Sustainability Reporting & Stakeholder Engagement: Determinants on Reporting quality

CHEN, HUI

Durham
Business School

Sustainability Reporting & Stakeholder Engagement: Determinants on Reporting quality

Hui Chen

ABSTRACT

The main objective of this work is to explore what are the driving forces of corporate sustainability reporting quality (SRQ) and what is the role of stakeholder engagement in shaping SRQ. It is found that the more companies engage their stakeholders the higher quality are their sustainability reporting. The key findings of this research are: first, company size, ownership structure and level of stakeholder engagement are significant determinants on SRQ; second, stakeholder engagement (SE) moderates company visibility with increasing effect and SE moderates company's ownership structure with decreasing effect. Using data from G250 companies, multiple factors are verified in a theoretical model. It is the first time to use GRI, KPMG and PIRC methods to evaluate SRQ simultaneously. Some interesting findings are, for example, companies of high leverage in terms of high pressure from investors are more likely to report, while their reporting quality is not necessarily high. As companies are operating in different sectors, construction companies are found less likely to disclose and if they disclosed, their reporting quality would be high; on the contrast, chemical companies are not particularly to disclose, and their reporting quality would be high if they did.

As theoretical contribution, the research provides a holistic view to link stakeholder theory, legitimacy theory, signaling theory and institutional theory together. It validates stakeholder theory in SR by arguing that SE is one determinant of SRQ rather than one of its dimensions. It also contributes to clarifications on definition of SR quality by distinguishing ambiguity between extent of reporting and quality of reporting. The author shifts evaluation of reporting quality from volumetric measurements to semantic assessments. Comparison of different methods to measure SRQ indicates a comprehensive view of what are the difference and why are the difference. This research expands and verifies theoretical model of determinants on SR and SRQ by adding stakeholder engagement as a new independent variable. How SE impacts other determinants are also explored. The comprehensive framework developed in this study to identify and assess environmental reporting quality, is an initial step in the direction of examining sustainability reporting quality. From practitioner's perspective, it helps to understand how SRQ were evaluated, and then provides implications for communication managers to enhance reporting quality and corporate communications from institutional, governance, and financial perspectives. This study argues that the quality of sustainability reports directed to various stakeholders are improved when stakeholder engagement is perceived important and said to be well implemented by companies. During sustainability reporting process, signaling of stakeholder engagement could also be enhanced. The researcher suggests companies to move from stakeholder management to stakeholder engagement, that is from a reactive way of consulting and influencing stakeholders to a proactive instrument of engaging them in process of the company's decision making and reporting on sustainability development.

SUSTAINABILITY REPORTING & STAKEHOLDER ENGAGEMENT: DETERMINATS ON REPORTING UALITY

BY
CHEN HUI

A thesis submitted to the Durham University for the degree of
Doctorate of Business Administration

Business School
Mar 2018

Declaration

The content of this thesis is the original work of the author and has not previously been submitted for a degree at this or any other university. Other peoples' work is acknowledged by reference.

Chen Hui
St Aidan's College
Business School
Durham University
March 2018

Copyright

ACKNOWLEDGEMNT

I would like to express my sincere gratitude to my advisor Prof. Mike Nicolson and Prof. Sarah Xiao, Pro. Gopal Iyer for the continuous support of my DBA study and related research, for their patience, motivation, & immense knowledge. My sincere thanks also go to my family, especially my wife JunYuan Shu, without their precious support it would not be possible to conduct this research.

CONTENTS

LIST OF FIGURS AND TABLES

Chapter 1. Introduction

Global transformation and increasing stakeholder consciousness are propelling companies to act as responsible citizens driving the sustainability agenda. As recent result shows that 93% of the directors believe that sustainability is crucial to their company's success (Accenture 2010). Many companies are sure that their commitment to sustainable business practices is to strengthen their corporate reputation, confirm legitimacy and provide credit, which is included their sustainable development report (Herzig and Schaltegger 2006). Reporting and external corporate communication play a crucial role in corporate sustainability. Most Recent research shows that in the absence of a regulation that requires sustainability disclosure, firms still seek the qualitative properties of comparability and credibility (Ioannou and Serafeim 2017).

Despite numerous literatures on corporate sustainability, a comprehensive definition of sustainability is still limited. Most research on sustainability disclosure and stakeholder engagement with sustainable development has focused on the internal factors of corporations, leaving aside the characteristics of the institutional and external context (Gallén and Peraita 2017). Mostly, corporate sustainability is considered as an approach to evaluate a company from economic, environmental and social aspects on theoretical methodology (Steurer, 2005). At the organizational level, a sustainable business has been defined as a measurement to meet stakeholder needs without compromising the ability and the future needs of development (Dyllick and Hockerts 2002). The framework of triple bottom line(TBL) means that the company is responsible for not only the creation of economic value but also social and environmental effects (Elkington,1997). Sustainable development embodies the three aspects closely to the principle: the integrity of the environment, social justice and economic prosperity. Sustainable Development should combine the present benefit with future needs without damaging the interest of future generation. With a balance of the factors that limit growth, which are population, resources, pollution, agricultural and industrial production (Meadows and Meadows, 1972), social and environmental concerns in the operation of company’s business should be combined with a voluntary concession of shareholders (European Commission, 2001). Triple-bottom-line(TBL) model related to economic, environmental and social aspects raised by Elkington (1997) and Lozano and Huisingh (2011), is a combination of its managers, performance, owners, investors, creditors, and other various constituencies studied by Hąbek and Wolniak (2016) in selected European Union member states. In this way, it is easy to understand why stakeholder concerns become key driver of any sustainability reporting.

Companies are affected by their stakeholders and report on sustainability differently (Miska et al. 2013). A sustainability report is an organizational report that gives information about economic, environmental, social and governance performance, which has a long history going back to environmental reporting. Sustainability is an increasingly important factor in evaluating a company's CR report (Lozano and Huisingh, 2011). Fifka (2012) and Kolk (2010) pointed that, there

are several methods in the history of sustainable development related reports. In the 1970s, some of the western countries have also added some early social reports in their financial reports, companies began to focus on environmental issues, such as waste gas emissions, waste disposal, material utilization, etc.

The first environmental reports were published in the late 1980s by companies in the chemical industry which had serious image problems. The other group of early reporters was a group of committed small and medium-sized businesses with very advanced environmental management systems. In 1990s, the environment part is considered as a part of the report, usually published with the traditional financial report. Non-financial reporting, such as sustainability and CSR reporting, is a recent trend which has expanded over the last twenty years. Many companies now produce an annual sustainability report and there is a wide array of ratings around. There are a variety of reasons that companies choose to produce these reports, enhance transparency and accountability as the core, they also intended to improve internal processes, engage stakeholders and persuade investors. Archel et al., (2008) suggest that by publishing TBL reports, companies mainly intend to gain and/or maintain the reputation rather than to discharge their accountability. As can be seen, sustainability and CSR (corporate social responsibility) are consistent in literature and business practice, thus this paper regards sustainability (reporting) and CSR (reporting) as the same issue. For instance, most companies published their sustainability information in their CSR reports, and they evaluated their sustainability performance and issues related to CSR through sustainability accounting, also aimed at the conveyance of useful information about its sustainability that helps decision-making of the direct and indirect stakeholders in corporations. As a consequence of its voluntary nature, the quality of such report has been fairly low, rarely covering those aspects that are more sensitive to sustainable development and ignoring issues of complexity and context. This development has led to a rise in the acceptation of guidelines for the use of the Global Reporting Initiative (GRI), as well as the criteria for sustainability reporting and assessment (Kolk, 2010; Vormedal and Ruud, 2009). However, detailed studies on the content and quality of published reports on sustainable development is still limited. Besides GRI, PIRC conducts survey on the listed companies in the UK to get their information of environmental information from their annual reports and sustainability reports. KPMG is famous to publish its survey of corporate responsibility reporting for consecutive years assess sustainability reporting for different companies. Although tones of research exist in studying sustainability reporting, how to assess and verify the report and measure reporting quality is neglected (Hahn and Kühnen 2013). Studies found that companies generally produced minimal sustainability information with vast diversity in their disclosure items (Ong, 2016).

Extant literature of sustainability reporting are mainly in the field of accounting (Berthelot et al., 2003; Deegan and Soltys, 2007; Lee and Hutchison, 2005; Parker, 2005; Spence et al., 2010). However, these studies have focused on the subject and journal papers, which lack of systematic views and methods (Burritt and Schaltegger, 2010). The important development is the study of sustainable development in the past 40 years, chronicle review done by Fifka (2012, 2013) and the

research on sustainable reporting. According to this stream, a more feasible approach is to assess the quality of sustainable development reports and what factors drive those reports.

Debate over whether to publish the report of sustainable development is no longer an issue, as more and more companies participated in sustainable development report in all regions and industries, which is now become a standard and the practice of global business operations. Regulations and legislation requirements were also enacted, for example EU directive regarding the disclosure of non-financial info by large companies adopted by the European Parliament in April 2014. The directive requires public-interest entities with more than 500 employees to issue a non-financial statement, including environmental, social and employee related, human rights with non-financial KPIs (Janek et al, 2016). Study on the determinants of sustainability reporting has make significant progress, some internal determinants are verified and confirmed such as company size, but role of many other determinants remains ambiguous and not verified (Gamerschlag and Verbeeten, 2011, Spence and Grey 2007). Compared with small companies, big companies do better in their reporting process. Therefore, the study of the motivation behind sustainability reporting is meaningful for those big companies. Maintenance of the sustainable development agenda become normal practice, the process of reporting is highlighted as an important method to promote the sustainability of companies (John Wiley. Browne and Cudeck, 1993). Now the question becomes "what" and "how" to report a company's sustainability. To answer this kind of questions, more empirical studies are necessary.

Recent literature shows a large amount of structure and content of linkage between the stakeholder theory and sustainability. Stakeholder pressure is believed as main driver of sustainable development, most research focus on indicators, and how stakeholder pressure affect the sustainability reporting has been neglected, Moratis, and Brandt (2017). For example, according to GRI, the process of multi-stakeholder involvement is the most central factor in evaluating the company's sustainable development as it reflects the relationship between the company and its stakeholders, which can also be viewed as a basis for the company's operations (Herremans et al, 2016). An indicator of this topic is described in detail, which reflects the interests of stakeholders, including business leaders, investors, employees, accounting and legal institutions and other institutions in society, long-term and global sustainable development of the company. Stakeholders want reports with high quality, and then they can have a general view of the company's growth and risk. In the process of information communication, correct communication strategy is an important part in the process of information transmission. Adams and McNicholas (2007) show that stakeholder can hardly create and get the information about sustainable development report. This is demonstrated by James and Donaldson (2001). Companies assume social and environmental impacts that need to be submitted for sustainability reporting, and then the public know what they are, because the process were usually supervised by the government, the legislative or some social organizations. But from the perspective of shareholders, they will not be willing to do so, because of the transparency and disclosure of such information may potentially conflicts with their interests.

Sustainable development disclosure has the following effect on the disclosure of the pioneer enterprises: better reputation and resources. And this explains why some companies still report their sustainable development despite the lack of regulatory and legislative environment.

The relationship of companies and their stakeholders can be described in two folds, on one hand, companies depend on a supply of resources from various stakeholders, so that management is challenged to secure social acceptance or in other word legitimacy. Thus, creates the need of communicating the benefits that the company creates for society and the sustainability effects of its activities. On the other hand, the vision of sustainable development requires participation, which in turn requires the reporting and communication of sustainability-relevant issues and activities. No participation is possible without communication and media. Research on stakeholder pressure and legitimacy aspects as determinants of sustainability reporting quality is remarkably scarce Hahn and Kühnen (2013). Comprehensive theory application calls for enterprises not only needs interpretation of the impact of stakeholders, but also the mechanism about how companies respond to these effects. In addition, when describing the respond to stakeholders, scholars must consider multiple and mutually influenced interactions at the same time (Rowley, 1997). Recently companies use social media to engage stakeholders as a means of defining the contents of CSR report, and that the level of interaction is generally low, Manetti and Bellucci (2016). This paper examines the role of stakeholder engagement from lens in the sustainable reporting under the scope of the world biggest companies. Based on a cross-sectional study of 250 companies in the list of Fortune, the researcher found room for improvement both in stakeholder engagement and sustainability reporting.

When pursuing the aim of profit, relationship between its internal and external stakeholders is always an important issue in a company which should be included in the analysis of sustainability approach as well (Dunphy, et al, 2003). Dyllick and Hockerts (2002) emphasized that in the process of sustainability development, firms should not only meet the needs of internal and external stakeholders, but also guarantee the interest of future stakeholders as well. To a certain extent, the relationship between stakeholder participation and sustainability disclosure is discussed. For example, Habisch et al (2011) explicitly claimed that the method of corporate social responsibility (CSR) is conducive to some Stakeholder engagement initiatives, e.g., stakeholder dialogue. But it ignores the importance of diversity of stakeholders and their participation involved in the process. Therefore, the validity of the debate and its relationship with corporate social responsibility is still unfinished. A few authors emphasize the relevance of stakeholder to create social capital, which can represent an important asset (Habisch and Moon, 2006; Mitchell et al., 1997). Companies seek strategic management, stakeholder involvement, continuous learning, knowledge transfer, and participation in decision making (Van Buren, 2001). Although the theory of sustainable development is very strong, the empirical research on how stakeholder drive such development and reporting is scarce. The author presents a model of the relationship between how company perceives their stakeholders and firm specific and contextual variables, which are explored in the context of sustainability reporting practices.

Sustainability was developed in response to stakeholder demands, how reporting is used to engage stakeholders is understudied (Herremans et al, 2016). Recently companies and their managers have found that it is no longer sufficient to define corporate social responsibility (CSR), the negative impact of their activities on the economy, society and the natural environment; stakeholders want to help address the challenges that facing society and put positive impact on the environment. Rather than assuming a deliberative approach that is aimed at forging a democratic consensus on how to address specific sustainability issues, this means to develop new strategies and policies, and work with other stakeholders. It is also important that managers must be allowed to demonstrate this positive impact, actions and results (Dubbink et al., 2008). Initially these expectations are limited to the production of consumer goods, but they have been expanded to all industries and businesses of all sizes (Blomback and Wigren, 2009). Large corporations are responsible for their entire supply chain, since they affect the policy and practice in small and medium-sized companies (Sobczak, 2006; Baden et al.,2009).

These trends, along with the emergence of various standards and management tools in the field, are conducive to the current economic mainstream of integration of social and environmental aspects (Gilbert and Rasche, 2008). The organization follows a path of evolution in their attitudes and behavior - from the compliance to competitive advantage. Figge and Schaltegger (2000) developed a measure of sustainable value in their paper, pointing that the value of environmental management issues related to the question is a key issue to participate in environmental management, which can create a sustainable development of the enterprise value. They are looking for a management approach that focuses on creating value. The purpose is to identify factors that are known as value drivers. According to Figge and Schaltegger (2000) and Figge and Hahn (2002), the only incentive to provide sufficient returns in the economic, environmental and social resources is to create sustainable value. Hart and Sharma (2004) clarify the relationship between sustainable development and the value developed by sustainability. According to their opinion, company is sustainable only if it considers sustainable development, which includes the production of economic, social and environmental benefits, which is the so-called triple bottom line framework. Most companies try to reconcile these aspects and increase the value of shareholders. By a sustainable development initiative, although different frameworks exist, their main goal is to improve the environment in most cases. This supports the decision in my paper to measure environment performance as the only anchor of sustainability.

The contribution of this research to the literature is another perspective towards the functions of sustainability report. First, this study attempts to fill the gaps in research about the definition of sustainability reporting quality (SRQ) and its measurements. The author improves on the prior literature by focusing on discretionary sustainability disclosures analysis and developing and verifying a content analysis index based on the Global Reporting Initiative guidelines to assess sustainability reporting adoption (disclosure behavior) and reporting quality. Because many research confuses reporting extent with reporting quality and do not distinguish the two different things. Then

to study quality, three mainstream measures are simultaneous used to evaluate sustainability reporting quality (SQR), it is the first academic effort to use three different quality measures at the same for the same groups of target reports, in this way this research contributes a clearer picture of what is "quality" vs "extent". two confusing terms in most cases.

The result of comparison could lay robust ground further SR quality standard development. Second, as Larrinaga-González (2007) pointed out, even though the usage of sustainable development report analysis framework is low, the method needs to be checked. In previous empirical studies, researchers tend to focus only on firm characteristics (such as size or industry) or general factors (social, political, and economic) (Adams, 2002). This study also examines the effects of internal factors perceived from sustainability reports, which aligns with the new institutional theory (DiMaggio and Powell, 1991; Powell, 1991; Scott, 2008), and it helps to understand the various factors combining with stakeholder engagement in the initiation of sustainability report. One major feature of this theoretical framework is that it moves away the organizational activities, and management's attitude is deliberately included to achieve a careful consideration of sustainability reporting. In this way, the author provides a detailed link to stakeholder theory, legitimacy, signaling and institutional theory. Third, while many determinants have been studies for companies' sustainability reporting (e.g., reduction of disclosure costs) (Lang and Lundholm,2000) or information asymmetry (Gibbins et al., 1990; Clarkson et al., 1994; Frankel et al., 1999), most of these reasons are mainly related to financial stakeholders.

To more broadly explore the motivations behind cooperate sustainability disclosure practices as reflected through sustainability reporting and its quality, the researcher proposes and test a model of the relationships among perceived stakeholder engagement level, and other contextual variables. This model better captures reporting quality related to perceived stakeholder engagement level of companies studied than the indices employed by prior studies. Through identifying and verifying a whole set of determinants of SR, the author argues that that stakeholder engagement (SE) is the key determinants of SR quality rather than one measurement dimension of SR quality, it also moderates some other determinants of sustainability reporting. Finally, this research contributed by introducing a set of potential research themes by providing an identified gaps and underexposed themes in extant research in relation to the quality of sustainability reporting.

The research also has a direct impact on the business practice. First, understanding of how SRQ were evaluated will help communication manager better influence the disclosure process. This research provides insight into the general methodology about information disclosure. By understanding the determinants of sustainability reporting quality, disclosure can be treated as a response to the environment, stakeholder requirements and sustainability development. Through this research, the author got a deeper understanding of why and how some companies offer certain types of information, which creates indications to develop better sustainability report to satisfy stakeholders. Second, as results in this study shows, different set of SRQ measures comes from different perspective, GRI more from institutional, PRIC more from reputational, and KPMG more

from financial. This helps to understand where various sustainability report ranking comes from and provide indication of ways to evaluate sustainability report quality with different focus. Third, in this paper the author examines how companies perceive the value of various stakeholder's form how those perceptions reflected in sustainability reporting. Our study is motivated by views that the stakeholder problem should be investigated from a perspective that examines the interconnectedness of actions and reactions. This links sustainability reporting with stakeholder management together. Stakeholder theory requires company not only an explanation of stakeholder influences but also how firms respond to these influences. Company's perceptions of stakeholder's warrant investigation. Understanding how management's perceptions directly influence corporate environmental disclosures will assist standard setters in better comprehending how to effect change in such disclosures. Analyzing sustainability reporting as reactions to their stakeholders' demands, this research gains insight into why high quality of information are provided by some firms but not by others. The process of this research is also a reflection of multiple theory application practice by exemplifying popular theories behind sustainability reporting which is a combination of stakeholder theory, legitimacy and signaling theory.

The main purpose of this paper is to give a critical analysis of data resources, define and evaluate the basic assumptions, methods and selection of tools. Provide indications on the definition of sustainability reporting quality, which is hard to define and has been neglected by prior studies. Combing two streams research in sustainability reporting (SR) development and stakeholder engagement (SE), this study aim to establish and verify suitable theoretical model based on the measurement of the quality of SR and add SE, which can be the starting point of the research about theoretical premise on the selected companies. As result shown, the author verifies and defends an argument derived from stakeholder theory, that stakeholder engagement (SE) should be taken as the key driver of sustainability reporting quality (SRQ), instead of as one dimension of SRQ measure.

The paper is structured as follows: First, the literature review will be described to give a clear perception of terminology, development history, existing framework and indicators, linking research on sustainability reporting quality (SRQ) and research on stakeholder engagement (SE). Then hypothesis is made from inconsistent or ambiguous conclusions on the determinants of sustainability disclosure and its quality, which presents the main research gap in extent study. Research methodology based on content analysis will be given in the next part. Then a descriptive analysis of the data is provided to a clearer picture on quality of sustainability report (SRQ) vs extent SR (SRE). Data analysis shows what role SE plays in relationship with sustainability disclosure and sustainability reporting adoption and its quality. In discussion, the author presented how our hypothesis are verified, explain the interesting findings and indicated next steps could be considered for further research.

Chapter 2. Literature Review

The researcher uses Web of Knowledge database based on extensive coverage of Anglophone peer-reviewed journals from business, management, and accounting on sustainability topics. The initial starting point for any considerations on sustainability or CSR reporting lies in the overarching (normative) concepts of sustainability and CSR. Adoption, extent and quality are the three levels of sustainability reporting research. Current literature often still seems far from considering truly complete sustainability reporting on all three dimensions of sustainability. While the researcher noticed a shift in focus from isolated social or environmental reports to a sustainability focus on the DBL or recently even on the TBL, the latter is still in its infancy so that there are plenty of opportunities for future research studying true sustainability reporting beyond compartmentalization and isolated approaches. Figure 1 shows the theoretical stream of stainability reporting research.

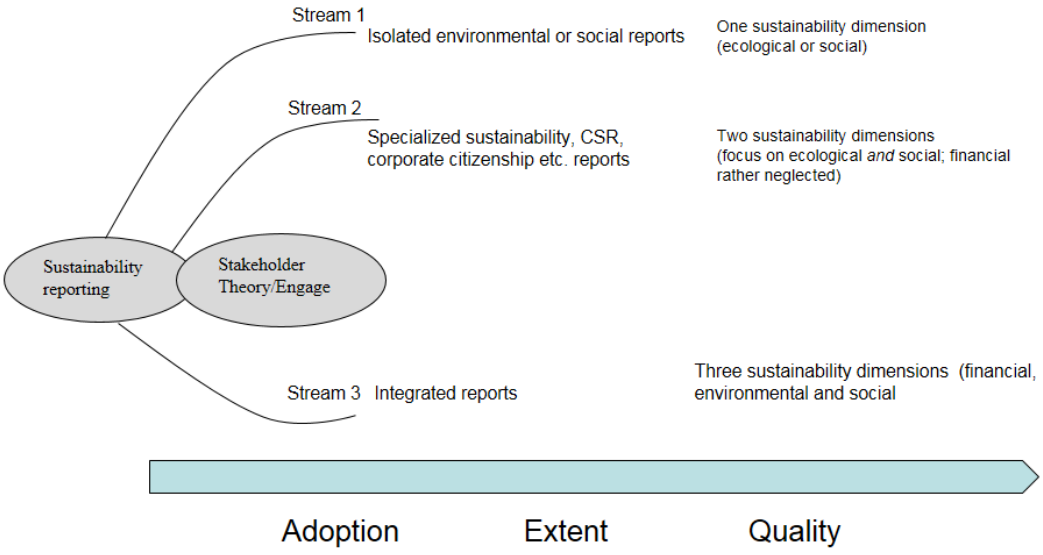


Figure 1 Theoretical Stream of Sustainability reporting

2.1 Sustainability

2.1.1 Definition of sustainability

Historically, the long-term sustainability of the process or state is primarily used to describe the process or state of being maintained (Holdren et al, 1995). In the literature of strategic management, the term is often used to refer to the enterprise and their daily evolutionary strategy to survive. This interpretation is the best example of a resource based view of the premise that a company's goal is to obtain a sustainable competitive advantage (Barney, 1991; Browne and Cudeck, 1993). Recently, from this term to describe the enterprise agenda, various considerations are integrated, including financial and (potential) additional financial goals, social responsibility, environmental protection, poverty alleviation, and stakeholder involvement. As for latest definition, Dyllick and Hockerts (2002) refers corporate sustainability as “meeting the needs of a firm’s direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders as well”.

Despite the long-term use of sustainability with these different corporate goals and sustainability taught in business school curriculum (Christensen et al, 2007), it is believed that the enterprise carries on a long history of public service (Learned et al ,1965). For example, in their collection of classic case studies, Learned et al (1965) proposed a framework for strategic development, which requires the manager to identify and accept corporate social responsibility which will be explained later. Even in the first few years of the environmental movement, researchers realized that "the new focus on conservation of natural resources, water, wastes and air pollution can significantly affect the company's strategies and their impact on society," Thus, there is evidence that, as early as 1965, there is an argument that corporate strategy takes into account the impact of social and environmental benefits by Aerts et al., (2008). Corporate social responsibility has been learned and enhanced by the academic interest of corporate ethics and corporate social responsibility (Elbing, 1970). Over time, as the business activities of the natural ecological system and environmental regulations become more and more stringent, more research about the environmental management appears (Kneese, 1973). Scholars have contributed to the literature in environmental, social and economic areas, or an integrated phrase refers to a diversity of issues that have become long-term sustainability (Engardio, 2007; Montiel, 2008). Some representative definitions of sustainable development, include The Brundtland definition from Our Common Future and triple bottom line (TBL) definition (Elkington, 1994; Elkington, 2004).

Unlike the definition of (Brundtland, 1987) for the majority of the audience, especially policy makers, TBL's definition is new, specifically for the enterprise environment. TBL's perspective focus on the social and environmental costs and benefits is not just about the economy (Elkington,

2004). This view requires for social and environmental consequences that are classified as fully objective measures which can be aggregated with some criticism of corporate financial performance (Norman & Macdonald, 2004). Advocate of this, in general, does not support the idea that social welfare and environmental adaptability can be measured by a single number (Pava, 2007). TBL is understood as a framework to help companies achieve economic value creation when improving social and environmental benefits.

The definition is presented with a variety of areas ranging from ecology, environmental economics, public policy, human competition, and development, and introduce some additional dimensions, i.e., connectivity, inclusion, fairness, prudence, and security (Gladwin et al., 1995). However, the researcher suggests that these two definitions are based on sufficient investigation of the sustainable development of the enterprise concept assimilation, because they often mention that managers and scholars should be familiar with TBL (Hart, 1995) and Marshall et al., (2010). Sustainability was defined in three dimensions (economic, social, and environmental), with a complete concept incorporated into poverty and intergenerational equity issues (Brundtland, 1987). Thus, one of the earliest and most recent definitions, shares this dimension and the expansion range. As the TBL method is new, which is designed for business applications, and the research incorporated it in the analysis of the dimensions of sustainability.

Sustainable development can be defined as a dynamic process in the economic, environmental and social system to meet the requirements of the present generation, as well as increasing the resources and capacity, which is donated to future generations. Sustainable development is a positive change, which does not occur in the expense of the environment or human survival of the social system. Traditionally, businessman focus on shareholders' wealth, however, due to globalization, a company's "license to operate is no longer given by a single interest group but by the global public stakeholder, and this has entered into the analysis of a company's financial and non-financial information.

2.1.2 Corporate social responsibility (CSR)

Corporate social responsibility (CSR) is a term used to describe the awareness of company toward its operation's impact on economic, social, environmental and governance concerns, also including how it communicate and address those issues.

When resources become scarce, and consumers become aware of the environmental issues such as the rise of global warming is due to business behavior. Many companies are under pressure from shareholders and consumers to behave in a moral and sustainable way. One tool for the company is to act under the needs of corporate responsibility. Shareholders are required to engage in ethical and long-term growth practices. Since then, the company has gained a competitive advantage in the practice of corporate social responsibility, continue to do usual business. A company that treat moral

and social responsibility as its aim can lead to a better relationship between higher sales and community and employees, which in turn, to attract top talent position in the market and relieve the relationship between the shareholders and stakeholders. From the view of human development, Corporate social responsibility is concerned about the enterprise sustainable development elements and TBL. Some literature considers the content of corporate social responsibility as a voluntary process of a company. In this case, it can be considered that the best form of corporate social responsibility is for human, and the company does not expect any return on the activity. However, commercial companies act mainly for profit and not in corporate social responsibility management. This can increase investment benefits generated in the financial and non-financial aspects of CSR. Corporate social responsibility can be defined as the assumption of the rights and obligations of the organization as a result of the economic, political, and social activities. In other words, it is the creation and development of values, such as protection, sustainable development, responsible and economic compromise, as well as the environment.

The world sustainable development and Industry Council (WBCSD) defines corporate social responsibility for employees working in the company, with a commitment to sustainable development of the economy, the quality of their family life, and the improvement of the local community and the whole social order. The emergence of the concept of social responsibility for the purpose of the new role of business. And it is believed that the corporate social responsibility system, enterprises should embrace corporate citizenship and management of their own affairs, in a series of different stakeholders to promote sustainable development of the target closely integrated. Social responsibility is a prerequisite for sustainable development, and it is pointed out that the social responsibility should not be an end, but a means to an end. A socially responsible enterprise establishes the benefits of both the employees and other stakeholders, leading to their reputation for good evaluation. It is further pointed out that there is a social responsibility but until the stakeholder and managers can measure these benefits, it will still be a lot of intangible benefits related to the edge of the activity.

While these changes between business and social concern around the world, they take the form of a change from one context to another, reflecting the culture of each country's social and economic and legal traditions (Berthoin Antal and Sobczak, 2007). Corporate social responsibility is often defined as the corresponding voluntary action beyond the mandatory requirements of law (Carroll, 1999), the state of the legal context has a significant impact on the company's approach is "corporate social responsibility" ('for example explicit or implicit). Through the implementation of law system, it provides the commitment of corporate social responsibility, and it will be to the interests of the company or to provide mandatory social and environmental reports to ensure the transparency of the company's strategic role, policy and performance. In addition, national legislation drives fiscal policy or the social and environmental standards into the conditions for the public interests, to create a motive for social responsibility.

However, in the era of globalization, the development of corporate social responsibility theory

and practice is also due to the rapid development of the international community, such as the development of the national organization of the initiative (Griesse, 2007), non-governmental organizations, trade unions (Berthoin Antal and, Sobczak, 2007), and the rapid development of international academic discourse. Global corporate social responsibility standards, such as the development of the United Nations Global Compact, the Global Reporting Initiative (Levy et al., 2010) or the ISO 26000 social responsibility Guide (Schwartz and Tilling, 2009) is helpful in understanding and supporting the exchange of experience between the leading of the company in the field of corporate social responsibility, and to support the exchange of experience between the company's leaders from different countries. The transnational dimensions of many companies and their stakeholders are also conducive to the practice of corporate social responsibility and some of the convergence of discourse.

Adapt to its specific context. In a similar vein, NGOs and trade unions are increasingly trying to take a global strategy to try to influence the relationship between business and society. Finally, in different national management education and research on the development of a common concept in the field of corporate social responsibility, the close cooperation of transnational networks (Wilson and Pickard, 2007) or the principle of liability management increased the knowledge sharing. Information and communication technologies are provided by stakeholder to increase the potential for sharing ideas and practices in the field of corporate social responsibility, no matter how far they are far away from each other. Thus, the disclosure and practice of CSR is a complex mix of national traditions and global influence. This situation creates a challenge in the field of corporate social responsibility for both companies and their stakeholders. For multinational companies, it is difficult to establish a sound balance between the common principles, must be applied to the world and the need to adapt to the local specificity. The same challenges exist for other stakeholder groups, the need to develop consistent strategies for these two general requirements, applicable to all companies and local priorities in the context of specific countries.

2.1.3 Dimensions of Sustainability and CSR

The broad definition of corporate sustainability recognizes the company's policies and practices that reflect the company's sustainability. Such a concept allows multiple cultural consideration in the framework of environment (Florida et al, 2001). As a result, the motto, corporate motto, mission statement, commitment to the voluntary management system and external audit reports, may be taken to respond to the idea of sustainable development that reflects the sustainable development of the enterprise. While formal and informal representations of activities and beliefs and sustainability are defined, this research distinguishes between one-dimensional and multidimensional definitions. For example, the following policy statement from the World Wildlife Fund (WWF) reflects a one-dimensional motto / policy, human are in the rescue of the only earth. (World Wildlife Fund, 2009).

This sentence shows a focus on sustainable development of the ecological / environmental aspects, but does not explicitly embrace or include social or economic aspects. At the same time, it only loosely means the inter- generational problem. A slight difference is found in P & G slogan / policy, which believes sustainability is the improvement of present life and generation. This policy reflects more than the first dimension, because it explicitly covers social aspects and intergenerational aspects. In contrast, the two organizational statements, considering the multidimensional policy vision statement by its behavior, displays the dimensions of sustainable development of the entire industrial world: people, processes, products, places, and profit, so the researcher can gain the power of influence (Interface, 2009). This sentence is so clear and specific to the category that it may be an exception to the definition of the definition that reflects the multidimensional sustainability. However, its existence implies a potential range of such a company policy. In fact, because of the heterogeneous reaction range representative in this example of the practical policy, the author found the existence of a crucial distinction between policy and its dimensions. Therefore, this research studied the formal sustainable development policies, and the combination of economic, social and environmental sustainability.

Lozano and Huisingh (2011) added time dimension into this framework which includes ‘’ short, long and longer-term perspectives”, which is in line with the claim of Dyllick and Hockerts (2002) that ask for a balance between the recent and future stakeholders and incorporate the dynamic and simultaneous evolution between the three aspects in the framework. Lozano and Huisingh (2011) mentioned that this terminological inconsistency may be due to the compartmentalization among the dimensions mentioned when evaluating sustainability after some reporting guidelines.

As can be seen, sustainability and CSR are consistent in literature and business practice, thus this paper regards sustainability (reporting) and CSR (reporting) as the same issue. For instance, most companies published their sustainability information in their CSR reports, and they evaluated their sustainability performance and issues related to CSR through sustainability accounting, also aimed at the conveyance of useful information about its sustainability that helps decision-making of the direct and indirect stakeholders in corporations.

2.2 Sustainability reporting (SR) and Framework

2.2.1 What are sustainability Reports

Sustainability reporting is used to measure the specific corporate performance in sustainability and CSR. Initially Sustainability related accounting utilizes information management and accounting methods to create high quality data supporting internal decision-making in corporate sustainability. While accounting discipline is to follow the generally accepted accounting principles

(GAAP), there is no standardized measure of a company's environmental and social benefits or costs. Sustainability reporting (SR) then provides stakeholders with information on status and progress of corporate sustainability through formalized ways (Schaltegger et al., 2006). Growing evidence suggests that the company has expressed one or more variants of the sustainable development report. KPMG's joint report and the United Nations Environment Program (UNEP) revealed that in 2006, more than half of the G250 companies produced the sustainability report (Dittrick, 2007). Extant studies show that the concept of sustainable development is clearly growing in the organization (Wheeler and Elkington, 2001). However, previous research firm reports stressed environment (Adams, 2002) or social organizational elements (Cowen et al, 1987) in isolation. Recently, this approach is changing and researchers have begun to discuss the specific behavior of sustainable development report (Gray, 2006a, 2006b, Wheeler and Elkington, 2001). In our definition and this study, the author only takes sustainability report and integrated annual report as research samples.

Annual Reports

Annual reports include the income statement, balance sheet and cash flow statement. Ratios and indicators should be included in the field of business, marketing, business, technology, and quality to check the financial competitiveness of the enterprise. In addition, from the perspective of social and environmental information in the annual report on the relevant issues of risk management, potential liabilities, research and development policies, etc. In any case, each country has a specific regulatory theme. Last time the financial failure of the decision makers to strengthen the rules to ensure the high level of financial accounting and reporting activities of transparency and fairness. However, if the researcher uses the interests of the stakeholders of the company, this tool is not enough to cover all aspects of corporate performance, including social and environmental issues.

Social Reports

The impact of social reporting measures on the company and its activities in different stakeholder groups. Thus, it is a way to support management decision-making processes and business communication / engagement policies. According to the method, it is analyzed by ethical policy, value added statement and stakeholder relationship.

Ethical policy includes the relationship between the specific enterprise commitment to the stakeholders and the company's view. These commitments are based on the corporate social performance evaluation through the other two elements.

Value added statement is a traditional tool in the social report: for example, it uses the German company called Sozialbilanz-Praxis (Rusconi, 1988), this is a report of the traditional financial accounting and social contact, measures of additional (financial) value creation and distribution of different stakeholder groups (employees, financial partners, state and local authorities, communities, shareholders) or investment companies. This is the first time that the stakeholders are included in the creation of corporate value (Figge and Schaltegger, 2000).

Stakeholder analysis aims to assess the sustainability of the interaction between the company and its stakeholders through qualitative and quantitative information. This analysis also includes accounting in order to understand the economic forms of social costs and benefits related to social activities and policies (such as the cost and benefit of internal occupational health and safety).

Environmental Report

Corporate environmental reporting is a company that uses tools to manage and control business activities and to communicate with stakeholders, especially those interested in environmental issues (Azzone et al, 1997). Although an independent and authoritative model of environmental reporting is not present, because of the characteristics of the tools (still generally voluntary way, concerned about national, industrial, enterprise specific, etc.), it is difficult to define the boundaries of the environmental information system. Depending on the nature of environmental information (physical data or financial items), these measurements refer to the object (process or product), which can be classified as the main method of development so far as the relationship between corporate activities and natural capital is as follows.

The environmental reporting framework is designed to include all the methods for identifying and combining accounting systems to collect the physical (internal) data of the related environment management costs and benefits to choose the process and product (Burritt et al, 2002). According to this approach, the environmental report consists of input-output analysis, Eco-balances LCA environmental management and cost - income account related processes.

Therefore, the two important information flows in the environmental reporting system are: physical data flow related - energy and material accounting; flow related financial products - monetary environment accounting. Energy and raw materials accounting is to collect information on the environmental impact of the company's activities (Hallay, 1990). Input-output analysis is to collect and organize information on energy and material consumption and related operations. Eco-balances LCA is to measure the impact of the company's major products on the environment, the consumption of resources and pollution of their entire life cycle (from-cradle-to-cradle method). Monetary and environmental accounting (the United States Environmental Protection Agency, 1995) is a way to determine the financial costs / benefits borne by the company, the relevant environmental management activities by the company itself, which represents the development of second important dimensions of corporate environmental report. It is a form of tool to measure the economic number of environmental management to improve decision-making. This monetary environment accounting must be integrated with the existing financial and management accounting systems (Burritt, 1997). Therefore, defining this environmental accounting is very complicated and some companies in the world have introduced an advanced system to measure the environmental costs and benefits.

Sustainability (development/value) Report

One-dimensional reporting for example, Environment Reports, or social reports remains existent,

however, only reports that simultaneously cover three dimensions of sustainability can truly defined as sustainability report. There are two main trends regards sustainability reporting, one is multidimensional reporting (Kolk, 2010), another is integrated reporting. The later integrates sustainability information with traditional financial repot in a single format to provide a holistic picture (KPMG, 2013).

A set of integrated performance indicators for the sustainability reporting system allows a company to examine and report on the overall performance of the enterprise. Its goal is to build a real and fair view to strengthen the business situation, and improve the relationship between the interests of the stakeholders in a sustainable way. This is a basic tool to meet the needs of information needs from different stakeholder's groups and the concept of the impact of corporate responsibility. Therefore, in order to achieve a more complete business behavior, the company should also be defined as a set of integrated performance indicators, that is, the horizontal index (GRI, 2002). The cross-cutting indicator involves the physical and technical quantities of performance (for example, an indicator can be added to the total amount of waste generated during the year). In this way, the company align with the triple bottom line method, to take a more comprehensive and integrated perspective, and define a more reliable and material business activities and sustainability related effects.

In practice, reflecting the new trend, it can be found changes related to the report "global top 250", an increase in the proportion of businesses that is called voluntary environmental, social and sustainability reports from 35% in 1999 to 52% in 2005 (KPMG 2005). In the early stages, the enterprise thought that this development is more necessary (must be done, because it is mandatory) but then more and more understanding, which may be useful as part of a competitive advantage. Under this background, a lot of researches were subsequently published, and appropriate indicators were constructed, to measure corporate sustainability or sustainable combination measurement index. As early as 2001, the European Commission (Commission European) issued a proposal to integrate sustainable development premise into the enterprise annual report (2001 European Commission).

This action results and general response is the sustainable performance report to enterprise: the "sustainability" of them is considered as separate documents or reports as part of its annual report (Hofmann and Jones 2005; o humorous Dwyer; Amran and Haniffa 2011), but this is so encouraging trend which is mainly limited to several major problems. These reports become the business and subsequent public documents to provide information about their position, a painting and an activity, economic, environmental and social issues, and its internal and external stakeholders. In academic understanding, the "sustainability" report is equivalent to social reporting, corporate social and environmental reporting (Research Council), which has the same meaning as it is in fact a corporate social responsibility report for its stakeholders.

In summary, terminology used for reporting varies between companies. research shows the most

commonly used terms globally are ‘corporate responsibility’ of 14% or ‘corporate social responsibility’ of 25% and ‘sustainability’ report of 43% (KPMG, 2013). In this research, the author includes, the use of the term ‘corporate responsibility/CR should therefore be taken to also cover the term ‘sustainability’ and other similar terms.

2.2.2 Triple bottom line

One of the most common definitions of resource descriptions is by Elkington who originally created the term: that is, the triple bottom line is a framework to measure and report on business performance for economic, social and environmental parameters. In its wide range, the term is used to capture the entire set of values, problems and processes that companies must address to reduce the damage of their activities and create economic, social and environmental values. It needs to be clear about the company's objectives, considering the needs of the company's stakeholders (Elkington, 2004).

Economic performance includes income or expenses, taxes, business environment, and employment which refer to questions about the company's annual financial report, but also consider issues such as: the ratio of market value, investment in human capital and research and development, wages and benefits, community development plans and the value and location of outsourcing products and services.

Environmental performance is the potential impact of environmental variables on the measurement of natural resources and their ability to survive that includes factors such as energy consumption and its origin, resources and materials, emissions, waste of water and waste management, land use, and management of habitat. It contains the quality of air and water, and toxic waste. Specific examples include power consumption, fossil fuel consumption (Suggett et al, 2010).

Social performance addresses the interaction between an organization and its community, including employee relations, health and safety, wages more than living expenses, non-discrimination, indigenous rights, community involvement, and customer satisfaction. These data are collected on states and state levels, which can also be in local or community level (Suggett et al, 2010).

The term of resource description is a response to the public's need to increase transparency and accountability in the organization and the business sector, the growing tension between the emerging social values and the traditional form of value creation (Wheeler and Elkington,2001). Corporate, individual customers and community members, with their purchase and resistance, also exert pressure on organizations to social and environmental responsibilities in their pursuit of profit. Companies can no longer only be responsible for internal management and shareholders, but also the local communities. As shown in Figure.2, the highest potential is the overlap among economic, environmental and social aspects.

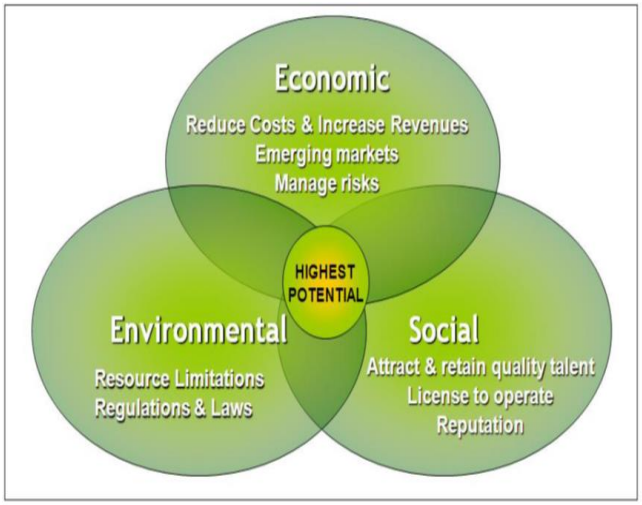


Figure 2 Drivers of the triple bottom line Source: Musikanski (2010)

According to the Group 100 sustainable development report (KPMG,2013), the companies that reported the key expectations of stakeholders and the relationship of these stakeholders improved the quality of a company's report, thereby protecting and enhancing the value of the organization. Some of the specific benefits of the organization include: reputation and brand; to ensure social license management, attract and retain high quality employees, improve the market access for investors, establish position as the preferred supplier and reduce the risk; saving cost, innovation; focus on stakeholder needs and management, create a good foundation for stakeholders' communication.

In addition to the relationship between the key stakeholder groups, the decision to take the environmental and social responsibility for the environment is generally considered as a powerful driver of the improvement in the internal behavior regarding to environmental aspects, in addition to the benefits associated with a key stakeholder. The availability of relevant information in the economic, environmental and social performance may not have been collected and well evaluated in a proper way to identify and focus on the specific aspects of the company's performance.

2.2.3 Rise of the Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) is a web-based organization that is the world's most widely used sustainability reporting framework (Brown et al, 2009b). This part will introduce GRI's commitment to continuous improvement and application of the global framework.

According to Brown et al (2009b), GRI's core objectives include the mainstream disclosure of environmental, social and governance performance. The production process starts with a few conceptual paper steering committees of the five working groups. In 1998 the United Nations

Environment Program (UNEP) formally joined the GRI as a cooperative institution to enhance its legitimacy, financing channels (through the United Nations Environment Program Foundation), administrative and intellectual support (through the United Nations Environment Program's technology division, industry and economics). The first draft of the GRI guidelines is an international seminar at the Imperial College London in London March 1999. The pilot test program immediately implemented, which involves more than a dozen of meetings around the world in a different position.

At the beginning of 2000, GRI interim secretariat was established to manage the daily operation of GRI. GRI's first official version of the guide was released in June 2000, and immediately began to work among the 31 major companies. Second GRI International Symposium (November 2000 in Washington, D. C.) succeeded in attracting non-representatives of participants, such as labor, international non-governmental organizations, and investors, as well as new geographic regions: Africa, Asia, and the United States. It also has a global multi stakeholder network, GRI's users increase from 200 to more than 200 members in 2000 and 2002. According to Brown et al(2009b), a ceremony was held in April 2002 in United Nations Headquarters, New York, as an independent organization, that is, GRI was sworn in as a mission to provide management guidance through continuous improvement and dissemination. Subsequently, GRI was set in Amsterdam as a non-profit organization and the United Nations Environment Agency cooperation center. The second edition of the guide, called G2, in Johannesburg in August 2002 during the World Summit on sustainable development, particularly in the third chapter mentioned the name of the Johannesburg plan to achieve. G2 is then more than a few so-called departments to complement and many technical agreements and resource materials. By the end of 2005, GRI's governance structure is complete. The third generation of the guide, G3, was released in October 2006. It is three years after the test, feedback and advisory period and the participation of more than 150 institutions from 30 countries. From the beginning of the 2000s, GRI became recognized as the best developed institution and the most famous international framework for sustainability report. The 2002 survey of 107 Multi-National Corporation, showed that the GRI is only second to ISO 14001 standard for their great impact on social responsibility. In addition, the Organization for Economic Co-operation and Development (OECD) Commission also promoted the use of GRI, and some European governments, such as France, Holland and the United Kingdom expressed strong interest in promoting sustainability reporting in its industry according to GRI's guidelines. Clearly, in a few years the GRI founder successfully created a visible and famous global system for sustainability reporting of the companies (Brown et al., 2009b).

The Global Reporting Initiative (GRI) is a multi-stakeholder process and independent agency, whose mission is to develop and promote the global application of sustainable development report guide. These guidelines are the economic, environmental and social aspects of activities, products and services used by the voluntary organization of the report (GRI, 2006). GRI guide is a report in

a framework, which are not a principle of conduct or performance criteria, but the current reporting principles guiding the preparation of an organization's sustainability report. Guidelines are to help an organization to balance their economic, environmental and social performances. The core criterion is the third generation, which was released in October 2006 after three years, the innovation development period of more than three thousand people from different industries, in the global scope (GRI, 2006). GRI promotes sustainability issues in a wide variety of geographically dispersed organizations and supports benchmarks for testing the sustainability of encoding performance, performance standards and volunteering. GRI's "guidelines, the reporting framework, for the sustainable development of the era, is intended as a general acceptance of the economic, environmental and social performances of an organization's framework". It is designed for use in any size of the organization, department, or location. It considers the practical problems faced by various organizations, ranging from small businesses to those that have broad and geographically dispersed operations. The GRI reporting framework contains general and professional content, which agrees with the wide range of stakeholders in the world and is generally applicable to reporting an organization's sustainability performance (GRI,2006). The third generation (G3) criterion, however, is not a tick list or regulatory requirement that organizations should simply use and learn from. The guide should be considered as a tool for process improvement report (GRI, 2006). The third generation of the guide (G3) released a global report initiative including significant improvements compared to previous models.

Some improvements to the previous models: - application level has been improved to support reporting at a wide range of levels. Now the definition and principle of better guidelines include self-testing which focuses on corporate strategy and analysis, and provides a more concise overview of a company's strategy for sustainable management. - More attention was given to the management of information disclosure, the use of a company to describe how an organization can manage and integrate the results of sustainable development. - Economic indicators address a wider range of impacts and issues, thereby addressing the economic conditions and economic systems of the organization's impact stakeholders. - Integrated environmental indicators, placed more emphasis on water and biodiversity. - Social indicators have been modified to increase comparability and can be examined in the third generation of these prominent display changes. The main goal is to make the report more relevant, comparable and can be audited, concerned with the increase in corporate performance and user friendly application framework (GRI, 2006).

The guidelines for the performance indicators are contained in the indicator agreements. These agreements provide definitions, compilation of guidance and other information to assist in the preparation of reports and to ensure consistency of interpretation performance indicators (GRI, 2006). In order to help determine what the report is, the importance of reporting principles, the interests of stakeholders, the development of environmental sustainability and integrity, together with a set of brief test principles, the application of these principles become the standard disclosure of the subject and indicator (GRI, 2006).

Standard which should be included in the sustainability report refers to the information disclosure. These guidelines identify most organizations and related information and materials and they can be classified into three categories:

(i) Strategy and introduction: the overall performance of the organization is disclosed in the context of understanding, such as strategy, introduction and governance.

(ii) Management approach: disclosure, involves an organization to address a given set of topics to provide context for understanding the performance of a particular field.

(iii) Performance indicators: indicators that cause similar information on the economic, environmental and social performances of the organization (GRI, 2006).

To promote the enterprises to meet the challenge of sustainable development, they need to show changes in their performances. Some of the most interesting challenges, however, are not found inside but cover the area among the economic, social and environmental bottom lines. Sustainable development agenda, and understanding of the bottom lines are trying to coordinate the bottom lines of the traditional finance and the new thinking environment, the result is more complex than some early business enthusiasts thought. Resources focus on economic prosperity, environmental quality and business tendency but ignore the elements, which is, social justice (Elkington, 1997).

Wheeler and Elkington (2001) believe that the progress of economic prosperity, environmental quality, social justice, and resources will become the characteristics of corporate responsibility in twenty-first Century. Wheeler and Elkington (2001), witnessed the information from the environment and social information, and more information for the sustainability of external relations. Resource description is not the subject of the definition of good and most companies rely on the policy structure of their sustainability report. The most popular guide is GRI. Common threat can be all the guiding principles, which are the concept of resources for the formation of structural guidance. Research suggested that companies which want to develop their own stakeholders to identify and participate in non-financial accounting, control information disclosure process can be used to increase the use of guidance materials, including the industry code, standards, practical methods and management tools. The 1000 report of the accountability system shows some examples that will be social and ethical research institute's work accountability in its AA1000 framework, which includes such aspects as:

i. GRI Guide

ii. SA8000 international responsibility

iii. Record 18000 occupational health and safety standards

iv. ISO 9000 quality management and quality assurance standards

v. ISO 14000 Environmental standard.

All the guide is recommended by the King III report, GRI has become a global acceptance, for reporting and most companies' using purposes. Current sustainability reports which are from many companies tend to put economic elements of the environment and social elements, mainly because companies still believe that the traditional financial reporting is full of information on economic

performance. A key element of sustainable development report is the need to identify and consider the sustainability reporting program for stakeholders in the enterprises. In addition, the sustainable development report is about stakeholders, the purpose is to provide information, and organize internal and external companies. In the past, only the interests of stakeholders of the Target Corp are considered, this situation has changed, more and more stakeholders to the company's ability have influenced the ability to perform.

In the past few years, the author witnessed a variety of attempts to simplify the operation of the enterprise, the company's long-term common priorities, and to improve their performances. Financial metrics are not complete information values which have long been told that the system based on accurate financial metrics is not enough, although researchers cannot deny their basic analytical information value form, for example, a simple comparison, which to a certain extent is due to resource availability (such as annual reports, financial performance, the balance sheet, and the income statement, etc.), which is in part by the fact that their construction is based on accounting standards, allowing for the same metrics (also between companies and countries). Current practice and theoretical analysis show that some phenomena which cannot be expressed solely through financial indicators, although they are ultimately involved, and ultimately become the financial results (such as the relationships with corporate governance, corporate decision and management). Contemporary performance measurement systems promote department performance evaluation method through financial and non-financial indicators (Marinič 2008). In recent years, the development of a major Growth Company performance measurement system has been caused by turbulence and environmental changes.

The concept of sustainable development to solve some of the enterprises wanting to see the opportunity to participate in and accepting the environment and social problems does not give up the economic prosperity. Table reports use the bottom line metaphor from the financial report as a report of the template of the economic, social and environmental sustainability (Dillard and Dujon king, 2009).

John Lkington in 1994, created the term triple bottom line, but he only had an impact on the matter of his book published in 1997, whose name is: the man of the family: the triple bottom line of the economy in twenty-first Century (Elkington , 1997).

Many companies have found that the financial report is no longer meeting the needs of shareholders, customers, and communities on the performance of the company's information. Sustainable development report is to provide information on the conditions and development of business to internal and external stakeholders through formal accounting methods, and the need for reliable comparability and integration of data and analysis of the company's annual report (Schaltegger et al, 2006). Although sustainability reports have received increasing attention in the literature due to the voluntary choices of the scope and content, companies are willing to disclose their reliability and quality in this flexible operation, as they are not forced to do so (Chen and Bouvain, 2009), which is different from those of the former literature on stakeholder involvement

in the business and the business of these publications. Deegan (2002) pointed out that the sustainable development of information and communication directly affect how many resources which the company can get from stakeholders. So, the report presents an indirect impact on the company's performance (Lamberton, 2005) which should be improved as the basic issues in the field of sustainability report.

Recent sustainability-related company reports include, many sustainable development reports corporate responsibility reports, the reports concerning the social aspects, environmental reports concerning the sustainable development, and environmental reports, etc. But they all share the same goal for the future of sustainable development companies in short or in the long run. Companies are increasingly inclined to report their sustainable development in multidimension (above three dimensions), and even include integration with time and integration with value creation (Kolk, 2010; KPMG, 2013). One dimensional report also exists but lack such an important aspect of the economic pillars which is the assessment of a company's most concerned problems, and does not look at the company's global growth, this sort of report is difficult to reach fair and accurate evaluation of the company's sustainable development. An important mechanism for the development of integrated sustainable response supports sustainable development report of activities (Hahn and Meiliya 2013).

Generally, more or less being aware of many other successful approaches to implement a variety of new management methods, they aimed at improving enterprise performance but failed to achieve the expected release, which is in particular because their definition of the goal is not comprehensive, however, the most important thing is that they failed, because they do not connect to determine the value of the creation of the accelerator (i.e., value drivers) and the ultimate goal of the enterprise. Measurement based on the construction of financial indicators has several serious problems related to the information value of these indicators (Marinič 2008). Despite the means of the financial indicators of high information value and its possible widely used mathematical and statistical methods, a simple algorithm cannot describe the complex reality of business practice.

Although, indicators and results interpretation are easy to explain the facts, these known as the shortcomings of the method play the important role which is the main body of interpretation; according to Marinič, (2008), these shortcomings damaging construction of key performance indicators.

Financial indicators, on the other hand, also have some advantages: first, the speed and low cost can be obtained and processed due to the availability of data; second, their construction is based on financial standards that allow simple comparisons with past the same metrics, in the company's internal corporate and international environment.

At present, the concept of sustainable development is in the context of the company's sustainable development, measurement system is a sustainable value, because the company's sustainable development depends on its measurement. Although economic indicators are necessary, they are not sufficient to create sustainable value. Shortcomings in their application can be used by non-financial indicators both for defining and measuring nor for financial goals.

Non-financial index (non-economic) shortcomings include (Marinič, 2008), first they are not based on accounting standards; second, the main drawback is the cost of the problem and the time factor; though there are a variety of methods, they have different denominators (time, quantity...), which makes the comparison between the companies possible. On the other hand the advantages of non-financial indicators, on the other hand, include (Marinič, 2008): first, the ability to express the proportion of intellectual property, the so-called intangible assets, the results of the activities of the entire firm and the added value of creation; second, long-term strategic and long-term business objectives; third, define and predict the overall success of the factors affecting the overall success of the enterprise; fourth, able to describe the basic aspects of the company's value chain;

2.2.1Sustainability information disclosure standards

Some authors argue that the research and method of sustainable development of enterprises should be based on different situations and definitions of cases (Van Marrewijk and Hardjono, 2003). This problem is not complete and any disclosure of business and organization was first emphasized by Cook (1989). One of the most important factors of the company's stakeholder pressure has been many literatures on stress.

GRI, founded in 1997, is a standardized approach to ensure comparability between departments and regions in sustainability reporting, Development objectives and audit plan (composite) Global Reporting Initiative (GRI), by the United Nations organization (GRI 2002; 2004; 2006).

It has developed a general guide to all the companies and organizations in the world over the last few years. According to GRI, the sustainability report should comply with the provisions of the reporting standards and comparability, reliability, accuracy, timeliness and clarity, and measurement performance in the economic, environmental and social aspects. GRI (2011a) is also required to disclose in the economic, environmental and social performances which are common and comparable to the financial report for an important organization to succeed.

As a standard guide for the company's sustainable development report, GRI is assembled from various areas of the concept and framework to help stakeholders understand the company's sustainability using a clear concept and language (GRI, 2011b). However, numerous indicators are compared to the environmental and social issues in detail, reporting the relevant rules of the economic aspects of financial reporting standards framework.

Environmental sustainability index (ESI), by the world economic forum, include social, economic, environmental and institutional dimensions of sustainability measurement and evaluation of a national scale - a cross country analysis.

The global reporting initiative is an independent body, and its task is to develop and promote the global reporting guidelines for sustainable development. The role of corporate social responsibility projects and their quantitative financial results will flourish in twenty-first Century. Focus is on the way to quantify the moral best approach to gain the economic advantage of the market, and will become a rich insight into the links between trust and business. Resource

description framework will change the company's organizational behavior in a global scale, the pursuit of trust and transparency will deliver financial results. On the contrary, the company will be punished in violation of the trust, which will be equally rapid, and the social network will be in the second time to judge the moral flaw. Twenty-first Century will also be a complete change in how the company will look at the resources as their brand and market valuation, which will affect their moral standard.

The benchmark after the equivalent of a company's performance is useful in assessing the performance of a company because the company can be internalized by advertising on the social impact and environmental factors easily, so that their own plans for production and financing will be in a comprehensive understanding of other competitors in the same industry and land area. That's why GRI is more and more popular in all the world's companies and organizations. Since its inception, only 15 years, nearly half of the 41 countries of the 4100 companies using GRI guidelines, which help GRI established management tools, the establishment of its status also shows its importance in this literature. The company's value is not determined by the sustainability report and the refusal to use GRI will involve a lot of cost. As a key component in the analysis of the sustainable development of the company, the GRI guidelines as an important component in our research are involved.

Dow Jones Sustainability World Index, environmental management system (EMS), is based on ISO. Corporate social and environmental reporting (Research), are based on three theoretical perspectives: legitimacy, stakeholder and political economy. Organization sustainable performance index (OSPI) - (four quadrant BSC and social and environmental indicators are added to create a six components). Environmental, social and corporate governance indicators (ESG), KPI, jazz (Hubbard) integrated Sustainability Report.

Benefits of the reporting of the global report initiative

Sustainability reporting based on the GRI framework can be used to demonstrate sustainability of organizational commitment, organizational performance comparison, measurement of organizational performance over time, and the organization's performance against the law, norms, standards and voluntary action. GRI promotes the standardization of methods to stimulate demand for sustainability information reports, and reports in organizations and users. According to GRI (2011a) GRI's vision is to improve corporate responsibility to ensure that all stakeholders, community, environmental protection, labor, religious groups, shareholders and investment managers to obtain standardized, comparable and consistent corporate financial reporting environmental information. There is a general framework for interpretation in the third chapter, which indicates the GRI category, and then further details. For the purposes of this study, the author will only address the economic, environmental and social categories.

2.3 Theoretical Framework

In the following sections, the author will review the theoretical framework of sustainability reporting and then propose a potential theoretical framework to explain the link between them, and the existing limitations and weaknesses of the existing studies. The existing literature shows that legitimacy theory (Cormier and Gordon, 2001) and stakeholder theory (Ruf et al,2001) are two basic theories to study organization's sustainability information discloses decisions. Most of the literature do not explicitly mention any theory or refers to stakeholder in general.

2.3.1 Stakeholder Theory

Stakeholder theory asserts that the reason behind the disclosure of social information is that the survival of an organization depends on the support of its stakeholders, and understands them as "a person or organization that can affect or influence the achievement of the organization's goals" (Freeman, 1984). In this sense, environmental or social activity report is a tool company use to gain an organization's survival based on support of its stakeholders. Existing literature primarily start with how to identify, address, and fully participate in the interests of stakeholders. The most like the crook stakeholders in previous studies (Woodward et al., 1996; Agle et al., 1999; Leighton and Thain, 1997) are investors, creditors, employees, suppliers, customers, governments, regulators in the public, their likes or suggestions to the company are very important. In spite of the fact that many authors have confirmed that the choice of relevant stakeholders is a critical challenge to the success of stakeholder communications (Mitchell et al, 1997; O'Riordan and Fairbrass, 2008), the study of this topic is very important. Davenport's classification (2000) classified stakeholders into five categories, namely: customers, suppliers, employees, shareholders and communities (Boesso and Kumar, 2009). According to the Greenwood (2007), stakeholder communication can be regarded as a social responsibility practice of diversity and stakeholder participation. By focusing on stakeholders, companies try to manage stakeholder expectations to be based on their business strategy.

Resource dependence theory believes that the power of the parties to control the required resources and organizations, is to create the power difference between stakeholders. In this sense, the power of the stakeholders is a function of the resources they control. At the most basic level, different stakeholder groups controlling the increased shareholding of these groups are faced by the company and intensify the urgency and the needs of these groups are met. It is generally believed that shareholders are the most direct impact on a company's transparency performance information

disclosure, and a direct impact on their wealth. However, other stakeholders may also have a vested interest in the company's performance disclosure (Harrison and Freeman, 1999). Evan and Freeman (1993) believed that the company has the responsibility of management for all stakeholders that are affected by their strategies. The quality of a company and its various stakeholders of the relationship directly affect the company's performance (Ogden and Watson, 1999).

Stakeholders can influence a company's activities or plans, and managers must respond to these groups. This response is known as "stakeholder management" (Husted, 1998) and results in a specific structural manager who is responsible for ensuring that certain stakeholder groups are being valued (Freeman, 1984). Stakeholder theory based research provides some of the views of the examination of the attitudes of stakeholders. Lerner and Fryxell (1994) explored the impact of CEO on the attitudes of stakeholders by a company to social activities. The overall results were weaker than they are expected, and only corporate philanthropy and CEO showed positive relationships to social attitudes. Another study, Harvey and Schaefer (2001) found that the economic interests of the stakeholders are not considered to be interested in the power company's environmental performance. The general findings of these studies are subject to national conditions. In addition, both the study provides a model that can be used for future research.

Under stakeholder theory framework, relationship between stakeholder and company can be described hub and spoke, stakeholder engagement (SE) has always been the core of management literature. Andriof et al (2002) pushed the direction of management theory to transparency and accountability which require regular reporting about the business and operation of companies.
An important model put forward by Svendsen (1998) is about the gradual involvement of stakeholders' that differs from traditional research on corporation and stakeholder thinking. The relationship is divided into three stages: the first stage was proposed by Clarkson (1995) about the distinction between stakeholders, corporations differentiated from their primary stakeholders who decide the vital business of a company such as the primary shareholders from those that only have small influence on it; the second stage is to divide the stakeholders according to their expectations, positions and support on different aspects in the business operations such as economic, environmental and social dimensions; the third stage is called stakeholder engagement (SE), which is greatly emphasized in this paper and adopted in the methodology, that is, stakeholders who are involved in the decision-making process of a corporation including participation in the management, information sharing and essential strategy making progress.

Identification and prioritization of stakeholders have been elaborated by numerous researchers such as Clarkson (1995) and Carroll (1999). The framework to understand this problem that classifies stakeholders according to their power, legitimacy and urgency of a position is given by Mitchell et al. If a stakeholder is greatly related with the company in terms of these facts, then he/ she is important and will gain the attention from the management (Sangle, 2010). The third stage,

SE, gives a mutual engagement to settle the problems related to the enterprise and its surroundings. Andriof et al. (2002) appreciated the method a lot and said that it created a dynamic interaction between companies and stakeholders with mutual respect and communication, not just unilateral management. The concept of SE is based on the assumption that companies have to take responsibility on behalf of their stakeholders (Phillips, 1997), whose involvement of cooperative interactions with stakeholders should take the idea of 'social contract' (Rawls, 1971) into consideration. Jonker and Foster (2002) mentioned that stakeholders' expectations can be analyzed by instrumental and strategic method to keep their interests for a long time. In this sense, Andriof and Waddock (2002) developed a framework about reciprocity, interdependence and power between enterprises and their stakeholders. The primary of SE is not only the management of stakeholders' expectations but also a network of mutual responsibility. This indicates that the participation of stakeholders is not only to convey requirement and expectations to the companies but also to generate positive impact on companies and take part in the decision of important issues that can avoid negative influence on their own companies, other organizations and local communities. Thus, if the stakeholders are engaged in the management of corporation business, their interests and responsibility are more than the satisfactions of their expectations but act as agents of the company. Therefore, the agents would take the rights and interests of stakeholder and other parties into consideration and form an effective and good relationship between the two parts (Wicks and Goodstein, 2009).

Spence et al. (2010) claims in his study that stakeholder theory is the dominant and most applicable theory in explaining sustainability reporting practice. Our observation also confirms the point. For example, several empirical studies are based on the determinants of sustainability disclosure. Earliest one, Roberts (1992) provided evidence of the relationship between the company's overall strategy and its social responsibility information disclosure level. The results indicate that the stakeholder theory allows for the impact of the economic performance of the social responsibility strategy on attitude activities, and the stakeholder strength level of corporate social information disclosure. Ruf et al (2001) investigated the relationship between a company's social responsibility performance (independent variable) and its financial performance (dependent variable). The results show the relationship between these two performance metrics, as Ruf et al. explained in the way that, the main stakeholder's benefits when managers meet the concerns of other stakeholders. More recently, Cormier et al (2004), indicated that managers consider the key stakeholder interests and concerns in determining the company's environmental performance information disclosure, and non-financial measures.

2.3.2 Legitimacy theory

Legitimacy theory says that very organization has no born right to exist and any business operation is subject to a greater acceptance by society. In this sense, a company needs to have legitimacy i.e. a social "license to operate" (Deegan,2002). It is not once-for-ever, because such legitimacy could be potentially threatened if society perceives that a company is not behaving well. So that, companies should take legitimation strategies to secure valuable resource (e.g., Dowling and Pfeffer, 1975; Suchman, 1995). Social contracts are for any organization or individual free to enter, to have the ability to increase social welfare (Rousseau, 1975). This kind of contract provides social preferences including business performance (Mathews, 1997). The successful realization of the social contract provides evidence that the goal of an organization is to be consistent with the goal of the society, thus providing legitimacy for the organization. To achieve or maintain legitimacy, the organization must take actions and the society must know the action. Some authors classify the actions that the organization may take to improve its legitimacy (Husted 1998). Furthermore, the acceptance of company's legitimacy can be linked to stakeholder theory, which mainly argues "that organizations should be managed in the interest of all their stakeholder not only shareholders." (Laplume et al., 2008). The coupled legitimacy theory and stakeholder theory (macro framework) (micro framework) help explain a firm's concrete actions.

Legitimacy theory forms a few studies based on research on social responsibility and environmental information disclosure using the annual environmental report. The results of these studies are mixed in the theory to explain the company's social and environmental information disclosure (Cormier and Gordon, 2001; Patten, 1992). For example, Patten (1992) found that when the Exxon Valdez oil spill incidentally the incident resulted in oil enterprises improving their environmental information disclosure in their annual report. However, Gurthrie and Parke (1989) found in an Australian company's exploration, that the legitimacy of the theory fails to explain most of the social disclosure. The flowing study of environmental information disclosure again found some support for the legitimacy of environmental information disclosure. In case of Canada, Neu et al (1998) studied three major issues: the impact of external organizations, the number and type of environmental information in annual report; environmental information disclosure and environmental performance; relationship between the environment and other social information disclosure. Their findings support the view that: "in conflicts of interests, the organization tries to legitimate the most important characteristics of the relevant public communication and ignore or neglect other stakeholders".

2.3.3 Signaling theory

Suppose for a fresh graduate looking for a job, what is the most important information he/she want the potential employer to know? Spence found education credentials is the information job applications in the labor market attempt to let potential employer to know, the signaling process is to reduce information asymmetry (Spence, 1973). After that, signaling theory got wide development and application in various economic and social topics, in 2001 Nobel Prize in Economics was granted to George Akerlof and Michael Spence for their contribution in signaling theory. There are three key elements need to be understood on signaling theory, signals, sender and receiver.

First, on signal itself, information asymmetry exists means that it is difficult for receiver to find or understand the information if the sender do not provide them in a proper way (Connelly et al.,2010). Second, to be effective, signals itself must be observable and costly to imitate. An alternative to costly signals (performance) itself is when it is a high penalty associated with sending dishonest signals. This has been found in financial performance reporting (Frankel et al, 1999; Botosan, 1997; Sengupta, 1998) needed to be signaled well to gain confidence in target stakeholder like investors. Other signals, like preannounce of new product development has also been found with signaling effect, although it is not costly but could generate immediate abnormal returns (Sorescu et al. 2007). Other company characteristics as brand ambassador, management team prestige, membership, quality certificate or decent ownership structure also found to be with signaling effects (Bruton et al., 2009). Similar with education credentials and other company characteristics that worthy while to be signaled, sustainability performance is also costly, to some extent observable and hard to imitate, from this sense, signaling theory is helpful to understand the which kind of sustainability performance needed to be reported (Connelly et al.,2010). In this sense, sustainability performance of a company can be regarded as such asymmetric information as it is difficult for parties out of company to gain the truth. It is also helpful in analyzing the process of communication, as signaling theory suggests that in context of asymmetric distribution of information, one party tries to credibly convey information about itself to another party. There are a lot of sustainability performance indicators, for example, ISO 14000 certificate, environmental friendly technology or product, CO2 emission level, recyclable materials, social development of workforce, etc. Some signals may be more effective than others to gain buy-in from general audience, there is a research gap in examining the efficacy of various sustainability communications derived from signaling theory (Connelly et al.,2010).

Second on sender, it is normally difficult for stakeholder like consumers, customers, supplier, investors, etc. to clear understand how sustainable the company's production or operation is, in other words, any environmental or social impact the company is generating. However, motivations are found on sender side to deceive, also known as "greenwashing" if the sending companies can get high return with low cost. Companies might proactively report on their sustainability-related

activities to reduce information asymmetry then to ensure legitimacy. Researchers found that voluntary disclosure reduce the information asymmetry between managers and investors and reduce financing costs (Gibbins et al, 1990; Clarkson et al, 1994;). However, companies can benefit from information disclosure before it is necessary to establish a reputation as a trusted reference (Healy et al, 1999). Performance allows stakeholders to disclose and evaluate the value of the company's contractual relationship. This value depends on key attributes, such as the going concern status of both sides (Bowen et al. 1995), as well as the integrity and reputation (Karpoff and Lott, 1993). There is evidence to suggest that if a company is lack of transparency in one of its activities, it may be inferred that other activities or relationships may be contaminated or not worthy of being trusted. In contrast to the legitimacy of the company's activities, managers must be able to assess and respond to public pressure, including public comment on the nature and scope of the company's activities.

Third, on receivers. How easily the receiver can get the information will make great difference in signaling effects (Janney and Folta, 2006). This is aligned with what signaling theory suggested, companies may invest in media exposure to reduce the cost of receivers getting such signals thus enhance the signaling effects. Furthermore, whether the signaling is effective or not depends on how important the receiver perceive the signals. In sustainability reporting, researcher found the efficacy of sustainability signal depends on how stakeholders like investor, consumers, community or suppliers, etc. perceive and decode the signal. However, how receiver perceives such information as trustworthy decides the effect such signaling efforts have is under researched (Jones et al., 2007). On the other side, if the companies as senders know the receivers are looking for specific signals, for example, investor are more interested in the financial impact of sustainability performance, the organizations may tend to invest more in such signals and communicate them intensively. the greater exposure to many (potentially powerful) stakeholders (and media coverage) could influence a company’s need to actively secure its legitimacy by signaling sustainability efforts in respective reports. Receivers can send feedback to signalers via different channel, that creates linkage between signaling theory and stakeholder theory in sustainability reporting. With stakeholder engagement, the efficiency of the whole signaling process gets improved. So, combing signaling theory and stakeholder theory, the author can expect the better stakeholder engagement the more efficient of signaling process and effects.

2.3.4 Institutional theory

Institutional theory suggests that organizations are directed by normative pressures, which lead the organization to be guided by legitimated elements (such as standard operating procedures, certificates, international standards etc.), shifting attention away from task performance. Adoption

of these legitimated elements leading to isomorphism with institutional environment, increase the probability of survival (Meyer and Rowan, 1977). It is naturally difficult to explicate institutional theory, because its assumptions are taken-for-granted at core of social action. Under institutional pressure, not all the organizational responses are used in the required practice (Scott, 2008). First, all organizations are not equally at work under the pressure of the system. Second, the organization to respond to these pressures may be different.

The new institutionalism in economics and political assumes that social influences and pressures are based on the social integration of organizational structure shape and practice (Oliver, 1997). Researchers believed new institutionalism framework is appropriate (Bebbington et al, 2009), because it expanded from a rational approach, go beyond purely instrumental logic to the more thoughtful decision (Deegan, 2002).

Institutionalized mechanism can be taken as the process and outcome of the process, from practice to commonplace, desirable and / or granted in the organization of a specific organization's field (Larrinaga-Gonzalez, 2007). Research believe corporate social responsibility reporting is a more common practice for many large companies to provide a strong evidence for a system of processes (Larrinaga-Gonzalez, 2007). DiMaggio and Powell (1991) explicate three mechanisms: mandatory, normative and imitation, which help to understand the power or motivation of corporate social responsibility report. Scott (2008) established three types of corresponding pillar - the regulatory, norms and cultural awareness to respond to three mechanisms. .

First, legitimacy theory can be associated with Scott's regulatory column (Larrinaga-Gonzalez, 2007). The center of the composition is therefore regulated by the support forces, sanctions, and self-interest (Scott, 2008). Second, Normative institutional pillars of influence values (the ideal / social acceptance) and norms (how things should be done / appropriately pursued) is raised by Scott (2008). Normative expectations are about how organizations should be highlighted in the external pressure of actors and experienced focus groups (Scott, 2008). Specification is isomorphic to normative (Greenwood et al, 2008). Normative rules are not compulsory, but come through legal authority of the norms and values (Scott, 1987). Bebbington et al (2009) found from respondents that corporate social responsibility and corporate social responsibility report is the right approach, because it reflects the normative expectations of the impact, no matter there is a business case or not. This shows that while the manager is still making a conscious choice, in the normative pressure, appropriate logic, he or she replaced and set the limits of instrumental behavior (Scott, 2008). Per DiMaggio and Powell (1991), the specification is isomorphic to the promotion of the slot specialization, formal education, and professional networks. In the context of corporate social responsibility report, the GRI guidelines and the ACCA award can be regarded as examples of specification mechanisms (Larrinaga-Gonzalez, 2007). Third, cultural awareness of the pillars is better reflected by the imitation of cognitive mechanisms according to DiMaggio and Powell (1991). The isomorphic mechanism is, organizations used to act in a traditional way and they imitate those appear to be more successful and legitimated.

2.3.5 Theory limitation

Although there are tons of research regarding sustainability reporting, little literatures explicate theoretical framework, which could be one of the reasons why inconsistent empirical findings exist (Hooghiemstra 2000). More obviously most studies refer to single theoretical reference points rather than comprehensive point of view (Hahn and Kühnen2013). There could be a clearer picture if researchers combine different theories to explain the findings from a more comprehensive perspective.

Legitimacy theory and stakeholder theory (Management) are often used in the literature on social and environmental information disclosure (Chen and Roberts, 2010; Elijido-Ten et al, 2010; Gray al et. 2010). Information on sustainability is difficult for stakeholders to get, thus creates information asymmetry. It is credible to inform stakeholders how the company behave in social and environmental activities, which in turn affects the choices of stakeholders and the value of a company (Connelly et al, 2010). Thus, the researcher found inherent linkage with signaling theory. Institutional theory suggests that company's behavior is to meet the expectations of institutions, for example, how they report their sustainability activity are gradually aligned with institutional aspects.

Based on all theoretical framework, the author can summary as, the company may try to signal sustainability activities in different stakeholders to ensure legitimacy, which does not necessarily follow commercial principles, but to answer the expectations of institutional environment.

Institutional theory has limitation in explain the motivation of sustainability reporting. According to institutional theory, corporate activities do not necessarily to follow business rationale but instead reply the institutionalized expectations of the environment (Hahn and Kühnen, 2013). So, some researchers claim that how companies report its sustainability activities will finally become norm due to institutional isomorphism (DiMaggio and Powell, 1991), while other external determinants cannot determine. However other research does not support the collusion Fortanier et al. (2011) and Chen and Bouvain, 2009;). Most institutional theory study how actors respond to external institutional pressures, but the new institutionalism also deals with systems from "within", creating or impeding change (Powell, 1991; Greenwood and Hinings, 1996). For example, Oliver (1997) found the existence of an "institutional isolation mechanism", which reflects the reluctance to imitate which experiences do not conform to the company's cultural and political environment. Such existence of the internal mechanism of the pressure may lead to inertia. Overall, the literature shows that the new institutional theory can explain corporate social responsibility reporting, derived from the internal factors that generate the

social background and company (Oliver, 1997). It explicates that the corporate social responsibility report has not yet reached the institutional status and its complexity are still in development (Bebbington, 2009).

Legitimacy theory and stakeholder theory both describe corporate social responsibility report will appear in the company responsible for coping with stress (Spence and Gray, 2007). The main difference between the two theories is degree of resolution (Chen and Roberts 2010; Elijido-Ten et al, 2010). In the legitimacy, it is general public to give legitimacy, while stakeholders' demands are the core of stakeholder theory. The overlap between the two theories, when researchers such as Lindblom (1993) embraced legitimacy theory, discussing the "relevant public" concerns, they focus on specific groups in society which are indeed from stakeholder theory (implicitly) borrowing ideas (Deegan, 2002). Grey et al (2010) and even the national legitimacy theory essentially requires the management of stakeholder theory and that increased conflict and disputes. Since this activity is greatly related to the decisions of stakeholders, not only the shareholders (Laplume et al., 2008), the interest of a wide range of groups should be taken into consideration (Buchholz and Rosenthal, 2005).

The legitimacy theory considers that the voluntary sustainability reporting is designed to narrow the gap between social expectations and the external organizational ethics, social environment performance as the managers need (Hooghiemstra, 2000). Existing research provide a further confirmation of the legitimacy of the theory (Deegan and Blomquist, 2006; Freedman and Patten, 2004). It is strengthened by the arguments of Spence et al (2010) that emphasized the stakeholder engagement in the practice of sustainability reporting. However, there is no detailed analysis in researches except a general overview about the stakeholder theory. Alciatore and Dee (2006) and Llena et al (2007) believed that the legitimacy of the theory does not explain the non-conformity. Freedman and Stagliano (2002) show that there is no credible reason for the social justice not to provide the disclosure of environmental information. Some authors (Alciatore and Dee, 2006; Llena et al., 2007; Patten, 2005) believe that companies are using mandatory environmental disclosures to improve their legitimacy in the eyes of the public. However, Adams al et. (1995) stated that the theory cannot explain the non-conformity of the regulatory norms, as the legitimacy theory indicates that the company hopes to be deemed to comply with the law. Again, the relationship was studied by Mobus (2005) that environmental compliance and mandatory disclosure does not comply with environmental standards of the United States oil refining industry and it concluded that those negative disclosures of accounting information has an impact on subsequent environmental performance. Mobus (2005) believes that the disclosure of information to achieve substantive results, the environmental information disclosure regulation is the potential to inform the public. Literature review shows that, regardless of the company's compliance with the provisions of the mandatory, norm may support effective accountability. However, it also indicates the low levels of compliance with existing norms. Traditional interpretation of the legitimacy theory is applied to the voluntary sustainability reporting, then to the mandatory prophet. However, it is far from clearing that the

current form of legitimacy theory helps to understand how companies should respond to mandatory sustainability regulation and its design may cause the company to disclose information to meet the needs of stakeholders.

For our research, the macro framework provides the idea of the existence of a contract between the enterprise and the society through the theory of legitimacy. This leads to the need for companies to communicate with a variety of social organizations to achieve or maintain their legitimacy. These points are related to our paper because this research is interested in modeling the impact of a company's environmental performance reports. While previous research has explored some aspects of this relationship, there are still some aspects of the task that still exist in the interests of the relevant stakeholders, and multinational settings.

Stakeholder theory provides a microeconomic framework to identify stakeholder that may be interested in the company's environmental activities and reporting. Most research depends on what the examination is, and the relevant stakeholders of different definitions and importance. For example, Agle et al (1999) found that: the interests of the relevant persons of the significant traditional production functions of the company, shareholders, employees and customers. - is higher than the interests of stakeholders to expand the company's views: the government and the community. Other researchers, such as Harvey and Schaefer (2001), think that the importance of government and regulatory agencies is above customers.

Although correlation of individual interest groups in different studies, most researchers agree with the interests of the two basic elements. First, address stakeholder expectations. Second, stakeholder management. The balance of the interests of stakeholders will affect the management decisions (Rowley, 1997). Lerner and Fryxell (1994) provided evidence that managers' attitude of the stakeholders provides an indication of how managers will respond to these groups. From this the author can conclude with obvious expansion that how important company perceive its stakeholders will impact the way the company response, for example sustainability reporting. So, the shift is not to argue which stakeholders are more important than another group of stakeholders, but that how important companies and its managers treat each stakeholder group's value will be an important consideration. The author believes there should be some model to provide a way to explore these aspects of management-stakeholder relations. From the legitimacy and stakeholder theory, the researcher can see a company and various groups must achieve the exchange, protection, and legitimacy. This research summaries the goal of previous study is to determine the interests of a company's stakeholders who are to determine what type of impact they play. In our model, the author shifts our attention to sustainability (environmental as a key dimension) information disclosure. New institutional economics provides a useful lens through the combination of internal and external factors that maybe affect corporate social responsibility reporting (Adams and Larrinaga-Gonzalez,2007). In the following session, the author will explore what are the determinants of sustainability reporting under above theoretical framework mentioned.

2.4 Determinants of sustainability report

2.4.1 Company size and company age

In most corporate documents, business scale and financial performance are often regarded as important determinants of corporate behavior. Company size is usually measured by total assets, turnover, sales, etc. Big companies are considered to have greater pressure on stakeholders because they are always forced to publish their information and have a greater impact on the environment and Society (Fortanier et al, 2011).

There is plenty of support in the literature that bigger company is, the more likely it will support environmental protection activities, including public reports of their environmental activities. Arora and Cason (1996) found a positive and significant relationship between the size of the company and participation in voluntary environmental planning, including reports, Alvarez al et. (2001) confirms the similar trend in the service industry. Brammer and Pavelin (2004) found a trend, but not necessarily a causal relationship between environmental disclosure and the size of the company. Haddock (2005) found a significant relationship between environmental reporting and turnover in the British food manufacturing and retailing. Roberts (1992), Patten (2002) and Cormier and Magnan (2003) considered motivational environment reports and recommendations, large companies are more likely to report the results more easily by the media visibility, and to manage the external stakeholders. This is enhanced by Gonzalez-Benito and Gonzalez-Benito (2006), which he believes is more likely to be the result of greater resource availability for larger companies Gallo al et., (2011). The reasons for this include greater pressure from social and political environments, economies of scale that make lower marginal costs than smaller firms' environmental management, and the impact on the environment's efforts to more customers.

Researchers usually include the study of environmental information disclosure in the organization's size and visibility factor (Patten, 2002; Cormier and Magnan, 2003). Belkaoui and Karpik (1989) believe that greater visibility of large companies and greater political and regulatory oversight from the outside. So, they are more likely to publish environmental and social reporting to the signal, they perform well and in good relationship with their stakeholders. In addition, they are more aimed at revealing this information through formal channels such as the annual reports (Cowen et al., 1987).

Larger companies are inherently more visible in the organization, and therefore attract more attention and supervision of stakeholders. These large companies with a greater number and a wide variety of stakeholders, which will affect the complexity and multidimensional nature of the formal sustainable development policy (Hart and Sharma, 2004). In addition, large companies may have

more slack resources in the form of human capital and financial capital. Previous research has shown that environmental protection measures (Sharma et al, 1999) and social actions (Seifert et al, 2004) require these resources. With enough money and human sustainability-related to respond to stakeholders and responses pressure, large companies can be put into time and energy sustainability-related details and the use of more detailed research and practice. So, the author put forward the following hypotheses:

H1: Sustainability disclosure (a) and its quality (b) are positively correlated with firm size.

Another factor has been identified as possible factor to impact sustainability disclosure and it quality is company age. (Roberts, 1992; Michelon, 2011). Older fixed assets, like plants and equipment, manufacturing facilities could cause higher environmental pollution level, and poor environmental performance, which this research will discuss later. From signaling theory, the researcher knows that a company with young assets has the incentive to report proactively as they bear costly investment. By sending such signal as sustainability reporting, young companies are expecting stakeholders link older fixed assets with a higher environmental pollution level, and younger with less pollution. Stanny and Ely (2008) found a negative association between company age and the decision to disclose sustainability information. There is also research found positive relation (Clarkson et al, 2011; Cormier and Magnan, 2007). In addition, the age of a company's fixed assets is also found to be related with its sustainability. Consider the case that a company with old equipment to deal with pollution may be less proficient than those with new equipment, thus leading to a higher level of pollution. And it would be unwilling to report its environmental information because of the possible pollution fines. Stanny and Ely (2008) supported this idea and found empirical evidence under the negative relationship between the age of assets and the extent of reporting, whereas it also gets objections from the results from Clarkson et al. (2008,2011) and Cormier and Magnan (2004) examined the quality of sustainability reporting by formulating functions about the relevant stakeholders of a company, their expectations and firm performance. As mixed results are presenting, the author proposes to verify the hypothesis as

H2: Sustainability disclosure (a) and its quality (b) are negatively correlated with company age.

2.4.2 Finance Performance

Corporate environmental reporting can be viewed as a result of management assessment of the economic costs and benefits are derived from additional disclosures (Blacconiere and Northcut, 1997). In fact, Cormier and Magnan (1999) provide evidence that the company is taking a strategy that is consistent with the attitude when considering the potential costs and benefits of disclosing

nor not disclosing sustainability performance. Cormier and Magnan (1999) proposed in the conceptual framework, there are two kinds of cost to consider. First, is information cost, which considers the benefit of reducing information asymmetry and overall information gathering costs. Second, cost of disclosure of proprietary information defined as proprietary cost.

If the firm's manager does not provide credible information, investors that are expected to make the worst of the plan, will depress the stock price (Lang and Lundholm, 2000). On the contrary, by disclosing reliable information, the company allows investors to reduce data collection and analyze alternative information sources (Healy et al, 1999; Wang and Dewhirst,1992). Sustainability reporting e.g. environmental reporting, to a large extent is proprietary information. It relates to capital expenditures and operating costs, estimated site repair and recycling costs, environment investment, environmental management strategies and environmental responsibility or commitment to the proprietary nature of the environment (Lee et al, 2005). However, resulting in proprietary costs, the company has enhanced its reputation as a trusted disclosure, so the value of the added information can be realized. Thus, the value of the report's value creation strategy depends on the proprietary cost and the ability to bear in the company (Skinner, 1994; Verrecchia, 1990). For example, there is evidence that high quality voluntary disclosure reduces firm's capital costs (Botosan, 1997; Sengupta, 1998), there is also evidence that environmental performance information disclosure measures are value-relevant, and high pollution levels reduce the company's valuation (Hughes, 2000). Buhr (2002) argued that if the majority of firm's shareholders are foreign, they are difficult to obtain information from alternative sources. The company has become effective in improving its environmental reporting, as it is a value-added service for these shareholders (KPMG, 2013).

The company's ability to bear proprietary costs generating from its environmental reporting strategy depends on its financial position. Furthermore, the cost involved in investigation, research and formation when publishing a sustainability report, also comes from financial performance. It is frequently referred to profitability of a company as a common factor that is included in the research of sustainability reveal. Thus, it appears that only when company's financial position is good enough to weigh the benefits of additional environmental information disclosure to reveal the potential damaging cost information on their environmental performance. Comply with Cormier and Magnan (1999), three variables on behalf of firm's affordability of these potential proprietary costs. Firms with higher profitability are more flexible to bear the costs mentioned and skilled to deal with the damage that were brought by the publication of sustainability information (Kent and Monem, 2008). However, there are no direct empirical results towards this relationship. Cormier and Magnan (2003) pointed out that high leverage is to decrease the incentives on cost-bearing activities of a company and discourage them to reveal extra information unrelated to formal reports. On the other hand, companies may be willing to publish their information about environmental and social aspects to attract financial support from their shareholders and give good signals to their creditors (Haniffa

and Cooke, 2002).

Other variables, such as market-to-book value, capital intensity, financial activities and systematic risk are also used frequently to measure a company's financial performance. Study on how these variables impact cooperate sustainability reporting are showing mixed result. Market-to-book value, also defined as Tobin's Q, which is the ratio between a physical asset's market value and its replacement value. Generally speaking, higher market-to-book value implies higher information asymmetry about a company's intangible assets. Managers would reveal more information about a company to give confidence to the shareholders, thus it is more likely to publish their sustainability reports with good quality. However, the more information revealed, the more likely that the inner information is inferred by outside investors. Firms would be reluctant to do so if they want to keep a super image in front of their investors. Positive interaction between book-to-market value and the extent of sustainability reporting is solely detected by Prado-Lorenzo et al. (2009b). Other research papers showed negative relationships (Stanny and Ely, 2008; Clarkson et al., 2008, 2011).

Capital intensity is positively related with the extent of sustainability reporting if the company wants to give the information to its investors about its assets and the good behavior in accordance with environmental and social regulations. However, contrary to the positive relevance of these two indicators given by Clarkson et al. (2008, 2011), Stanny and Ely (2008) found no significant relationship between them. Similarly, financing activities on the capital market bring the effects of increasing the quality and extent of sustainability reporting. And the empirical results are mixed as well. Cormier and Magnan (2004) raised the influence of systematic risk as a factor to influence the extent and quality of sustainability reporting, since it is an evaluation of its economic performance. Companies with higher systematic risk would give a lower level of reporting because of the difficulties in financing the reporting processes. The empirical work of Cormier and Magnan (2003, 2004) confirmed this result.

Surplus financial resources are vital in the decision making and implementation processes in enterprise business, organizations with health finance resources are easy to meet the requirements of their stakeholders (Sharfman et al., 1988). Meanwhile surplus financial resources may stimulate companies to make proactive and innovative decisions (Cyert and March, 1963), buffering them from financial restrictions that lead them to suboptimal behaviors (Thompson, 1967).

In this sense, the author concluded that two important measurements of financial performance should be included in our empirical study, which are profitability and leverage. With generous profits, companies can conduct sustainability report processes and will suffer less pressure from shareholders and creditors if their leverage is relatively low, therefore they have voluntary incentives to disclose their information about organizational activities, especially relating to environmental and social influence. And this avoids them from a one-dimensional aim of economic aspects, which is greatly demanded by their financial supporters. Base on existing literature, the author can infer below hypotheses:

H3: Sustainability disclosure (a) and its quality (b) are positively correlated with a company's profitability.

H4: Sustainability disclosure (a) and its quality (b) are negatively correlated with a company's leverage.

2.4.3 Social and environmental performance

An unresolved research issue in the relationship between environmental accounting is the level of the amount of corporate environmental information disclosure and corporate environmental performance (Hughes et al, 2001; Patten, 2002). Accounting standards makers and securities regulators are increasingly understanding of the lack of environmental information disclosure of enterprises. The relationship between corporate environmental performance and environmental information disclosure of the mixed financial report are presented in the results of previous studies. Patten (2002) failed to find an important and consistent relationship between environmental performance and environmental information disclosure issues existing research design. These problems include the failure to control other factors and environmental information disclosure level, sample selection, and environmental performance measures and information disclosure issues.

The social performance is rarely measured by researchers, while environmental performance is normally indicated from the amount of environmental fines or pollution data or popular environmental indexes. When looking at the incentives of a company's sustainability disclosure, reporting is a way for them to signal good performance to its stakeholders, especially potential financial supporters. Companies with weak performance are more likely to report their information about sustainability and eliminate the adverse conjectures towards their performance. However, there is no clear empirical evidence on this topic. Belal and Cooper (2011) found that companies with better performance are more likely to publish their sustainability information. And the extent of reporting is higher than those firms with worse performance (Clarkson et al., 2008). Meanwhile, Brammer and Pavelin (2006) indicated that companies with worse performance are more likely to report in detail. And they also found no significant evidence on the relationship between the extent and adoption of reporting and companies' performance, which is revisited by Prado-Lorenzo et al. (2009b). Therefore, researchers did not get a clear conclusion on the influence of firm's performance from former literature about this topic.

Furthermore, disclosure of sustainability information may be promoted by the shareholders with long-term interests who need the evaluation of non-market influences (Belkaoui and Karpik, 1989). However, the announcement of firm's performance including environmental and social performance with disadvantages would damage the company's image established as well (Hughes and Sankar, 1997). And this is also an incentive that should be considered in our case. Therefore, the author got

the following hypothesis:

H5: Sustainability disclosure (a) and its quality (b) are positively correlated with firm's environmental performance.

2.4.4 Ownership structure

Ownership structure is much related to the extent and quality reporting as some researches addressed. There are several measurements of a company's ownership such as whether it is a listed firm or not, the share of government ownership in it, the ownership of shareholders is concentrated or dispersed, and the share foreign ownership in it.

Listed corporation are regulated more than a wide range of institutional actors than private sectors, including the government, banks, stock exchanges, and shareholder activist groups. Those pressure and interaction with a wide range of stakeholders will push listed companies to have a greater variety of perspectives on the company financial, social and environmental impacts (Freeman, 1984; Hart and Sharma, 2004). Coping with these comprehensive perspectives may expand the complexity and multidimensional nature of the company's formal sustainability definitions.

Similarly, as is noted above, the listed corporation must comply with regulatory authorities and the public to provide verification or non-compliance. Institutions and institutional investors need information and results in this arear due to the public nature of the company. Financial or social or environmental setbacks for the listed corporation can stimulate negative news, and reduce shareholder's confidence (Hamilton, 1995).

Request for evidence and avoiding negative news means the necessity of listed companies to become more and more professional and can complete the sustainability-related behavior. Studies also showed that companies can offset these risks through the simple expression of the environment or social reasons (Bansal and Clelland, 2004). This fact can be used in the case of social norms and professional expectations as well as formal reporting requirements and job descriptions (bureaucracy) as well as impression management techniques with employees and motivate them to develop sustainability-related behavior. Many of the above views are also applicable to the issue of sustainability reporting. For example, the listed companies need to submit mandatory disclosure requirements of public disclosure and report shows that the listed corporation is usually more experienced than private companies (KPMG, 2015). It is found that listed companies can expand the existing structure of the report or use existing staff to focus on sustainability reporting than the private enterprises that can be more time and cost efficient (Darnall and Edwards, 2006).

Study also shows that the legitimacy of the important incentive accumulation of enterprises to

provide transparent form to shareholder reports and official statements (Bansal and Clelland, 2004). Previous researches in the environmental management system (EMS) showed that listed corporation have greater ability to complement the cost of implementation (Darnall and Edwards, 2006) than those of private companies. These findings in the EMS implementation, the sustainability of the activities represents the environmental dimension, which suggests that the listed corporation can absorb more dimensions than the private enterprises whose sustainable development have the same resource. Together, these arguments suggest that listing corporations are more likely than private firms to provide formal sustainability reports for stakeholders. At the same time, the listed company's stakeholders, including shareholders having apparent authority grant or the ability to revoke company's license management (Hart & Sharma, 2004) and writing ability to limit the company's cash flow. This phenomenon has been extensively studied in the social responsibility and its reporting (Roberts, 1992).

Confirmed by Haddock (2005), listed firms are more inclined to publish their sustainability reports, to meet the requirements of regulations and stakeholders, and this will bring them prestige among competitors as well. Research showed that the quality of sustainability reports published by listed firms was better (Da Silva Monteiro and Aibar- Guzmán, 2010). State owned companies or companies with government ownership are with higher likelihood of sustainability reporting and better quality, this may due to the supervision of governments which requires the companies to report more frequently (Amran and Haniffa,2011). And there is another reason to explain this could be, these state-owned companies or companies with government ownership are normally found in sectors that will create heavy pollution or with higher social responsibility, such as mining, resource, education and health sectors.

The concentration of the ownership of shareholders also plays an important role in affecting the extent and quality of this reporting. Concentrated firms, with majority of the outstanding share owned by a unique investor, do not have the pressure from stakeholders of revealing information since their shareholders have already known it from inner channels. Firms with dispersed ownership would increase their publishing frequency to eliminate the information asymmetry due to the principle and agent problems, since they usually hire managers to operate the company under shareholders' requirements. Shareholders in the companies with dispersed ownership seldom have access to acquire the detailed information except for various reports. Cullen and Christopher (2002) demonstrated that firms with dispersed ownership are more frequently to disclose their information through reports, including environmental reports. Sometimes, this information about environmental and social aspects would also be attached in companies' annual reports. In accordance with this analysis, the empirical research of Brammer and Pavelin (2006) verified that firms with dispersed ownership are more willing to publish their sustainability information with good quality (Gamerschlag et al. 2011). However, there are also some studies that did not find any significant results (Stanny and Ely, 2008; Tagesson et al., 2009). Even though the empirical result of this topic is ambiguous, the author proposed the following hypothesis being verified:

H6: Sustainability disclosure (a) and its quality (b) are negatively correlated with the concentration of a company's ownership.

Other aspects of corporate governance should also be considered such as non-executive directors as well, and they usually represent the interest of external stakeholders (Wang and Dewhirst, 1992). This will influence the extent of disclosure of annual reports as well as sustainability reports (Haniffa and Cooke, 2002).

H7: Sustainability disclosure (a) and its quality (b) are positively correlated with the number of non-executive directors.

2.4.5 Corporate visibility

Corporate visibility is related to the disclosure of sustainability reporting because of media exposure, stakeholder pressure, supply chain and so on. Media exposure is usually measured by the number of hits of a company's annual news or public reports, and it is positively related to the extent of sustainability reporting (Patten, 2002a; 2002b). This is from the literature of Meznar and Nigh (1995) who explicated the reason that companies exposed under media exposure are under the pressure of the external stakeholders such as the citizens and public organizations are more likely to answer the questions of these stakeholders through reporting such as environmental impacts (Sharma and Nguan, 1999).

The influence of supply chain differs according to the position of the company. For example, companies that frequently interact with consumers may have higher level of corporate visibility and thus higher level of sustainability disclosure (Groves et al., 2011). Haddock (2005) confirmed that business-to-consumer companies are more inclined to report their information. And Haddock and Fraser (2008) pointed out that the extent and quality of reporting is relevant to the closeness to market and business-to-business companies tend to report less than business-to consumer companies. In addition, the consistency of brand name and company name also has effect on the extent of discourse of information (Haddock, 2005). But there is no empirical study to verify the conclusion.

In addition, the extent of corporate environmental activities of the news report, which shows that corporate stakeholders actively monitor, improve the potential benefits from an open environment reporting strategy and lead to more information disclosure. Several studies have been carried out to evaluate the importance of media in influencing corporate environmental activities and reporting, and that reasoning is the media that can affect the organization's stakeholders. Deegan et al (2000) show that higher print media coverage of environmental issues increases public policy pressure, and promotes public issues, which further lead to greater environmental disclosure of

affected firms. This view is made by Campbell and Beck (2004), he found compelling evidence that the company is aware of the environmental charges against them, and uses a variety of communication channels to make the defense disclose. However, Walden and Schwartz (1997) suggest that public pressure may occur even when there is no significant media exposure, public discontent itself, from new or proposed political action and / or increased regulation. These findings reinforce Patten (2002) suggests that environmental data (in which the package is estimated to be released in the United States) is more important to the media exposure.

Benefit from an active environmental reporting strategy is obvious, if external stakeholders pay close attention to the company's amplification. In this case, any information released by the company is quickly and efficiently distributed to the market with a relatively low cost for the company (Gibbins et al, 1990). In addition, the manager will be more sensitive to maintain the reputation of firm's environmental management if it is highly visible (Skinner, 1994). Therefore, the author got the following hypothesis:

H8: Sustainability disclosure (a) and its quality (b) are positively correlated with a firm's media exposure.

2.4.6 Sector affiliation and legal requirements

The industry's impact on the type and extent of environmental reporting has also been identified in a comprehensive literature. For example, it is found that there are differences in the level of reporting in the UK, with different environmental impacts. (Halme and Huse 1996; Bowen, 2000; Sharma, 1997; Kolk, 20003). It is suggested that higher motivation of sustainability reporting will be in these areas, where higher environmental pressures exist (Martin and Hadley, 2006). For example, in water and energy sector, its environmental information disclosure was 94% compared to the lower environmental pressures industry, such as electronic (19%) and bank (15%). However, in a survey, KPMG (2005) identified the low-environmental-impact desires to increase the company's environmental performance report. For example, the financial industry increased by 138% of the social and environmental reports from 2002 to 2005, from 24% in 2002 to 57% in 2005. They noted that the increase was due to higher public interest, money is the perception of the investment and long-term economic benefits, more and more evidence shows about social and environmental considerations (KPMG, 2005). Other environmental impacts of industries are at historic low levels recently achieved relatively high levels of environmental reporting including electronic and computer (91%) and communications and media (47%).

Sector-specific stakeholder pressure (Sotorrío and Sánchez, 2010) and mimetic incentives are factors that drive companies to publish their sustainability reports with high level of social and environmental impacts, even without regulations and legitimacy threats (Husillos-Carqués et al.,

2011). Empirical results on this aspect differ across countries (Fortanier et al., 2011). Buhr and Freedman (2002) showed differences of the impact on the adoption and extent of sustainability reporting (Chen and Bouvain, 2009). However, there are also some literatures found no significant influence of the country-of-origin factors (Sotorrío and Sánchez, 2010). Since industries that affect the environment seriously received more media attention from the public such as green gas and oil spills (Bowen, 2000). Nowadays, externals groups pushed the companies to disclose their environmental information due to the urgency of environmental issues especially the firms in the sector that are associated with these urgent issues such as metals, resources, paper and chemical sectors (Dutton et al, 1990;). Recent study indicates that the legal obligation of CSR data disclosure has a positive effect on the quality of CSR reports.

H9: Sustainability disclosure (a) and its quality (b) are higher in specific industries with urgent environmental issues.

2.4.7 Country/continent origin

Researches show style of sustainability reporting may change across countries and regions due to different cultural, social norms and regulations (Fifka, 2013; Sotorrío and Sánchez,2010; Golob and Bartlett, 2007). Recent research suggests that increases in sustainability disclosure driven by the regulation are associated with increases in firm valuations (Ioannou and Serafeim 2017). Comply with trends observed in North American companies (Gamble et al., 1995), the European companies are increasingly considering that the environmental reporting strategy as a value-added tool. In fact, there is evidence that most European countries are expanding the number and quality of information disclosure of environmental information (KPMG, 2013). Corporate social responsibility behavior is not the result of strategic decision. Instead, they represent the state of a specific aspect of the reactive business system. However, the format of such an environmental report is different from the company because its content is not strictly regulated.

Matten and Moon (2008) believe that corporate social responsibility is significantly influenced by factors that shape the national business system. The author compares Europe and the United States and concludes that the United States enterprises emphasize the explicit elements of corporate social responsibility, while European companies emphasize the elements of the recessive CSR. The emergence of corporate environmental reports comes as European firms are increasingly dependent on equity and public debt markets to raise funds because of their demands for foreign investors (Cohen and Perez, 1999). In the context of North America, the evidence suggests that before, as companies increase investment in the capital market and capital market participants, they may change their disclosure (Scott, 1994; Healy et al., 1999; Botosan, 1997).

In these areas, some authors (Albareda et al, 2006, 2008; Steurer, 2010) emphasized the relevance of the role of the national government through public policy CSR. Specially, Albareda et al (2006) identified the four models, which depend on the type of policy and the actors involved in the decision-making process. Germany and Italy are classified in sustainable development in citizen models, respectively, and the market model. In sustainable development and citizen model, the structure of corporate governance reflects the contribution of different stakeholders, especially the business activities of employees. The government plays a moderate role and public policy and corporate behavior to corporate social responsibility to emphasize sustainable development. Market model, the government plays a fundamental role through state-owned enterprises and high regulation.

German national business system is characterized by a high degree of formality, and corporate social responsibility by law enforcement agencies, and does not voluntarily decide the company (Matten and Moon, 2008). The Italy business system causes the enterprise to emphasize the enterprise social responsibility of implicit element. Russo and Tencati (2009) show that small and medium enterprises in Italy are very sensitive to the needs of the local community and they communicate with stakeholders through various corporate social responsibility activities, even though they do not work hard to communicate with society. Some countries such as Denmark and Norway, need environmental reports (Hess and Dunfee, 2007), whereas some countries such as French and British only need sustainability-related information (Brown et al., 2009b). Acerete et al. (2011) argued that companies in the countries with tighter regulations would be more inclined to report their sustainability information and publish reports with higher quality as well. The national business system is very different from the United States. According to Matten and Moon (2008), the United States national business system leads to an explicit element of corporate social responsibility, while the European national business system leads the enterprise to emphasize corporate social responsibility of implicit elements, such as political, financial, education and labor, and cultural aspects of the impact of the national business system. The American national business system is characterized by small government intervention in the economy. The economic activity of the United States government is extremely limited, and seldom deviate from the principle of free market. The subsequent lack of social benefits of traditional elements is a powerful driving force in the spread of corporate social responsibility practices in the United States. American companies have been close to corporate social responsibility for what Buehler and Shetty (1974) found that enlightened self-interest, which is the combination of the company's profitability and social welfare. Similarly, Maignan and Ruston (2002) found that American companies rarely have corporate social responsibility as a response involving all the demands but they usually describe it as part of their corporate culture and strategy. It is interesting to investigate KPMG's proposal to reduce the number of sustainability reports disclosed by U.S. Inc (KPMG, 2005). This trend is in contrast to the increasing number of private and public sectors and the issue of sustainability reporting standards that are expressed in the common and social performance of the sustainable development report of

U.S. firms (Weaver et al, 1999). A decline in the level of social information disclosure is also likely to show that the gap between the United States corporate social responsibility of the explicit method is more subtle, implicit CSR method in Europe (Matten and Moon, 2008).

Compared with the United States, sustainability discourse and practice are also different in France and Brazil. France is often considered as a state of corporate social responsibility for an example of a long time which has been implicit (Matten and Moon, 2008), since the integration of the economic, social and environmental responsibility, the enterprise is a part of the mandatory law. This interpretation, the academic research has recently begun to pay more attention to practice by the French company and other stakeholders in this area (Beaujolin and Capron, 2005; Berthoin Antal and Sobczak, 2007). As for Brazil, the company has been a long time not to submit to the interests of the relevant groups of pressure than other countries, it's in the hands of government in a specific period. Until recently, Brazil companies have begun to develop more structured disclosure and practice corporate social responsibility in a wider perspective than international customer expectations, or that more and more local consumers and non-governmental organizations are more concerned about economic, social and environmental challenges (Schmidheiny, 2006).

When CSR disclosure and practice eventually become more explicit and structured in France and Brazil, the focus in these two countries is the social dimension rather than the environment. In France, CSR discourse and practice of internal labor issues, rather than be concerned about the external stakeholders (Berthoin Antal and Sobczak, 2007). In Brazil, CSR disclosure and practice of the traditional focus on the role of the business community projects, especially in the field of education, emphasizing the government's difficulties in this area. Different cultural and legal environment continues to affect CSR disclosure and practice.

Bebbington (1999) reported that 83% of the Denmark corporations reported that the basic information required for the Danish Environmental Protection Act, the rest of the literature shows more disappointing results. In UK, Adams et al (1995) analyzed the financial statements of 100 British companies, which are the equal to the opportunity, and the mandatory reporting, said that this is a very confidential law. Day and Woodward (2004) studied the information disclosure to employees in the UK, to obtain similar results. Low levels of disclosure also revealed in compliance investigation by the American company mandatory disclosure of environmental liabilities (Alciatore and Dee, 2006; Freedman and Stagliano, 2002) and predicted future environmental capital expenditures (Patten, 2005). Finally, Larrinaga-González et al (2001) found that 80% of the Spanish companies in their studies failed to report any information required in the Independent Commission Against Corruption - 1998 standard.

In summary, existing researches explicate sustainability reporting practice vary across countries and regions due to different cultural, social norms and regulations. On the contrary, no significant relationship between country-of-origin and extent of sustainability reporting are found (Sotorrío and Sánchez, 2010). Even fewer study on the quality of sustainability reporting explicates impact of country-of-origin, so far only two were found (Vormedal and Ruud, 2009; DeTienne and

Lewis 2005). Researcher argue that the most appropriate way to improve the quality of the sustainability reporting is to improve the standards of quality reporting requirements, in particular information disclosure requirements and implementation mechanisms (DeTienne and Lewis 2005) It can be said that his principle has also led to the development of standard, for example SEER (Seasonal Energy Efficiency Ratios) regulatory guidelines in the United States (Alciatore and Dee, 2006) and Europe (Hibbitt and CoUison, 2004). SEER quality is one of the parameters used to identify, measure and disclose environmental issues in its May 30, 2001 annual report and the annual report (2001/453 / EC), which considers the lack of clear provisions, leading to a different stakeholder, including regulatory agencies, investors, financial analysts and the general public which may consider the environmental information disclosure of enterprises that is not sufficient or unreliable (the European Commission, 2001). Researches have confirmed that, the more tightened regulation the more adoption and extent of sustainability (environmental) reporting (e.g., Acerete et al., 2011; Deegan and Rankin, 1996,1997;). While number of empirical study examining the development of sustainability (environmental) reporting in response to regulation is still quite limited. It makes sense to verify below hypothesis.

H10: Sustainability disclosure (a) and its quality (b) are higher in specific countries/continent with specific environmental regulations.

2.4.8 Stakeholder Engagement

Lewis and Unerman (1999) pointed out that Legitimation strategies and reporting patents were to meet the expectations of stakeholders. Buhr (2002) and Husillos-Carqués et al. (2011) used interview data to specify that reporting is a way to solve inefficient communication. And the content of sustainability reporting is associated with the demands of stakeholders (Golob and Bartlett, 2007), as well as the quality of reporting (Sinclair-Desgagné and Gozlan, 2003). Despite these arguments, empirical research about stakeholder pressure and sustainability reporting is still missing. Dhaliwal et al. (2011) concentrated on the influence of investors, a specific stakeholder group, to analyze its role in information asymmetry between managers and companies about the firm value. GRI, as a standard in sustainability reporting, is emphasized in the research of Willis (2003) about socially responsible investment in the framework of estimation in the time-dimension. And its applicability is also evaluated by Van den Brink and Van der Woerd (2004), which give a direction in the following evaluation of sustainability reporting.

There are six stakeholder groups are most likely to be concerned about the company's sustainability reporting, investors, creditors, suppliers, customers, government and the public. These groups are interested in one or more previous studies (Woodward et al., 1996; Agle et al. 1999) and

is believed to be important stakeholders of the enterprise and consumer disclosure (Leighton and Thain, 1997; Lev,1992). The specific reasons for each stakeholder group are as follows. Investors or shareholders, each contain a specific group of people involved. Investor or shareholder and representatives of a major stakeholder groups may lose their investment if a company is not responsible for the environment. Banks (creditors) are important stakeholders because they can recall or prevent further expansion of credit. Suppliers and customers are important stakeholder groups, the formation of a part of the industrial chain; they rely on other business survival or consumption. Regulators and supervisors need to comply with environmental laws and regulations, the government formed an important stakeholder groups. Finally, the public represents a wide range of stakeholders interested in how companies use scarce environmental resources (Wilmshurst and Frost, 2000).

The ultimate goal of each enterprise is the value creation, which has a value for its owner (i.e., the shareholders) but the contemporary enterprise basically can be seen as a network composed of a large number of individuals and groups (Freeman 1984), Post et al (2002) show the way the stakeholders affect the business management and then affects the company's behavior.

Stakeholder pressure is a common topic of importance in the literature on motivation and level of corporate environmental reporting (Gonzalez-Benito and Gonzalez-Benito, 2006). This concept has been accepted by researches (Dowling and Pfeffer,1975; Suchman, 1995), emphasizing their existence and legitimacy of the interests of the society and enterprise stakeholders, and disclosure of the type and quantity is under force of the stakeholders (Campbell, 2004). Berman et al (1999) experience has demonstrated that the company's motivation is to use stakeholder management practices, as they are potentially the positive impact of the final bottom line profit graph (Belal, 2002).

There are considerable debates about the relative importance of different types of stakeholders on corporate environmental behavior. Henriques and Sadorsky (1999) broadly supported the view that the organization's environment is positively related to the impact of stakeholders (customers, suppliers, employees and shareholders) and community stakeholders (e.g., non-governmental organizations), with environmental responsiveness and regulatory stakeholders and media pressure. This suggests that a possible environmental disclosure and report of motivation may be used as defense measure (in response to the media) or unable to measure (in response to regulatory stakeholders). This view is advanced by Brammer and Pavelin (2004), he noted that voluntary disclosure may be viewed as an attempt to reduce the risk of potential investors. It is relatively important for stakeholders in determining environmental information disclosure, Collinson et al. (2003) assessed the relative importance of different stakeholder groups (from the perspective of corporate environmental management) to provide corporate environmental information. They found that although the environmental regulators were the most important stakeholder groups, followed by the local community, pressure groups and customers. More deeply, Post et al. (2002) stresses that the capacity of an enterprise to generate sustainable wealth over time is essential to certain basic

issues or problems in a time or enterprise by its relationship with other interested parties (stakeholders). From this point of view, these enterprises and their stakeholders are related to long-term success and survival. The measurement of strategic and business success is not limited to the value creation of a group of stakeholders, the enterprise should be responsible for the way of social responsibility, including the interests of stakeholders, including the participation of stakeholders in the way to create sustainable value for long-term view.

Because of the inefficiency of SR in measuring the expectations of stakeholders (O'Dwyer, 2002), Gray et al. (2001) proposed that stakeholder engagement (SE) which is relevant to sustainability reporting should be considered as important factor that influences the decisions of which information to be included in the reports. Important information that does not enter the annual reports such as social and environmental information which should be conveyed to the external stakeholders as well, not only the managers. And this kind of dialogue with stakeholders is recognized as a vital factor that determines the level of SR. In the literature of measuring the quality of SE, some authors argued that in order to meet the satisfaction of stakeholders, the convey of information should be timeless, honest and complete, and require the equal and fair treatment by managers and shareholders. Moreover, transparency of the communication and balance of benefits and risks are added into the quality of dialogues between managers and stakeholders. Zadek and Raynard (2002) classified the quality of stakeholder engagement into three dimensions: procedural quality, responsiveness quality and quality of outcomes. Procedural quality is related to the process of the dialogues and reports. Responsiveness quality refers to the answer to the requirement of stakeholders and whether they are satisfied with it or not. Quality of outcomes means the consistency of the actions and practices adopted by the companies proposed by stakeholders. The relationship between the stakeholder holder's participation and sustainability reporting is also mixed. In addition, Greenwood (2007) pointed out that stakeholder dialogue itself does not lead to social responsibility. But Habisch et al (2011) showed that more stakeholder engagement effective significantly increased the extend of corporate social responsibility report. Based on stakeholder theory, stakeholder pressure and stakeholder engagement to cope with that should be the main driver of sustainability disclosure, extent and reporting quality. But few empirical studies have been found in this regarding, it is worthy while to verify below hypothesis:

H11: Sustainability disclosure (a) and its quality (b) are positively correlated with the level of stakeholder engagement.

Summary of Hypotheses

To understand what elements will determine whether a company will disclose their sustainability related information or not, and on what quality level those disclosures are, above hypotheses need to be tested in a consolidated model. Below charts shows the summary of hypotheses based on existing literature as shown in Table 1.

Table 1.

Summary of hypothesis

SUMMARY OF HYPOTHESIS
H1: Sustainability disclosure (a) and its quality (b) are positively correlated to firm size;
H2: Sustainability disclosure (a) and its quality (b) are negtively correlated to firm age;
H3: Sustainability disclosure (a) and its quality (b) are positively correlated to a company's profitability;
H4: Sustainability disclosure (a) and its quality (b) are negatively correlated to a company's leverage;
H5: Sustainability disclosure (a) and its quality (b) are positively correlated to a firm's environmental performance;
H6: Sustainability disclosure (a) and its quality (b) are negatively correlated to the concentration of a company's
H7: Sustainability disclosure (a) and its quality (b) are positively correlated to the number of non-executive directors.
H8: Sustainability disclosure (a) and its quality (b) are positively correlated to a firm's visibility;
H9: Sustainability disclosure (a) and its quality (b) are higher in specific industries with urgent environmental issues.
H10: Sustainability disclosure (a) and its quality (b) are higher in specific continent with specific regulations
H11: Sustainability disclosure (a) and its quality (b) are positively correlated to the level of stakeholder engagement.

2.5 Research Gap

2.5.1 CR reporting quality and its determinants

In the development of existing sustainability reporting (SR) literature, there are three levels of research: the adoption of SR, extent of SR and quality of SR. The practice of big pioneer companies in reporting their international business is currently driving the report of sustainable development, but there are still some companies rarely voluntarily report their company's sustainable development. Factors that affect the possibility of the main relevant participation in sustainability reporting are also related to the interests of the business. In definition, the adoption of SR mainly is whether or not the company report its sustainability related activities. Extent of SR refers to the volume or quantity of reports such as key words, sentences, pages and sustainable development issues. Quality of SR reflects the utility of such reporting; it is a central issue to provide a true and faire view of a company's sustainability-related issues. Unfortunately, quality of SR is largely neglected by extant literature, because compared with adoption and extent of SR, quality of SR is difficult to evaluate and thus to study (Hahn and Kühnen, 2013). Another reason is that, how to define the quality of the report is not standard method, considering different strategic requirements, which is mainly based on the subjective judgment of the researcher. By reviewing what is known and what is not known about the determinants on extent of sustainability reporting (SRE) and quality (SRQ), current research gap becomes clear.

Few studies assess of the quality of sustainability reporting (SRQ) with different methodology. For example, according to GRI guidelines, a balanced reporting of both positive

and negative aspects of a company's performance could reflect SRQ (GRI, 2014). However, there is few paper that explores the effects of negative aspects (Criado-Jiménez et al., 2008). And this research gap can be filled by content analysis on sustainability reports in order to know impact of reporting of negative news (Hahn and Lülfs, 2013). Some researchers and institute found the independent assurance and stakeholder dialogue could enhance SRQ (KPMG, 2013). A few research is conceptually or empirically examining the impact of assurance on SRQ (O'Dwyer, 2011). However, a detailed study of the content and quality of published reports on sustainable development is still limited, besides GRI only PIRC and KPMG have explicitly published its way to evaluate SRQ. PRIC is a consulting firm who conducted a survey on the listed companies in the UK to get their information of environmental information from their annual reports and sustainability reports. KPMG publish its sustainability study and survey for world big companies. Furthermore, empirical researched on how senior managers define and implement the construction is lack of study. Most research recently does not come up with consistent results and are published in special journals but rather management ones. Apparently, how to assess and verify the report and measure reporting quality is relative neglected (Hahn and Kühnen2013).

Since no attention has focused on the study of the characteristics of good sustainability report and how companies define their sustainability report quality. Castelló and Lozano (2011) mentioned that sustainability-related reporting not only reveals negative information but also strengthens the company as a management tool. Holder-Webb et al. (2009) showed that disclosure of sustainability reporting gave positive impression on the company's image, although it is always criticized for the selective and strategic processes (Archel et al., 2008; Criado-Jiménez et al., 2008). Thus, the assessment of the quality of these sustainability reporting is worth studying in this literature. According to GRI guidelines, sustainability KPI can be classified into three aspects, economic, environmental and social aspects. However, there is few paper that explores the effects of negative aspects (Criado-Jiménez et al., 2008). And this research gap should be filled with methods and theoretical analysis such as stakeholder engagement, interviews and empirical investigations. So, it is important to give a detailed study of the quality assessment of a variety of sustainable development reports.

Although there are tons of research on determinants of sustainability reporting only few determinants are confirmed, most others remain unexplored or mixed result summarized in as summarized in Table 5. Company size the most consistently confirmed determinants that affects adoption of SR (SRA) SRE and SRQ. There is a strong focus on the literature on large multinational companies. Only 11 papers address the small and medium enterprises (Parsa and Kouhy, 2008). Also, only a few papers and even parts of the non-profit organizations such as sustainable development report of public institutions and non-governmental organizations. Only leverage and concentration of ownership structure have mixed effect (negative in some cases) on the disclosure of sustainability information as conclude from previous literature. Corporate

visibility often measured by media exposure is confirmed with linked with size variable (Bellard and Ru¨ ling, 2001; Groves et al., 2011). Although the effect of firm size is positive, the channel of how it influences the extent and quality of sustainability reporting is still mixed. Ownership structure is much related to the extent and quality reporting as some researches addressed (Amran and Haniffa, 2011; Gamerschlag et al. 2011). There are several measurements of a company's ownership such as whether it is a listed firm or not, the share of government ownership in it, the ownership of shareholders is concentrated or dispersed, and the share foreign ownership in it. How company's financial performance impact sustainability reporting is till ambiguous its variable includes profitability, leverage and capital intensity and financial cost (Amran and Haniffa, 2011; Clarkson et al., 2008, 2011). Studies on social and environmental performance of a company, provided mixed, inconsistent and various empirical results (Clarkson et al., 2011; Amran and Haniffa, 2011; Belal and Cooper, 2011), Compared with environmental performance, company's social performance are more complex and thus hard to measure, that is not surprising that study on social performance as key factors in sustainability reporting is rather scarce. Furthermore, the company's social and environmental performance studies, the quality of the literature report is quite scarce. The quality of measurement and the reexamination of these factors need more theoretical and empirical work on the disclosure of sustainability information. The influence of sectors and country of origin should also be considered in the research of sustainability reporting (Fortanier et al., 2011; Sotorrío and Sánchez, 2010; Albareda et al, 2008; Steurer, 2010). However, the global capital market is open to increase the quality and quantity of information disclosure of the enterprise's pressure on the quality and quantity of their activities. For example, European countries such as France firms_ financial reports are strictly regulated by the state, their non-financial reporting context is not geared to the rules than in the United States and, therefore, are more conducive to voluntary disclosure (Saudaragan and Beadle, 1992). French companies reveal their new system in the context of the establishment of public affairs or investors, allowing the active disclosure of potential economic to better use benefits strategy. While the stakeholder's environmental issues behind the trend of more information disclosure of the company (Bebbington et al, 1999), this is particularly serious in France, where a green party, with a strong ecological view, is part of the government. However, with our understanding of the environment, it is still relatively unknown to the general law on the determinants of corporate environmental reporting in the English-speaking countries (USA, Canada, UK, Australia) in the European continent, especially in France. Another example of regulation can be found in South Africa, who request listed companies to publish an integrated TBL report, or explain omission (Adamsand Simnett, 2011). How sector and country origin impact sustainability reporting and its quality needs to be further studied. The different role of various determinants has been summarized in literature review of this paper followed by the hypothesis. After those hypotheses been examined, it will contribute to close the research gap because few empirical studies explore all the determinants in one theoretical model empirically. The

author created a head map to reflect research status quo and gaps as shown in Table 2.

Table 2

Heat Map of research gap

Determinants of sustainability reporting	Sustainability Reporting Literature					
	Adoption	(key Ref)	Extent	(key Ref)	Quality	(key Ref)
Corporate Size		Fortanier et al., 2011; Patten, 2002; Cormier and Magnan, 2003		Amran and Haniffa, 2011 Seifert et al, 2004 Clarkson et al., 2011		Morhardt Emil, 2010; Clarkson et al., 2011 ; Hart and Sharma, 2004
Financial performance		Amran and Haniffa, 2011; Clarkson et al., 2008, 2011; Lang and Lundholm, 2000		Sotorrío and Sánchez, 2010 Clarkson et al., 2011 ;		KPMG, 2015; Prado-Lorenzo et al., 2009
Environmental performance		Clarkson et al., 2011; Amran and Haniffa,2011		Gamerschlag et al., 2011 Parsa and Kouhy, 2008 Cormier and Magnan, 2003		Brammer and Pavelin, 2006
Social performance		Belal and Cooper, 2011; Nikolaeva and Bicho, 2011		Prado-Lorenzo et al. 2009		Luke, B., 2016.
Ownership structure		Amran and Haniffa,2011 Gamerschlag et al. 2011		Stanny and Ely, 2008; Tagesson et al., 2009		Gamerschlag et al. 2011
Corporate visibility		Haddock, 2005; Fraser (2008)		Haddock, 2005; Cormier et al., 2004 (þ) Cormier and Magnan, 2004 (þ)		Bellard and Ru¨ ling, 2001; Groves et al., 2011
Sector affiliation		Fortanier et al., 2011 Sotorrío and Sánchez, 2010		Amran and Haniffa, 2011; Steurer, 2010		Brammer and Pavelin, 2006 Clarkson et al., 2008 Clarkson et al., 2011
country-of-origin		Albareda et al, 2006, 2008; Steurer, 2010		E.g., Brammer and Pavelin, 2006; Ertuna and Tukel, 2010; Fonseca, 2010; Haniffa		Gallén, et al, 2017
legal requirement		2011; Criado-Jiménez et al., 2008; Hahn and Lülfs, 2013; Laufer, 2003; and other studies		Prado-Lorenzo et al., 2009a		Hahn and Kühnen, 2013.
Stakeholder Engagement		Castelló and Lozano, 2011 ; Onkila, 2011; Habisch et al, 2011		Husillos-Carqués et al. 2011		Hahn and Kühnen, 2013. Manetti, 2011.

Many literature and consistent conclusion

Some Literature or inconsistent conclusion

FEW Literature or no conclusion

Based on stakeholder theory and legitimacy aspects, most research acknowledges stakeholder engagement as key drivers of sustainability reporting. However, research on how stakeholder engagement impact adoption, extent and quality of sustainability reporting are remarkably scarce. GRI and KPMG takes stakeholder engagement (SE) as one dimension to measure quality of SR, which may distort SE as key determinants of SR itself. Sinclair-Desgagné and Gozlan (2003) propose in one of the few models that stakeholder pressure can influence the quality of reporting. Despite consistently arguing for a positive relationship between SE and sustainability reporting, there is a significant lack of empirical research. Interestingly, the few existing studies applied methods of how to measure stakeholder engagement level, which were otherwise even scarce. The measurement of the SR quality and revisit role of stakeholder engagement on SR requires more theoretical and empirical works. When looking at this issue, researchers would embed the stakeholder theory to see if the

sustainability reporting meets the expectations of stakeholders and increases their power. Greenwood (2007) points out stakeholder engagement such as stakeholder dialogue (SD) does not lead to socially responsible behavior. But (Habisch et al., 2011) showed that effective stakeholder dialogue significantly increased corporate social responsibility report. Other methods such as interviews and survey should also be combined with the theoretical study such as legitimacy, signaling, and so on.

Moreover, even if researchers considered the most advanced methodologies in the sustainability field they are not designed to consider in an explicit, clear and complete way the different relationships that companies develop with their stakeholders (Figge et al., 2002). The concept of extended enterprise, based on a relational view of the firm focused on stakeholder linkages (Post et al., 2002), goes beyond 'previous work on the "triple bottom line" and "balanced scorecard". 'The key to solving the core strategic problem is to understand the firm's entire set of stakeholder relationships' (Post et al., 2002). Furthermore, the traditional environmental, social and sustainability reports are defined more as public relations products than as effective methodologies to control and manage the corporate performance (Cerin, 2002a, 2002b). Because of the inefficiency of SR in measuring the expectations of stakeholders (O'Dwyer, 2002), Gray et al. (2001) proposed that stakeholder engagement (SE) which is relevant to SR should be considered as important factor that influences the decisions of which information to be included in the reports. However empirical study in this field remain untapped because study on shift from stakeholder management to stakeholder engagement is also emerging. Manetti (2011) proposed a model to measure the level of SE, which is to general interests to know how companies operate their stakeholder engagement. If combined with the research direction on the role of SE in sustainability reporting, it becomes a new lens of study.

Look closely at the journal that these inconsistencies appear to have been subject to different management disciplines but are distributed in different parts of the Journal such as to expose the journals of sustainability-related journals, periodicals from other disciplines, or general management journals. Subjective research interests could to some extent prevent most research coming up with consistent results. However, it makes sense to develop comprehensive theoretical model and empirically test role of stakeholder engagement.

2.5.2 Quantitative vs qualitative

Quantitative studies have provided the basis for CR reporting research, especially for legitimacy theory (Spence and Gray, 2007). While these studies have succeeded in establishing broad relationships between CSR reporting and factors such as size and industry, which can be measured from content analysis. Although quantitative studies are more reliable in its trackable and repeatable

manner, its limitation is obvious in finding interactions, such as attitudes and intents. Q*ualitative* studies have indicated that motivations to disclose, which are somewhat more complex than simply to achieve organizational legitimacy or to manage stakeholder relationships (Adams, 2002; Buhr, 2002; O'Dwyer, 2002; Spence and Gray,2007). According to Adams and Larrinaga-González (2007), it is only through engagement-based research that researchers might better understand which external and internal factors drive or prevent managers to conduct CR reporting. (Adams, 2002) argues compared with quantitative focus of existing studies (for example content analysis), less research has been done on the internal processes of CSR reporting or attitudes, which influence decision-making.

Due to test design and quality of interview targets, qualitative research to find determinants of CR reporting, sometimes shows mixed result. For example, although the interview-based study of Spence and Gray (2007) confirms that a variety of different pressures and perceived benefits, including reputation and risk management, stakeholder management, satisfying pressures from the city, peer pressure, and socio-environmental underpin CR reporting, the authors argue that these different motivations circle around the 'business case'. In other words, commercial motivations determine CSR reporting. However, another interview-based study of Bebbington et al. (2009) reveals that rather than being initiated rationally, CSR reporting may be initiated by managers to 'fit in' and to act 'appropriately' in the context in which they operate. Means that institutional pressure play a role without business rationale.

In simple word, in CR reporting studies, *Quantitative* method has widely available data which is reliable but limited in testing attitudes, Q*ualitative* can deeper dive attitudes while difficult to control bias. If attitudes can be analyzed from content analysis, to somehow *Quantitative* study in CR reporting can be strengthened.

2.6 Character of sustainability reporting

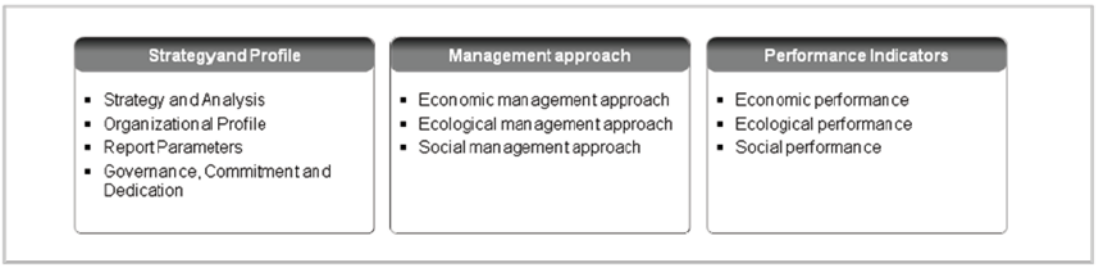
General principles about the content of the report, quality control as well as reporting boundaries are all defined in GRI (2011). The important part in assessing the extent of sustainability are related to the three categories of standard disclosures, which are the strategy and profile of a company, the management approach and the indicators referring to the three dimensions (economic, environmental and social) mentioned above.

The performance indicators are classified to three basic aspects, the strategy and profile, the management approach and the performance indicators as shown in Table 3. Each part of the aspects should all be included in the consideration of the company's sustainability. The first part about sustainability disclosure related the strategy and analysis require detailed information

about Strategy and Analysis, Organizational Profile, Report Parameters and Governance, Commitment and Dedication of the company. This is the start of the analysis and helps to give an overall view of the company to be analyzed. The management approach in the second category is related to be management approach or method toward the three dimensions. And the third part, the performance indicators is to evaluate the qualitative and quantitative description among the economical, ecological and social performance part, which contains catalogs about core indicators and the additional information that has significant impacts on the stakeholders of a company.

Table 3

Three basic aspects (GRI, 2014)



2.6.1 General characteristics of the sustainability reports

To analyses the extent and quality of sustainability reports, there are some communication channels and general characteristics to be identified: type of the report, reporting year, reporting frequency, availability of an interactive sustainability report, existence of a direct link with a focus on sustainability on the group's website, length of the report (words/pages), usage of GRI-guidelines, usage of an external auditor and use of assurance.

2.6.2 Analyze Reporting Extent

Following the analysis of sustainability reporting by Loew et al. (2005) about German companies, I developed a complicated research about the performance indicators of G250 companies and separated the indicated into the three dimensions recommended by GRI guidelines. Reports relating to the sustainable actions of companies should be considered as separate documents due to the voluntary in the reporting. Several key performance indicators (KPI) is needed to give an overview about how elaborative the sustainability reports are, they are text ratio and category ratio defined in the next part.

Text ratio

Referring to Coding about the sustainability performance aspects, the author found disclosure standards created by GRI that are related to the strategy and profile, strategy and analysis, organizational profile, report parameters and statements regarding to the economic, environmental and social dimensions, and the last part is what will be stressed in this research. The text ratio is the number of words used in a document for a certain type of sustainability code in relation to the total number of words used in this document. It can be shown in equation 1:

Equation 1:

$$\text{Textratio} = \frac{\sum_{i=1}^{k} n_{dci}}{n_d}$$

with: c = Index for the codes

d = Index for the coded document

i = Index for all codes

k = Number of coded passages

n_d= Number of words in document d

n_{dci}= Number of words which belongs to code c in document d and passage i

This ratio gives a comparison of word frequency relating to the sustainability of different companies and through which the author can tell how detailed the company is describing its sustainability polies, given the number of words and pages used in their reports.

Category ratio

Information about sustainability would not only be included in the text description but also in the description of categories. If researchers only rely on the text ratio indicator, they would lose some additional information about the exactness of these reporting and another KPI is introduced · the category ratio. If two documents are of the same text ratio, then research can calculate the category ratio of each one and give a comparison of the extent of these two reports. To make the definition clear, it is better to give a description of what contents should be included in accounting the category ratio.

Besides the detailed description and definitions of various categories and subcategories in text or passages, further surplus and explanation in the document should also be include into the corresponding category. Sometimes the passages are not appropriate in describing the category of sustainability, or some categories are defined in the company's own framework without the using of worldwide and comparable categories, it would discount the reliability of the report and mislead further analysis. This indicator is to solve the problem and classify the information into appropriate position regarding to their relevance of the standard disclosure. Category ratio is calculated as the number of words related to a category in relation to the total words for all the coding in a document, and it is elaborated in equation 2:

Equation 2:

$$\text{Categoryratio} = \frac{\sum_{i=1}^{k} n_{dci}}{\sum_{c=1}^{m}\sum_{i=1}^{k} n_{dci}}$$

with: c = Index for the codes

d = Index for the coded document

i = Index for all codes

k = Number of coded passages

m = Number of all codes

n_{dci}= Number of words which belongs to code c in document d and passage i

Within the category ratio, the sum of all values for a category of a document is always 100 percent while the text ratio has no fixed value. Therefore, the category ratio is expedient for a further analysis of the frequency of the occurrence of the categories of sustainable development.

Sustainability performance indicators

These indicators are developed by GRI method and is assumed to be applicable for most organizations with various types of stakeholders. It includes economic, environmental and social aspects.

GRI Application Level

Since GRI guidelines is a standard for the sustainability reporting, it is important to designate an indicator to specify the level of application within the framework of GRI reporting. Some authors simply gave a score about the applied level as A, B, C or (+), Additional self-assessment about the extent that a report author explained in this work should be examined by a third party or GRI. Even though it gives information about the standardization level of these reports, frequency of the indicator published that follow the GRI category is an easier and objective approach to analyze the GRI application level of different companies.

Coding process of Extent

There is an unreliability problem when researcher only use counts words or portions of pages, even if researchers use Text Ratio and category ration. To cope with this problem, to compute specific words that matches KPI defined by GRI become necessary (Michelon, 2011). Our method is when A particular sentence is analyzed as the recording unit, then is matched with all sustainability disclosure in the flowing chart. The coding process is that, if it provides no information then the score will be 0; with a score of 1 if it discloses information. The extent of disclosure is measured by counting the frequency of items. There could be multiple indicators mentioned in one sentence, it will be multiple counted. When same information is repeated in

the report, those should not be double counted. To analyze the three-performance category, and create index for each of them, for example FINANCE is the disclosure index of financial and operational information; ENV the disclosure index regarding information on the environmental impact of a company's activities; SOCIAL is the disclosure index of the social aspects of the company's activities, such as labor practices, human rights, and product responsibility. Or combine them together if the researcher wants to know the index both on environmental and social, then sum up the twoindex. Finally, the researcher can aggregate the frequency count of all KPI and get the overall extend score of the sustainability reported (for the year 2014) analyzed. Table 4 is the criteria for GRI and used as coding dictionary for content analysis.

Table 4

Coding Dictionary

Code	Section	Category
Strategy and Profile		
SP1		Strategy and Analysis
SP2		Organizational Profile
SP3		Report Parameters
SP4		Governance, Commitments and Engagement
Management Approach and Performance		
MAP1		Economic
MAP2		Environmental
MAP3		Social
Key Performance Indicator		
Economic		
EC1-EC4	Economic Performance	
Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.		
Financial implications and other risks and opportunities for the organization's activities due to climate change.		
Significant financial assistance received from government.		

EC5-EC7 Market Presence

Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.

Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.

Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.

EC8- EC9 Indirect Economic Impacts

Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.

Understanding and describing significant indirect economic impacts, including the extent of impacts.

Environment

EN1-EN2	Materials	Materials used by weight or volume. Percentage of materials used that are recycled input materials.
EN3-EN7	Energy	Direct energy consumption by primary energy source. Indirect energy consumption by primary source. Energy saved due to conservation and efficiency improvements. Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives. Initiatives to reduce indirect energy consumption and reductions achieved.
EN8-EN10	Water	Total water withdrawal by source. Water sources significantly affected by withdrawal of water. Percentage and total volume of water recycled and reused.
EN11-EN15	Biodiversity	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas. Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas. Habitats protected or restored. Strategies, current actions, and future plans for managing impacts on biodiversity. Number of IUCN Red List species and national

		conservation list species with habitats in areas affected by operations, by level of extinction risk.
EN16-EN25	Emissions, Effluents and Waste	Total direct and indirect greenhouse gas emissions by weight. Other relevant indirect greenhouse gas emissions by weight. Initiatives to reduce greenhouse gas emissions and reductions achieved. Emissions of ozone-depleting substances by weight. NOx, SOx, and other significant air emissions by type and weight. Total water discharge by quality and destination. Total weight of waste by type and disposal method. Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.

EN26-EN27	Products and Services	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation. Percentage of products sold and their packaging materials that are reclaimed by category.
EN28	Compliance	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.
EN29	Transport	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.
EN30	Overall	Total environmental protection expenditures and investments by type.
Social		
LA1-LA3; LA15	Employment	Total workforce by employment type, employment contract, and region, broken down by gender. Total number and rate of new employee hires and employee turnover by age group, gender, and region. Benefits provided to full-time employees that are not provided to temporary or parttime employees, by significant locations of operation. Return to work and retention rates after parental leave, by gender.

LA4-LA5	Labor/Management Relations	Percentage of employees covered by collective bargaining agreements. Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.
LA6-LA9	Occupational Health and Safety	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs. Rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender. Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.
		Health and safety topics covered in formal agreements with trade unions.Health and safety topics covered in formal agreements with trade unions.
LA10-LA12	Training and Education	Average hours of training per year per employee, by gender, and by employee category. Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings. Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.
LA13	Diversity and Equal Opportunity	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.
HR1-HR3	Investment and Procurement Practices	Percentage and total number of significant investment agreements and contracts that include clauses incorporating human rights concerns, or that have undergone human rights screening.

		Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening, and actions taken. Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.
HR4	Non-discrimination	Total number of incidents of discrimination and corrective actions taken.
HR5	Freedom of Association and Collective Bargaining	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and actions taken to support these rights.
HR6	Child Labor	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.
HR7	Forced and Compulsory Labor	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.
HR8	Security Practices	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.
HR9	Indigenous Rights	Total number of incidents of violations involving rights of indigenous people and actions taken.
SO1; SO9-SO10	Local Communities	Percentage of operations with implemented local community engagement, impact assessments, and development programs. Operations with significant potential or actual negative impacts on local communities. Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.
SO2-SO4	Corruption	Percentage and total number of business units analyzed for risks related to corruption. Percentage of employees trained in organization's anti-corruption policies and procedures. Actions taken in response to incidents of corruption.

Percentage of employees trained in organization's anti-corruption policies and procedures.

Actions taken in response to incidents of corruption.

2.6.2 Extent vs Quality

What is Quality? Quality is the degree to which a commodity meets the requirements of the customer at the start of its life (ISO 9000). Quality is usually defined as the term relating to the reliability, maintainability and sustainability of a product or project. It is applied in different areas and has different understandings by different kinds of people. In the market, when consumers talk about a product's quality, it means the fitness of its use, and whether it is more durable and multifunctional compared to its substitutions or competitors. The item has other meaning when it goes to the producers' side, which is often regarded as the implement of product standard and the variation control. It also has different meaning in reporting process as well. Product quality perception comes from your design specifications and the manufacture standards achieved. Service quality perception comes from your service process design and the customer contact impressions. Quality is an experience of the customer, when it becomes reporting quality, it turns out to be an experience of stakeholders who read the port. A report with good quality is to convey its information correctly which is demanded by the stakeholders and match the standard of reporting as well.

The practice of evaluating various reports has been acted for a long time. Annual reports, especially financial reports by listed companies are tested by organizations and journals once a year to give an overview of the quality of these reports about their contents and indicators. Award for well-designed reports is another way to encourage companies to give reports with good quality. And this leads to the trend of increasing various supplements of reporting such as environmental, social and sustainability reports. The Association of Chartered Certified Accountants （ACCA） is the famous organization that give awards to the companies with good quality of reporting, especially in environmental and social aspects. Evaluation by journals and awards by organizations give a good direction of the reporting practice with systematic improvement on quality of reporting and this can be verified in the trend of a consideration of supplements by international and national studies.

Moreover, evaluating the reporting procedure is not the primary in the endeavor to identify the corporate sustainability reporting with good quality. After an initial and general assessment of these reports, the methodology used in the reports to convey its orientation

and the usefulness of this report is taken into consideration as well. This is a good trial to put principles for ecological and social performance into the integral assessment of special reports. Some companies, who have given a first version of these reports, provide a benchmark for the reporting with “model”.

And this approach raised several fundamental problems in the methodology of this literature. If an approach is limited to an individual report and gets its best result from it then it loses the universality of its application. And, to a certain degree, comparability of reports play an important role in the identification of the quality of reports and this should give us the criteria to compare, for instance, the sustainability report of one company and the safety of another. To what extent can researchers compared different kinds of reports requires a method to identify this problem, which should also be taken into the consideration of the quality of reporting. In this study, the author made apple-to-apple analysis. The sample studied in most research is a big concern regarding to this topic. In most cases, only large and mostly multinational companies’ reports were assessed by organizations and journals, omitting a lot of small and medium sized enterprises, whose reporting criteria should also be included in the set of quality assessment. Usually, these firms have adequate financial and professional resources to publish their special reports in details which would be difficulty for small companies to follow.

The information contained in the research reports should also be evaluated under the needs of various stakeholders of the company. Research reports usually do not contain enough information about the development of a company and this might lead to bad consequence to the stakeholders and policymakers who rely on such reports.

The main difficulties in recent study is the difference of various evaluation methods, and no unified definition and measurement are given on sustainability reporting quality. There are three method to evaluate sustainability reporting quality. Let’s begin with GRI, (Moore and Robson (2002) perceive GRI as the “most detailed, comprehensive and prescriptive criteria”, GRI guidelines provided a detailed benchmark towards reporting and evaluating approach for many companies and research organizations as shown in table 5. The author explained how to use the KPI and definition set by GRI catalogue to analyze extent of sustainability reporting. GRI also provide method to evaluate reporting quality.

Table 5

GRI Guideline Overview

	Category	Aspect
Economic	Direct Economic Impacts	Customers Suppliers Employees Providers of capital Public sector
Environmental	Environmental	Materials Energy Water Biodiversity Emissions, effluents, and waste Suppliers Products and services Compliance Transport Overall
Social	Labour Practices and Decent Work	Employment Labour/management relations Health and safety Training and education Diversity and opportunity
	Human Rights	Strategy and Management Non-discrimination Freedom of association and collective bargaining Child labour Forced and compulsory labour Security practices Indigenous rights
	Society	Community Bribery and corruption Political contributions Competition and pricing
	Product Responsibility	Customer health and safety Products and services Advertising Respect for privacy

The GRI Guidelines stated 11 principles to ensure the basic quality of sustainability reports, they are: transparency, inclusiveness, auditability, completeness, relevance, sustainability context, accuracy, neutrality, comparability, clarity, and timeliness. In this study, the author relied on the GRI guidelines published in 2003 and constructed the table 1 to help us give scores for each company. GRI guidelines are divided into three aspects, the economic, environmental and social aspects. Each category has several main indicators to describe. Within the category of social aspects, there are four sub-categories, which are labor practice and decent work, human rights, society and product responsibility. GRI defines very comprehensive principles, how to apply them and how to test them, take “clarity” as example shown in Table 6.

Table 6

Clarity Principle (Source: Principle and Tests, GRI 2003, SECTION 3 16)

CLARITY Principle:

The organization should make information available in a manner that is understandable and accessible to **stakeholders** using the report.

Tests:

a. The report contains the level of information required by **stakeholders**, but avoids excessive and unnecessary detail

b. **Stakeholders** can find the specific information they want without unreasonable effort through tables of contents, maps, links, or other aids

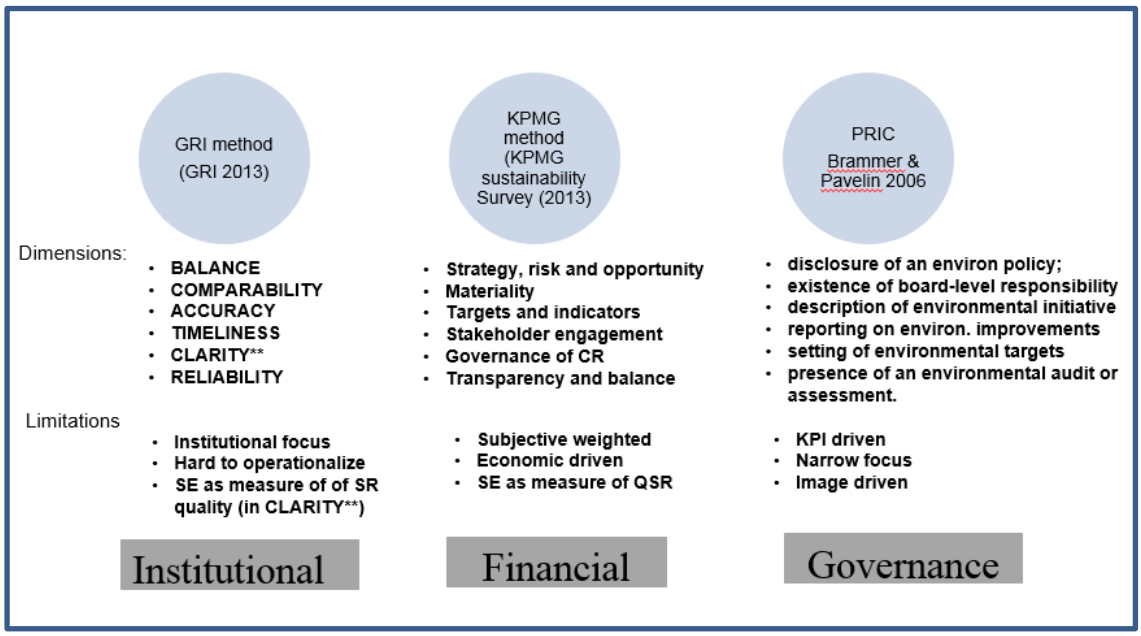
c. The report avoids technical terms, acronyms, jargon, or other content likely to be unfamiliar to **stakeholders**, and should include explanations (where necessary) in the relevant section or in a glossary

d. The data and information in the report is available to **stakeholders**, including those with particular accessibility needs (such as differing abilities, language, or technology)

To make it appropriate for all types of companies, just orienting on the GRI guidelines is not enough for us to study and this may constrain companies in stereotypes. Moreover, the general rules and description given by GRI guidelines is difficult for all types of companies especially those small and special companies to fulfill. Nevertheless, this is mostly used in sustainability reporting issues. Too "institutional" limitation of GRI method calls for other evaluation methods, KPMG and PRIC method are the other two mainstream methods the author found from very limited literature on this topic. Figure 3 summarizes the key dimension of GRI, PRIC and KPMG method, their detail development process and measurement are provided in session of "method to measure sustainability reporting quality".

Figure 3

Dimensions of GRI, PRIC and KPMG



In summary, research on the extent of reporting generally addresses the volume or amount

o reporting, the most popular way is to calculate the quantity of disclosed information based on keyword (KPI frequency). More simple ways to count sentence or count page numbers to identify major themes discussed can also be applied. “Extent” can only reflects quantity index on sustainability reporting. In contrast, research on quality index of sustainability reporting are looking for what kind of information the report is providing, to which stakeholder, relevant or irrelevant, strategic or not strategic, ranging from rather narrative and descriptive disclosure. The reality is tons of research have been done on “sustainability reporting extent” based on KPI calculation methodology, while few studies have been conducted on “sustainability reporting quality” as reporting quality in itself is already difficult to evaluate and thus to study (Hahn, 2013). So, in this study the author will not focus on extend of sustainability reporting, but to explain the difference between sustainability reporting extent and quality will make it clearer on the definition themselves, which contribute to the main research gap of reporting quality’s definition and its measurement.

Chapter 3. Research Methodology & Design

3.1 Research flow

The main research flow this work to give a critical analysis of data resources, define and evaluate the basic assumptions, methods and selection of tools. Provide measures on the definition of sustainability reporting adoption and its quality. By contrasting research in sustainability reporting (SR) development and its determinants, propose a comprehensive model with additional elements derived from stakeholder theory and measure on stakeholder engagement (SE). The process as shown in Figure 4, is suitable to test theoretical model based on the measurement of the quality of SR and add SE, which can be the starting point of the research about theoretical premise on the selected companies.

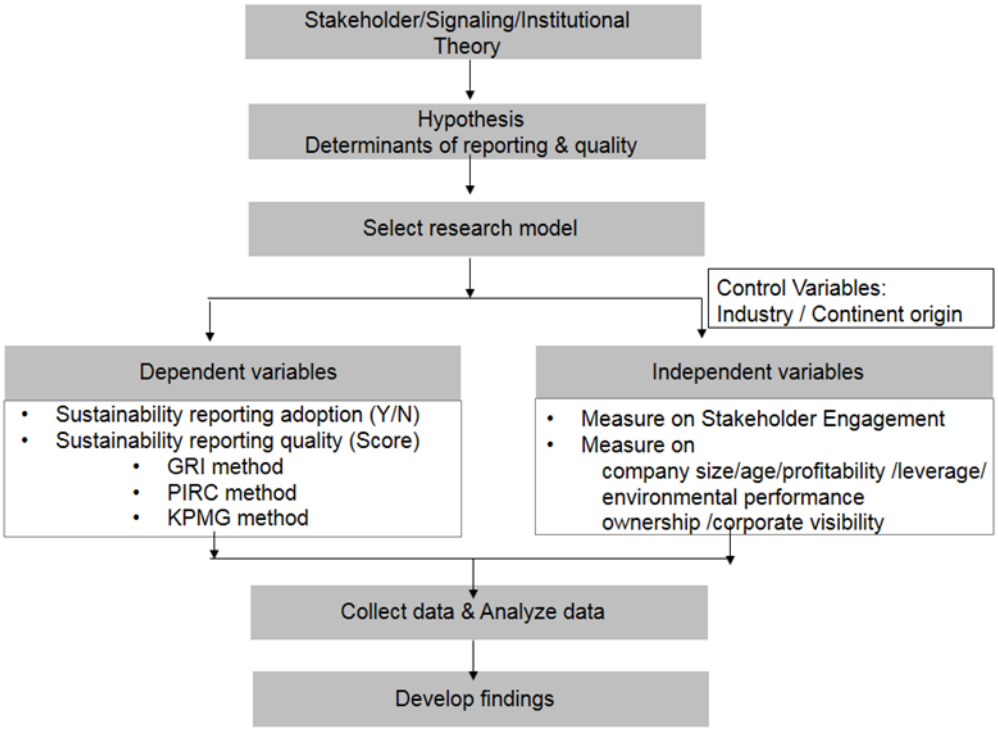


Figure 4 Research Flow

3.2 Reliability & Validity

The researcher chooses public communication that is widely used to provide a record of the activities of the company's management. The sample of the top 250 companies in the list of Fortune Global 500 (G250) in 2014, due to data availability of one dependent variable of "environmental performance" which is collected from Environmental and Protection Agency (EPA). The author got total toxic releases and the toxic waste treated in $ value in 2014, as reported by the EPA in 2016 as EPA reports data with a two-year lag. Since the research is to analyze the reporting information in the public, only published information available is used in this research. The source of sustainability reports and basic information are downloaded from their websites, including sustainability reports (including environmental report), corporate responsibility/CR and integrated annual reports. Reliability refers to consistency of a measure of a concept. During the process of our analysis, when the author collected the dependent and independent variables, there will be normally a lag of one-year i.e. report in 2014 is determined by firm and industry variables in 2013. This helps to clarify potential conflicting cause-effect relationship, for example one might believe the extent and quality of sustainability reporting to impact the firm's environmental performance or it finance leverage level or it media exposure.

13% of the companies did not publish any sustainability-related report (excluding those publish integrated sustainability report in annual report) in the year of 2014, and they will be considered as Non-disclosure samples. On validity, which can be considered as the extent to which a research method accurately measures what it intends to measure (Saunders et al., 2012), the author is going to use measurement have already been used to by various researchers. Cronbach's alpha is a commonly used test of internal reliability, the researcher will test coefficient between independent variables wherever possible. On reliability, to cope with inter-observer consistency, two persons reviewed reporting scores while a third person reviewed scoring disagreements. One is a Phd in economics study Fudan university studying economics research, one is the expert form China sustainability business council, a NGO to promote sustainability in business community. Comparison conducted in the coding process to see if a research method repeatedly (consistently) generates the same result or if other researchers draw the same conclusions from the raw data. Generalizability refers to how research findings can be transferred to settings other than the original research setting (Saunders et al., 2012). Although the author uses the sample data of world largest companies with sufficient industry and country coverage, this research does not claim that our findings can be generalized to all companies in other context, especially those small ones.

3.3 Methodology & Data Collection

3.3.1 Content Analysis

Abbott and Monsen (1979) define the content analysis as a kind of technology to collect data, and the qualitative information derived from the compilation of anecdotes and literary forms of quantitative classification with varying degrees of complexity on the scale

Content analysis in social and environmental reporting is studied by extensive researchers (Adams & Kuasirikun, 2000; Gray et al, 1995; Larrinaga et al, 2002). Thematic content analysis (Jones and shoemaker, 1994) is used for the construction of different information disclosure measures. Because there is no universal legislative or regulatory requirements on governing the format of sustainability reporting, there is an inherent variation in reporting style across countries and industries. So, that it is necessary to associate those indicators with specific set of words and phrases which makes systematic analysis possible. Systematic analysis includes two parts: a classification scheme for the construction and design of a set of rules for encoding, measurement and classification of data (Milne and Adler, 1999). The first activity is often a very serious problem, as it is not easy to define and classify the text in an objective way (Gray al et, 1995). However, companies often focused on the use of a standard, so the required information definition and encoding standards, which forced the company in awareness of

value and environmental issues in their annual report account. In details, the company must disclose the value of the financial statements and describe the environmental assets, expenses, accidents and regulations. As for the establishment of a specific encoding rule and measurement, they will be described as a feature of the variables.

Common variables are collected from data. In order to ensure the reliability (Gray et al., 1995; Jones and shoemaker, 1994; Milne and Adler, 1999), at least two programmers, should be responsible for data collection and classification. They check each annual report. Reliability is also obtained for further analysis and resolution of all the differences between the programmer (Milne and Adler, 1999). This is a popular technique for different fields of Social Science Research (Krippendorff,1980) to organize public information (e.g., such as media or company reports), and systematically classified data reporting trends or differences in data sets. The researchers have the opportunity to comment on their "hidden content" (meaning, under the trend). Content analysis is defined in numerous works. Kassarjian (1977) pointed out that a common theme definition has analysis method must be objective, systematic and quantitative (in the data must be able to use quantitative analysis method), but as Collie and Hussey (2003) stated that collecting the data in the beginning may be qualitative, it must can classify the system.

For this study, the author takes environmental performance as the only proxy of sustainability, then content analysis as a method of the advantages of a low profile and transparent analysis of the environmental report sample selection of content and trends, so that the observation of the company's behavior on the behavior of the environment performance information communication. This is generally accepted; however, the use of measurement analysis is the sustainability performance of communication, is not the environment performance itself, but the lack of a report which does not necessarily indicate the lack of environmental information

Current research about sustainability reporting is of numerous form and style, such as CSR report, sustainability report, sustainable development report, etc. Even though one-dimensional reporting is flourishing in the practice of reporting, there is an increasing trend towards multi-dimensional method which includes integrated information about sustainability as well as traditional financial facts (Kolk, 2010). However, only the reports that include the three pillars of sustainability are regarded as sustainability reports and those with isolated description about sustainability are excluded.

3.3.2 Data Collection

Bias and subjective selection is the main source of measurement mistakes (Saunders et al.,

2012). The selection of database is inevitably subjective and gives limitation to this study. Even though G250 covers nearly all industries in the world, it cannot detect the information of small companies and those do not publish their information. Another limitation for this study, the author takes environmental performance as the only proxy of sustainability performance, although environmental is the most mentioned aspect of sustainability, other dimension as social performance should not be ignored.

If the author follows the research of high-impact journals and articles, it would get the suitable method for selecting database, quality measurement of sustainability reporting and analysis of these relationships, thus give validity to this study. To achieve reliability, the author conducted three methods of sustainability measurement and compared the advantages and disadvantages of them. And this can also be enhanced if the author drew similar conclusions as other researchers (Saunders et al., 2012).

Sample data set is selected from G250. All data is the calendar year of 2014. Of all the 250 companies, nearly 27% are located in USA, following by Japan with 13% and China with 12%. Other countries with great quarter in G250 are France, Germany, UK, Switzerland, Italy and Spain. The distribution of industry sector of G250 companies is also very interesting. Nearly a quarter companies are financial companies including finance, insurance and securities. The following industry with second largest part in G250 is oil & gas with 13% and the third is trade & retail with 11%. Other following industries are automotive, electronics & computers, communications & media, utilities, metals, engineering & manufacturing and so on. They are shown in Figure 5 and Figure 6.

Figure 5

G250 companies by location of headquarters

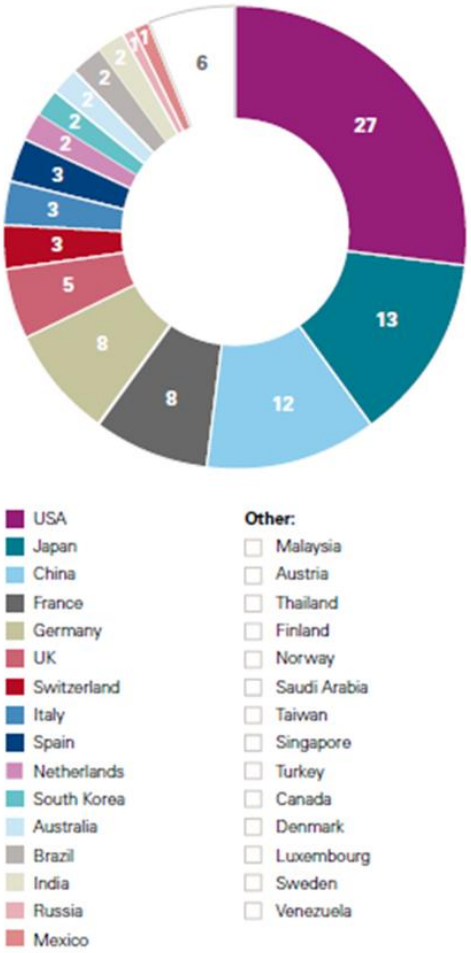
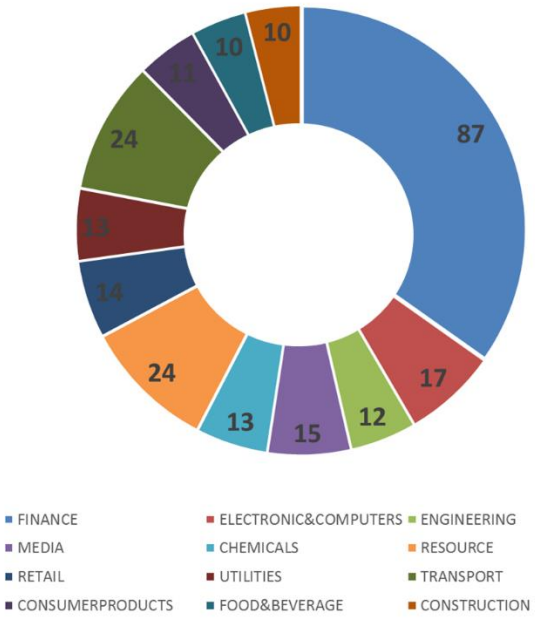


Figure 6

G250 companies by industry sector



3.4 Method to measure Sustainability reporting quality

3.4.1 GRI method

GRI evaluation on company level

GRI is regarded as "the de facto global standard" (Hahn and Kühnen2013) for sustainability reporting. However, despite the standardization efforts, significant variance remains between companies from different context on quality of sustainability reports. If a company adopted GRI guidelines, it has to fill in the format of GRI and this is the type of hard disclosure that cannot easily mimic by those companies who has not prepared well for sustainability disclosure or with poor sustainability performance. Of all the companies in the G250 sample with sustainability disclosure, nearly 80% of them have adopted GRI guidelines in their reports. No matter company adopted the GRI guidelines in its sustainability report or not, the quality of its sustainability report can be analyzed with GRI method.

Researchers adopted GRI KPI and frame to evaluate sustainability report, creating detailed list of criteria broken down into for main categories Table 7. In our study, the author will collate information collected from sustainability report into those categories (Mertens et al., 2012; Daub, 2007). Table 9 shows some information about sustainability reporting in G250 companies regarding to GRI method. Because the researcher believes "Dimensions of performance" should contains the most "hard facts" according to Signaling theory, a more substantial weighting than other categories are given. Here the author follows the same method as Daub (2007) that the criteria in Reporting Cluster C (Performance Indicators) should be weighted with a factor of 2. GRI method takes how stakeholder perceive the sustainability reporting as one of the measures of quality of sustainability reporting. In our study, the researcher took Stakeholder engagement factor out to be consistent with the other two method, which is aligned with the main argument that, stakeholder engagement should be one key determinant of QSR other than one measurement of QSR itself. So, the author took out the criteria of "stakeholder relations" out form Category B.

Table 7

GRI evaluation criteria on sustainability reporting (source: Daub, 2007)

Cat.	Themes	Factor	Criteria	Score	(Max.)	in %
A	**Context and Coverage**		**4**		**12**	**8%**
	Company Profile & Report Profile	1	1		3	
	CEO Statement		1		3	
	Corporate Vision		1		3	
	External Business & Sustainable Development Trends		1		3	
B	**Policies, Management Systems and Stakeholder Relations**		**7**		**21**	**15%**
	Code of Conduct & Corporate Philosophy	1	1		3	
	Economic Policy and Organisation		1		3	
	Environmental Policy and Organisation		1		3	
	Social Policy and Organisation		1		3	
	Integration of sustainability into the Management Systems		1		3	
	Risk Identification		1		3	
	Stakeholder Relations		1		3	
C	**Dimensions of Performance**		**32***		**96**	**65%**
	Economic Performance	2	8		24	
	Environmental Performance		10		30	
	Social Performance		10		30	
	Integrated Performance		4		12	
D	**Transparency and General View**		**6**		**18**	**12%**
	Reliability and Transparency (General View)	1	1		3	
	Reliability specifically in the Environmental Dimension		1		3	
	Reliability specifically in the Social Dimension		1		3	
	Comparability		1		3	
	Accessibility and Structure		1		3	
	Layout and Language		1		3	
Total: Criteria and Score			**49**		**147**	**100%**

** These criteria have already been weighted with factor 2. The total score for each performance dimension (economic, environmental, social, and integrated) is listed here.*

Table 8 shows the indicator of criterion weighted with in "company profile & reporting profile" under category A of "Context and Coverage". The researcher looks for the information on specific indicator in sustainability report, if they follow GRI guidance it is easily located. Then the author notes down our comments on whether the indicators are accounted, for example highlights on pages, level of fulfilment. Then the number of indicators and the level of fulfilment will decide the score of the criteria. Table 9 gives details on indicators of "social performance"

Table 8

Indicator of criterion weighted with in company profile & reporting profile (source: Daub, 2007)

Category A: Context and Coverage
Criterion A1: Company Profile & Reporting Profile

Indicator	Comments	
Number of employees	*In this field the comments on whether or not the indicators are accounted for in the reporting are noted (pages, level of fulfilment etc.). The number of indicators covered and the level of fulfilment then decides the score of the criteria.*	
Major products and/or services, including brands if appropriate		
Major clients and target groups		
Nature of markets or customers served (e.g., retail, wholesale, governments)		
Countries in which the organisation's operations are located		
Nature of ownership; legal form; stock exchange listings		
Key figures (economic, ecological and social dimension)		
Contact person for the report, including E-mail and web addresses		
Reporting period (e.g., fiscal/calendar year) and date of most recent previous report, if any		
Scores: 0 – 3	**F1**	**Total: (max score 3 points)**

Table 9

Criteria on Dimensions of performance – Social performance (source: Daub, 2007)

Category C: Dimensions of Performance - Social Performance
Criterion C12: Distribution of Wages, Benefits & Continuing Education Possibilities & Offers

Indicators	Comments	
Health and pension benefits provided by the organisation	*In this field the comments on whether or not the indicators are accounted for in the reporting are noted (pages, level of fulfilment etc.). The number of indicators covered and the level of fulfilment then decides the score of the criteria.*	
Percentage spent on education of the yearly budget		
Average number of days of education paid per employee (comparison over the last three years)		
Scores: 0 – 3	**F2**	**Total: (max score 6 = 3 x 2)**

The end score of the reporting assessment is made up by the total tally of all the individual criterion scores (the score of A1 + A2 + A3… and so on).

0 = No meaningful information is provided on the specific criterion.

1 = Patchy information is provided.

2 = The reporting provides good information on the criterion. However, one relevant area/indicator is not addressed.

3 = The reporting includes full information to the criterion.

The max score of 144 (deducted 3 from 147 to take out "stakeholder relations") points corresponds to a full score on all criteria, then covert into a scope scheme with full score of 10, just to align with PRIC and KPMG method. The researcher should point out that, the core only

give an idea on how well the company reports on sustainability performance or issues according to list of GRI criteria. The quality of information disclosure dose not necessary mean anything about what the companies believe and how they behave.

GRI evaluation on general level

The general principle given by GRI guidelines in defining report quality is to reflect the objective and overall evaluation of a company's sustainability performance. Both positive and negative information should be revealed especially that information that influence stakeholder's decisions. And the disclosure should be clear to make readers know the facts and interpretation information. Disclosure over time is preferred in the practice to give a comparable overview of the company's sustainability performance. Since comparability is important in the evaluating process, a year- to- year disclosure of sustainability information can guarantee comparable and reliable information to stakeholders which outstands those reporting practice in discrete years. This can be verified in the information collection of the samples in this paper and should be considered as an important variable that influence the quality of reports.

Some indicators in the reports are expressed in different ways with detailed explanations about their gathering method and data, and this will provide more accurate information in the reports, thus are of good quality. Whether a report has fulfilled this rule or not can be observed in the data collection process. Useful information is always associated with time and the decision-making process, therefore timing of disclosure is a variable considered in the assessment of reporting quality. The cases when information disclosed is considered before reporting period can give stakeholders a signal if the board deals with this issue carefully and seriously. Companies which declare integrated or combined sustainability report have incentive to link their strategy and sustainability performance. Thus, sustainability can be considered as an important integral part of corporate strategy. And the reason to publish reports about a company's sustainability information is always to raise the attention of this aspect among mangers and stakeholders. Most lagging sustainability KPIs such as CO2 emissions, total waste and so on do not clearly provide the opportunities and risks about sustainability, as well as the management process. Thus, to analyze these indicators precisely and comprehensively can help evaluating the quality of sustainability disclosure.

Clarity principle means that the information is understandable and usable to the stakeholders and they can find desired information in the report as well. Mostly, this is related the technical terms and others that are unfamiliar to stakeholders, whether or not a company has published this information can give an impression of the quality of the report. Language used in the report is also an important factor that influences the clarification of a report. The last and most important, reliability of a report is the determination of the quality assessment, which means that the information published can stand the examination of other researchers and organizations. Indicators given in the text should be additional supplement to specify its reliability and

exactness. Ambiguous information or those have not been tested is not proper to be claimed in the key part of the reports. The author can judge whether it is reliable by the external assurance it provided in its supplements.

In the flowing paragraph, the author is going to discuss some indicators that may impact other quality of sustainability reported suggested by GRI. First, external assurance. Table 10 shows the results about third party assurance of published sustainability reports. Of all the G250 companies, about 59% have the 3rd party assurance, among which, about 78% companies have separate sustainability reports. 41% of the companies do not have third party assurance and the proportion of not having separate sustainability report is higher, which is 74%. Most of the assured companies use GRI guidelines as standard to report their sustainability information, and it reaches a percentage of 95%. However, those which do not have third party assurance does not use GRI guidelines frequently as assured companies and only 45% of them take GRI guidelines as standard criteria. In this research, the author also examined if the sustainability reports reveal the risks and opportunities of companies. 36% of the companies with assured reports have taken sustainability into their corporate strategies and about 23% of the companies without assured reports take this behavior. However, risks and opportunities of these companies have been emphasized in their sustainability related reports. About 70% of the companies with assured sustainability reports have revealed their risks and opportunities, while this percentage is much less in those companies which do not have their sustainability reports assured and the percentage is only 35%, half of the assured companies. Among sustainability related reports with third-party assurance, the percentage of which mentioned the compensation of executives is larger than those without third-party assurance. Remarkably, among the sustainability reports with third party assurance, about 94% have a year-to-year comparison of quantitative sustainability goals, and this is a high number, compared to those companies have no assured reports, which is only 60%. Another aspect related to the managed of companies is the certificates of shares, and it does not perform well in either the companies with or without assured sustainability related reports, with 11% among assured reports and 9% among no-assured reports.

Table 10

Sustainability reports and third-party assurance

	Assured N=127		No-assured N=90	
	Yes	No	Yes	No
Separate sustainability report	78%	22%	26%	74%
GRI used as standard	95%	5%	45%	55%
Sustainability linked to corporate strategy	36%	64%	23%	77%
Sustainability linked to company risks/opportunities	70%	30%	35%	65%
Sustainability part of executive compensation	26%	74%	18%	82%
Year comparison of quantitative sustainability goals	94%	6%	60%	40%

Second, when the report mention “sustainability supervisory” or not. The analysis about the supervisory of sustainability is presented in Table 11. The sample is divided into two groups, with sustainability supervisory mentioned in the description of the Board and without this information mentioned. These two categories are rather close to each other. Nearly more than half of the sustainability related report that mentioned supervisory in their boards have separate reports, and it is more common for those separately published reports not to mention this kind of supervisory in their boards. GRI guidelines used in these two categories are similar, one is 78% and the other is 65%. It seems that companies that link the sustainability information to their risks and opportunities are more inclined not to report the information of sustainability supervisory in their board, with 65% of the report that not mention this information linked sustainability to company risks and opportunities. In addition, sustainability information with third party assurance and executive compensation are strongly correlated with each other. Those companies that provide sustainability supervisory information are more likely to examine their sustainability information by a third party as well as disclosure the executive compensation related to the sustainability part. The logic behind this observation is that if sustainability supervisory information is mentioned in the board meetings, the compensation and responsibility of executives are naturally to be raised to encourage the managers.

Table 11

Sustainability supervisory information mentioned in the Board

	Sustainability supervisory mentioned N=129		Sustainability Supervisory not mentioned N=88	
	Yes	No	Yes	No
Separate sustainability report	51%	49%	57%	43%
GRI used as standard	78%	22%	65%	35%
Sustainability linked to company strategy	35%	65%	24%	76%
Sustainability linked to company risks/opportunities	44%	56%	65%	35%
Sustainability information with third party assurance	50%	50%	28%	72%
Sustainability part of executive compensation	47%	53%	23%	77%
Year comparison of quantitative sustainability goals	80%	20%	74%	26%

Third, the researcher takes frequently used GRI indicators in social and environmental performance to do a quick check in the samples for G250 companies. Table 12 shows the most frequently used GRI indicators according to the checklist above. Restricted by the length of the table, only several notable indicators are picked to present the points of these sustainability related reports.

In general, of the 71% companies that use GRI guidelines as standard for integrated reporting, social, ethics and environment and governance are important issues that emphasized in these reports. The indicator “Total workforce with breakdown by employment type and gender”, “Voluntary contributions to civil society”,” Initiatives to reduce greenhouse gas emissions and reductions achieved”, “Company indicates whether improvements could be made” have a wide usage of over ninety percent, which implies that companies cares more about the conditions of employees and the emission of greenhouse gas. It is also a feasible indicator that can be measured and controlled during the operations and production process, which would be considered as incentives for managers to take sustainability activities. “Number of injuries”, “Total weight of waste by type and disposal method”, “Percentage and total volume of water recycled and reused” and “biodiversity” are given less attention since the percentage of companies that report these issues are no more than 60%. Again, companies seem to pay more attention to the positive achievements they made since “Company indicates whether improvements could be made” and “Information on actions taken during the year” reach a high level among the reports using GRI indicators.

Table 12

Most frequently used GRI indicators

	G250
Category:	N=217
Employees/social:	
Total workforce with breakdown by employment type and gender	85%
Total number and rate of employee turnover broken down by gender	75%
Average hours of training per year per employee broken down by employee category	67%
Total number of fatalities	62%
Total number of injuries	60%
Work days lost due to occupational accidents, injuries and illness	81%
Ethics:	
Voluntary contributions to civil society	93%
Number of convictions for violations of corruption related laws or regulations and number of fines paid / payable	82%
Environment:	
Initiatives to reduce greenhouse gas emissions and reductions achieved	91%
Percentage of materials recycled	78%
Energy saved due to conservation and efficiency improvements	80%
Percentage and total volume of water recycled and reused	55%
Total weight of waste by type and disposal method	62%
Other:	
Company indicates whether improvements could be made	93%
Information on actions taken during the year	87%
Customer satisfaction and reputation	83%
Stakeholder dialogue or stakeholder management	76%
Biodiversity	43%

GRI also give scores on G250 companies on their application level of GRI framework. Some companies got a GRI score of A or A+. Those firms with high level of GRI scores would publish their sustainability report every year, providing comparable information for sustainability analysis. Even though GRI score may not necessarily give the accurate information about the quality of sustainability reports, the GRI application level can tell us some indications about a company's sustainability development. Companies with higher level of GRI application level or with higher GRI scores pay more attention to the standard of disclosure and give the public more accurate and comparable information about their

sustainability. However, under the framework of GRI guidelines, even a company gives good sustainability performance in its reports, how will it develop in the future depends on the effectiveness of its sustainability related policies and the implementation.

3.4.2 PIRC method

The method of measuring the extent of voluntary sustainability disclosure is obtained from PIRC, who conducted a survey on the listed companies worldwide to get their information of environmental information from their annual reports and sustainability reports (www.pirc.co.uk). As the author has mentioned in the first paper of this project, a set of relevant phrases, words and indictors are necessary to form the dictionary of sustainability-related issues. In their methodology, they defined six indicators to evaluate the quality of voluntary environmental disclosure, which are related to the disclosure of environmental policy, the responsibility of the board, the initiative of environmental reporting, the improvements, the targets and the auditing and assessment issues, and the method has been confirmed in the research of Brammer and Pavelin (2006). If any of these six aspects mentioned above is revealed in a company's sustainability report, then the value is one, otherwise it is zero. QUALITY is the number of these aspects mentioned in their sustainability reports that is included in the set of the six indicators above. Thus, the author can separately analysis the influence of the extent of disclosure and quality of a sustainability report. This method provides a method of quality evaluation which transfers the firm's strategy into something this research can calculate and compare and gives us a judgment according to the type rather than length of the reports. This is distinguished from 'soft talk' disclosure (Hutton et al., 2003).

In the literature of this method, there are two items to be emphasized, the hard disclosure items and the soft disclosure items. As Verrecchia (1983) specified, hard measures cannot easily be adopted by those firms in poor environment. Thus, companies with good environmental performance are more likely to adopt hard measurements to distinguish them from those with poor environmental performance since it is voluntary and increases the threshold of mimic and this is in line with the signaling theory. Under the demand of the information of environmental performance by stakeholders, companies with good environmental performance are more inclined to join the parties or guidelines with hard and objective measures since soft claims cannot efficiently provide the premium on distinctions.

To analyze the disclosure of these sustainability related reports, according to Deegan and Gordon (1996) the criteria of the attitude of environmental disclosure are given in Table.13.

Table 13

PIRC Model

PIRC Model on SR quality	Yes (+1)	No (+0)
1. Disclosure of an social responsibility policy (1 score)		
1.1 Is there clear statement on using enviromental sensitive management technics?		
1.2 Does it mention any reporting standard the report follows		
1.3 Is any statement of company vision or mission on environment		
1.4 Is any maintenance or implemetation of a strategy on social responsibility		
1.5 Is the company monitor environment as part of value chain cycle (e.g part of production)		
2. Description of social responsibility intiatiaves (1 score)		
2.1 is there any pollution/waste control, recyling of materials initiatives in process		
2.2 is any response to govermntal inquiries or public concern regarding SR		
2.3 is voluntary adoption of safe environmental activities		
2.4 is there any research into or support of environmentally friendly products and practices		
2.5 is there tracking process of historical SR initaitves		
3. Corporate governance on environmental matters (1 score)		
3.1 is there board-level responsibility on environmental matters		
3.2 is there specific process to disclose environmetal reports		
3.3 Is evidence of bord support/approval of the company's SR policies		
3.4 Is any review process of company's social responsibility		
3.5 does company undertake SR impact or assessment studies		
4. Reporting of SR performance improvement and negatives (1 score)		
4.1 is improvement in SR standard/facilities reported		
4.2 is SR performance reported in a quantitative way		
4.3 is admission of SR problems, no-compliance with gov. regulations or investigation		
4.4 is admission of SR community or mediat sensitivity to the industry or firm		
4.5 is any acknowledgement of detrimental effects of activities or court action		
5. Setting of SR targets (1 score)		
5.1 is any statement on measures of SR performance		
5.2 is any quantified environmental target (e.g. energy saving/material/recycling)		
5.3 is any quantified economic target feedback to stakeholders		
5.4 is SR target by time phased (short term target vs long term target)		
5.5 is any quantified target in acident, loss, or detrimental effects		
6. Presence of SR audit or assessment (1 score)		
6.1 is any existing internal process of SR audit or assessment		
6.2 is any existing external SR audit		
6.3 is any update on SR certifications (e.g. ISO 14001)		
6.4 is any assurance on sustainability report		
6.5 is any assessment on SR ranking, index and awards		
Total (PIRC/6 score)		

To analyze the disclosure of the environmental information of G250 companies, 217 sustainability related reports were obtained from their websites. Companies tend to report their "good news" rather than "bad news", and this behavior is considered as a reaction to the stakeholder pressure put on corporations. And this is explained as a result of the demand for information of external stakeholders. Researcher demonstrated that disclosure strategy is always to emphasis the positive contributions and achievements of companies and avoid the harmful facts about its impacts on society (Groves et al., 2011). The disclosure policies of companies are mainly influenced by the environmental aspects. The disclosure of environmental information peaked at 1970s and it happens mainly in mining, oil and steel industries which are mostly criticized by the public. Companies, with larger size, would emphasize their information in the long run because of their higher systemic risks, which is relatedly to sustainability disclosure, and this would seldom be published in smaller companies'

reports. Since these reports are main source of the environmental information, the amount of the disclosure of each item is conducted by content analysis, with individual words counting in each category. Negative or positive disclosures are measured by reading their sustainability related reports according to the items mentioned above.

It has to be mentioned that two limitations are related to the content analysis in analyzing disclosure quantity of sustainability reports. One is that the counting of words cannot distinguish different subjectively chosen indicators that measure the quality of reports. The other is that the quantity of disclosure may fail to represent the importance and significance of the disclosure. However, through counting words, the author can achieve the most robust results about the quantity of disclosure information. Content analysis may not perform well in reports with small amount of words. In this study about the G250 companies, the overall effect of measurement error can be neglect and this method is to give an indication about the quantity of environmental disclosure and the quality of sustainability related reports as shown in table 14.

Table 14

Comparison of the quantity of positive and negative environmental indicators

Variables	**POS**		**NEG**		
Test	Mean	Sd.	Mean	Sd.	Significance
T-test	5.2	11.3	1.7	10.9	$p<0.0001$
No. of companies = 217					

The t-test is according to the logarithmical form of POS and NEG POS is the amount of positive disclosures and NEG is the amount of negative disclosures.

T-test is a test to give an estimate about the distribution, which is derived from the following equation:

$$t = \frac{Z}{(s/\sqrt{n})} = \frac{(\bar{X} - \mu)/(\sigma/\sqrt{n})}{(s/\sqrt{n})}$$

Where, $\bar{X}$ is the sample mean of variables X, μ is the mean of variables X, σ is the standard error of variable X, s is the estimated standard error of variable X and n is the sample number. When t is higher than a certain number, the null hypothesis that there is no different between the real variable and estimated variable can be rejected, which means there is a difference between the two variables.

Of all the 217 companies that published their sustainability related reports, t-test and Wilcoxon test is used to find if there is a difference between the disclosure of positive and negative information in their reports and this is shown in Table.18. The results significantly indicate that companies are inclined to publish their positive environmental information whereas suppress negative information. As Table.18 shows, the mean amount of negative disclosures is only 40.7 which is lower than that of positive disclosures. This reveals the incentive of companies that

decorates their information and reports. The maximum of negative disclosure is only 93 words and only 23 companies have published their negative environmental information in the reports. However, all the 217 companies have provided their positive information related to environmental aspects and the maximum amount of words reached 5642, which is much higher than the negative disclosure. This is very interesting that when the readers look at the sustainability related reports, they would have some conjectures about the harmful activities that the company takes in its daily business, however, they would find almost positive news about the development of this company. Thus, firms would have incentive to hide its harmful information to achieve the aim set by the public and therefore information disclosed in these sustainability reports would be biased. Given these conclusions according to the sample, managers of these companies would take a strategy of publishing positive reports rather than objective reports since the harmful information would damage the image that they would to build through disclosure process.

If the character of a company influences its disclosure policy, then the behavior of sustainability related reporting may be related to its particular industries. And it can be assumed that the more environmentally sensitive industry a firm is in, the more likely that it reports positive information about environmental aspects and sustainability development. This may due to the attempt to seek for favorable legitimization and differ itself from other companies in the industry. If every firm in an industry increases its disclosure quantity and quality, the legitimization and industrial standards would be influenced as well.

From this analysis, the top 10 industries that publish their sustainability related information are electric components, travel & tourism, mining, chemical & pharmaceutical, electricity, furnishing, media, oil & gas, heavy construction and timber industry. To obtain the environmental sensitivity of each industry, a guide provided by Patten (1991) helps to build the list of industries that is sensitive to critical review. Through the rating of the companies' disclosure according to the six aspects mentioned above, indexes of DISCLOSE and QUALITY about the sustainability related reports in different industries can be given in Table 15. The indicators DISCLOSE and QUALITY in each industry are calculated as:

$$\text{DISCLOSE} = \sum Ratings \text{ for the industry by each company} (0-1) \Big/ Total \text{ number of companies}$$

$$\text{QUALITY} = \sum Ratings \text{ for the industry by each company} (0-6) \Big/ Total \text{ number of companies}$$

Table 15

DISCLOSURE and QUALITY of the top 10 industries

Industry	DISCLOSE	QUALITY
Electronics &computers	0.88	5.23
Chemicals	0.83	4.32
Construction	0.81	4.03
Food & beverage	0.80	4.79
Electricity	0.80	3.01
Oil & gas	0.72	4.28
Travel & tourism	0.72	4.96
Timber	0.63	3.42
Communications & Media	0.61	4.88
Mining	0.59	4.25

Both measures are overall rating on industrial scope, with the first one ranging from 0 to 1 and the second one from 0 to 6. The first measure DISCLOSE only distinguishes if the company have published their environmental information and the second one QUALITY provides more detailed rating about how these companies have accomplished the target of disclosure in their reports. In Figure 7, it can be shown that electric components industry discloses most frequently among all the other industries, followed by chemical & pharmaceutical and heavy construction industries. However, the quality of their reports differs, with electric components industry as the top industry and followed by travel & tourism industry. This result reflected the conclusion that the great size of the interest group in the sector, the greater influence the group imposes on the sector and the more likely that the sector reflects its views.

Following the method of sustainability reporting assessment by PIRC, this research also forms a set of scores related to their reporting performance of each company and this is given in Figure 7 (by sector) and Figure 8 (by country). From Figure 7, the researcher found that electronics &computers sector has the highest score of 5.23. Large companies in travel & tourism and communications & Media sector have average scores of 4.96 and 4.88. Some sectors did not perform well in the sustainability practice such as automotive, retail and consumer products sectors, with score lower than 3.

The score of sustainability reporting assessment for most G250 companies are above 2.4 and has an average score of 3.7, which brings room for improvement for these large companies. European companies score higher than the other area with most of them score higher than 4 and 17 companies have scores higher than 5. Companies in Asia Pacific area did not take sustainability reporting practice seriously with almost three quarters scored less than 3. U.S.A. performs well and rank in the medium of all the companies in this sample. Figure 8 shows the score (higher than 3) of the best countries that concentrate on the quality of sustainability reporting. Italy, Spain and UK are countries that most concentrated on the reporting quality

with an average score higher than 5.

Figure 7

Average score of quality of sustainability reporting under PIRC method by sector

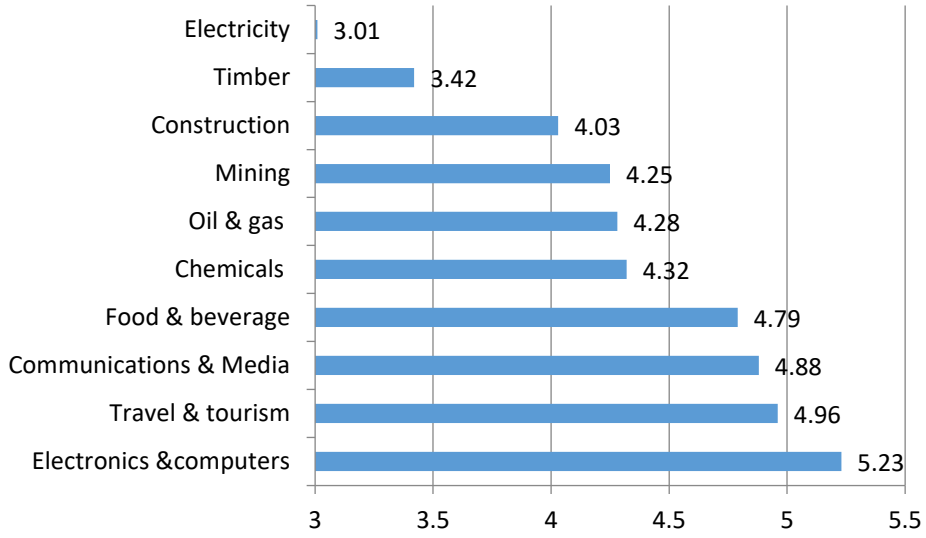
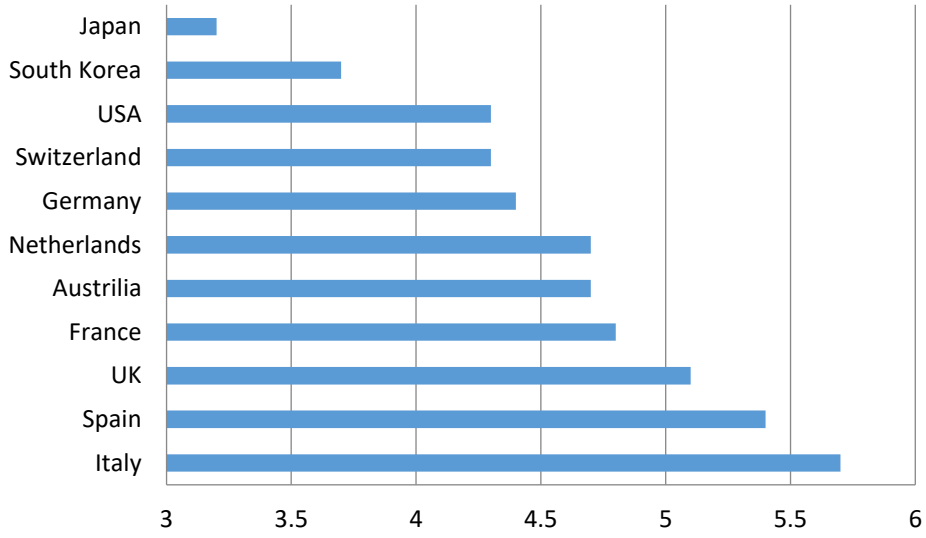


Figure 8

Average score of quality of sustainability reporting under PIRC method by country



3.4.3 KPMG method

KPMG analyses (2014) classify the standard of assessment of sustainability reporting into seven parts, strategy risk and opportunity, materiality, target and indicators, suppliers and the value chain, stakeholder engagement, governance of CR and transparency and balance. In this research, stakeholder engagement is analyzed as a factor that influence the quality of

sustainability related report and thus this dimension is removed from this framework.

Strategy, risk and opportunity means an explanation of risks and opportunities and the actions related to these environments. Materiality means the demonstration of issues that greatly affects the choices of the company or its stakeholders. Targets and indicators should be related to the performance and clearly reflects the progress. Sustainability-related impacts would also occur in the suppliers and value chain, and their impacts are considered in this measurement. Governance of CR is about the responsibility taken by the stakeholders in the company. Sustainability reports should give both shortcomings and achievements of the company in its operation process. If any of the six aspects mentioned above is mentioned in the sustainability related report, then the value of this aspect is one, and the total quality score of the report is the sum of all the scores relating to the six aspects as shown in Table 16

Table 16

KPMG checklist

KPMG Model on SR quality	Yes (+1)	No (+0)
1. Strategy risk and opportunity (total score 1)		
1.1 clear assessment of the sustainabiity opportunies?		
1.2 Significant risks to the organization described?		
1.3 clear company strategy in response described?		
2.5 Critical factors for enabling organizational success described?		
1.5 main topics and future challenges for the sector reported by peers and competitors described?		
2. Materiality (total score 1)		
2.1 identified sustainability issues with the greatest potential impacts ?		
2.2 report sutainability performance or issues with Performance Indicator ?		
2.3 use the materiality assessment to inform reporting and managing risks and opportunities?		
2.4 Relevant laws/regulations, agreements with significance impact the organization described?		
2.5 does the report prioritize material topics and Indicators?		
3. Targets and indicators (total score 1)		
3.1 use concrete targets on sustainability performance ?		
3.2 set clear KPI target on sustainability linked with financial statement ?		
3.3 is the progress and performance repoted on set targets and objective?		
3.4 is a year-to-year sustainability performance track/comparison provided ?		
3.5 does sustainability targts link with company strategy described?		
4. Suppliers and value chain (total score 1)		
4.1 is the social and environmental impacts on the company's supply chain described ?		
4.2 is the downstream impact products and service explained?		
4.3 is process in place to manage thoes impacts		
4.4 are key suppliers identified with their sustainability information provided ?		
4.5 any process in place to check and audit supplier qualifications in sustainability ?		
Stakeholder Engagement	Not Applied	Not Applied
are stakeholder identified in sustainability report ?	Not Applied	Not Applied
is the process to engage with stakeholders explained ?	Not Applied	Not Applied
is any actoins taken in response to stakeholder's feedback explained ?	Not Applied	Not Applied
5. Governance of sustainability (total score 1)		
5.1 is there a clear governance structure on sustainability described?		
5.2 who is the highest governance body in sustainability reporting clearly defined?		
5.3 is any policy linking sustainability performance with remmuneration described ?		
5.4 any internal or external audit scheme on sustainability performance described ?		
5.5 any external assurance on sustainability reoprt described ?		
6. Transparency and balance (total score 1)		
6.1 does the report discloses favorable sustainability results and topics ?		
6.2 does the report discloses unfavorable sustainability results and topics ?		
6.3 include explanations (where necessary) in the relevant section or in a glossary ?		
6.4 does sustainability performance can be compared with appropriate benchmarks ?		
6.5 original source of the information can be identified ?		
Total (PIRC/6 score)		

Based on KPMG's framework, the score of all the G250 companies is to reflect if they meet the criteria set by KPMG. The top 10 companies that have the highest score are listed in Table 17. They are Royal Dutch Shell, BMW, Cisco System, GM, Samsung, ING, Nestle, Procter &Gamble, and Saint-Gobain companies, whose scores are above 5. From the table, the author found that Automotive sector is the leader in sustainability reporting since there are two companies listed in the top 10 companies shown in Table 17.

Table 17

Top 10 companies with the highest score of quality in G250

Company	Country	Sector
Royal Dutch Shell	Dutch	Oil & gas
BMW	Germany	Automotive
Cisco System	US	Communications& media
GM	US	Automotive
Samsung	South Korea	Electronics & computer
ING	Netherland	Finance
Nestle	Switzerland	Food & beverage
Procter & Gamble	US	Consumer service
Saint-Gobain	France	Construction

In the analysis under KPMG framework, the average score of G250 companies is 3.2, which means the sustainability reporting needs more attention for the managers and board of these companies. Targets and indicators is the most frequently reported aspects among all the sustainability related reports of the G250 companies, with an average score of 0.72 of all the companies, and the following aspect is the governance of CR and materiality which reach a level of 0.68 and 0.65 respectively.

From the reports of the G250 companies, it can be found that GRI guidelines is the most popular criteria used in their reports and nearly 82% of them have included GRI guidelines in their reports. With greater emphasis on this practice, further development will be made in the comparability and materiality of reporting process. Other standards such as the International Organization for Standardization (ISO) on social responsibility and United Nations Global Compact (UNGC) also provide valuable framework in the analysis of sustainability reporting standards and have gained some influence towards these companies. These two set of frameworks have their advantages, for instance, ISO is anticipated to establish its dominant position using 14001 environmental management standards, whereas UNGC has gained the popularity among over 1000 companies in their reporting practice towards social and environmental issues.

Of all the G250 companies, suppliers and value chain is the weak aspect that need more

attention in the sustainability reporting activities. In the process of corporate sustainability reporting and management, the boundary of responsibility is important and sometimes it is beyond the control of the corporation's stakeholders. Nearly 90%of the companies have mentioned their supply chain, however only 42% of them have details about the mechanism of how it works and whether it has been monitored or implemented as reflected in Figure 9. Companies in the retail sector such as Walmart do better with reinforced the environmental and labor standards in this respect.

Most G250 companies have mentioned stakeholder engagement in their sustainability related reports. Companies in the Europe area are more likely to include their stakeholder engagement in the sustainability related reports. However, most of the companies do not emphasize the environmental and social issues in their daily business or the meeting of board. Nearly two thirds of the companies have mentioned the risks and opportunities that they will face soon, and about 62% of them have published the information about climate risks, and carbon restrictions, energy and fuel are mostly considered in the sustainability related reports.

In these sustainability, related reports, transparency and materiality need to be improved since only half of them gave identification of these sustainability related issues among their stakeholders.

Figure 9

Average score of report quality of G250 companies by criterion aspects

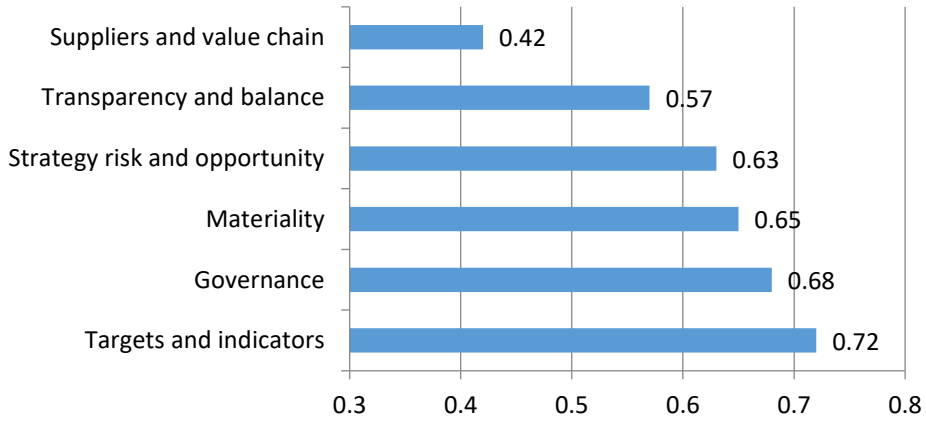
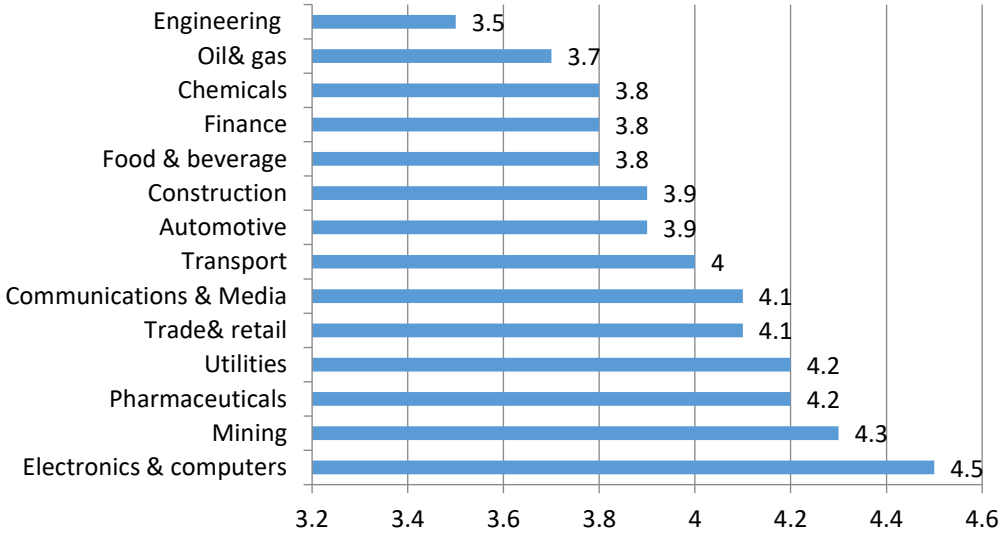


Figure 10 shows the average score of the quality of sustainability related reports according to KPMG method. Companies in the electronics and computers sector shows a higher quality of sustainability report with a score of 4.5, followed by the mining and pharmaceuticals sectors. And their scores are 4.3 and 4.2 respectively. Some sectors that have significant social and environmental influence do not publish their reports with good quality such as the oil& gas sector, engineering, chemicals and construction sector, with score of 3.7, 3.5, 3.8, and 3.9 respectively. One of the reason is due to the size of interest group as mentioned above. Since companies in these sectors are of big size, it is common for the managers to behave under the

interest of these inner stakeholders and thus do not publish enough information about their sustainability development. Chemicals and electronics does not report their supply chain in detail and this exposes the risk of their business. Companies in the food &beverage, pharmaceutical and electronics& computers do well in the transparency of the report and give a balanced assessment of the sustainability information, including the shortcomings and achievements.

Figure 10

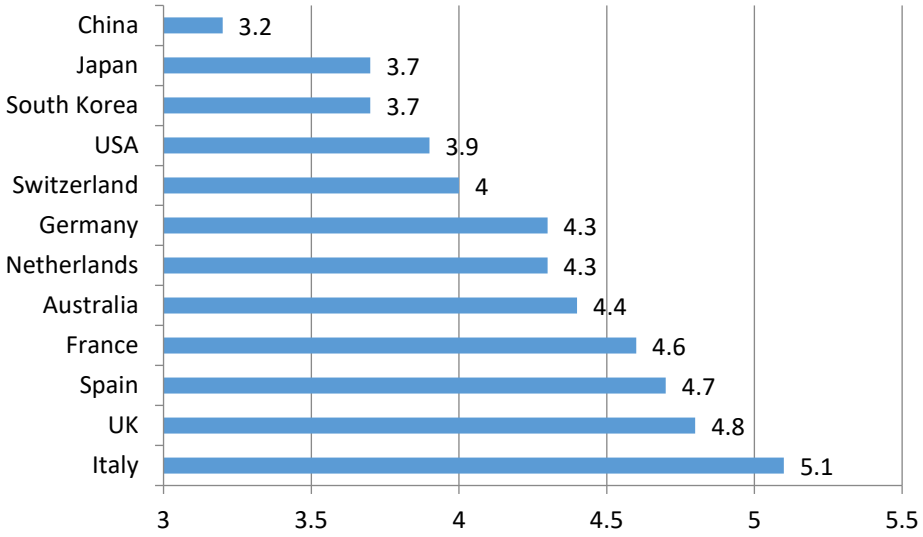
Average score of quality of G250 companies reports under KPMG method by sector (0-6)



Nearly one quarter of the companies have a score higher than 4.5 and most of them are in Europe and US. As Figure 11 shows, Italy is the leader country that have the companies performing well in the practice of sustainability reporting with a score of 5.1. The following countries are UK, Spain and France. Courtiers in the Asia Pacific area does not perform will as those in Europe and the US, with China, Japan and South Korea have scores of 3.2, 3.7 and 3.7. And this indicates the attitude towards the mode of production and business strategy of companies in the Asia area, which need improvement towards sustainability development, and mostly environmental and social aspects. Corporations in Europe reached the highest score of quality of sustainability reporting, with an average of 4.2, while companies in America and Asia do not perform well with average scores of 3.4 and 2.9. Almost three quarters of European companies give detailed information about the environmental and social impacts of their products, whereas only 45% of the American companies defined their impact on the society and this percentage is only 30% in Asia companies.

Figure 11

Ave. score of quality G250 companies reports under KPMG method by sector (0-6)



3.5 Measure on independent variables

(i) Environmental Performance

Environmental performance is difficult to measure since its impact on the society is intangible, and the researcher aims to assess relative environmental performance in this study, the author follows the existing literature (Clarkson, et al., 2008). The first proxy is TRI emission scaled by total sales revenue, data computed using the public database made available by the US Environmental and Protection Agency (EPA). The author gets total toxic releases and the toxic waste treated in $ value in 2014, as reported by the EPA in 2016 because EPA reports data with a two-year lag. To evaluate the environmental performance of a company is the toxic releases and toxic waste (Al-Tuwaijri et al., 2004; Clarkson et al. 2004). Usually the companies who received fines has poor environmental performance and very large. Some companies with poor environmental performance but of medium size or did not give serious impact on the society may not be detected by the data. The second proxy, Brammer and Pavelin (2006) used another method is use of the aggregated fines that a company received from the government such as Environment Agency (in UK) ratio of the aggregate level of fines incurred for environmental transgressions over the 4-year's period to the firm's total assets. In our study, the researcher will combine the two proxy, both considering TRI and aggregated fine the company exposed in last 4 years. The author gets EN-PERFOR = (TRI + FINE on environment performance over past 4 years) / total sales in 2014

(ii) Measuring Ownership Structure

Although ownership structure can be measured in different ways, the author follows the variable that measures the percentage of shares that the top five shareholders have. And this is comparable among all the companies. The ownership structure is measured by the size of the largest of these significant shareholdings expressed as a proportion of the firm's share capital. In other worlds, the researcher measured the percentage of shares held by the top 5 shareholders.

(iii) Measuring Organizational Visibility

Most researchers use firm size to measure their visibility. However, Bowen (2000) pointed out firm size is an integral variable that includes not only a firm's visibility but also other factors and firm's visibility may contribute little to this proxy. Saiia (2000) proposed another method to measure this issue, the incidence of media coverage, which captured the character of visibility and works well. So, in this sense, visibility can be defined as the number of news stories in world publications for a particular company. The author follows the method and to leverage Factiva database, which provides searchable archives of news content from over +9,000 global sources. The data is for the calendar year 2014 and used the natural logarithm of the number of annual news hits.

(iv) Company size

Firm size, some researcher use natural logarithm of the value of firm total assets (Brammer and Pavelin, 2006), some use natural logarithm of the firm's total sales (Michelon, 2011). In this study, the researcher will use the concept of total assets. Because the Fortune 250 companies are ranked by their sales, which means revenue wise they are closed to each other, while considering assets they hold the sequence become different and variation become larger.

(v) Company age

Company age will be the number of year history form the company established.

(vi) Financial performance variable

ROA is the ratio of net profit before taxation to total assets. As a measure of firm leverage, the author uses ratio of total debt to total assets to reflect the availability of financial resources within the firm. In the meanwhile, the researcher uses DataStream to collect and verify data.

(vii) Number of non-executive directors,

The number of non-executive directors can also be obtained from DataStream.

(viii) Sector and continent-origin

Industry or sector variable and continent-origin variable as control viable will be

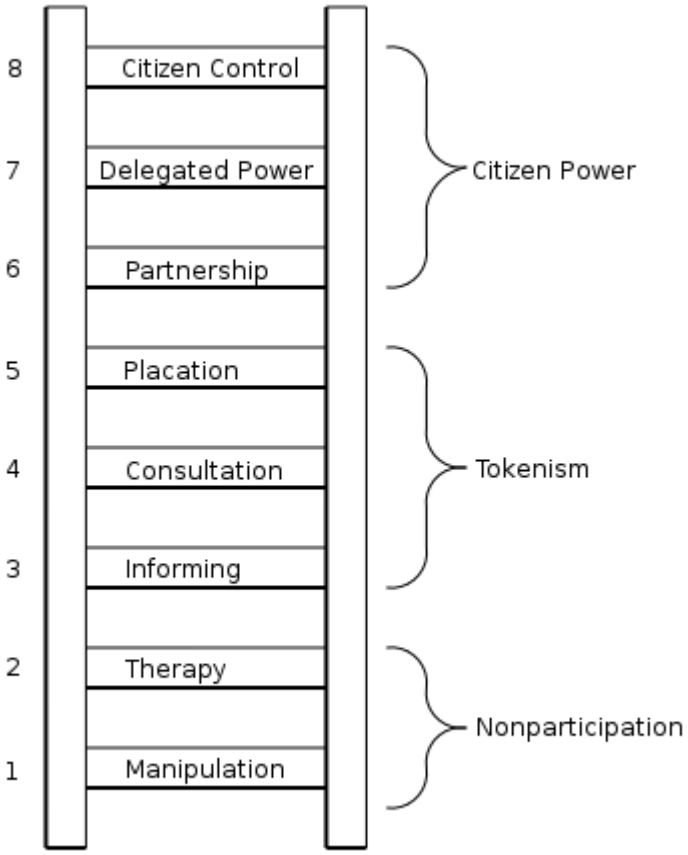
taken as a dummy variable, when a company fits in the specific industry or continent-origin, the umber will be one otherwise will be zero.

3.6 Measure on Stakeholder Engagement

Stakeholder engagement (SE) has different levels in Figure 12, according to the model of Friedman and Miles (2006), who defined the degree of stakeholder engagement according to Arnstein's Ladder of Citizen Participation (1969) that classified the group into eight categories: the first two levels are manipulation and therapy which refer to the control power of stakeholders and they have to accept the rules set by managers. The second layer includes 3,4,5,6 ladders that give a binary communication between stakeholders and the company or managers. Stakeholders have the opportunity to be informed of the decisions, give consultation to the board and decided the placation of managers. Cumming (2001) noted that the approaches of engagement are relative to the structure and character of stakeholder groups. Specifically, engagement of level 3 or 4 requires structured proxies to reflect the opinions and expectations of stakeholders. If the group or proxy of stakeholders has the right to nominate the managers, then it reaches the level of 5 or 6. As researcher (Friedman & Miles, 2006) noted, there is no companies that have reached level 7 or 8 yet, because this level requires companies to redefine their regulations and structures that would be difficult for most companies to avoid the principle-agent problem.

Figure 12

Ladder of Citizen Participation (Source: Arnstein's Ladder of Citizen Participation)



However, when looking are the seventh level of engagement, only those companies with good sustainability performance are potential ones that can reach this level since it requires stakeholders' participation in the decision-making process and thus SE is a vital factor that influence the quality and adoption of sustainability reporting. This has not been paid enough attention in both the literature of stakeholder theory and sustainability reporting analysis.

The method defined in this paper is in line with the reference of Krippendorff (1980), which is widely accepted content analysis. Before the author conducts the measure of stakeholder engagement, it is primary to define the dimension and give the research questions for scoring and coding, and this is presented in Table 18. This method has been used by Manetti (2011), who proposed a model to measure the level of SE, which is to general interests to know how companies operate their stakeholder engagement.

Table 18

Questions and dimensions for SE evaluation

SoreCard on Stakeholder Engagement (Manetti, 2011)	Yes (+1)	No (+0)
1. GENERAL INFORMATION (total score :1)		
1.1. Has a proper section been devoted to the SE in the report?		
1.2. Aims and objectives of SE		
i. setting or reviewing strategic objectives		
ii. setting the content of the report (defining what information are relevant)		
2. DEGREE OF REPRESENTATION OF STAKEHOLDER (totla score 1)		
2.1. Have all the stakeholders identifi ed in the report been engaged?		
2.2. Among the groups engaged, have representatives been appointed?		
3. DEGREE OF STAKEHOLDER INVOLVEMENT (total score 3)		
3.1. Simple consultation, monitoring, and information gathering?		
3.2. Direct involvement in the reporting process?		
3.3. Proactive role and appointment of representatives in the governing bodies?		
3.4. Preventive engagement accomplished in the earlier stages of planning and accounting (information gathering) ?		
3.5. Stakeholders are addressed to review the fi nal document ready to be released?		
3.5. Is there stakeholders' perception on the previous edition of the sustainability report?		
3.6. Are stakeholders required to express their opinion on the materiality and reliability of the report?		
4. ENGAGEMENT CHANNELS AND METHODS (total score 1)		
4.1. Are the channels and methods used to reach the stakeholders identifi ed?		
4.2 Are diffi culties met in SE stated?		
4.3 Are the commitment and objectives to report continuous improvement declared?		
4.4 Are specifi c guidelines used in SE?		
Total (SE quality /6 score)		

Table 18 shows the questions and dimensions that will be considered in the measuring process of sustainability related reports. This process can be divided into 4 parts, general information, degree of representation of stakeholder, degree of stakeholder involvement and engagement channels and methods. Among each section, there are questions to define and score the level of stakeholder engagement. For instance, in the first section, general information, proper section, aims and objectives of stakeholder engagement, strategic objectives and definition of information are considered. If any of the information related to be questions is examined to be positive in the report, the score of one is added to the total amount, whereas if the total score will be deducted of one if the answer is no.

In the G250 companies, nearly 24% companies have mentioned their stakeholder engagement policies and practices in their sustainability related reports. And the major purpose of the contented related to stakeholder engagement is to set strategic objectives to give information relevant to stakeholder engagement. About 18% of these firms have involved their stakeholder engagement practice in the strategic objective setting of sustainability reports. Social and environmental consideration is critical in the definition of sustainability goals; thus, stakeholders would pay more attention to these issues and express their targets and objectives in accordance to these aspects. But this does not mean that they have to publish detailed content about the issues in the part relevant to the stakeholder engagement. And this information cannot be measured as "material" or "relevant" since the information about the attitude towards these issues can hardly be obtained through these reports without the original records since the information presented are embellished in the reports and the reason is mentioned in the former part of this analysis.

Of all the G250 companies, most of the companies have information about stakeholder engagement in their SR and this percent include those companies who also includes their targets of stakeholder engagement in their reports. From the analysis of the content, the author can infer the attitude towards this aspect, and more information about the company is needed as well when assessing the degree of stakeholder engagement.

About 64% of the G250 companies did not mention the information relevant to stakeholder engagement in their sustainability reports. In these reports, opinions and demands of stakeholders are omitted and the section relevant to stakeholder engagement seems to be self-laudatory and general compared to the other two categories of reports.

In 36% of the cases that mentioned the targets and contents of stakeholder engagement, nearly 80% of the companies have involved all their listed stakeholders in their stakeholder engagement process. And in other cases, some minority groups are left aside such as employees and outsider stakeholders. It was observed that only 10% of the companies have appointed the representatives of their groups by themselves and in the majority, these representatives are appointed by ethics committee or the government.

About three quarter of the companies have implied that they have used the method of advising, monitoring and information collecting in the process of stakeholder engagement. In other words, these stakeholders only have a level of basic role in the engagement practice, which means they can have reliable information about the companies and give suggestions to the operation of the companies. The second level of stakeholder engagement such as direct involvement in the reporting process is much rare in the G250 companies, with only 27% of them have published this information in their sustainability related reports. And this means that the stakeholders can influence the decisions of the companies and thus plays an important role in the operation process of the companies. Only about 10% of the G250 companies have mentioned that stakeholder engagement has reached the third level that some representatives of

the groups of stakeholders have entered the governance of the companies and gain the power to directly influence the decisions of these companies. For instance, some German companies have included some employees in the layer of management and governance.

With reference to the difficulties in the stakeholder engagement, about 30% of the companies have stated their problem in their sustainability reports and this is a balancing of interest of different groups which need more detailed considerations. About half the companies have mentioned the improvement of stakeholder engagement through policies. Special guidelines such as AAIOOO SE issued by AccountAbility (2005) is mentioned in almost 20% of these companies.

Chapter 4. DATA ANALYSIS & DISCUSSION

4.1 Introduction

In this section, the author will present the research model to test determinants on sustainability reporting adoption (disclosure) and quality with the aim to verify the hypothesis developed in chapter two. An overview of all the G250 companies is given by the narrative analysis on their reporting types, behavior, length of the reports, text ratio and category ratio allocation across those reports. Then regression analysis is given on model with different context setup. Moderating effects test of stakeholder engagement is conducted to show to what extent SE will affect other sustainability reporting determinants. Finally, the researcher give a summary on verification of all hypothesis. The author uses STATA for data analysis and apply OLS (ordinary least squares) regression.

4.2 Research Model

The disclosure of sustainability information is specified as two aspects: DISCLOSE and QUALITY. DISCLOSE is a dummy variable that reflects whether the company reveals some information about sustainability information and is one if it does, otherwise zero. A Probit model is employed in this estimation. When the variables are ordinary and with little variation, it is common to use Probit model to estimate the equations. The coefficients are the probability that added to the dependent variable. Specifically, it is usually expressed as:

$$\Pr(Y = 1 \mid X) = \Phi(X'\beta),$$

where Y is the dependent variable and X is the matrix of independent variables.

In this paper, PIRC method is employed in evaluating a company's sustainability reporting process to give a rough view of the relationship between sustainability performance and stakeholder engagement. QUALITY from PIRC and KPMG has values from 0 to 6 and QUALITY from GRI is ranged from 0 to 10. In this research, Ordered Probit method is used to estimate the effect of different sectors that have on the quality of reports.

Taking industry as control variable the researcher got model A as:

$$DISCLOSE = f(X, I) \tag{3}$$

$$QUALITY = g(X, I) \tag{4}$$

$$X = \{SIZE, AGE, LEVERAGE, ROA, NONEXEC, VISIBILITY, EN\text{-}PERORMANCE, OWNERSHIP, STAKEHOLDER\ ENGAGEMENT\}$$

$$I = \{ELECTRONIC \& COMPUTERS, ENGINEERING, MEDIA, CHEMICALS, RESOURCES, RETAIL, UTILITIES, FINANCE, TRANSPORT, CONSUMERPRODUCTS, FOOD \& BEVERAGE, CONSTRUCTION\}$$

Where: DISCLOSE= 0 or 1 depending on whether the company has revealed sustainability information, the value is 1 if it has revealed the sustainability information.

QUALITY = the score according to the three methods mentioned above respectively;

SIZE = the logarithm of a firm's total assets;

AGE= history of company fixed assets

LEVERAGE = the ratio of firm total debt to total assets;

ROA = the ratio of pre-tax profits before interest and tax to total assets;

NONEXEC = the number of non-executive directors on the board;

VISIBILITY = the logarithm of the number of news hitting in 2013

EN-PERFORMANCE = TRI + FINE on environment performance

OWNERSHIP = percentage of shares held by the top 5 shareholders;

STAKEHOLDER ENGAGEMENT = score gained in the assessment of SE by the method mentioned above;

ELECTRONIC, ENGINEERING, MEDIA, CHEMICALS, RESOURCES, RETAIL, UTILITIES, FINANCE, TRANSPORT, CONSUMERPRODUCTS, FOOD and CONSTRUCTION are dummy variables with value 1 if a company operates in that sector and 0 otherwise.

Taking out industry and taking continent-origin as control variable the author got model B as:

$$DISCLOSE = f(X, I) \quad (5)$$

$$QUALITY = g(X, I) \quad (6)$$

$$X = \{SIZE, AGE, LEVERAGE, ROA, NONEXEC, VISIBILITY, EN\text{-}PERORMANCE, OWNERSHIP, STAKEHOLDER\ ENGAGEMENT\}$$

$$I = \{NORTH\ AMERICA, SOUTH\ AMERICA, EUROPE, ASIA\ PACIFIC, OTHER\}$$

Where: NORTH AMERICA, SOUTH AMERICA, EUROPE, ASIA PACIFIC, OTHER are dummy variables with value 1 if a company operates in that continent and 0 otherwise.

4.3 Narrative Analysis

Figure 13 shows nearly 90% of the G250 companies published their reports about sustainability. Some companies published both sustainability reports and CR reports. However, half of them published just one type of the reports that related to sustainability, and this is shown in Figure 14. Figure 15 shows the reporting frequency of G250 companies and it can be found that almost 91% of these companies give sustainability report once a year. Eighty percent of the G250 companies use GRI-guidelines as a reference in their sustainability reporting and fifty-five percent of them has external audit in their reporting, which can be shown in Figure 16 and Figure 17.

Figure 13
Reporting parameters about availability of G250 companies

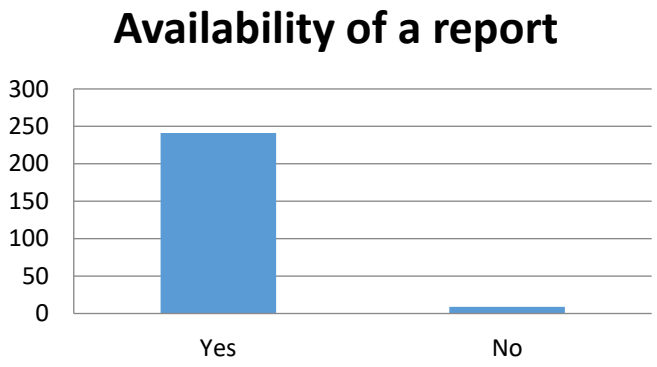


Figure 14
Type of reports of G250 companies

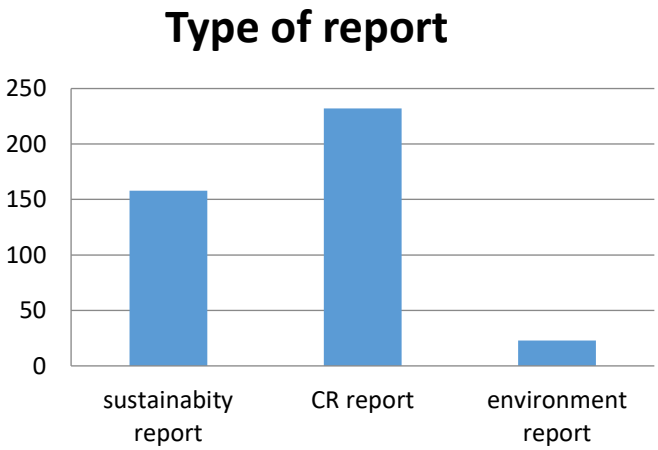


Figure 15
Reporting frequencies of G250 companies

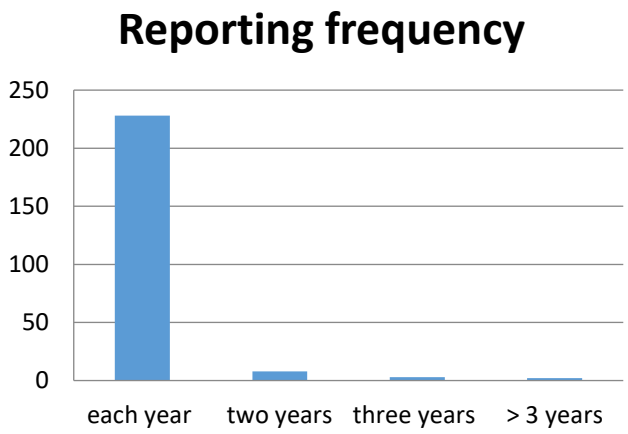


Figure 16
Number of companies that applied GRI-guidelines

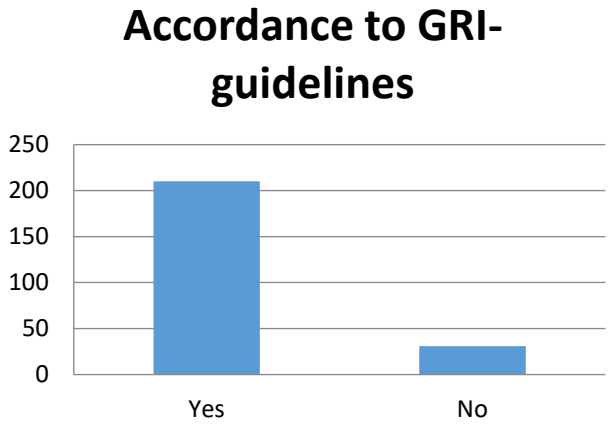


Figure 17
Number of companies with external audit

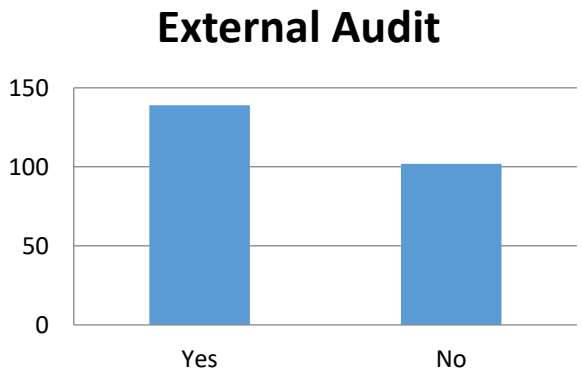


Figure 18 is about the measure of quality of sustainability reports and gives us a sketch about the length of reports. Chemical sector gives the longest reports and medical gives the shortest. Financial sector and retail sector rank as second and third length respectively. As shown in Figure 18, chemical sector is also the sector whose words cannot easily be classified in GRI framework, with the most not-coded words. Companies in medical sector specify a lot at their management approach and performance, followed by those in automotive sector. The text ratio of strategy and profile aspect keeps almost stable at 20%-30% in all the sectors.

Figure 18
Length of the reports by sector

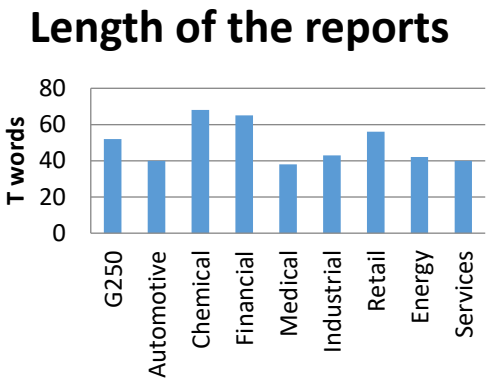
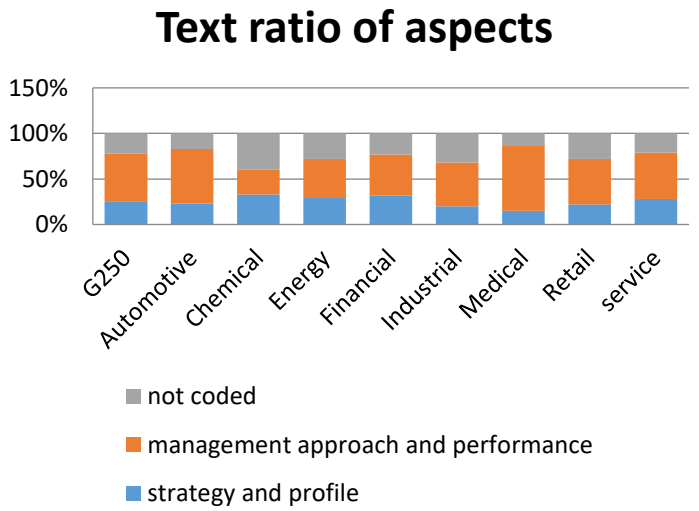


Figure 19
Text ratio of aspects by sector



In accordance with the framework of category ratio reviewed in the literature part, this paper also gives some information about the sections considered, especially the three dimensions related to sustainability in management approach and performance. These are

shown in Figure 19 and Figure 20. Organizational profile and strategy and analysis take similar percentage of about 33% on average of the category ratio of the G250 companies. Report parameters take the least part of only 15% and governance and engagement takes 18% on average. Industrial and energy sectors give the most attention to organizational profile while strategy and analysis takes the most percentage in chemical sector. In Figure 21, the author can see a large percentage is given to the environmental section which reflects the consciousness and rigid regulations about environmental effects brought by companies. The author found a large part of the sustainability reports belongs to the social aspect as well, on average or in the selected sectors.

Figure 20

Category ratio about strategy and profile of G250 companies in selected sectors

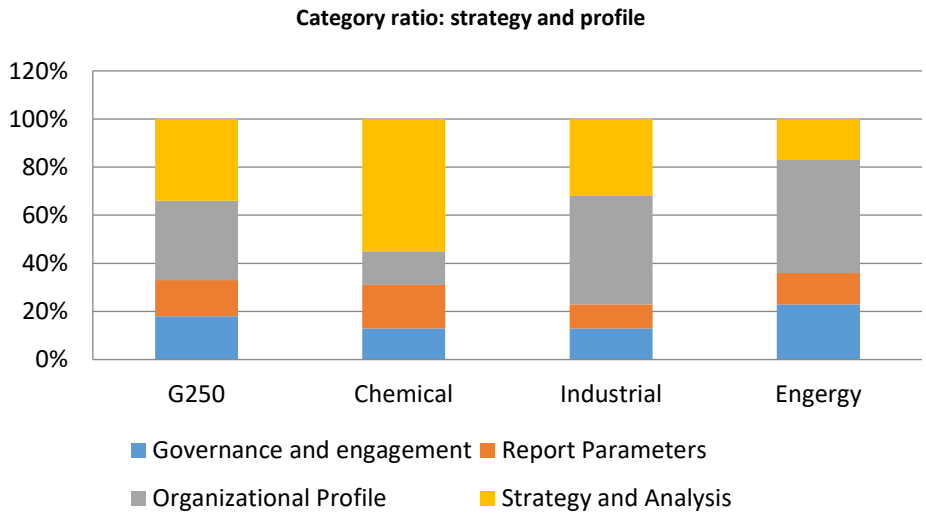
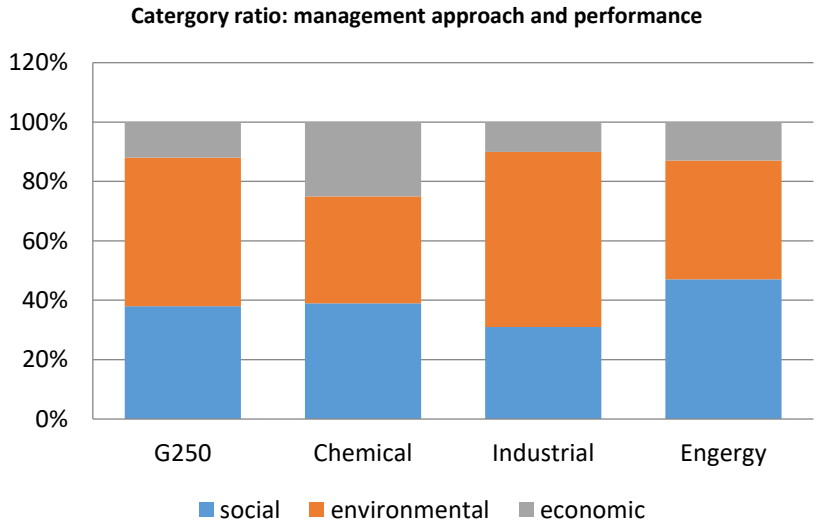


Figure 21

Category ratio of management approach and performance of G250 companies



4.4 Regression analysis

In this section the results of regressions under the three kinds of measurement is presented. Before turning to the regression, descriptive statistics about the major dependent and independent variables are shown in Table 19. The variable DISCLOSE is a dummy with value of 0 and 1. Nearly 90% of the companies have published their sustainability information, which is higher than many researchers about this topic. However, the standard deviation shows that there is not much difference in the values of this variable. The mean of quality scores obtained by PIRC, GRI and KPMG method are 4.23, 7.28 and 3.54 respectively. The scores obtained by PIRC and KPMG method have a range of 0 to 6, while the scope of scores from GRI method is ranged from 0 to 10. The mean size of all the G250 companies is 21.32 (in logarithm) and the leverage is 30.59. Non-executive members in the G250 companies have an average number of 8.23, with 2 in minimum and 15 in maximum. Ownership in the G250 companies is relatively dispersed with a mean level of 15.23% of the largest significant shares. However, the control of some companies is rather concentrated, with the largest shares take a proportion of 89.33%.

Table 19
Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
DISCLOSE	0.87	0.94	0	1
QUALITY (PIRC)	4.23	7.95	0	5.9
QUALITY (GRI)	7.28	11.26	0	9.8
QUALITY (KPMG)	3.54	4.32	0	6
SIZE	11.62	1.43	8.78	14.95
AGE	95.12	61.43	17	317
LEVERAGE	30.59	18.24	0	123.9
ROA	9.23	10.39	-23.2	33.25
NONEXEC	8.23	2.31	2	15
VISIBILITY	6.27	1.93	1.25	11.27
EN-PERFORMANCE	0.54	3.68	0	5.72
OWNERSHIP	15.24	32.29	5.26	89.33
STAKEHOLDER ENGAGEMENT	3.27	2.37	1	5

Correlation coefficients for dependent and independent variables are shown in Table 20, from, which indicates multicollinearity is unlikely to present significant statistic problems.

Table 20
Correlation coefficients

Variable		Mean	Standard Deviation	Minimum	Maximum	Correlation Coefficients											
						1	2-1	2-2	2-3	3	4	5	6	7	8	9	10	11
1	**DISCLOSE**	0.9	0.98	0	1	-												
2-1	**QUALITY (PIRC)**	4.23	7.95	0	6	0.71	-											
2-2	**QUALITY (GRI)**	7.28	11.26	0	9.8	0.73	0.57	-										
2-3	**QUALITY (KPMG)**	3.54	4.32	0	6	0.83	0.62	0.71	-									
3	**SIZE**	21.32	8.23	19.88	30.44	0.51	0.60	0.71	0.54	-								
4	**AGE**	95.12	61.43	17	317	-0.03	-0.02	0.10	-0.08	0.02	-							
5	**LEVERAGE**	30.59	18.24	0	123.9	0.11	0.15	0.00	0.31	0.21	-0.12	-						
6	**ROA**	9.23	10.39	-23.2	53.25	-0.02	-0.04	0.03	-0.12	-0.11	-0.08	0.02	-					
7	**NONEXEC**	8.23	2.31	2	15	0.21	0.23	0.34	0.41	0.59	0.11	-0.17	0.04	-				
8	**VISIBILITY**	6.27	1.93	1.25	11.27	0.43	0.49	0.58	0.55	0.61	-0.56	0.12	0.09	0.11	-			
9	**EN-PERFORMANCE**	0.54	3.68	0	5.72	0.09	0.21	0.11	0.02	0.01	0.09	-0.04	0.11	0.07	0.12	-		
10	**OWNERSHIP**	15.24	32.29	5.26	89.33	-0.16	-0.11	-0.13	-0.06	-0.12	-0.05	-0.03	0.21	-0.01	-0.03	-0.04	-	
11	**STAKE_ENGA**	3.27	2.37	1	5	0.75	0.51	0.48	0.37	0.56	0.09	-0.02	0.54	0.12	0.03	-0.12	0.15	-

To make the research clear, there are several hypotheses given in this section. In accordance to the analysis from section 2.3, the results are shown in Table 21. As is analyzed in the former part, firm size, leverage, ownership structure and stakeholder engagement influences the disclosure and the quality of sustainability report significantly. Model 1 and model 3 are the regressions excluding the sector influence, and model 2 and model 4 are regressions including the sector influence.

Variables such as SIZE, ROA, STAKE-ENGA have positive influence on DISCLOSE and QUALITY variables. The coefficient of firm size on the disclosure behavior of sustainability information is 0.74 and 0.724, 1.341, 0.833 respectively on quality of sustainability related reporting according to PIRC, GRI and KPMG method. The positive relationship between size and the disclosure and quality of a sustainability report verified the facts observed by many researchers. The reason is comprehensive. Large companies would face more pressure from the outsider stakeholders and the public, thus need to provide more detailed information about their sustainability information in a higher frequency. On the other hand, large firms and firms with higher profit are less constrained by the finance pressure of the company and thus more likely to conduct the reporting process related o sustainability information. However, the demand for information disclosure by different groups of stakeholders would also bring about this result. All hypothesis and their verification are summarized in Table 44. H1 is verified in this empirical result. Result shows that company age does not significantly impact the sustainability disclosure and its quality, so H2 cannot be verified.

No significant correlation is found on ROA with DISCLOSE and QUALITY, but interesting findings is, under QUALITY (KPMG) the positive relationship become quite significant. Possible reason could be the KPMG method take more commercial consideration in finance performance on evaluating disclosure quality. H3 cannot be verified. Leverage shows negative and significant influence on the disclosure of sustainability reporting and this also verified the suspects that companies with high leverage would be reluctant to publish their sustainability information, for the fear of bad impact of the sustainability performance on the belief of stakeholders. The coefficient of LEVERAGE is more significant on

DISCLOSE, which shows that firms with higher level of leverage are more likely to publish their sustainability related report, however the quality of their report have room for improvement. The coefficient of LEVEARGE on QUALITY(PIRC), QUALITY(GRI) and QUALITY(KPMG) are 0.001, 0.002 and -0.001 respectively and the level of significant is low. One possible explanation for this result is that for firms with higher level of leverage, if they do not perform well, they have incentive to hide some information and thus give reports with low quality, but on the other hand, higher leverage would cause more pressure from the creditors and thus they are more likely to publish their sustainability related reports.

Ownership structure of a company also influence its reporting behavior significantly. Firms with more concentrated ownership are less likely to report their sustainability information and provide sustainability related reports with poor quality even if they have published this kind of reports. Results from the three kinds of method are concordant with negative co-efficiency which are -0.011, -0.24, -0.028 respectively. Quality score from GRI method shows higher relevance towards the ownership structure of a company. H6 is verified in this research.

A company's media exposure also has positive effect on the disclosure of sustainability information and quality of sustainability related reports. VISIBILITY has positive effect on DISCLOSE but not significant. VISIBILITY also has significant and positive effect on QUALITY according to PIRC and KPMG method, but negative effect on that from GRI method. The three method shows difference in this respect. And it can be concluded that those companies with higher media exposure would focus on the quality of their report and this may due to the concern about the supervision of the public. Suppose some bad news are always reported about the company, the public would concern about the sustainability of this company and even the quality of their products. Thus, potential threat from the market or consumers would push the company to report their sustainability information in detail and clarify the conjecture from the public. Other variables such as NONEXEC, EN-PERFOR does not show significant impact on the disclosure and quality of sustainability information. H5 and H7 need further research towards this topic.

Last and most important, a positive and significant relationship between stakeholder engagement and the disclosure and quality of sustainability reporting practice is verified in the regression result, which means that sustainability reporting meets the requirement of information by stakeholders and in turn enhanced the power of the stakeholders in a company. Stakeholder engagement has positive influence on both the disclosure and quality of sustainability reporting. As shown in Table 22 and 23, the coefficient of STAKE-ENGA on DISCLOSE, QUALITY (PIRC), QUALITY (GRI), QUALITY (KPMG) are 0.037, 0.043,0.021 and 0.059 respectively, all shows significant impact on the reporting procedure of sustainability. It can be concluded that stakeholder engagement shows higher impact on the quality score from KPMG method. Hypothesis 11 is verified in this research.

The author returns to our findings regarding cross-sector variation and this research can detect some trends of sustainability reporting among these sectors. Electronic&computers, engineering, chemical, finance, food&beverage, and construction sectors perform better than the industrial sector in the quality of sustainability reporting. Electronic&computers, finance, food&beverage sectors are more close to the consumers and thus their quality of report is higher than other sectors. Electronic & computers is the sector that more likely to disclose its

sustainability information. This is not only because its clients are consumers but also because of its asymmetric information about its product that most consumer do not have the knowledge to judge its quality and safety, therefore sustainability report provides a feasible method to convince the consumers of their good quality and safety which would ease their doubts. Furthermore, there are differences in cross-sector variation between the determinants of disclosure and determinants of disclosure quality. For example, firms in the construction sector shows likely to not to disclose, but likely to make high quality reporting under GRI and KPMG method. In contrast, firms in the chemicals sectors are not particularly likely to disclose, but do tend to make disclosures of a high quality in all three methods. This may be explained by the special regulations in the sector that would require firms who are willing to report their information in a good framework and provide professional and detailed information. It need further research on this topic about the characters of sectors. Engineering and resource sectors always receive pressure from the public and thus their frequency and quality of reporting shows positive correlation.

As the author groups countries into different continent, the results on continent-origin shows an interesting picture (Table 23 and Table 24). Europe-origin is the only continent shows significant influence on reporting quality under PIRC method. An interesting finding is that South America-origin shows significant positive correlation on reporting quality under GRI method. A possible explanation could be those big companies from emerging economy follow strictly with GRI framework as they do not have so much experience in sustainability topic compared with their counterparts in Europe or North America.

Table 21
Empirical results of regression model (1) and (2)

	DISCLOSE		QUALITY(PIRC)	
Independent Variable	Model A1	Model A2	Model A3	Model A4
CONSTANT	-3.731***	-9.530***	-5.687***	-6.232***
	(0.362)	(3.451)	(0.346)	(0.80)
SIZE	0.740**	0.954**	0.724*	0.345**
	(0.071)	(0.062)	(0.03)	(0.014)
AGE	-0.013	0.015	-0.121	0.231
LEVERAGE	-0.006**	-0.023***	0.001	-0.005*
	(0.003)	(0.004)	(0.003)	(0.003)
ROA	0.002	0.004	0.003	0.002
	(0.008)	(0.003)	(0.007)	(0.006)
NONEXEC	0.009	-0.011	-0.007	-0.035
	(0.050)	(0.060)	(0.008)	(0.038)
VISIBILITY	0.083	0.092	0.146**	0.052
	(0.076)	(0.121)	(0.063)	(0.094)
EN-PERFOR	-0.272*	0.231*	0.092*	0.055**
	(0.235)	(0.288)	(0.134)	(0.123)
OWNERSHIP	-0.019***	-0.021***	-0.011**	-0.012***
	(0.005)	(0.007)	(0.004)	(0.006)
STAKE-ENGA	0.037***	0.056**	0.043***	0.023**
	(0.002)	(0.013)	(0.008)	(0.006)
ELECTRONIC&COMPUTERS		0.236***		0.223**
		(0.014)		(0.105)
ENGINEERING		0.137		0.345***
		(0.208)		(0.126)
MEDIA		-0.394		0.002
		(0.201)		(0.237)
CHEMICALS		0.347		0.402**
		(0.495)		(0.115)
RESOURCES		0.276		0.118
		(0.342)		(0.132)
RETAIL		-0.102		-0.009
		(0.134)		(0.124)
UTILITIES		0.472		0.348
		(0.331)		(0.422)
FINANCE		1.233		1.342***
		(0.878)		(0.523)
TRANSPORT		-0.572		0.433
		(0.479)		(0.543)
CONSUMER PRODUCTS		0.001		-0.005
		(0.225)		(0.327)
FOOD&BEVERAGE		0.032		-0.453
		(0.329)		(0.872)
CONSTRUCTION		-0.328**		0.008
		(0.168)		(0.105)
Mu(1)			0.043***	0.623***
			(0.043)	(0.050)
Mu(2)			1.021***	1.239***
			(0.368)	(0.062)
Mu(3)			1.369***	1.657***
			(0.057)	(0.072)
Mu(4)			2.332***	2.844***
			(0.089)	(0.103)
N	250	250	217	217
Chi-Squared	128.22***	245.37**	213.52***	346.58***

The notation * for 10% significant level, ** for 5% significant level, *** for 1% significant level, EN-PERFOR is short for EN-PERFORMANCE, STAKE-ENGA is short for STAKEHOLDER ENGAGEMENT. Value in the brackets are standard deviation of each variable.

Table 22

Empirical results of regression model (3) and (4)

	QUALITY (GRI)		QUALITY(KPMG)	
Independent Variable	Model A3	Model A4	Model A3	Model A4
CONSTANT	-4.6831***	-11.232***	-6.724***	-7.32***
	(1.278)	(1.368)	(0.589)	(1.934)
SIZE	1.341**	1.284**	0.833*	0.788**
	(0.351)	(0.627)	(0.131)	(0.126)
AGE	0.312	0.431*	-0.031	-0.024
	(0.041)	(0.032)	(0.007)	(0.002)
LEVERAGE	0.002*	-0.003	-0.001	-0.002*
	(0.001)	(0.004)	(0.006)	(0.001)
ROA	0.231*	0.104	0.197***	0.184***
	(0.126)	(0.303)	(0.009)	(0.023)
NONEXEC	0.003	-0.012	-0.003	-0.432
	(0.042)	(0.023)	(0.011)	(0.637)
VISIBILITY	-0.033*	0.004	0.204**	0.239*
	(0.018)	(0.137)	(0.098)	(0.109)
EN-PERFOR	-0.358	0.342	0.077	0.073
	(0.469)	(0.657)	(0.047)	(0.092)
OWNERSHIP	-0.24***	-0.321***	-0.028	-0.034***
	(0.021)	(0.074)	(0.114)	(0.005)
STAKE-ENGA	0.021***	0.029*	0.059***	0.042***
	(0.002)	(0.017)	(0.002)	(0.007)
ELECTRONIC&COMPUTERS		0.126*		0.146*
		(0.065)		(0.073)
ENGINEERING		0.546**		0.762***
		(0.237)		(0.105)
MEDIA		-0.094		0.003**
		(0.342)		(0.001)
CHEMICALS		0.863*		0.422**
		(0.472)		(0.136)
RESOURCES		0.057		0.375
		(0.693)		(0.655)
RETAIL		-0.322***		-0.008
		(0.035)		(0.166)
UTILITIES		0.682		0.756
		(0.433)		(1.053)
FINANCE		1.89**		1.64***
		(0.893)		(0.434)
TRANSPORT		-0.489		0.005
		(0.564)		(0.578)
CONSUMER PRODUCTS		0.001		0.005
		(0.823)		(0.489)
FOOD&BEVERAGE		0.322***		0.001
		(0.077)		(0.332)
CONSTRUCTION		0.479***		0.019**
		(0.003)		(0.008)
Mu(1)	0.092***	0.034***	0.039***	0.072***
	(0.081)	(0.057)	(0.042)	(0.056)
Mu(2)	1.336***	1.673***	1.039***	1.356***
	(0.784)	(0.724)	(0.474)	(0.067)
Mu(3)	1.423***	1.395***	1.382***	1.487***
	(0.063)	(0.059)	(0.049)	(0.066)
Mu(4)	2.288***	2.266***	2.353***	2.673***
	(0.076)	(0.109)	(0.072)	(0.112)
N	217	217	217	217
Chi-Squared	223.32***	238.37**	230.43***	352.75***

The notation * for 10% significant level, ** for 5% significant level, *** for 1% significant level, EN-PERFOR is short for EN-PERFORMANCE, STAKE-ENGA is short for STAKEHOLDER ENGAGEMENT.

It can be concluded that these three kinds of method are similar in estimating the quality of sustainability related reports, however their impact on sectors are different. Thus, companies can choose beneficial framework to report their sustainability information and this would bring them good image among consumers and stakeholders. The quality of sustainability reports from different sectors shows different characters according to these three methods respectively. Across all three method, Size, ownership and stakeholder engagement shows robust relevance to the disclosure and quality of sustainability related reports. In one word, firms with larger size, diverse stakeholders with more stakeholder engagement are more likely to publish their sustainability report and these reports are always of good quality. Methods on quality of sustainability reporting are from different perspective, e.g. ROA is not significant in PIRC & GRI, but significant in KPMG. The same result happens with LEVERAGE, which aligned with the financial origination of KPMG method.

Table 23

Model B result based (5) and (6)

	DISCLOSE		QUALITY(PIRC)	
Independent Variable	Model B-1	Model B-2	Model B-5	Model B-6
CONSTANT	-2.427***	-7.512***	-4.546***	-5.452***
	(0.242)	(2.854)	(0.276)	(0.743)
SIZE	0.456**	0.873**	0.532*	0.231**
	(0.081)	(0.052)	(0.021)	(0.021)
AGE	-0.012	-0.003	-0.001	-0.034
	(0.021)	(0.012)	(0.017)	(0.041)
LEVERAGE	-0.004*	-0.011**	0.002	-0.003*
	(0.002)	(0.002)	(0.001)	(0.002)
ROA	0.002*	0.003	0.003	0.004
	(0.005)	(0.003)	(0.006)	(0.003)
NONEXEC	0.007	-0.021	-0.012	-0.041
	(0.060)	(0.070)	(0.009)	(0.043)
VISIBILITY	0.091	0.091	0.213**	0.062
	(0.086)	(0.131)	(0.143)	(0.101)
EN-PERFOR	-0.349*	0.352*	0.078*	0.043
	(0.435)	(0.548)	(0.343)	(0.102)
OWNERSHIP	-0.012***	-0.013***	-0.087**	-0.023***
	(0.007)	(0.006)	(0.008)	(0.004)
STAKE-ENGA	0.017***	0.056***	0.073***	0.032***
	(0.010)	(0.009)	(0.011)	(0.006)
NORTH AMERICA		0.123		0.324
		(0.197)		(0.137)
SOUTH AMERICA		-0.412		0.003
		(0.278)		(0.317)
EUROPE		0.317		0.401**
		(0.712)		(0.123)
ASIA PACIFIC		-0.217		0.127
		(0.312)		(0.101)
Mu(1)			0.038***	0.583***
			(0.053)	(0.061)
Mu(2)			2.031***	1.189***
			(0.878)	(0.423)
Mu(3)			1.229***	1.767***
			(0.047)	(0.054)
Mu(4)			3.112***	3.452***
			(0.189)	(0.302)
N	250	250	217	217
Chi-Squared	112.43***	232.37**	293.52***	306.51***

The notation * for 10% significant level, ** for 5% significant level, *** for 1% significant level, EN-PERFOR is short for EN-PERFORMANCE, STAKE-ENGA is short for STAKEHOLDER ENGAGEMENT. Value in the brackets are standard deviation of each variable.

Table 24

GRI and KPMG method

	QUALITY (GRI)		QUALITY(KPMG)	
Independent Variable	Model B5	Model B6	Model B5	Model B6
CONSTANT	-4.173***	-10.345***	-6.012***	-6.78***
	(1.121)	(2.121)	(0.245)	(1. 782)
SIZE	1.023**	1.121**	0.743**	0.768**
	(0.350)	(0.548)	(0.211)	(0.126)
AGE	-0.013	-0.014	-0.003	-0.014
LEVERAGE	0.001*	-0.004	-0.002	-0.003*
	(0.001)	(0.005)	(0.003)	(0.002)
ROA	0.321*	0.213	0.106***	0.201***
	(0.226)	(0.401)	(0.007)	(0.019)
NONEXEC	0.004	-0.017	-0.007	-0.372
	(0.062)	(0.013)	(0.021)	(0.589)
VISIBILITY	-0.053*	0.006	0.603**	0.123*
	(0.078)	(0.337)	(0.328)	(0.134)
EN-PERFOR	-0.473	0.654	0.009	0.061
	(0.673)	(0.675)	(0.027)	(0.042)
OWNERSHIP	-0.34***	-0.543***	-0.021	-0.067***
	(0.031)	(0.124)	(0.107)	(0.011)
STAKE-ENGA	0.041***	0.034*	0.087***	0.046***
	(0.007)	(0.021)	(0.001)	(0.004)
NOTHR AMERICA		0.234		0.347
		(0.053)		(0.098)
SOUTH AMERICA		0.049**		0.893
		(0.107)		(0.115)
EUROPE		0.084		0.207
		(0.457)		(0.011)
ASIA PACIFIC		0.721		0.301
		(0.321)		(0.006)
Mu(1)	0.081***	0.054***	0.079***	0.061***
	(0.034)	(0.076)	(0.082)	(0.043)
Mu(2)	1.126***	1.611***	1.879***	1.271***
	(0.978)	(0.874)	(0.344)	(0.071)
Mu(3)	1.213***	1.459***	1.613***	1.719***
	(0.043)	(0.061)	(0.038)	(0.071)
Mu(4)	2.109***	2.181***	2.109***	2.187***
	(0.018)	(0.109)	(0.068)	(0.135)
N	217	217	217	217
Chi-Squared	2134.34***	271.21**	232.72***	207.48***

The notation * for 10% significant level, ** for 5% significant level, *** for 1% significant level, EN-PERFOR is short for EN-PERFORMANCE, STAKE-ENGA is short for STAKEHOLDER ENGAGEMENT.

Moderating effects of stakeholder engagement

Although Stakeholder Engagement can strengthen quality of sustainability reporting is confirmed in this study, next question become how SE impact QSR, in other words, is there any relationship between SE and other SR determinants? Moderation examines under what conditions, the X-Y relation varies, while mediation examines why the X-Y relation occurs. A moderation effect could be (a) Enhancing, where increasing the moderator would increase the effect of the predictor (IV) on the outcome (DV); (b) Buffering, where increasing the moderator would decrease the effect of the predictor on the outcome; or (c) Antagonistic, where increasing the moderator would reverse the effect of the predictor on the outcome. The author takes SE as a moderating variable, which may change (increases or decreases) the

otherwise established effect of the independent variable upon the dependent variable. The objective is that, when look at the linear relationship where independent variables such as confirmed determinants supposedly causes or affects the dependent QSR (quality of sustainability reporting), how a moderator variable SE would somehow alter the strength of that relationship.

The author uses the PIRC model to test the relationship, because it is the only model originally take out level of SE (stakeholder engagement) from measures of QSR, while the other two methods (GRI and KPMG) consider SE as one measure of QSR. This is aligned with the main argument of stakeholder theory, which claim stakeholder engagement derived from stakeholder pressure should be key driver of sustainability reporting. The result as Table 25 shows, SIZE is significantly positive to QUALITY. LEVERAGE, ROA and EN-PERFOR has no significant impact on QUALITY. NONEXEC negatively impacts QUALITY. VISIBILITY is positively related to QUALITY, consistently explained the more visibly company is, the more pressure they may feel to do better reporting. OWNERSHIP negatively impact QSR, as companies with more concentrated shareholder structure will pay lower attention to sustainability reporting. Consistently STAKE-ENGA significantly strengthen QUALITY. Among cross variables, NONEXEC* STAKE-ENGA and OWNERSHIP* STAKE-ENGA negatively impact QUALITY significantly, means SE as moderating variable, decreased the established relationship between OWNERSHIP and QSR. The impact of VISIBILITY* STAKE-ENGA on QUALITY is positive, which shows SE can increase the relationship between VISIBILITY and QUALITY. The possible explanation is, in one way more stakeholder engagement will put more pressure on companies to provide more information, which increase the external communication through media. In another way, the more visible the companies are in public the more they attract stakeholder concerns, such more stakeholder engagement leads to higher quality of SR. from this sense the author can conclude that, increase visibility of the company can strengthen the quality of SR, in another word, “make invisibles visible” could be an effective marketing strategy in communicating corporate image in sustainability.

Table 25
Moderating effects of SE

	QUALITY(PIRC)	
Independent Variable	Model 5	Model 6
CONSTANT	-10.239***	-7.522***
	(0.257)	(0.102)
SIZE	0.701*	0.518**
	(0.01)	(0.015)
AGE	-0.023	-0.007
LEVERAGE	0.001	-0.002
	(0.001)	(0.003)
ROA	0.002	0.004
	(0.003)	(0.007)
NONEXEC	-0.008	-0.027*
	(0.005)	(0.012)
VISIBILITY	0.124**	0.023
	(0.098)	(0.135)
EN-PERFOR	0.030	0.067
	(0.143)	(0.223)
OWNERSHIP	-0.009**	-0.011***
	(0.002)	(0.003)
STAKE-ENGA	0.038***	0.032***
	(0.002)	(0.003)
SIZE* STAKE-ENGA	0.225	0.268***
	(0.360)	(0.019)
AGE* STAKE-ENGA	-0.083	0.007
LEVERAGE* STAKE-ENGA	0.001	-0.004
	(0.001)	(0.008)
ROA* STAKE-ENGA	0.014	0.005
	(0.235)	(0.006)
NONEXEC* STAKE-ENGA	-0.005**	-0.009*
	(0.002)	(0.005)
VISIBILITY* STAKE-ENGA	0.074**	0.081**
	(0.033)	(0.027)
EN-PERFOR* STAKE-ENGA	0.137	0.099
	(0.223)	(0.201)
OWNERSHIP* STAKE-ENGA	-0.012	-0.009***
	(0.049)	(0.037)
ELECTRONIC&COMPUTERS		0.354**
		(0.009)
ENGINEERING		0.223*
		(0.128)
MEDIA		0.012
		(0.267)
CHEMICALS		0.539***
		(0.124)
RESOURCES		0.103***
		(0.004)
RETAIL		-0.014
		(0.235)
UTILITIES		0.436*
		(0.379)
FINANCE		1.229
		(0.856)
TRANSPORT		0.411
		(0.672)
CONSUMER PRODUCTS		0.013**
		(0.006)
FOOD&BEVERAGE		0.004
		(0.992)
CONSTRUCTION		0.013
		(0.101)
Mu(1)	0.047***	0.678***
	(0.039)	(0.052)
Mu(2)	1.024***	1.243***
	(0.374)	(0.068)
Mu(3)	1.375***	1.663***
	(0.061)	(0.079)
Mu(4)	2.342***	2.854***
	(0.093)	(0.112)
N	217	217
Chi-Squared	273.66***	257.42***

4.4 Summary on Hypothesis

Key finds on verification of hypothesis are summarize in Table 26, company size, concentration of ownership and stakeholder engagement are the three determinants both significant on sustainability reporting adoption (SRA) and sustainability reporting quality (SRQ). Other determinants show mixed picture.

Table 26
Summary of varification on Hypothesis

SUMMARY OF HYPOTHESIS
H1: Sustainability disclosure (a) and its quality (b) are positively correlated to firm size:
YES
H2: Sustainability disclosure (a) and its quality (b) are positively correlated to firm age:
No
H3: Sustainability disclosure (a) and its quality (b) are positively correlated to a company's profitability:
NO (ONLY IN KPMG)
H4: Sustainability disclosure (a) and its quality (b) are negatively correlated to a company's leverage:
(a) yes, (b) no
H5: Sustainability disclosure (a) and its quality (b) are positively correlated to a firm's environmental performance:
NO
H6: Sustainability disclosure (a) and its quality (b) are negatively correlated to the concentration of a company's ownership:
YES.
H7: Sustainability disclosure (a) and its quality (b) are positively correlated to the number of non-executive directors.
No
H8: Sustainability disclosure (a) and its quality (b) are positively correlated to a firm's visibility:
(a) no (b) significant positive in PIRC and KPMG, significant negative in GRI
H9: Sustainability disclosure (a) and its quality (b) are higher in specific industries with urgent environmental issues.
Partially Yes
H10: Sustainability disclosure (a) and its quality (b) are higher in specific continent with specific regulations
No
H11: Sustainability disclosure (a) and its quality (b) are positively correlated to the level of stakeholder engagement.
YES

Chapter 5. Discussion and Conclusions

5.1 Key findings

This paper provides a new perspective to examine the quality of sustainability reporting. It tries to expand stakeholder theory's role in shaping sustainability report (SR) by adding stakeholder engagement (SE) as an additional factor into a theoretical model to test multiple determinants on adoption of SR (SRA) quality of SR (SRQ). During the process of contrasting three different set of measures on quality of SR, implication is given on the definition of SR quality. A clearer concept on SR quality are both useful to companies' stakeholder who have interests in evaluating target's sustainability, and provide venue for company managers to better craft sustainability report. This research empirically test company's consciousness about sustainability development and their attitude toward stakeholders. It is done by content analysis with quantitative method which is of less subjectivity compared with qualitative research. Through the identification of adoption, extent and quality of sustainability reporting, the data from G250 companies provided solid information for quantitative analysis. From the analysis, the author tries to distinguish the extent of sustainability reporting (SR) and quality of SR, and

confirm factors that influences the adoption and quality of SR identified from existing literature. This research explored two under researched directions, one is quality of SR and the other is determinants of SR and its quality under the role of stakeholder engagement. In summary, companies with larger size, more dispersed ownership, and lower level of leverage are more inclined to disclose their sustainability information voluntarily and provide reports with good quality. Role of stakeholder engagement as moderating variable become clear in two folds. First, SE decreased the established effects of "concentration of ownership" on sustainability reporting quality. Second SE increased the established effects of "company visibility" on sustainability reporting quality.

Regarding the determinants of SR, the author found the relationship between the size of a company and its disclosure and quality of sustainability reporting is verified to be positive in this research, in line with the conclusions of (Fortanier et al, 2011). This is in line with the results of Cowen et al. (1987) and Patten (2002a). Firms with larger size are more likely to make voluntary disclosure with higher quality, on the one hand is that they find their information is easier to be disclosed due to their normalization of their reports, on the other hand they are suffering from heavier pressure from the outside stakeholders. Firms with poor sustainability reporting are suffering more from the strictness of anti-pollution legislations and boycotts, which would cause potential loss of the value of firms. And this is important in considering whether a firm is worth investing or not. Therefore, firms with poor sustainability performance would have incentive to elaborate the function and management of its ownership structure, and more information about stakeholder engagement would be included in their sustainability related reports. In contrast with the early study about the ambiguous effect of sustainability performance and SR disclosure (Patten, 2002a and 2002b), this research confirms no relationship between sustainability performance and quality of SR under GRI and KPMG model. The interesting finding is that, companies did well in environmental aspect with less pollution fine do not necessarily have high quality SR. Under PIRC model, Companies with worse environmental performance are not willing to disclose their information, however, once they decide to disclose, they are more likely to provide reports with high quality. This finding shows some indications about the additional pressure brought by high level of criteria towards firms with poor environmental performance. And this can explain the puzzle why companies in the chemical sectors are less likely to publish their supply chain information but get high score under the assessment of sustainability report quality.

Cross-sector factor also influences the disclosure and quality of sustainability reports significantly. And the Patten differs in difference sectors. For sectors, such as consumer products, engineering and retail whose disclosure incentive is very strong. However, some sectors such as construction sector, would have a strong willingness to disclose their sustainability information but their reports are less likely to be of high quality. Companies in chemical sector is less willing to disclose their sustainability information, whereas their reports are of high quality. And this is similar in media, resource and utility sectors. Sector affiliation also differs according to different method. Through using appropriate criterion, companies would lift their image of sustainability in front of stakeholders. Companies in the sector of Electronic & computers, pharmaceuticals are more likely to produce sustainability reports with higher quality, however some sectors with more social and environmental impacts such as trade& retail, engineering & manufacturing produce sustainability reports with scores below

average. Companies in the chemical & pharmaceuticals are less likely to provide their supply chain in their report. Nearly 70% companies in this sector did not provide this information in their sustainability reports. This is reasonable, since most of the prescriptions of medicines are business secret, they are likely less to disclosure this kind of information which related to their prescriptions.

On the contrary, electrics & computers are the sectors that most likely to report this information. The reason behind this kind of difference is difference of industries. Materials used in electronic& computers industry are mostly general and the core of their business is the manufacture process and the software. Thus, this kind of information is less valuable to them and they are more willing to disclose this information to convince consumers. This research also shows that companies in the sector with higher environmental and social risks are less likely to provide their information about supply chain. And this is important towards the extension of companies since if they are method and operation are questionable, it is difficult for them to build confidence among customers, investors and other stakeholders. For instance, if the consumers do not know there the material of the medicine is from, they would be reluctant to buy it even if sometimes they are forced to take these medicines under the guidance of doctors. Thus, transparency is an effective method to prevent companies from taking illegal actions and help them to build their reputations. Country/continent of origin plays also important role in shaping SR disclosure and quality. For example, it can be found that European companies achieve the highest score among all the companies from other countries in the sample of G250. Around one quarter of those companies which get a score of more than 5(out of 6), about 10 companies are from Europe. And the average score of these companies from Europe are higher than those from the US, followed by Asia Pacific, under the assessment of these three methods. G250 companies are more likely to disclose the detailed information of the environmental and social influences of their products, while Americans are less likely to provide this kind of information and Asia Pacific companies shows the least information about their products in these aspects. American and companies are weaker in providing stakeholder engagement information as well.

The G250 companies gave a lot of consideration to sustainability reporting and the communication with their stakeholders. To analyze the relationship between the quality of sustainability reporting and stakeholder engagement, several methods are applied in this research to give accurate scores for sustainability quality and stakeholder engagement with regressions analysis. Stakeholder engagement plays an important role in the level of quality of sustainability reporting and makes it differ across the large companies. It is conducted by the channel of information demand in the complex affairs that stakeholders engage in, which need accurate and detailed information disclosed, including information about sustainability aspects. Only about 5% of the companies have mentioned the value of stakeholder engagement and financial value. Some companies mentioned other kinds of risks such as regulatory risk, competition risk, social risk, physical risk and so on. From the analysis under KPMG framework, risk and opportunities are aspects that should be linked to the value of companies as well. For most companies, risk and opportunities only stay in a moral level, rather than the core of business. Since companies are influenced from environmental and social factors, how to use communication tools to maximize their value and what impact will be on the SR quality have not been clarified in most of the reports. Few companies have not incorporated risks in

their analysis under the framework of triple bottom line. And this indicates that companies should be careful about using the triple bottom line framework and other sustainability related frameworks in their reports.

More transparency should be focused on the materiality process as well. Even three quarters of the companies have reported their identifications of sustainability indicators and assessment, there is still room for the improvement, as a result of comparability and materiality. Nearly half of the companies did not explain the process and basis of their material issues. Other possible reasons for the difference are size, leverage, ownership and sector factor presented in the results. The identified acceptance of sustainability development is of quantitative nature. More transparency and authority of sustainability reporting is needed for companies all over the world. This should receive the same importance as annual reports that published by most companies. Both challenges and opportunities of a company's sustainability practice should be reported in these publications, and this requires balance. Besides the stakeholder engagement, the character of business structure would influence the expenses and efforts related to sustainability activities, not only reporting but also feasible actions. This will be of great interest if the author consider the behavior of companies about sustainability-related practice and its accordance, such as firm size, leverage, strategic dimensions, and ownership structure. The moderating role of SE is also confirmed on company size and ownership structure. through an initial research about the stakeholder engagement, the data in this analysis can be used for other sustainability-related behavior, internal or external, and gives direction of the management approach.

The insights from this study shed some new light on the initiation and nature of SR and have some important implications for any attempt to develop better sustainability reporting. As SR becomes as an important marketing tool, better engagement of stakeholder and higher quality of SR will be on the top of companies' agenda. Therefore, the study adds to the sustainable development report of research, and represents a lot of additional information, and extend the literature of SR quality and motivation. This paper differs from previous sustainability reporting studies in that it analyzes both internal and external contextual factors that influence sustainability disclosure and its quality.

5.2 Limitation & Further study

Quantitative vs Qualitative

The author uses content analysis to come up with quantitative research while some other research use qualitative method such as survey to know how sustainability report are evaluated by stakeholders. In the past 20 years, growing in the field of social and environmental accounting research, and explaining variables, although scholars are more interested in the analysis of the external factors (such as the pressure of the stakeholders, media reports, singular, pollution incident (Adams and Larrinaga-Gonzalez, 2007). Those studies tend to use quantitative methods, e.g., content analysis, Gray et al. (1995); Gray, 2002. There is a growing body of literature, using qualitative analysis methods, whose main superiority is directly test opinion and response based on primary data. A recent flow of qualitative research, based on case studies and interviews, analysis of internal and external

factors through discourse of sustainability, including Larrinaga-Gonzalez and Bebbington, 2001; Adams, 2002; Deegan and Blomquist, 2006; Spence and Gray, 2007.While the main shortcoming to do a survey by interviewing managers is the conclusions drawn can only be tentative, due to size and method limitation. In most cases, the sustainable development report has little correlation with the reality of the company's daily operation. The differences in the management of sustainable development indicators respectively from the business management system (Figge et al. 2002) is one of the biggest challenges. If the company wants to realize the improvement of economic, social and environmental performance, a lack of integration will prove to be a major hurdle. Gray (2002 a) shows that social accounting is still undertheorized, for its rich through to the development of social accounting in the organization in a way that further studies.

There is no such integration, there will be no sustainable management (Figge et al. 2002). Through influencing the sustainable development report and responsibility investigation and the level of stakeholders, organizational structure and organizational behavior can be for sustainability in the interview information, help to find out which factors promote or prevent the company from the sustainable development of the potential. A kind of feasible research in future research for example to know how company evolve stakeholders could be, content analysis of the report plus a survey to test manager’s opinion, in such survey the selection of target will become critical. Some important criticism aimed at the fact that the research of SR may be in the past 20 years, mainly with specific external factors, use the method of quantitative analysis of the relationship of the lens, the pressure of the stakeholders and the influence of the media (Deegan et al, 2002), economic and political society. In the framework of the company's operations (or doubted the legitimacy of some enterprises events (Patten, 1992; Deegan et al, 2000), there are more common research variables used to explain the SR. Internal factors, such as attitude to stakeholders, top manager’s opinions, attitudes, reporting process, corporate governance or enterprise resource and ability, has not been properly studied yet.

Big vs Small

Voluntariness of reporting is related to the size of companies; voluntary reports are mostly submitted by large companies. Although there has been an increase in the number of companies that submit social and environmental reports, the quality of those published reports has not improved and “there is little evidence of progress in the integration of social and environmental impacts into management decisions” (Bhattacharya, 2016). There is evidence that big companies report their environmental management tend to be more widely than small companies will be consistent, and they are under fiercer external monitoring. In the environmental report, the important differences between industry has also been found to study specific stakeholders, investors, for example, further study on how to be associated with the stock market performance of enterprises. Although the existing research has touched this, depth and breadth in this field need to be strengthened (Cormier and Magnan,1999). Although for a large company, sustainability report or don't report debate has ended, still have a lot of small companies do not report. Therefore, further research can check the management of cognitive motivation (voluntary) to do corporate social responsibility report. A semi-

structured interview is an effective method. These reports and those should not be all the study was to understand the practice of corporate social responsibility disclosure is embedded in a wider range of process, dynamic organization or individual may, influential factors, is external to the organization.

Measurement on performance

Although there are several initiatives for sustainability measurement, only a few of them are inclusively orientated to the measurement of environmental, economic and social dimensions (Singh *et al*. 2009). An analysis of several sustainability initiatives undertaken (Singh *et al*. 2009) showed that although different frameworks exist, their main objective in most cases is the environmental dimension. This to somewhat can be ascribed to the difficulty to measure social performance. There is no consensus regarding sustainable development indicators for sustainability measurement which represents a major obstacle to implementing sustainable development strategies and increasingly initiates the need to "define a common methodological standard and a set of indicators". Even though it might, on the other hand, lead to distortions in the measuring system e.g. problems in comparing regions, industries, companies, etc. Other limitations including limited samples, narrow environment performance is measurable, but maybe there is a limit in the conceptual framework. Future research can compare the different theoretical framework of sustainability report. The determination of many national environmental report can also be considered, which will allow more disclosure mode. Companies are better in reporting the environmental and social trends and risks that impact their business if they present concrete measures on sustainability performance. For example, KPMG Survey of corporate responsibility reporting 2015 is focusing on evaluating Carbon reporting of various companies. More specific measures in sustainability performance need to be developed for future study, such as emission, toxic and waste water in environmental performance as well as human rights, equality, diversity in social performance. In this study the author apply aggregated measure of reporting quality, an alternative approach in the future could be focus on each individual dimension of quality. In this way, researcher could know that whether the dimension are complements or substitutes

Corporate governance

Referring to the regulation and legislation by governments, some papers expressed that voluntary sustainability reporting is insufficient in driving the comparability and accountability of reports as well as the consciousness of sustainability practice (Hess, 2007; 2008). Similarly, Dubbink et al. (2008) pointed out that the self-governance of sustainability practice leads to the low level of transparency in publication and gives inadequate information to stakeholders. This can also be analyzed in future research. Although it stresses by multinational companies, international non-governmental organizations and activities in the organization for standardization in the region have certain coordinated development trend.

Cultural and legal traditions continue to play an important role, in the definition of the relationship between enterprise and society. Managers in multinational companies, must pay attention to the issues when to determine their corporate social responsibility strategy, to

create a balance between some of the common value, especially those that are integrated in the emerging international standards, and the need to adapt to different national background, their subsidiaries or suppliers. In some countries, like France, national respect is the mandatory law; In other countries, such as Brazil, the local stakeholder expectations, especially multinational companies, this is seen as a specific responsibility reflect their economic power. The best way to find the right balance, including participation in local stakeholder groups can help managers to understand the background, and implementation of effective project, improve the company's nature, the positive impact of economic and social environment. However, a growing body of research has been conducted long-term success conditions which allow partnership between such a place, very different actors, partnerships, and allowing managers from these places to improve their discourse and policy of global corporate social responsibility. Although Sustainability Reporting is a key driver for organizational change in companies; research into the link between these two processes has been limited (Lozano et al, 2016).

Role of CEO

Shareholder theory and legitimacy theory have been used to explore the perception of managers' interests and how to bring them to effect (Cormier et al.,2004). Directly related to stakeholder communication is the importance of the management on how to treat all kinds of stakeholder groups. The attitude of the manager has been examined from several perspectives. The relationship between positive, chief executive attitude and community (Lerner and Fryxell,1994) as well as significant stakeholders, value view of CEO and corporate social performance was found (Agle et al., 1999). In the case of environmental information disclosure, Henriques and Sadorsky (1999) found that the relative importance of stakeholders differs depending on a company's environmental profiles, and institutional stakeholders were the most important water and power utility companies. It is concerned about the fact that take environmental managers as research target can be a challenge, because the responsibility of the company's information disclosure policy resides in the board of directors. However, the author believes that environmental managers should focus on environmental information disclosure as they are the board of directors and chief executive officers of the board of directors and chief executive officers to achieve wide information disclosure policy.

There is a chain of decisions with the board of directors to consider the interests of stakeholders, and then guide the chief executive to address these issues. Since the performance of solving the board of directors and shareholders' concerns, CEO has the motivation to direct her / his subordinates to take actions to be consistent with her interests and the interests of the board of directors. Once an environmental manager has taken actions on the issue of the report, the stream returned to the CEO and the board of directors (through the audit committee or the Environmental Council) who approved the external. Individual of environmental management Daily implementation decisions, ultimately affect the actions and information disclosure under the interests of stakeholders. Chief executive, and report the practice of corporate social responsibility plays an important role in the process of start. The chief executive's attitude can not only provide the foundation of an organization isolation

mechanism, he/she can also determine whether institutions pressure is considered. Narrative shows that pressure is mostly by the chief executive officer - who has a positive attitude and a commitment to a person (Husillos-Carqués et al., 2010). This once again shows that the importance of internal environment.

In other studies, have also shown that the CEO may affect the practice of corporate social responsibility report (Bebbington et al., 2009; Spence and Gray, 2007), future research should focus on the individual level of system background (Oliver, 1997). Most recently, empirical research on the impact of CEO duality, which means CEO of a company also holds the board chairperson, and its impact on sustainability disclosure has been inconclusive. In theory, CEO duality means constrains of board independence leads to the absence of separation between decision making and decision management, which may negatively impact sustainability reporting. In different studies, negative and no association between COE duality and sustainability disclosure have been found (Michelon, 2012) with no clear conclusion.

B2B vs B2C

Researchers (Groves et al., 2011) argue that direct facing to consumers leads to high corporate visibility, which can improve the extent and quality of SR. Business-to-consumer companies are more likely to engage in reporting activities, while business-to-business companies display lower levels of disclosure (Haddock, 2005; Groves et al., 2011). Company and industry characteristics appear to be related to the dominant type of institutional pressure felt by a specific organization. B2B companies, for instance, report some pressure from their B2B customers to adopt certain SR practices. To answer these pressures, these companies not only adopt those ‘required’ SR practices but also report on this to show that they are taking the necessary steps. The results indicate, however, that the position in the supply chain matters. Companies that provide some goods that are visible for the end consumer (e.g. food, packaging) experience B2C pressures, while other B2B companies do not. Environmentally sensitive companies indicate that they mimic the SR reporting practices of their peers. This might indicate that being part of an environmentally sensitive industry brings along a lot of uncertainty, which leads companies to mimic each other. Furthermore, Haddock and Fraser (2008) found that the extent of reporting depends on a company’s closeness to market. However, research to compare B2B and B2C companies in SR extent and quality is still scarce. So, whether supply chain position can also be considered a determinant of sustainability reporting and the reporting quality could be an interesting further research topic.

Stakeholder Engagement

Sustainable development in the field of reporting, however need further steps: if the relationship between stakeholders is one of the important assets, creating sustainable wealth is not only the company as the center, and the performance of the stakeholders as the center should be measured. For example, stakeholders and corporate strategy and the behavior of the satisfaction of all stakeholders should be carefully assessed (Lev, 2001). Method, which requires to develop further on the available set of measures, is more difficult to use specific performance indicators. Therefore, if the author uses the stakeholder's point of view of an

enterprise, to design the reporting system of sustainable development, the author should also learn how to participate stakeholder relations and related process may affect the quantity and quality of performance indicators, designed to monitor the enterprise sustainable development. This view can dramatically change the way managers and stakeholders to assess the company, their success and their role in society.

Further research to interact with stakeholders, from the reaction of stakeholders is another direction of further research. The effects of the resulting environmental information disclosure in the social legitimacy. If disclosure shows that the company failed to fulfill its social contract, the society will respond negatively to the company. This may make the company stakeholders to review ways relationship with the company. For example, consumers may resist the products of the company; the government may be strict for the company's activities or investigation, and loan/investors may with draw their support from financial markets, and promote the rise of the cost of capital, reduce the stock price. The under researched topics, for example, “Does negative aspects in the reports influence stakeholder’s perceptions?”. Further study could also be, “whether or not the SR oriented towards the information needs of certain stakeholders (e.g. investors)?”. Another example research question could be “how stakeholder take sustainability reporting as an indicator of company’s reliability and predictability”. These untapped topics would lead new directions of reassessing SE with sustainability reporting.

5.3 Theoretical Contributions

In theory, although traditionally, explanations of why companies disclose SR information are addressed by stakeholder or legitimacy theory, the narratives illustrated that the internal organizational context as well as the external context influences the SR reporting practice. While stakeholder theory and legitimacy theory mainly explain SR reporting practices using the firm’s social context, the author should consider both the internal and external contextual factors underlying SR disclosure decisions. Institutional pressures relating to SR performance as well as to SR reporting, might lead to the initiation of SR reporting. The analysis indicates that like in legitimacy theory (Deegan, 2007; Spence et al., 2010) the ‘perceptions’ of external pressures are important. This is in line with Patten (1991; 2002) who argues that size and membership of a sensitive industry, influence the company’s visibility, and as such, public pressure.

Furthermore, and in line with DiMaggio and Powell (1983) and Oliver (1991), the narratives indicate that companies only include SR information in the annual report if the external pressures originate from ‘relevant’ stakeholders. Like stakeholder theory (Deegan, 2007; Gray et al., 1996; 2010), New institutional economics embraces the difference in power between various stakeholders. By illustrating that the internal organizational dynamics, can both further or hinder SR reporting, the study confirms the influence of the internal organizational context on the reporting practices demonstrated in earlier studies (Adams, 2002; Bebbington et al., 2009, Husillos-Carqués et al., 2010). Information and strategy on sustainability performance can be considered as asymmetric information, which is difficult and costly for outsiders to gain

credible information. This context fits into signaling theory which suggests in situation of asymmetric information, one party tries to covey information about itself to another party (Spence, 1973). However, how the information receiver e.g. some specific stakeholder perceives conveyed information greatly influences effects of such signaling efforts. In one world, stakeholder pressure could drive a company's disclosure to secure its legitimacy by signaling sustainability efforts and performance in respective reports.

This study tests there set of measurements on report quality assessment, PIRC method, GRI method and KPMG method, it is the first time to use the three methods simultaneously in one research. In this contrastive manner, this gives a comprehensive measurement towards the definition of SR quality. The cross-sectional problem would be partly solved by longitudinal analysis. Even though these three methods are aggregated measure of report quality, including the most frequently used criteria in this research helps reduce the deficiency of aspects that influences the quality of sustainability related reports. An alternative research would be a set of inclusive indicators of quality and this would give insight toward general measurement of quality. In this research, the advantages and shortcomings of these three different methods are also reflected. Global Reporting Initiative (GRI) is the most popular reporting guideline worldwide, over 60% of SR reference the GRI. On average, KPMG method gives a lowest score of quality of sustainability related report, followed by GRI. And PIRC method gives the highest score. This can be explained by the different origination of the three methods, for example, KPMG comes more from financial perspective, more stringent measures should be taken for stakeholders like external investor to evaluate the company performance and potential. PIRC comes from NGO with more reputational consideration especially impact on environment. While GRI guidelines are raised as a standard method of sustainability reporting to overcome the problems in strategic disclosure (Hess and Dunfee, 2007). However, it is too generic for various companies to apply and too complicated institutional indicators make the approach difficult to use (Levy et al., 2010). The author did not argue which method is superior than another, at least the author understands they come from different perspective with some common underlying.

According to the literature review about stakeholder engagement, little empirical examination has been given to the assessment of the quality of stakeholder engagement. For this reason, the method for evaluating stakeholder engagement needs more attention. In most companies, stakeholders have not involved in corporate governance, and thus lack the information about the negative impacts that the companies caused. To solve this problem, compulsive and voluntary methods should be combined to encourage the stakeholders to be included in the decision-making process of companies. The method from previous research (Friedman & Miles 2006; Herremans et al, 2016) gives a distinction of the extent of stakeholder engagement with qualitative nature, yet more detailed analyses about the incentives of stakeholders and managers should be incorporated in further research. The author applied this into empirical sustainability with quantitative method, which in return complements research on measuring stakeholder engagement level from more objective perspective. Company stakeholder engagement strategy seems determined the quality of sustainable reporting in the same way, regardless of the given country's social and cultural environment. SE plays a critical role in defining materiality and relevance of sustainability information. The author found that several sustainability reporting characteristics are associated with the company's stakeholder

engagement status: degree of representation of stakeholder, degree of stakeholder involvement and engagement channels and methods. Our study develops the literature by providing insight into companies' choices of stakeholder engagement strategy.

5.4 Managerial Implications

In practice, this study helps managers to understand how quality of sustainability reporting are evaluated and thus create more initiative to link sustainability reporting with stakeholder management. Attention should be paid to the quality of sustainability reporting of the G250 companies, as they are leading icons in respective industries. Most of the G250 companies have adopted at least one format to report their sustainability report, however, the quality of sustainability reports various. From this analysis, the author found a lot of things to do for the improvement in reporting process. Target and indicators are the mostly emphasized aspect in analyzed sustainability reports, in which materiality and strategy should be given more consideration. The same time, by decoding the process of popular 3rd party evaluation premise, the author proposes the variations coming from different perspective and indications, for example, GRI from institutional, KPMG from financial and PIRC from reputational and company governance. In response, any communication initiatives should align with company's visions & values, and strategy. By understanding this, communications mangers can optimize the process on defining strategy on sustainability reporting, the de facto 2nd annual report if not integrated one. This process enables company response effective and efficiently to sustainability topics and stakeholder requirement.

Stakeholder engagement (SE) is so important that if companies did not pay enough attention to the corporation's, environmental and social considerations by stakeholders, for example, investors would push them to strengthen their sustainability development and lead to the change in cash flow from investors, which would finally decide the survival of a company. Potential financial risks and opportunities related to firm literature would bring the sustainability research to a new level. And more detailed measurement of a company's sustainability should be taken into consideration. Companies should be aware of this change and prepare for the coming challenges and opportunities brought by popularization of sustainability practice. Even ninety percent of the companies in our sample published their reports about sustainability, the level of stakeholder engagement is not aligned. Description and identification of these issues are not necessarily informed to the stakeholders as well, and as the research showed, participation of stakeholder in the operation of business will promote the development of a company. Scores of the G250 companies about the quality of sustainability reporting shows there are still plenty room to improve.

A trend identified in the sustainability reports of G250 companies is that most companies emphasize opportunities rather than risks. Most of them have identified some environmental and social changes such as climate, energy and resources, however threats from the commercial aspects such as globalization are more likely to be overlooked in these reports. Innovation of new products has been paid a lot of concentration in their analysis about the social and environmental changes. Through strengthen their brands and reputations to stabilize their market power is another method mentioned in these reports toward the

opportunities. However, access to adequate capital and the importance of stakeholder engagement have not received enough attention and this is the purpose of this research. And thus, evaluation for qualitative and validated examination is need in the future, with the support from empirical results. It showed that what is really applied in a majority of the sample report, “stakeholder management approach rather than stakeholder engagement approach”. A trend in future remains questionable, is SE moving from being a simple way to consult and influence stakeholders to an effective instrument for engaging them in process of the company's decision making? It is only possible to be done through a mutual commitment. Sustainability Reporting provides a starting point for planning organizational or governance change for sustainability development purpose and in return such change for sustainability improves the reporting process.

Reference

Abbott W.F. and Monsen R.J., 1979, On the measurement of corporate social responsibility: self-reported disclosures as a method of measuring corporate social involvement, Academy of Management Journal, September, pp.501-515.

Accenture, 2010, Co-produced a report with the United Nations Global Compact titled A New Era of Sustainability: CEO reflections on progress to date, challenges ahead and the impact of the journey toward a sustainable economy.

Acerete, B., Llena, F., and Moneva, J.M., 2011, Environmental disclosure in financial statements: an analysis of Spanish toll motorway concessionaires, Transportation Research Part D: Transport and Environment ,16, 377-383.

Adams C, and McNicholas P, 2007. Making a difference: Sustainability reporting, accountability and organizational Change, Accounting, Auditing & Accountability Journal, 20, 382-402.

Adams S, and Simnett R, 2011, Integrated reporting: an opportunity for Australia's not-for-profit sector, Australian Accounting Review, 21, 292-301.

Adams, C. A. and Kuasirikun N., 2000, A Comparative Analysis of Corporate Reporting on Ethical Issues by UK and German Chemical and Pharmaceutical Companies, The European Accounting Review, 9(1), 53-80.

Adams, C., 2002, Internal organizational factors influencing social and ethical reporting beyond theorizing, Accounting, Auditing and Accountability Journal, 15 (2), 223-250.

Adams, C., A. and Larrinaga-González ,2007, Engaging with Organizations in Pursuit of Improved Sustainability Accounting and Performance, Accounting, Auditing and Accountability Journal, 20 (3), 333-355.

Adams, C., Coutts, A. and Harte, G., 1995, Corporate Equal Opportunities (Non-)Disclosure, British Accounting Review, 27 (2),87-108.

Aerts, W., Cormier D. and Magnan M., 2008, Corporate Environmental Disclosure, Financial Markets and the Media: An International Perspective. Ecological Economics, 64 (3), 643-659.

Al-Tuwaijri, S. A., Christensen, T. E., & Hughes, K. E., 2004, The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. Accounting, Organizations and Society, 29(5-6), 447–471.

Agle, B.R., Mitchell, R.K., and Sonnenfeld, J.A., 1999, Who Matters to CEOs? An Investigation of Stakeholder Attributes and Salience, Corporate Performance, and CEO Values, Academy of Management Journal, 42(5), 507-525.

Albareda, L., Lozano, J. M., Tencati, A. , Midttun A.,and Perrinin F., 2008, The Changing Role of Governments in Corporate Social Responsibility: Drivers and Responses', Business Ethics, A European Review ,17(4),347–363.

Albareda, L., Tencati A. , Lozano J. M.and Perrini F., 2006, The Government's Role in Promoting Corporate Responsibility: A Comparative Analysis of Italy and UK From the Relational State Perspective, Corporate Governance 6(4), 386–400.

Alciatore, M. L. and Dee C. C., 2006, 'Environmental Disclosures in the O? and Gas Industry', Advances in Environmental Accounting & Management ,3, 49-75.

Alvarez G, Burgos Jimenez MJ, Cespedes Lorente JJ., 2001. An analysis of environmental management, organizational context and performance of Spanish hotels, Omega ,29, 457–471.

Amran, A., and Haniffa, R., 2011, Evidence in development of sustainability reporting: case of a developing country, Business Strategy and the Environment ,20, 141-156.

Andriof J, Waddock S, Husted B, and Rahman S., 2002, Unfolding stakeholder thinking: theory, responsibility and engagement, Greenleag Publishing: Sheffi eld, 9–16.

Archel, P., Fernández, M., and Larrinage-González, C., 2008. The organizational and operational boundaries of triple bottom line reporting: a survey. Environmental Management 41, 106-117.

Arnstein S. R., 1969, A ladder of citizen participation, American Institute of Planners Journal , 35, 216–224.

Arora, S, and Cason, T N., 1996, Why do firms volunteer to exceed environmental regulations? Understanding participation in the EPA's 33/50 Program. Land Economics ,74(4): 413–432.

Azzone G, Brophy M, Noci G, Welford R, and Young W, 1997, A stakeholders' view of environmental reporting, Long Range Planning 30(5), 699–709.

Baden, D.A., Harwood, I.A. and Woodward, D.G., 2009, The effect of buyer pressure on suppliers in SMEs to demonstrate SR practice: an added incentive or counter productive?'', European Management Journal, 27(6), 429-441.

Bansal, P., and Clelland, I., 2004, Talking trash: Legitimacy, impression management and unsystematic risk in the context of the natural environment, Academy of Management Journal, 47(1), 93-103.

Barney, J.,1991, Firm resources and sustained competitive advantage, Journal of Management, 17(1), 99-120.

Beaujolin, F. and Capron, M., 2005, France. Balancing between constructive harassment and virtuous intentions'', in Habisch, A., Jonker, J., Wegner, M. and Schmidpeter, R. (Eds), Corporate Social Responsibility across Europe, Springer, Berlin/Heidelberg/New York, 97-108.

Bebbington, J., 1999, Compulsory Environmental Reporting in Denmark: An Evaluation, Social and Environmental Accountin 19(2), 2-4.

Bebbington, J., Higgins, C. and Frame, C., 2009, Initiating sustainable development reporting: evidence from New Zealand, Accounting, Auditing and Accountability Journal, 22 (4), 588-625.

Beck, M., 1993, Obilanzierung im betrieblichen Management, Vogel: Würzburg.

Belal, A, R., 2002, Stakeholder accountability or stakeholder management: a review of UK firms' social and ethical accounting, auditing and reporting (SEAAR) practices. Corporate Social Responsibility and Environmental Management, 9, 8–25.

Belal, A.R., and Cooper, S., 2011, The absence of corporate social responsibility reporting in Bangladesh, Critical Perspectives on Accounting, 22, 654-667.

Belkaoui, A., and Karpik, P. G., 1989, Determinants of the Corporate Decision to Disclose Social Information, Accounting, Auditing, and Accountability Journal, 2, 36–51.

Bellard, E. and Ru¨ ling, C.C., 2001, Importing diversity management: corporate discourses in France and Germany, working paper, Ecole des Hautes Etudes Commercials, Université de Genève, Geneva.

Berman, S,K, Wicks, A,C, Kotha, S,and Jones, T,M., 1999, Does stakeholder orientation matter? The relationship between stakeholder management models and firm financial performance, Academy of Management Journal ,42(5), 488–506.

Berthelot, S., Cormier, D., and Magnan, M., 2003, Environmental disclosure research: review and synthesis. Journal of Accounting Research 22, 1-44.

Berthoin Antal, A. and Sobczak, A., 2007, Corporate social responsibility in France: a mix of national traditions and international influences, Business & Society, 46(1), 9-32.

Bhattacharya C B. Responsible Marketing: Doing Well by Doing Good[J]. GfK Marketing Intelligence Review, 2016, 8(1): 8-17.

Blacconiere, W.G., and Northcut, W.D., 1997, Environmental information and market reactions to environmental legislation, Journal of Accounting, Auditing and Finance, 12 (1), 149–178.

Blomback, A. and Wigren, C., 2009, Challenging the importance of size as determinant for CSR activities, Management of Environmental Quality: An International Journal, Vol. 20 No. 3, pp. 255-70.

Boesso, G. and Kumar K., 2009, Stakeholder Prioritization and Reporting: Evidence From Italy and the US, Accounting Forum ,33, 162–175.

Botosan, C.A., 1997, Disclosure level and the cost of equity capital, The Accounting Review, 72 (3), 323–350.

Bowen, F. E., 2000, Environmental Visibility: A Trigger of Green Organizational Responsiveness?, Business Strategy and the Environment, 9, 92–107.

Bowen, R.M., Ducharme, L., and Shores, D., 1995, Stakeholders Implicit Claims and Accounting Method Choice, Journal of Accounting and Economics, 20(3), 255-295.

Brammer S, and Pavelin S., 2004, Voluntary social disclosures by large UK companies. Business Ethics: a European Review, 13(2/3), 86–99.

Brammer, S., and Pavelin, S., 2006, Voluntary environmental disclosures by large UK companies, Journal of Business Finance & Accounting, 33, 1168-1188.

Brown, H.S., De Jong, M., and Levy, D.L., 2009b. Building institutions based on information disclosure: lessons from GRI's sustainability reporting. Journal of Cleaner Production 17, 571-580.

Browne, M. W., and Cudeck, R., 1993, Alternative ways of assessing model fit. In K. A. Bollen and J. S. Long (Eds.), Testing structural equation models (pp. 136-162).Beverly Hills, CA: SAGE.

Brundtland G H., 1987, Our common future—Call for action[J]. Environmental Conservation, 14(4): 291-294.

Bruton, G. D., Chahine, S., & Filatotchev, I. (2009). Founders, private equity investors, and underpricing in entrepreneurial IPOs. Entrepreneurship Theory and Practice, 33(4), 909–928.

Buchholz, R.A., and Rosenthal, S.B., 2005, Toward a contemporary conceptual framework for stakeholder theory, Journal of Business Ethics, 58, 137-148.

Buehler, V. M. and Shetty Y. K., 1974, Motivations for Corporate Social Action, The Academy of Management Journal, 17(4), 767–771.

Buhr, N., 1998, Environmental Performance, Legislation and Annual report Disclosure: The Case of Acid Rain and Falconbridge", Accounting, Auditing and Accountability Journal, 11(2),163-190.

Buhr, N., 2002, A structuration view on the initiation of environmental reports, Critical Perspectives on Accounting, 13, 17-38.

Burritt R L, 1997, Corporate environmental performance indicators: cost allocation – boon or bane? Greener Management International,17, 89–100.

Burritt, R L, Hahn, T, and Schaltegger, S., 2002, Towards a comprehensive framework for environmental management accounting –links between business actors and environmental management accounting tools, Australian Accounting Review 12(2), 39–50.

Burritt, R.L., and Schaltegger, S., 2010, Sustainability accounting and reporting: fad or trend? Accounting, Auditing & Accountability Journal 23, 829-846.

Campbell, D, and Beck, A, C., 2004, Answering allegations: the use of the corporate website for restorative ethical and social disclosure, Business Ethics: a European Review 13(2/3), 100–116.

Carroll, A.B., 1999, Corporate social responsibility. Evolution of a definitional construct, Business & Society, 38 (3), 268-95.

Castelló, I., and Lozano, J.M., 2011, Searching for new forms of legitimacy through corporate responsibility rhetoric, Journal of Business Ethics, 100, 11-29.

Cerin P. 2002b, Characteristics of environmental reporters on the OM Stockholm Exchange, Business Strategy and the Environment, 11(5): 298–311.

Cerin, P., 2002a, Communication in corporate environmental reports, Corporate Social Responsibility and Environmental Management 9(1), 46–66.

Chen, J.C. and Roberts, R.W., 2010, Toward a More Coherent Understanding of the Organization-Society Relationship: A theoretical consideration for social and environmental accounting research. Journal of Business Ethics, 97, 651-665.

Chen, S., and Bouvain, P., 2009, Is corporate responsibility converging? A comparison of corporate responsibility reporting in the USA, UK, Australia, and Germany. Journal of Business Ethics 87, 299-317.

Christensen, L. J., Peirce, E., Hartman, L. P., Hoffman, W. M., and Carrier, J. , 2007, Ethics, CSR and sustainability education in the Financial Times top 50 global business schools: Baseline data and future research directions. Journal of Business Ethics, 73, 347-368.

Clarkson M B E., 1995, A stakeholder framework for analyzing and evaluating corporate social performance, Academy of Management Journal, 20, 92–118.

Clarkson, P., Kao, J.L., and Richardson, G.D., 1994, The Voluntary Inclusion of Forecasts in the MD&A Section of Annual Reports, Contemporary Accounting Research, 11(1), 423-450.

Clarkson, P.M., Li, Y., Richardson, G.D., and Vasvari, F.P., 2008. Revisiting the relation between environmental performance and environmental disclosure: an empirical analysis. Accounting, Organizations and Society, 33, 303-327.

Clarkson, P.M., Overell, M.B., Chapple, L., 2011, Environmental reporting and its relation to corporate environmental performance, Abacus: A Journal of Accounting Finance and Business Studies, 47, 27-60.

Cohen, E., and Perez, R., 1999, Vingt d_ans d_analyse financi_ere en France, Comptabilit_e-contr^ole-audit , 2, 61–76

collective rationality in organizational fields, American Sociological Review, 48 (1), 147-160.

Collinson, D, Lorraine, N, and Beck, A,C, 2003. An exploration of corporate attitudes to the significance of environmental information for stakeholders, Corporate Social Responsibility and Environmental Management, 10(4): 119–211.

Collis J, and Hussey R., 2003, Business Research, 2nd edn. Palgrave, MacMillan, Basingstoke, UK.

Connelly, B.L., Certo, S.T., Ireland, R.D., and Reutzel, C.R., 2010, Signaling theory: a review and assessment, Journal of Management ,37, 39-67.

Cooke, T.E., 1989, Disclosure in the corporate annual reports of Swedish companies, Accounting and Business Research, 19, 113-124.

Cormier, D, and Magnan, M, 2003, Environmental reporting management: a European perspective, Journal of Accounting and Public Policy 22(1), 43–62.

Cormier, D., and Gordon, I.M., 2001, An Examination of Social and Environmental Reporting Strategies, Accounting, Auditing, and Accountability Journal, 14(5), 587-616.

Cormier, D., and Magnan, M., 1999, Corporate Environmental Disclosure Strategies: Determinants, Costs and Benefits, Journal of Accounting, Auditing and Finance, 14(4), 429-451.

Cormier, D., and Magnan, M., 2004, The Impact of the Web on Information and Communication Modes: The Case of Corporate Environmental Disclosure, Journal of Technology Management, 27(4), 393-416.

Cormier, D., Magnan, M., 2007. The revisited contribution of environmental reporting to investors' valuation of a firm's earnings: an international perspective. Ecological Economics 62, 613-626

Cowen, S.S., Ferreri, L.B., and Parker, L.D.,1987, The Impact of Corporate Characteristics on Social Responsibility Disclosure: A Typology and Frequency-Based Analysis, Accounting, Organizations & Society, 12, 111–122.

Criado-Jiménez, I., Fernández-Chulián, M., Husillos-Carqués, F.J., and Larrinage- González, C., 2008, Compliance with mandatory environmental reporting in financial statements: the case of Spain (2001-2003). Journal of Business Ethics, 79, 245-262.

Cullen, L., and Christopher, T., 2002, Governance Disclosures and Firm Characteristics of Listed Australian Mining Companies, International Journal of Business Studies,10, 37–58.

Cumming, J F., 2001, Engaging stakeholders in corporate accountability programmers: a cross-sectoral analysis of UK and transnational experience, Business Ethics: A European Review 10, 45–52.

Cyert, R.M. and March, J.G.,1963, A Behavioural Theory of the Firm (Englewood Cliffs, Prentice-Hall).

Da Silva Monteiro, S.M., and Aibar-Guzmán, B., 2010, Determinants of environmental disclosure in the annual reports of large companies operating in Portugal, Corporate Social Responsibility and Environmental Management ,17, 185-204.

Darnall, N., and Edwards, D., 2006, Predicting the cost of environmental management system adoption: The role of capabilities, resources and ownership structure, Strategic Management Journal, 27, 301-320.

Daub C H., 2007, Assessing the quality of sustainability reporting: an alternative methodological approach[J]. Journal of Cleaner Production, 15(1): 75-85..

Davenport, K., 2000, Corporate Citizenship: A Stakeholder Approach for Defining Corporate Social Performance and Identifying Measures for Assessing it' Business and Society 39(2), 210–219.

Day, R. and Woodward T., 2004, Disclosure of Information about Employee in the Directors' Report of UK Published Financial Statements: Substantive or Symbolic?, Accounting Forum, 28(1), 43-59.

Deegan, C. and Blomquist C., 2006, Stakeholder Influence on Corporate Reporting: An Exploration of the Interaction between WWF-Australia and the Australian Minerals Industry, Accounting, Organizations and Society 31(4/5), 343-372.

Deegan, C., 2002, The legitimizing effect of social and environmental disclosures: a theoretical foundation, Accounting, Auditing and Accountability Journal, 15 (3), 282-311.

Deegan, C., and Soltys, S., 2007, Social accounting research: an Australasian perspective, Accounting Forum 31, 73-89.

DeTienne, K. B. and Lewis L. W. , 2005, The Pragmatic and Ethical Barriers to Corporate Social Responsibility Disclosure: The Nike Case, Journal of Business Ethics, 60, 359-376.

Dhaliwal, D.S., Li, O.Z., Tsang, A., and Yang, Y.G., 2011, Voluntary nonfinancial disclosure and the cost of equity capital: the initiation of corporate social responsibility reporting, The Accounting Review 86, 59-100.

DiMaggio, P. and Powell, W. , 1991, Introduction in Powell, W. and DiMaggio, P. (Eds), The New Institutionalism in Organizational Analysis, The University of Chicago Press, Chicago, IL and London, 1-38.

Dittrick, P., 2007, Sustainability reports answer growing calls for information. Oil & Gas Journal, 105(37), 22.

Dowling J, and Pfeffer J. 1975, Organizational legitimacy: social values and organizational behavior, Pacific Sociological Review 18(3):122–136.

Daub C H., 2007, Assessing the quality of sustainability reporting: an alternative methodological approach[J]. Journal of Cleaner Production, 15(1): 75-85.

Dubbink, W., Graafland, J., and Van Liedekerke, L., 2008, CSR, transparency and the role of intermediate organizations, Journal of Business Ethics, 82, 391-406.

Dubbink, W., Graefland, J. and Van Liedekerke, L., 2008, CSR, transparency and the role of intermediate organizations, Journal of Business Ethics, Vol. 82 No. 2, pp. 391-406.

Dunphy, D. C., Griffiths, A., and Benn, S., 2003, Organizational change for corporate sustainability: A guide for leaders and change agents of the future. London: Routledge.

Dutton, J.E., Stumpf, S.A., and Wagner, D., 1990, Diagnosing Strategic Issues and Managerial Investment of Resources', in P. Shrivastava and R.B. Lamb (eds.), Advances in Strategic Management: A Research Annual (JAI Press, Greenwich).

Dyllick, T. and Hockerts, K., 2002, Beyond the business case for corporate sustainability. Business Strategy and the Environment 11, 130.

Elbing, A. O., Jr., 1970, The value issue of business: The responsibility of the businessman, Academy of Management Journal, 13(1), 79-89.

Elijido-Ten, E., Kloot, L. and Clarkson, P., 2010, Extending the application of stakeholder influence strategies to environmental disclosures. An exploratory study from a developing country, Accounting, Auditing and Accountability Journal, 23 (8), 1032-1059.

Elkington J, 1997, Cannibals with forks: the triple bottom line of 21st century business. Capstone Publishing, Oxford.

Elkington, J. ,1994, Towards the sustainable corporation: Win-win-win business strategies for sustainable development. California Management Review, 36(2), 90-100.

Elkington, J., 2004, Enter the triple bottom line. In A. Henriques & J. Richardson (Eds.), The triple bottom line: Does it all add up? (pp. 1-16). London, UK: Earthscan.

Engardio, P. , 2007, January 29, Beyond the Green Corporation. Business Week, p. 50.

European Commission: 2001, Recommendation of 30 May 2001 on the Recognition, Measurement and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies (2001/453/EC).

Evan, W.F., and Freeman, R.E., 1993,A Stakeholder Theory of the Modern Corporation: Kantian Capitalism. In T. Beauchamp, N. Bowie, eds., Ethical Theory and Business. Prentice-Hall, Englewood Cliffs, NJ: 75-84.

Fifka, M.S., 2012, The development and state of research on social and environmental reporting in global comparison, Journal of Betriebswirtsch, 62, 45-84.

Fifka, M.S., 2013, Corporate responsibility reporting and its determinants in comparative perspective: a review of the empirical literature and a meta-analysis. Bus. Strat. Environ. 22, 1–35

Figge F, Hahn T, Schaltegger S, and Wagner M. 2002, The sustainability balanced scorecard – linking sustainability management to business strategy. Business Strategy and the Environment 11(5), 269–284.

Figge F, Schaltegger S., 2000, What Is 'Stakeholder Value'? Developing a Catchphrase into a Benchmarking Tool. University Lüneburg–Pictet–UNEP: Lüneburg. Freeman RE. 1984. Strategic Management: a Stakeholder Approach. Pitman: Boston, MA.

Florida, R., Atlas, M., and Klein, M., 2001, What makes companies green? Organizational and geographic factors in the adoption of environmental practices. Economic Geography, 77, 209-224.

Fortanier, F., Kolk, A., and Pinkse, J., 2011, Harmonization in CSR reporting: MNEs and global CSR standards, Management International Review, 51, 665-696.

Frankel, R., Johnson, M., and Skinner, D.J. ,1999, An Empirical Examination of Conference Calls as a Voluntary Disclosure Medium, Journal of Accounting Research, 37(1), 133-150.

Freedman, M. and A. J. Stagliano, 2002, Environmental Disclosure by Companies Involved in Initial Public Offerings, Accounting, Auditing and Accountability Journal, 15(1), 94-105.

Freedman, M. and Patten D., 2004, Evidence of the Pernicious Effect of Financial Report Environmental Disclosure, Accounting Forum, 28(1), 27-43.

Freeman, R. E., 1984, Strategic management: A stakeholder approach. Boston: Pitman.

Friedman, A, L, and Miles, S., 2006, Stakeholders: Theory and Practice, Oxford University Press: Oxford.

Gallén, M. L., & Peraita, C., 2017. The Relationship between Femininity and Sustainability Reporting. Corporate Social Responsibility and Environmental Management.

Gallo, P.J., Jones Christensen, L., 2011. Firm size matters: an empirical investigation of organizational size and ownership on sustainability-related behaviors, Business & Society, 50, 315-349.

Gamble, G., Hsu, K., Kite, D., and Radtke, R., 1995, Environmental disclosures in annual reports and10Ks: an examination, Accounting Horizons, 9 (3), 34–54.

Gamerschlag, R., Möller, K., and Verbeeten, F., 2011, Determinants of voluntary CSR disclosure: empirical evidence from Germany, Review of Managerial Science 5, 233-262.

Gibbins, M., Richardson, A., and Waterhouse, J., 1990, The management of corporate financial disclosures: opportunism, ritualism, policies and processes, Journal of Accounting Research, 28 (1), 121–143.

Gilbert, D. and Rasche, A., 2008, Opportunities and problems of standardized ethics initiatives: a stakeholder theory perspective, Journal of Business Ethics, 82 (3), 755-73.

Gladwin, T. N., Kennelly, J. J., and Krause, T. S., 1995, Shifting paradigms for sustainable development: Implications for management theory and research. Academy of Management Review, 20, 874-907.

Global Reporting Initiative (GRI). 2002, 2002 Sustainability Reporting Guidelines. GRI: Boston, MA. http://www.globalreporting.org

Global Reporting Initiative (GRI). 2004. High 5! GRI: Amsterdam.

Global Reporting Initiative (GRI). 2006. G3 Sustainability Reporting Guidelines. Version for Public Comment. 2 January 2006–31

Global Reporting Initiative., 2009, GRI reports list. Retrieved from http://www.globalreporting.org/GRIReports/GRIReportsList/

Golob, U., and Bartlett, J.L., 2007, Communicating about corporate social responsibility: a comparative study of CSR reporting in Australia and Slovenia, Public Relations Review ,33, 1-9.

Gonzalez-Benito, J, and Gonzalez-Benito, O, 2006. A review of determinant factors of environmental proactivity, Business Strategy and the Environment, 15, 87–102.

Gray, R., 2006a, Does Sustainability Reporting Improve Corporate Behaviour? Wrong Question? Right Time? Accounting and Business Research, 36(4).

Gray, R., 2006b, Social, Environmental and Sustainability Reporting and Organizational Value Creation? Whose Value? Whose Creation?', Accounting, Auditing and Accountability Journal 19(6), 793-819.

Gray, R., Owen, D. and Adams, C., 1996, Accounting and Accountability: Changes and Challenges in Corporate Social and Environmental Reporting, Prentice-Hall, London.

Gray, R., Owen, D. and Adams, C., 2010, Some theories for social accounting?: a review essay and a tentative pedagogic categorization of theorizations around social accounting, Sustainability, Environmental Performance and Disclosures, Advances in Environmental Accounting and Management, 4, 1-54.

Gray, R.H., Kouhy, R. and Lavers, S.,1995, Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure. Accounting, Auditing and Accountability Journal, 8 (2), 47-77.

Greenwood, M., 2007, Stakeholder Engagement: Beyond the Myth of Corporate Responsibility, Journal of Business Ethics ,74, 315–327.

Greenwood, R. and Hinings, C.R. ,1996, Understanding Radical Organizational Change: Bringing together the Old and the New Institutionalism. The Academy of Management Review,21 (4), 1022-1054.

Greenwood, R., Oliver, C., Sahlin, K., and Suddaby, R., 2008, Introduction. In R. Greenwood , C. Oliver, K. Sahlin & R. Suddaby (Eds.), The Sage handbook of organizational institutionalism, 1-46.

GRI, 2011a. A New Phase: The Growth of a New Phase: the Growth of Sustainability Reporting. Amsterdam.

GRI, 2011b. Sustainability Reporting Guidelines: Version 3.1. Amsterdam.

Griesse, M., 2007, Caterpillar's interactions with Piracicaba, Brazil: a community-based analysis of CSR, Journal of Business Ethics, 73 (1), 39-51.

Groves, C., Frater, L., Lee, R., and Stokes, E., 2011, Is there room at the bottom for CSR? Corporate social responsibility and nanotechnology in the UK, Journal of Business Ethics, 101, 525-552.

Guthrie J, Parker L D., 1989, Corporate social reporting: a rebuttal of legitimacy theory[J]. Accounting and business research, 19(76): 343-352.

Hąbek, P., & Wolniak, R, 2016, Assessing the quality of corporate social responsibility reports: the case of reporting practices in selected European Union member states. Quality & quantity, 50(1), 399-420.

Habisch, A. and Moon J., 2006, Social Capital and Corporate Social Responsibility, in Jonker J. and Witte M. de (eds.), The Challenge of Organizing and Implementing CSR (Palgrave, London), 63–77.

Habisch, A., Patelli, L., Pedrini, M., and Schwartz, C.,2011, Different talks with different folks: A comparative survey of stakeholder dialogue in Germany, Italy and the U.S., Journal of Business Ethics 100, 381-404.

Haddock, J., 2005, Consumer influence on internet-based corporate communication of environmental activities: the UK food sector, British Food Journal, 107, 792-805.

Haddock, J., and Fraser, I., 2008, Assessing corporate environmental reporting motivations: differences between "close-to-market" and "business-to-business" companies, Corporate Social Responsibility and Environmental Management,15, 140-155.

Hahn, R., and Kühnen, M., 2013, Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. Journal of Cleaner Production, 59, 5-21.

Hallay H, (ed.), 1990, Die obilanz. Ein betriebliches Information system. Schriftenreihe des I: Berlin.

Halme M, and Huse M., 1996, The influence of corporate governance, industry and country factors on environmental reporting, Paper presented at the Academy of Management Conference.

Hamilton, J. ,1995, Pollution as news: Media and stock market reactions to the toxics release inventory data. Journal of Environmental Economic and Management, 28, 98-113.

Haniffa, R.M., and Cooke, T.E., 2002, Culture, Corporate Governance and Disclosure in Malaysian Corporations, Abacus, 38, 317–349.

Harrison, J. S. and Freeman, R. E., 1999, Stakeholders, Social Responsibility, and Performance: Empirical Evidence and Theoretical Perspectives, Academy of Management Journal 42(5), 479–485.

Hart, S. L., 1995, A natural-resource-based view of the firm. Academy of Management Review, 20, 986-1014.

Hart, S. L., and Sharma, S., 2004, Engaging fringe stakeholders for competitive imagination, Academy of Management Executive, 18(1), 7-18.

Harvey, B., and Schaefer, A., 2001, Managing Relationships with Environmental Stakeholders: A Study of U.K. Water and Electricity Utilities, Journal of Business Ethics, 30(3), 243-260.

Healy, P., Hutton, A.P., and Palepu, K.G., 1999, Stock performance and intermediation changes surrounding sustained increases in disclosure, Contemporary Accounting Research, 16 (3), 485-520.

Henriques, I., and Sadorsky, P.,1999, The Relationship between Environmental Commitment and Managerial Perceptions of Stakeholder Importance", Academy of Management Journal, 42(1), 87-99.

Herremans, I. M., Nazari, J. A., and Mahmoudian, F., 2016, Stakeholder relationships, engagement, and sustainability reporting. Journal of Business Ethics, 138(3), 417-435.

Herzig, C. and Schaltegger, S., 2006, Corporate sustainability reporting: an overview. In: Schaltegger, S., Bennett, M., Burritt, R.L. (Eds.), Sustainability Accounting and Reporting. Springer, Dordrecht, 301-324.

Hess, D., 2007, Social Reporting and New Governance Regulation: The Prospects of Achieving Corporate Accountability Through Transparency, Business Ethics Quarterly 17(3), 453–476.

Hess, D., and Dunfee, T.W., 2007, The Kasky-Nike threat to corporate social reporting: implementing a standard of optimal truthful disclosure as a solution, Business Ethics Quarterly 17, 5-32.

Hibbitt, C., and ColUson D., 2004, Corporate Environmental Disclosure and Reporting Developments in Europe, Social and Environmental Accounting Journal, 24(1), 1-11.

Hillman, A. J. and Keim G. D., 2001, Shareholder Value, Stakeholder Management and Social Issues: What's the Bottom Line?, Strategic Management Journal 22,125–139.

Hofmann, D. A., and Jones, L. M., 2005, Leadership, collective personality, and performance, Journal of Applied Psychology, 90, 509-522.

Holder-Webb, L., Cohen, J., R., Nath, L., and Wood, D., 2009, The supply of corporate social responsibility disclosures among U.S. firms. Journal of Business Ethics, 84, 497-527.

Holdren, J. P., Daily, G. C., and Ehrlich, P. R., 1995, The meaning of sustainability: Biogeophysical aspects. In M. Munasinghe and W. Shearer (Eds.), Defining and measuring sustainability: The biogeophysical foundations (pp. 3-17). Washington, DC: The World Bank.

Hooghiemstra, R., 2000, Corporate Communication and Impression Management New Perspectives Why Companies Engage in Corporate Social Reporting, Journal of Business Ethics, 27(1/2), 55-68.

Hughes, K.E., 2000, The value relevance of nonfinancial measures of air pollution in the electric utility industry, The Accounting Review, 75 (2), 209–228.

Hughes, P.J., and Sankar, M.R., 1997, The Impact of Litigation Risk on Discretionary Disclosure, Working Paper (University of California, Los Angeles).

Hughes, S. B., Anderson A. ,and Golden S.,2001, Corporate Environmental Disclosures: Are They Useful in Determining Environmental Performance, Journal of Accounting and Public Policy 20(3), 207–240.

Husillos-Carqués, F.J., Gonzalez, C.L., and Alvarez Gil, M.J., 2011, The emergence of triple bottom line reporting in Spain, Spanish Journal of Finance and Accounting 40, 195-219.

Husted, B. W., 1998, Organizational Justice and the Management of Stakeholder Relations, Journal of Business Ethics 17(6), 643–651

Hutton, A.P., Miller, G.S. and Skinner, D.J. ,2003, The Role of Supplementary Statements with Management Forecasts. Journal of Accounting Research 41, 867–890.

Interface., 2009, Mission/vision. Retrieved from http://www.interfaceglobal.com/Company/Mission-Vision.aspx

James, P., Donaldson. S., 2001, Action for sustainability: Northwest England's tool for regional strategic sustainability appraisal. J Environ Assess Policy Manage, 3,413–430.

Janek, C., Riccerib, F., Sangiorgia, D., & Guthrie, J. (2016). Sustainability and integrated reporting: A case study of a large multinational organization.

John Wiley. Browne, M. W., Cudeck, R., 1993, Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models (pp. 136-162). Beverly Hills, CA: SAGE.

Jones, M. J. and Shoemaker P. A.,1994, Accounting Narratives: A Review of Empirical Studies of Content and Readability, Journal of Accounting Literature ,13, 142-184.

Jonker, J, and Foster, D. ,2002, Stakeholder excellence: framing the evolution and complexity of a stakeholder perspective of the firm, Corporate Social Responsibility and Environmental Management, 9, 187–195.

Jones, P., Clarke-Hill, C., Comfort, D., & Hillier, D., 2007, Marketing and sustainability. Marketing Intelligence and Planning, 26(2), 123–130

Karpoff, J., and Lott, J.R., 1993, The Reputational Penalty Firms Bear from Committing Criminal Fraud, Journal of Law and Economics, 36(2), 757-803.

Kassarjian, H H., 1977, Content analysis in consumer research. Journal of Consumer Research 4, 8–18.

Kent, P., and Monem, R., 2008, What drives TBL reporting: good governance or threat to legitimacy? Australian Accounting Review, 18, 297-309.

Kerlinger, F H., 1964, Foundations of Behavioural Research: Educational and Psychological Inquiry, Holt, Rinehart and Winston: New York.

Kneese, A. V.,1973, Management science, economics and environmental science. Management Science, 19, 1122-1137.

Kolk A, 2003, Trends in sustainability reporting by the Fortune Global 250. Business Strategy and the Environment 12, 279–291.

Kolk, A., 2010, Trajectories of sustainability reporting by MNCs. Journal of World Business 45, 367-374.

KPMG, 2005, KPMG International Survey of Corporate Responsibility Reporting 2005, KPMG International: Switzerland.

KPMG,2014, The KPMG Survey of Corporate Responsibility Reporting 2013, kpmg.com/sustainability

KPMG,2015, The KPMG Survey of Corporate Responsibility Reporting 2015, kpmg.com/sustainability

Krippendorff, K., 1980, Content Analysis: an Introduction to its Methodology, Sage Publications: Beverly Hills CA.

Lamberton, G., 2005, Sustainability accounting of a brief history and conceptual framework, Accounting Forum 29, 7-26.

Lang, M., Lundholm, R., 1993, Cross-Sectional Determinants Of Analyst Ratings Of Corporate Disclosures, Journal of Accounting Research, 31(2), 246-271.

Laplume, A.O., Sonpar, K., and Litz, R.A., 2008, Stakeholder theory: reviewing a theory that moves us, Journal of Management, 34, 1152-1189.

Larrinaga-González, C. ,2007, Sustainability reporting: insights from neo-institutional, in Unerman, J., Bebbington, J. and O'Dwyer, B. (Eds), Sustainability Accounting and Accountability, Routledge, London.

Larrinaga-González, C., Carrasco-Fenech, F., Caro-González, F.J., Correa-Ruiz,C., and Páez-Sandubete, J.M., 2001, The Role of Environmental Accounting in Organizational Change. An Exploration of Spanish Companies, Accounting, Auditing and Accountability Journal, 14 (2), 213-239.

Learned, E. P., Christensen, C. R., Andrews, K. R., and Guth, W. D.,1965, Business policy: Text and cases. Homewood, IL: Richard D. Irwin.

Lee, T.M., and Hutchison, P.D., 2005, The decision to disclose environmental information: a research review and agenda, Advances in Accounting 21, 83-111.

Leighton, D. S. R. and Thain D. H., 1997, Making Boards Work (McGraw-Hill Ryerson Limited, Toronto).

Lerner, L.D., and Fryxell, G.E., 1994, CEO Stakeholder Attitudes and Corporate Social Activity in the Fortune 500, Business and Society, 33(1), 58-81.

Lev, B, 2001, Intangibles: Management, Measurement, and Reporting, Brookings Institution Press: Washington, DC.

Lev, B., 1992, Information Disclosure Strategy, California Management Review, 34(4), 9–32.

Levy, D.L., Brown, H.S., and De Jong, M., 2010, The contested politics of corporate governance: the case of the Global Reporting Initiative, Business & Society, 49, 88-115.

Lewis, L., and Unerman, J., 1999, Ethical relativism: a reason for differences in corporate social reporting? Critical Perspectives on Accounting, 10, 521-547.

Lindblom, C.K.,1993, The implications for organizational legitimacy for corporate social performance and disclosure, Proceedings of the Critical Perspectives on Accounting Conference, New York, NY.

Llena, F., Moneva J. M., and Hernandez, B., 2007, Environmental Disclosures and Compulsory Accounting Standards: The Case of Spanish Annual Reports, Business Strategy and the Environment, 16(1),50-63.

Ioannou, I., & Serafeim, G., 2017, The consequences of mandatory corporate sustainability reporting.

Lozano, R., and Huisingh, D., 2011. Inter-linking issues and dimensions in sustainability reporting. Journal of Cleaner Production 19, 99-107.

Lozano, R., Nummert, B. and Ceulemans, K., 2016, Elucidating the relationship between Sustainability Reporting and Organisational Change Management for Sustainability. Journal of cleaner production, 125, 168-188.

Luke, B., 2016. Measuring and Reporting on Social Performance: From Numbers and Narratives to a Useful Reporting Framework for Social Enterprises. Social and Environmental Accountability Journal, 36(2), 103-123.

Manetti, G., and Bellucci, M., 2016, The use of social media for engaging stakeholders in sustainability reporting. Accounting, Auditing & Accountability Journal, 29(6), 985-1011.

Manetti G., 2011, The quality of stakeholder engagement in sustainability reporting: empirical evidence and critical points[J]. Corporate Social Responsibility and Environmental Management, 18(2): 110-122.

Maignan, I. and Ralston D. A., 2002, Corporate Social Responsibility in Europe and the U.S.: Insights from Businesses' Self-Representations, Journal of International Business Studies 33(3), 497–514.

Marinič, P. ,2008, Plánovaní a tvorba hodnoty firmy. Praha: Grada.

Marshall, S., Vaiman, V., Napier, N., Taylor, S., Halsberger, A., and Andersen, T., 2010, The end of a "Period": sustainability and the questioning attitude, Academy of Management Learning & Education, 9, 477-487.

Martin, A,D,and Hadley, D,J. 2006, Corporate environmental non-reporting – a UK FTSE 350 perspective, Business Strategy and the Environment in press. DOI: 10.1002/bse.518.

Mathews, M. R., 1997, Towards a Mega-Theory of Accounting', Asia-Pacific Journal of Accounting 4(2), 273–289.

Matten, D. and Moon, J. 2008, 'Implicit' and 'explicit' CSR: a conceptual framework for a comparative understanding of corporate social responsibility', Academy of Management Review, 33(2), 404-424.

Meadows, D H, Meadows D I, Randers J, and Behrens W W I, 1972, The Limits to Growth: Report for the Club of Rome's Project on Predicament of Mankind. New York: New American Library.

Mertens, G., Maas,K., Strootman, R., and Meliefste, S., 2012, KPIs and sustainability performance. An empirical analysis concerning the use and development of KPIs on sustainability performance reporting for the largest stock listed firms in the Netherlands, Research instigated by Eumedion, published by: Shareholder Support.

Meyer, J.W. and Rowan, B., 1977, Institutionalized organizations: Formal Structure as myth and ceremony, American Journal of Sociology, 83, 340-363.

Meznar, M.B., and Nigh, D.,1995, Buffer or Bridge? Environmental and Organizational Determinants of Public Affairs Activities in American Firms, Academy of Management ,38, 975–996.

Michelon G., 2011, Sustainability disclosure and reputation: a comparative study[J]. Corporate Reputation Review, 14(2): 79-96.

Michelon G, Parbonetti A., 2012, The effect of corporate governance on sustainability disclosure[J]. Journal of Management & Governance, 16(3): 477-509.

Mills, R.W. and Weinstein, B. ,2000, Beyond shareholder value-reconciling the shareholder and stakeholder perspectives, Journal of General Management 25(3), 79–93.

Milne, M. J. and Adler, R. W., 1999, Exploring the Reliability of Social and Environmental Disclosures Content Analysis, Accounting, Auditing and Accountability Journal, 12(2), 237-252.

Miska, C.H., Stahl, G.S., Mendenhall, M.E., 2013, Intercultural competencies as antecedents of responsible global leadership. Eur. J. Int. Manag. 7(5), 550–569

Mitchell, R. K., Agle B. R. and Wood D. J., 1997, Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts, Academy of Management Review 22(4), 853–886.

Mobus, J. L., 2005, Mandatory Environmental Disclosures in a Legitimacy Theory Context, Accounting, Auditing and Accountability Journal, 18(4), 492-517.

Montiel, I., 2008, Corporate social responsibility and corporate sustainability: Separate pasts, common futures. Organization & Environment, 21, 245-269.

Moratis, L., and Brandt, S., 2017, Corporate stakeholder responsiveness? Exploring the state and quality of GRI‐based stakeholder engagement disclosures of European firms. Corporate Social Responsibility and Environmental Management.

Neu, D., Warsame, H. and Pedwell, K., 1998, Managing public impressions: environmental

Norman, W., and MacDonald, C. ,2004, Getting to the bottom of "triple bottom line." Business Ethics Quarterly, 14, 243-262.

O'Dwyer, B., 2002, Managerial perceptions of corporate social disclosure: an Irish story, Accounting, Auditing and Accountability Journal, 15 (3), 406-436.

O'Dwyer, B., 2011, The case of sustainability assurance: constructing a new assurance service. Contemporary Accounting Research, 28, 1230-1266.

O'Riordan, L. and Fairbrass J., 2008, Corporate Social Responsibility: CSR: Models and Theories in Stakeholder Dialogue', Journal of Business Ethics 83, 745–758.

Ogden, S., and Watson, R., 1999, Corporate Performance and Stakeholder Management: Balancing Shareholder and Customer Interests in the U.K. Privatized Water Industry, Academy of Management Journal, 42(5), 526-538.

Oliver, C., 1991, Strategic Responses to Institutional Processes, The Academy of Management Review, 16 (1), 145-179.

Oliver, C., 1997, Sustainable competitive advantage: combining institutional and resource based views, Strategic Management Journal, 18 (9), 697-713.

Ong, S. H, 2016. Measuring the quality and identifying influencing factors of sustainability reporting: Evidence from the resources industry in Australia.

Parker, L.D., 2005, Social and environmental accountability research: a view from the commentary box, Accounting, Auditing & Accountability Journal 18, 842-860.

Parsa.S., and Kouhy, R.,2008, Social reporting by companies listed on the alternative investment market, Journal of Business Ethics 79 (3),345 – 360.

Patten, D. M., 1991, Exposure, Legitimacy and Social Disclosure, Journal of Accounting and Public Policy, 10(4), 297-308.

Patten, D. M., 1992, Intra-Industry Environmental Disclosures in Response to the Alaskan Oil Spill: A Note on Legitimacy Theory, Accounting, Organizations and Society 17(5), 471–475.

Patten, D. M., 2005, The Accuracy of Financial Report Projections of Future Environmental Capital Expenditures: A Research Note, Accounting, Organizations and Society, 30, 457-468.

Patten, D.M., 2002, Exposure, Legitimacy, and Social Disclosure. Journal of Accounting and Public Policy, 10, 297-308.

Patten, D.M., 2002, The Relation Between Environmental Performance and Environmental Disclosure: A Research Note, Accounting, Organizations and Society, 27 (8), 763-773.

Pava, M. L., 2007, A response to "Getting to the bottom of 'triple bottom line.'" Business Ethics Quarterly, 17(1), 105-110.

Phillips, R., 1997, Stakeholder theory and a principle of fairness, Business Ethics Quarterly, 7, 51–66.

Post, J,E, Preston, L, E, and Sachs, S., 2002, Managing the extended enterprise: the new stakeholder view, California Management Review 45(1), 6–28.

Powell, W. ,1991, Expending the scope of institutional analysis, In The New Institutionalism in Organizational Analysis, Powell and DiMaggio (pp. 183-203), University of Chicago Press, Chicago.

Prado-Lorenzo, J.-M., Rodríguez-Domínguez, L., Gallego-Alvarez, I., García-Sánchez, I.M., 2009b, Factors influencing the disclosure of greenhouse gas emissions in companies world-wide. Management Decision 47, 1133-1157.

Rawls, J., 1971, A Theory of Justice, Harvard University Press: Cambridge MA.

Rayner J, and Raven W, 2002, Corporate Social Responsibility Monitor, GEE: London.

Research in Corporate Performance and Policy 4, 243–250.

Reynolds, M. A., and Yuthas, K., 2008, Moral discourse and corporate social responsibility reporting, Journal of Business Ethics, 78, 47-64.

Roberts, R., 1992, Determinants of Corporate Social Responsibility Disclosure: Application of Stakeholder Theory. Accounting, Organizations and Society 17(6), 595-612.

Rousseau, J. J., 1762/1975, The Social Contract', reprinted in L. J. Seidler and L. L. Seidler (eds.), Social Accounting: Theory, Issues and Cases (Melville Publishing Company, Los Angeles), pp. 43–49.

Rowley, T. J., 1997, Moving beyond Dyadic Ties: A Network Theory of Stakeholder Influences, Academy of Management Journal 22(4), 887–910.

Ruf B M, Muralidhar K, Brown R M, et al., 2001, An empirical investigation of the relationship between change in corporate social performance and financial performance: A stakeholder theory perspective[J]. Journal of business ethics, 32(2): 143-156.

Rusconi G., 1988, Il Bilancio Sociale d'Impresa. Problemi e Prospettive. Giuffrè: Milan.

Russo, A. and Tencati A., 2009, Formal vs. Informal CSR Strategies: Evidence from Italian Micro, Small, Medium-Sized, and Large Firms, Journal of Business Ethics, 85, 339–353.

Saiia, D.H., 2000, Measuring Business Exposure: An Empirical Measure of Stakeholder Influence and Enterprise Visibility, Presented at the IABS meeting, Burlington, VT.

Sangle, S., 2010, Critical success factors for corporate social responsibility: a public-sector perspective, Corporate Social Responsibility and Environmental Management, 17, 205–214.

Saudaragan, S., and Biddle, G., 1992, Financial disclosure levels and foreign stock exchange listings, Journal of International Financial Management and Accounting 4 (2), 106–148.

Saunders, M., Lewis, P., and Thornhill, A., 2012, Research Methods for Business Students, sixth ed. Pearson, New York.

Schaltegger S, and Wagner M. 2006, Integrative management of sustainability performance, measurement and reporting, International Journal of Accounting, Auditing and Performance Evaluation.

Schmidheiny, S., 2006, A view of corporate citizenship in Latin America'', Journal of Corporate Citizenship, Spring, 21-24.

Schwartz, B. and Tilling, K., 2009, 'ISO-lasting' corporate social responsibility in the organizational context: a dissenting interpretation of ISO 26000, Corporate Social Responsibility & Environmental Management, 16 (5), 289-299.

Scott, T., 1994, Incentives and Disincentives for Financial Disclosure: Voluntary Disclosure of Defined Benefit Pension Plan Information by Canadian Firms, Accounting Review, 69(1), 26-43.

Scott, W.R., 2008, Institutions and Organizations, Sage, Thousand Oaks, CA, 3rd edition.

Scott, W.R.,1987, The adolescence of institutional theory. Administrative Science Quarterly, 32, 493-511.

Seifert, B., Morris, S. A., and Bartkus, B. R., 2004, Having, giving and getting: Slack resources, corporate philanthropy, and firm financial performance, Business & Society, 43, 135-161.

Sengupta, P., 1998, Corporate disclosure quality and the cost of debt, The Accounting Review 73(4), 459–474.

Sharfman, M., Wolf, G., Case, R., and Tansik, D., 1988, Antecedents of Organizational Slack, Academy of Management Review,13, 601–614.

Sharma S., 1997, A longitudinal analysis of environmental responsiveness strategies: the importance of issue interpretation and organizational context. In Best Paper Proceedings of the Academy of Management, Keys JB, Dozier LN (eds). Academy of Management: Boston, MA, 460–464.

Sharma, S., and Nguan, O., 1999, The Biotechnology Industry and Strategies of Biodiversity Conservation: The Influence of Managerial Interpretations and Risk Propensity, Business Strategy and the Environment, 8, 46–61.

Sharma, S., Pablo, A. L., and Vredenburg, H.,1999, Corporate environmental responsiveness strategies, Journal of Applied Behavioral Science, 35(1), 87-108.

Sinclair-Desgagné, B., and Gozlan, E., 2003, A theory of environmental risk disclosure, Journal of Environmental Economics and Management 45, 377-393.

Singh, R.K., Murty, H.R., Gupta, S.K., and Dikshit, A.K., 2009, Development of composite sustainability performance index for steel industry. Ecological Indicators 7, 565–588.

Skinner, D., 1994, Why firms voluntarily disclose bad news, Journal of Accounting Research, 32, 38–60.

Sobczak, A., 2006, Are codes of conduct in global supply chains really voluntary? From soft law regulation of labor relations to consumer law, Business Ethics Quarterly, 16(2), 167-84.

Sorescu, A., Shankar, V., & Kushwaha, T., 2007, New product preannouncements and shareholder value: don't make promises you can't keep. Journal of Marketing Research, 44(3), 468–489.

Sotorrío, L. L., and Sánchez, J. L. F., 2010, Corporate social reporting for different audiences the case of multinational corporations in Spain, Corporate Social Responsibility and Environmental Management 17, 272-283.

Spence, C. and Gray, C., 2007, Social and environmental reporting and the business case, ACCA Research Report, No. 98, ACCA, London.

Spence, C., and Husillos-Carqués, F.J., and Correa-Ruiz, C., 2010, Cargo cult science and the death of politics: a critical review of social and environmental accounting research, Critical Perspectives on Accounting 21, 76-89.

Spence, M., 1973, Job market signaling, The Quarterly Journal of Economics, 87, 355-374.

Stanny, E., and Ely, K., 2008, Corporate environmental disclosures about the effects of climate change, Corporate Social Responsibility and Environmental Management 15, 338-348.

Steurer, R., 2005, Mapping Stakeholder Theory A new: From the 'Stakeholder Theory of the Firm to Three Perspectives on Business–Society Relations', Business Strategy and the Environment, forthcoming.

Steurer, R., 2010, The Role of Governments in Corporate Social Responsibility: Characterizing Public Policies on CSR in Europe, Policy Sciences, 43, 49–72.

Suchman, M,C., 1995, Managing legitimacy: strategic and institutional approaches. Academy of Management Review , 20(3), 571.

Suggett, C., Moore, M.,and Geider, R. J., 2010, Estimating aquatic primary productivity using active fluorescence, p.103-128. In D. J. Suggett, O. Prasil, and M. A. Borowitzka [eds.], Chlorophyll a fluorescence in aquatic sciences: methods and applications.

Sustainability, Environmental Performance and Disclosures, Advances in Environmental Accounting and Management, 4, 1-54.

Svendsen A., 1998, The Stakeholder Strategy: Profi ting from Collaborative Business Relationships, Berett-Koehler: San Francisco CA.

Tagesson, T., Blank, V., Broberg, P., and Collin, S.-O., 2009. What explains the extent and content of social and environmental disclosures on corporate websites: a study of social and environmental reporting in Swedish listed corporations. Corporate Social Responsibility and Environmental Management 16, 352-364.

Thompson, J.D.,1967, Organisations in Action (New York: McGraw Hill).

Thomson, I and Bebbington, J. ,2005, Social and environmental reporting in the UK: a pedagogic evaluation, Critical Perspectives on Accounting, 16 (5), 507-533.

William, B., and Tobin, J., 1968, Pitfalls in Financial Model Building, American Economic Review 58 (2): 99–122

United States Environmental Protection Agency (US EPA), 1995, An Introduction to Environmental Accounting as a Business Management Tool: Key Concepts and Terms, US EPA Office of Pollution, Prevention and Toxics: Washington, DC.

Van Buren, H. III, 2001, If Fairness is the Problem, Is Consent the Solution? Integrating ISCT and Stakeholder Theory, Business Ethics Quarterly 11(3), 481–499.

Van den Brink, T.W.M., and Van der Woerd, F., 2004, Industry specific sustainability benchmarks: an ECSF pilot bridging corporate sustainability with social responsible investments. Journal of Business Ethics, 55, 187-203.

Van Marrewijk, M., Hardjono,T.,W., 2003, Concepts and Definitions in CSR and Corporate Sustainability, Journal of Business Ethics, 95-105.

Van Staden, C. J., and Hooks, J., 2007, A Comprehensive Comparison of Corporate Environmental Reporting and Responsiveness. The British Accounting Review, 39 (3), 197-210.

Verrecchia, R., 1990, Endogenous proprietary costs through firm interdependence, Journal of Accounting and Economics, 12 (1), 245–250.

Verrecchia, R.E.,1983, Discretionary Disclosure, Journal of Accounting and Economics 5,179–194.

Vormedal, I., and Ruud, A., 2009. Sustainability reporting in Norway: an assessment of performance in the context of legal demands and socio-political drivers. Business Strategy and the Environment 18, 217-222.

Walden, D., and Schwartz, B.N., 1997, Environmental disclosures and public policy pressures, Journal of Accounting and Public Policy 16 (2), 125–154.

Wang, J., and Dewhirst, H.D., 1992, Boards of Directors and Stakeholder Orientation, Journal of Business Ethics, 11, 115–123.

Weaver, G., Trevino L. ,and Cochran P., 1999, Integrated and Decoupled Corporate Social Performance: A Management Commitments, External Pressures and Corporate Ethics Practices', Academy of Management Journal 42(5), 539–552.

Wheeler, D., and Elkington, J., 2001, The end of the corporate environmental report? Or the advent of cybernetic sustainability reporting and communication. Business Strategy and the Environment, 10, 1-14.

Wicks, A. C, and Goodstein, J. D, 2009, Stakeholder responsibility and stakeholder commitment. Notizie di Politeia, 93, 9–24.

Willis, C.A.A., 2003. The role of the Global Reporting Initiative's sustainability reporting guidelines in the social screening of investments, Journal of Business Ethics 43, 233-237.

Wilmshurst, T.D., and Frost, G.R., 2000, Corporate Environmental Reporting: A Test of Legitimacy Theory, Accounting, Auditing and Accountability Journal, 13(1), 10-26.

Wilson, A. and Pickard, S.,2007, European Academy of Business in Society. Knowledge development, research and learning upgrade, Journal of Corporate Citizenship, 25, 109-110.

Woodward, D.G., Edwards, P., and Birkin, F., 1996, Organizational Legitimacy and Stakeholder Information Provision, British Journal of Management, 7(4), 329-347.

World Business Council for Sustainable Development (WBCSD), 2003, Sustainable Development Reporting. Striking the Balance.

World Wildlife Fund, 2009, Local to global environmental conservation. Retrieved from http://www.panda.org/

Zadek, S., and Raynard, P., 2002, Stakeholder Engagement: Measuring and Communicating Quality, Account Ability Quarterly, 19, December (London: Account Ability).