim et al.,2011) or for instrumental reasons such as to gain competitive advantage (Martinez-Ferrero et al. 2015). Conversely this study does find some empirical support for a potentially negative relationship to exist between sustainability and financial reporting quality for value relevance and accounting conservatism. Such potentially negative relationship is in line with the findings of the study of Salewski and Zulch (2014), which put forward the theory that managers use the multiple objectives of stakeholders as an opportunity to increase information asymmetry around financial results by decreasing the quality of the financial report.

In this study, no empirical evidence was found in support of sustainability being a mediator between corporate governance and FRQ. However, independent boards and board gender are found to have a significant positive relationship with sustainability performance. This finding is consistent with previous studies, which also found the corporate governance mechanisms of board independence and board gender to be positively correlated with sustainability performance (Walls et al. 2012; Johnson and Greening 1999; Hussain et al. 2018). However, this positive relationship does not lead to higher financial reporting quality. The implication of this finding that increasing independent board membership and board gender rates are effective mechanisms to improve sustainability performance but that this improvement does not reduce information asymmetry for financial reporting quality.

6.2 Practical implications

The practical contributions of the present research lie in the positive relationship found between corporate governance and sustainability performance and in the absence of a relationship between sustainability and FRQ. External stakeholders such as governments, labour organisations and special interest groups can create alignment between their interests and the companies interests in improved sustainability performance through an increased representation of independent or female members on the board. To promote this, governments and regulators could put into place further regulations or publish best practices in terms of independence and gender diversity of the board. Other stakeholders such as labour organisations and special interest groups can expand their influence by not only addressing management but also by lobbying and approaching board members who are more likely to represent their views.

Shareholders and stakeholders who are primarily interested in improving the financial reporting, however, cannot rely on improved sustainability performance as an effective mechanism to increase their reliance on the financial reporting. They will have to find other mechanisms to reduce financial information asymmetry.

6.3 Limitations of this paper

This paper has several significant limitations, which are outlined as follows:

Firstly, there are limitations in the operationalisation of the concepts. There is a lack of distinction made between sustainability reporting and sustainability performance. This results in that improvement in reporting measured might not reflect a performance improvement (Drempetic et al. 2020) invalidating the conclusion reached that no relationship exists. Additionally, the ESG score is based on a ranking system, thus it only measures a company's performance relatively to others. This entails the possibility that the use of ESG score does not accurately capture the performance of any given company.

The variables used to measure FRQ also have limitations. The measure of value relevance revolves around R^2 of the Ohlson model. There is no ability to determine the statistical significance of a difference between the R^2 of two samples. Additionally, it is not possible to directly test for mediation effect- following the method of Baron and Kenny (1986)- by introducing sustainability in the regression as it is for the two other measures of financial reporting quality (accuracy and accounting conservatism). This is the result of the way value relevance is measured through comparing R^2 of two samples as compared to the other two financial reporting quality measures in which mediation is interpreted through the changes in variable coefficients. These limitations reduced the ability to bring significance to observations made in hypothesis 1a and 2a. As for the other two measures of financial reporting quality, accuracy as the number of restatements does not distinguish between restatements, which are the result of an intentional acts by management to distort earnings and unintentional acts (Hennes et al 2008). By using the market to book ratio as a measure of accounting conservatism an increase of the market-to-book ratio might inappropriately suggest an increase in accounting conservatism instead of a change in the economic situation or growth expectations in the market (LaFond and Watts 2008). The study operationalised corporate governance as board independence and board gender. Taking only these two variables is another limitation of the research performed. There could be other corporate governance mechanisms-such as independent audit committee or type of auditor- that have an impact both directly and indirectly on FRQ.

Secondly a further limitation of this paper revolves around previously mentioned sampling errors. the sample data set was limited to listed Western European companies over a six-year period. The sample might not be representative for the wider population of stock market related companies or certain other segments of companies. Although no relationship between sustainability and FRQ was found for listed companies a positive relationship might exist for non-listed companies.

Thirdly, another obstruction to the validity of findings revolves around causality. The use of the data was cross-sectional, which means that the causality of the relationships cannot be established. In addition, the study does not address the complex time issues in terms of time lags between corporate governance, sustainability and FRQ improvements.

Finally, there are limitations in the research set up: although identical companies were used to compare value relevance in the high and low sustainability cases, the low and high observation by company were (necessarily) drawn from different years. Therefore, the values observed might be affected by other factors not staying constant over time.

6.4 Suggestions for future research

Suggestions for further research are mostly resulting from the gaps identified as part of this study. The first suggestion is in the extension of this study into more measures of sustainability performance. This should then be accompanied by an assessment around validity of these concepts as to their accuracy of capturing improvements in performance rather than reporting. The second suggestion is to perform a longitudinal study into the time effects of the relationship between corporate governance, sustainability and financial reporting quality. The third suggestion is to extend the research to wider segments such as non-Western European companies or non-listed companies to investigate if the found conclusions apply to these segments as well. Lastly, and additional suggestion would be to further explore other ways to measure value relevance which allow determination of statistical significance of differences.

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8. Appendix A

Table 5.1 - Descriptive analysis of variables excluding outliers

Variable	N	Mean	SD	min	max	Median	Skew.	kurtosis
ESG	3546	59.58	19.05	0.70	94.49	62.50	-0.56	-0.30
Price	3474	99.337	260.224	0.015	5668.5	29.280	8.798	115.017
EPS	3474	12.815	29.958	0	266.24	2.700	4.404	23.232
Book value per share	3474	51.955	169.123	-353.7	4520	14.364	15.758	350.215
Restatement	3546	0.20	0.40	0	1	0	1.51	0.27
Market to book	3474	3.406	19.255	-47.28	592.67	1.67	23.098	603.896
Independent board	3546	59.36	25.16	0	100	60.00	-0.31	-0.39
Board gender	3546	27.63	13.61	0	75	28.67	-0.14	-0.37
Accounting standard	3546	0.82	0.38	0	1	1	-1.66	0.76
Market value	3546	12671	23686.38	1.74	299832	4964.18	5.31	39.92