The reporting on sustainability performance indicators

A thesis about the reporting of the Global Reporting Initiative's sustainability Performance Indicators by the largest Swedish companies of the industrial sector

Authors: Tristan Schiehlé
Jonas Wallin

Supervisor: Gert-Olof Boström

Student
Umeå School of Business and Economics

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Supervisor: Gert-Olof Boström

Authors: Tristan Schiehlé and Jonas Wallin

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Abstract

More and more companies and organizations around the world are aiming towards a sustainable path for their businesses. Pressure from stakeholders and society pushes companies to report on their sustainability performance; however, companies are also seeing the opportunities which arise with these reports and especially large companies are embracing the sustainable path according to prior studies. With an increasing number of sustainability reports produced around the world, the need for measuring the performance indicators within these reports is increasing.

With the expansion of sustainability reports among companies, the use of the Global Reporting Initiatives (GRI) Guidelines becomes a popular framework for companies to adopt. GRI is widely used around the world, as their comprehensive framework includes many performance indicators for companies to report on.

It has also been proved that the use of sustainability reports and the number of indicators disclosed in these reports are depending on several criteria among which the size of the company, its sector of activity, and its nationality.

As master students studying in Sweden, we considered it would be interesting to know more about the sustainability reporting inside the country we are studying in. Large-size companies tend to disclose use more sustainability reporting and to disclose more information. Some sectors as the industrial sector are in need of sustainability reporting. As no prior studies were found in our search for showing which GRI indicators companies of the industrial sector preferably report on, we decided to embrace the challenge and fill the research gap by conducting a research of large Swedish companies within the industrial sector.

This thesis adopted a quantitative approach. We collected data from 30 large Swedish companies within the industrial sector. We also conducted five hypotheses for our analysis in order to make conclusions on our work, and our main findings show that among the Swedish large-size companies belonging to the industrial sector, the largest report more on sustainability using the GRI. Besides, among the large companies which disclose on the GRI the largest disclose on more indicators than the smallest. Finally, we succeeded in identifying indicators of the GRI which are largely and poorly disclosed by the Swedish large-size companies belonging to the industrial sector.

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1. INTRODUCTION

This chapter sheds light on the main reasons for a company to invest on sustainability and to measure it. An emphasis is put on the GRI framework which is founded on plenty of indicators related to sustainability. The motivations which drive us to focus on large Swedish companies performing in the industry sector are also developed in this chapter. The presentation of these key elements leads us to our research question. Thereafter are respectively explained the purpose of our thesis, our own contribution to existing knowledge and the delimitations of our thesis. We conclude the introduction revealing the disposition of the following chapters of our thesis.

1.1. Problem background

Sustainability is an area of growing importance in today's business (Dobers, 2009, p. 185). In order to better understand how essential sustainability is for companies, we need to come back to its definition. The term "sustainable development" appeared for the first time first in the report "World Conservation Strategy" (IUCN, UNEP and WWF, 1980) written by the International Union for Conservation of Nature and Natural Resources (IUCN). This report focused on environmental issues, and it would take some years before it was then stated that social and economic factors, as well as the environmental factors, ought to be taken into account for the development to be sustainable. In 1987, the World Commission on Environment and Development (WCED, 1987) released the report "Our Common Future" (also known as the Brundtland Report), which gave the new direction towards global solutions. In this report, sustainable development has been defined as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). This definition has been considered as a foundation stone and is a reference to introduce the notion of sustainability and its development (Moldan et al, 2011, p. 4). Nowadays, a "true" sustainable development is seen as possible to achieve thanks to "the integration of action in three key areas" known as the economic, social and environmental pillars (UN, 2002, ref in Moldan et al., 2011, p. 4). These three aspects of sustainability will be further described in detail in the first section of the theory chapter of our thesis. To have knowledge concerning all the different aspects of sustainability may be of importance as companies and organizations around the world are striving towards running their businesses in a sustainable way (GRI, 2013). This interest for sustainability might be supported by some economic motivations as the companies are the ones which make the decision to invest on sustainability and we hardly imagine them doing so without expecting any return on investment.

The investments made by companies in the sustainability area can be guided by different logics. Companies need investors, and investors take into consideration the companies' efforts as regards sustainable development when they choose to commit (Kajander et al., 2012, p. 666). Indeed, Hespenheide et al. (2010, p. 52) mention a constantly rising demand of information as regards the social and environmental performances of companies. Not providing any information about sustainability could be interpreted as a proof of a poor condition of the company by the stakeholders, whereas the disclosure of an important amount of information could lead to the improvement of the image of the company (Joshi & Gao, 2009, p. 33-34) and to a larger number of investors. Kajander et al. (2012, p. 666) reckon that the increasing amount of

investments in companies devoted to corporate sustainability is mainly driven by two factors which are the company's commitment to sustainability – as it is assumed to increase long-term value for shareholders – and the expectation of an improvement of the company's performances (Kajander et al., 2012, p. 666). Just as Kajander et al., Hespenheide et al. (2010, p. 52) consider the desire to satisfy both their shareholders and stakeholders' expectations as a reason for companies to invest in sustainability; but they also highlight the companies' legal obligation to invest in this field in order to comply with a growing number of regulations. However, these motivations are not the only ones driving companies into acting sustainable. Sustainability can provide lots of benefits when it is adequately integrated in the company's corporate strategy (Hespenheide et al., 2010, p. 52). Companies have discovered that embracing sustainable operations and being environmentally conscious will help them to achieve both social and environmental accomplishments, and not only financial success (Cowan et al., 2010, p. 525). Indeed, it "can help improve operations, attract talent, promote positive relations, enhance transparency and accountability and streamline regulatory compliance […], inspire supply chain partners, draw investors, energize stakeholders, heighten competitiveness and, ultimately, boost the company's bottom line." (Hespenheide et al., 2010, p. 52). These benefits sound appealing for companies but we can wonder how the companies will make these sustainability benefits occur.

To know how the progress towards achieving a goal is developing, a company can measure this progress. According to Mintz (2011, p. 27), measuring sustainability aspects is possible thanks to Key Performance Indicators (KPI). These KPI are defined as "quantifiable measurements, agreed to beforehand, that reflect the critical success factors of an organization" and depend according to the aforementioned organization (Mintz, 2011, p. 27). KPI also "translate sustainability issues into (usually) quantifiable measures of economic, environmental, and social performance" and enable to see both the concerns of the companies and how they deal with sustainability (Krajnc & Glavic, 2005, p. 191). Therefore, the indicators chosen by companies enable the latter to measure their progress towards their goals in the sustainability field – thanks to the "quantifiable" property of the indicators –, and give them precious information about the different elements they have to improve in order to reach their aims in terms of sustainability. They have to be chosen carefully and represent major strategic tools. Furthermore, the indicators chosen can also help to satisfy the need of information of shareholders and stakeholders. Indeed, companies can use these indicators to show their performance in the sustainability area to the outside world.

Information about the economic, environmental and social performances of an organization is mentioned in sustainability reports (GRI, 2013). They are used by companies as an important platform for sharing both their positive and negative sustainability impacts. As an increasing number of companies wants to make its operations sustainable (ibid.) as well as report on this field (Ekins & Vanner, 2007, p. 88), the number of sustainability reports does not stop increasing since the first one has been emitted in 1989 (Kolk, 2004, p. 51; Lozano & Huisingh, 2011, p. 100). We can add that the information which is presented in these reports is broadening (Adams & Frost, 2008, p. 288; Cormier et al., 2005, p. 1; Kolk, 2004, p. 54), which is in adequacy with the will of the shareholders to be better informed. We can point out that some companies keep publishing their information about sustainability in their annual reports and not in a separate sustainable report. According to GRI (2013), indicators represent an important part of the sustainability reports. Numerous indicators as well as

frameworks gathering several indicators have been created on the purpose to measure sustainability; and every company has to select its own indicators according to its activities and other specificities which could affect its surroundings (Ethos International, 2009). To have a better idea of the quantity of indicators which exist to measure sustainable development we can refer to the paper made by Rajesh Kumar Singh et al. in 2009. The Indian scholars made an overview of the different sustainability indicators and frameworks which have been created and frequently used until 2008. 41 are described in detail in their paper (Rajesh Kumar Singh et al., 2009, p. 190-191), and we can reasonably assume that this number has increased since then. Among all the indicators used to report on sustainability we can wonder which ones are the more commonly used.

First of all, we need to mention that the indicators used to report on sustainable development have changed over time and that the most frequently used in 2013 may be obsolete or need improvements in some years. At the inception of sustainable development in the 1980's the focus was mostly on the environmental aspect of sustainable development, and at the edge of the 21st century sustainable reports including the three pillars of sustainability were extremely limited (Kolk, 2004, p. 54). Nonetheless, the end of the 20th century and the beginning of the 21st century were of major importance for sustainability reporting as they were marked by the apparitions of the World Business Council for Sustainable Development and of the Global Reporting Initiative (GRI) - respectively in 1997 and 2002 - as well as the development of the ISO and EMAS standards which are standards for environmental management systems (Krajnc & Glavic, 2005, p. 191). Some indicators keep specializing in one aspect of sustainability, such as the EPI – Environmental Performance Indicator –, but the need of an approach integrating the three parameters has been acknowledged by the scholars (Milne & Gray, 2012, p. 1; Rajesh Kumar Singh et al., 2009, p. 209) as well as the professionals (Mintz, 2011, p. 26). Indeed, in 2008 the most commonly used tools as regards sustainability reporting were three international guidelines composed by indicators representing the three pillars of sustainability: the Global Reporting Initiative – GRI -, the AccountAbility standards, and the United Nations Global Compact – UNGC (Dumay et al., 2010, p. 538). Among them, the most used is the GRI (Dumay et al., 2010, p. 532, 536; Legendre & Coderre, 2012, p.181; Lozano & Huisingh, 2011, p. 100). It could be interesting to have further information about the GRI Guideline in order to better understand the interest of this framework.

The GRI appeared in 1997 when the Coalition for Environmentally Responsible Economies – CERES – noticed some weaknesses in sustainability reporting (Willis, 2003, p. 234). The GRI's purpose is to improve the reporting practices in the sustainability area – economic, environmental and social pillars – to "a level equivalent to that of financial reporting in rigor, comparability, auditability and general acceptance" (Willis, 2003, p. 234). The GRI reports are supposed to be structured in four parts if the companies use the GRI Guidelines of June 2000 to report on sustainability (Willis, 2003, p. 235). The first part consists in an introduction and general guidance explaining among other things the reasons of the adoption of the GRI by the company and the relations between the GRI and other sustainability initiatives (Willis, 2003, p. 235). We can point out that some other guidelines are included to a certain extent inside the GRI. The second part of a GRI report establishes the reporting principles and practices of the company and aims to give to environmental and social performance reporting as much stability as we can find in financial performance

reporting (Willis, 2003, p. 235). The third part, which is the most important, is the content of the GRI report (Willis, 2003, p. 235). It contains several sections including the CEO statement, the executive summary and key indicators, the vision and strategy, the policies as well as organization and management systems, and the performance of the company in the economic, environmental and social aspects of sustainability (Willis, 2003, p. 235). The companies and organizations using the GRI for reporting can choose among 79 indicators – each one representing one of the three pillars of sustainability - the ones they will provide information on (GRI, 2013). The last part of the company's report gives explanation about the choice of the indicators as well as the implementation of the guidelines (Willis, 2003, p. 235). The GRI framework is supposed to be accessible to every company as it provides companies from all around the world, of all sizes and all sectors, with a comprehensive sustainability reporting framework (GRI, 2013). The fact that GRI's Guidelines of sustainability reporting are widely used around the world make them a reliable source of information, universally applicable and a good way to collect information. These reasons lead us to pay attention to the use of the GRI as a tool to report on sustainability by the companies. We will use the GRI indicators to see how the companies report on sustainability but we have not determined yet the type of companies we will focus on. It may have some incidences on the thesis as companies with different specificities may not act and report the same way on sustainability.

It has been proved in numerous studies (Cornier et al., 2005, p.31; Joshi & Gao, 2009, p.38; Prado-Lorenzo et al., 2009, p.104) that the size of the company has a positive influence on the quality and the quantity of information disclosed in sustainable reports. This is applicable for the companies disclosing with the GRI (Legendre & Coderre, 2012, p. 187). Large companies disclose more on their sustainability practices than small ones as they are on the spotlight and need investors (Joshi & Gao, 2009, p. 33; Legendre & Coderre, 2012, p. 184). Furthermore, the costs which are engendered by the implementation and the reporting of the company's sustainability practices are lower for larger companies (Joshi & Gao, 2009, p. 34); SMEs suffering from time and cost restrictions when they want to go sustainable (Orth & Kohl, 2013, p. 31). Other elements such as the lack of knowledge about environment and its legislations, or inadequate environmental management techniques make sustainable development more difficult to achieve for SMEs (Laurinkevičiūtė & Stasiškienė, 2011, p. 798; Shearlock et al., 2000, p. 51). Until now, academic research has more focused on large companies for several reasons among which a stronger convenience to measure their impact on the environment (Laurinkevičiūtė & Stasiškienė, 2011, p. 798). However, we do not know if the reporting is the same for all the large companies, if there are distinctions among the group of large companies. In order to give us the best chance to find companies using the GRI we decide to focus only on large companies in our thesis; and we aim to see if some distinctions can be made in their way to report.

Among the large companies, we decided to pay attention to those belonging to the industrial sector. Some studies reveal that the sector of activity of a company has an impact on the use of sustainability reporting and on the quality and quantity of information disclosed by the company (Joshi & Gao, 2009, p. 34). The choice of the industrial sector seems relevant to us as Block et al (2006, p. 43) wrote in their article that there is a growing need for measuring the progress of sustainability within this sector. However, the industrial sector may be complex to study as Cowan et al. (2012, p. 525) explain that within the industrial sector, sustainability can be viewed from different perspectives according to the company's business model, its consumer base

and its inputs and outputs. This indicates that there might be a variation on the indicators companies report on. This assumption is in adequacy with the study on the GRI made by Gallego in 2006 which showed that companies from different sectors disclose different quantities and types of information, and that some indicators may be specific to some sectors (Dumay et al., 2010, p. 183). The GRI has also noticed that sectors may have an influence on the reporting and so created some guidelines taking into consideration their particularities in a pilot version of a sector specific supplement which was issued in 2005 (Dumay et al., 2010, p. 536). Since then, the use of this sector supplement has been analyzed and it was found by Tort that the awareness and use of this supplement by companies was really limited (Dumay et al., 2010, p. 536). Therefore, we can consider that a review of the GRI has to be made as regards the different sectors in order to find their particularities. Consequently, we will focus on the use of the GRI in the industrial sector.

There is a last point we would like to take into consideration in our thesis. A large number of studies agree to say that the level of disclosure and the nature of environmental reporting are influenced by the business culture of the country – which includes "culture, economic development, legal system, taxation, and political and civil systems" (Joshi & Gao, 2009, p. 35) – from which the company is (Joshi & Gao, 2009, p. 29; Legendre & Coderre, 2012, p. 185). Furthermore, it has been proved that according to the country in which the company is reporting from, the disclosure varies (Joshi & Gao, 2009, p. 35). This leads us to focus on companies coming from one unique country. We opt for Sweden. The choice of Swedish companies can be explained by two main reasons. First of all, we think it could be relevant to know more about the way the companies are performing and reporting on sustainability in the country we are studying in. Secondly, Sweden is well known for being environmentally respectful and has for instance been ranked in overall 9th out of 132 countries by the Yale Center for Environmental Law and Policy in 2012 (Yale University, 2012), which indicates that Swedish companies would be interesting to use in our thesis based on our topic. Besides, Sweden is known for providing a large amount of information as regards sustainability (Joshi & Gao, 2009, p. 29). Information on the topic should consequently be accessible to us. Regarding the use of the GRI; as partly and fully state-owned companies have been mandated by the Swedish government from 2008 to report on sustainability using the GRI Guidelines (Regeringskansliet, 2007, p. 1) we can consider that the use of the GRI is spreading in this country and that we should be able to find information about the Swedish companies we will investigate on.

1.2. Research question

From all the elements we have developed in the problem background, a research question emerged.

We have seen that large companies tend to report more on sustainability than small companies (Cornier et al., 2005, p.31; Joshi & Gao, 2009, p.38; Prado-Lorenzo et al., 2009, p.104); which is still valuable when the reporting on sustainability is made with the GRI framework (Legendre & Coderre, 2012, p. 187). However, no distinction has been made yet inside the group of large companies. Therefore, we can wonder if the companies which are considered large report the same way on sustainability with the GRI framework. It has also been proved that the sector of activity of the companies impact their reporting (Joshi & Gao, 2009, p. 34). Information on sustainability

reporting has not be provided for every sector yet; and the case of the industrial sector has been highlighted by Block et al. (2006, p. 43). Thus, we are to investigate the reporting of GRI's sustainability Performance Indicators by large Swedish companies in the industrial sector, what could be summarized by the following question:

"How do the large Swedish companies in the industrial sector report on sustainability using the GRI?"

1.3. Purposes of the thesis

The purposes of our thesis are:

- to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector;
- to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector;
- to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector

The research we aim to do has been considered of interest by former scholars such as Legendre and Coderre (2012, p.190). Indeed, they were wondering about the impact of the companies' size, sector and business culture on the different GRI indicators in their study Determinants of GRI G3 Application Levels: The Case of the Fortune Global 500. We will study the impact of the size, sector, and business culture of a company on the GRI indicators in the specific case of large Swedish companies belonging to the industrial sector.

As we have found no prior studies showing which sustainability performance indicators large Swedish companies in the industrial sector report on, we believe there is a need to explore this research area.

Prior researches have shown that large companies report more than small ones on sustainability (Eccles et al., 2012, p. 8; Kolk, 2004, p. 51-54). Legendre and Coderre (2012, p. 187) have also shown that this conclusion is valuable when the framework used to report on sustainability is the GRI. The previous researches we mentioned made the distinction between the large companies and SMEs as regards their use of the GRI; however we want to insist on the difference inside the group of large companies in the case of Swedish companies belonging to the industrial sector. We believe that even among the group of "large" companies, the largest ones use more the GRI as a tool to report on their sustainability performances.

Prior researches have also established that the large companies are keen to disclose on a bigger number of sustainability indicators than small ones (Hackston and Milne, 1996; Neu et al., 1998; Patten, 2002; García-Sánchez, 2008; Joshi and Gao, 2009; Da Silva Monteiro and Aibar-Guzmán, 2010; Prado-Lorenzo et al., 2009; Sotorrío and Fernández Sánchez, 2010, ref in Legendre and Coderre, 2013, p. 184; Cornier et al., 2005, p. 31; Guo & Zhao, 2011, p. 47; Joshi & Gao, 2009, p. 38; Prado-Lorenzo et al., 2009, p. 104). We aim to see if this conclusion is still relevant inside the group of "large" companies

for Swedish companies belonging to the industrial sector; if the "largest" large companies disclose on more sustainability indicators than the "smallest" large companies.

The importance of the size of a company is especially put forward in our two first purposes. As regards our last aim, the sector is essential. We aim to determine which GRI indicators are of interest for large Swedish companies belonging to the industrial sector. Block et al. (2006, p. 43) have put forward the need to measure sustainability in the specific case of the industrial sector, which makes our thesis needed. We will therefore highlight the most important indicators in the case of large Swedish companies belonging to the industrial sector. The determination of these indicators will be a value-added of our thesis in comparison to the research papers which have been done until now.

1.4. Contribution to existing knowledge

We consider that this thesis will provide useful information for scholars about the current state of use of the GRI by large Swedish companies in the industrial sector. Considering that large companies report more on sustainability than small companies, we believe that even among large companies, the largest ones use more the GRI as a tool to report on their sustainability performances. Some previous researches made the distinction between the large companies and SMEs as regards their use of the GRI (Legendre & Coderre, 2012, p. 187); however we want to insist on the difference inside the group of large companies. We expect our thesis to prove it using both the turnover and number of employees in the specific case of the Swedish companies acting in the industrial sector. Besides, we aim to prove that some indicators are essential for companies performing in the industrial sector. We expect to identify them using the frequency of reporting of the companies. We will also use the characteristics of the size of the companies in order to prove that even among large companies the size has an impact on the quantity of information provided by large companies; and so highlight that some indicators are more accessible for the biggest companies.

1.5. Delimitation

Our focus is on Swedish companies, that is to say companies whose headquarters are established in the Swedish territory. By using companies following the same national legislation; it will prevent potential differences in laws from explaining the differences in the results we will get and so makes the comparisons between companies easier. However, our conclusions will only be valid for Swedish companies.

We have chosen to focus on large companies. We assume them to be more able to generate sustainability reports than small-and-medium enterprises. This belief gets stronger as a prior study by Cowan et al. (2010, p. 525) highlights the increasing use of sustainable practices by large companies. The companies of the population we study have a turnover higher than €100,000,000 and count more than 500 employees (for a discussion, see the section "Companies' size" under the theoretical framework chapter).

We decided to focus our researches on the industrial sector of the economy in order to compare the performances of companies belonging to the same sector.

1.6. Disposition of the thesis

The thesis is structured as follows: in the next chapter, the methodology is presented. In this chapter we will explain the perception we have of our thesis, the reasons which will lead us to adopt the methodological assumptions we will choose. Then we will present our theoretical framework. It will provide definitions of the terms of interest in our thesis and develop the different theories which exist as regards these elements. It will be followed by our practical method. This chapter will present the criteria we will use to determine the population we will study in our thesis and lead us to our research hypotheses. Then, the empirical observations and analysis' chapter will make us collect data and assess the research hypotheses established previously. We will end presenting our conclusions and some of the potential further researches which can be made from our thesis.

2. METHODOLOGY

Writing a thesis is a process which requires a long reflection. The researchers have, inter alia, to choose their field of study, define their topic, their goal(s), think about the best way to achieve them, collect data, analyze it, or draw conclusions. Therefore, the authors have to answer a long succession of questions in order to structure the best way their thesis; which can be done by following a methodology. This chapter describes the methodology approach we followed and the choices we made for our thesis. Here will be highlighted our preconceptions on our subject, the perspectives from which our thesis could be of interest, the research approach we adopted, the ontological and epistemological orientations we opted for, the research design we selected, the quality criteria a thesis has to respect, the choices we made as regards data collection, processing and analysis; and finally the ethical practices we have to follow.

2.1. Preconceptions

A preconception is "an idea or opinion formed before enough information is available to formulate correctly" (Proctor, 1995, p. 1111). Thus, when a question is asked, an answer often comes to the respondent's mind whether this person knows the answer or not. People's mind naturally seeks to establish connections between what is unknown and their knowledge in order to provide an answer. Through the way the respondent has been educated, the studies he made, the work experience he get, or the cultures he has been in contact with, he has both acquired knowledge and been exposed to the values of others; values which influence his way to think and make him have preconceptions. Therefore, assumptions can be made by the respondent from the background he gets; however, they cannot be assured by the respondent as being absolutely right as long as they are not the result of a process solely based on knowledge.

As thesis' writers we have to dissociate real knowledge and preconceptions to make our thesis value-free. However, it seems impossible to totally implement this ideal. Thus, as it is advocated by Weber (1949), a consensus has to be made to restrain the influence of preconceptions. We consider that using sources to support our affirmations after having questioned their relevancy, objectivity, and methodology is a good way to limit the impact of our preconceptions on our thesis. When we started writing we had preconceptions. We expected Swedish companies to report a lot on sustainable development and to obtain good results as regards the implementation of sustainable measures. Therefore, we know we have to be rigorous on these points while writing as we aim to be as objective and as reliable as possible.

2.2. Perspective

A perspective is defined as "a particular attitude towards or way of regarding something; a point of view" (Oxford Dictionaries, 2013). The way we perceive and understand things vary from one another. Therefore it is important while writing a thesis to describe properly the perspective adopted to give the reader a clear comprehension of the way we tackle the research question (Eriksson & Wiederheim-Paul, 2006, p. 39).

Our research question is: "How do the large Swedish companies in the industrial sector report on sustainability using the GRI?". We will study it from the perspective of both the companies and scholars. Thanks to our thesis, large Swedish companies belonging

to the industrial sector can compare themselves to others concerning the use of the GRI as a framework to report on sustainability. Our thesis will also give the scholars statistics about the use of the GRI by companies and help them to better estimate the interest companies have for this framework. Therefore, scholars will be able to evaluate if the preconception that the GRI framework is often used by the biggest companies to report on sustainability (Legendre & Coderre, 2012, p. 187) is applicable for large Swedish companies which perform in the industrial sector. Besides, the use of the GRI reports, which contain a large amount of information about companies' economic, environmental and social practices and performances, enables "to compare performance within an organization and between different organizations over time" (Mintz, 2011, p. 27). Therefore, the companies can be aware of the aspects of sustainability which are the most taken into consideration by other companies, evaluate how they perform in comparison with the others, and think about ways to improve the implementation and the reporting of their sustainable practices. This is also of interest for scholars, as this study will help them to know which indicators are perceived as important, especially for large Swedish companies belonging to the industrial sector and reporting on sustainability. The findings and conclusions of this study could have changed if our study had been realized from another perspective.

2.3. Research approach

A research is done when some questions need to be answered in a project (Bryman & Bell, 2011, p. 11). Research is connected to theory, as theory seek to explain and predict the research phenomenon of interest (Haugh, 2012, p. 7), and the research approach establishes the link between theory and research (Bryman & Bell, 2011, p. 11); it is the logic of the research. According to Bryman and Bell (2011, p. 11), two main research approaches exist: the deductive approach and the inductive approach. This is confirmed by Saunders, Lewis and Thornhill (2009, p. 143), saying that the choice of which approach to follow depends on the reasoning of the author.

The deductive approach is used when the researcher seeks to test theories whereas the inductive approach is used when he aims to generate a theory (Bryman & Bell, 2011, p. 13). Therefore, two different processes are implemented according to the research approach the researcher chooses to follow. When the researcher opts for a deductive approach, he "on the basis of what is known about a particular domain and of theoretical considerations in relation to that domain, deduces a hypothesis (or hypotheses)" (Bryman & Bell, 2011, p. 11). Data is then collected in order to test the hypothesis or hypotheses (David & Sutton, 2011, p. 83; Saunders et al., 2009, p. 125). Once the tests are conducted, some findings are made which enable then to either accept or reject the hypothesis and finally make a revision of the theory. In this research approach, the researcher goes from general – theory – to particular – observations. The deductive approach is summarized in the following figure.

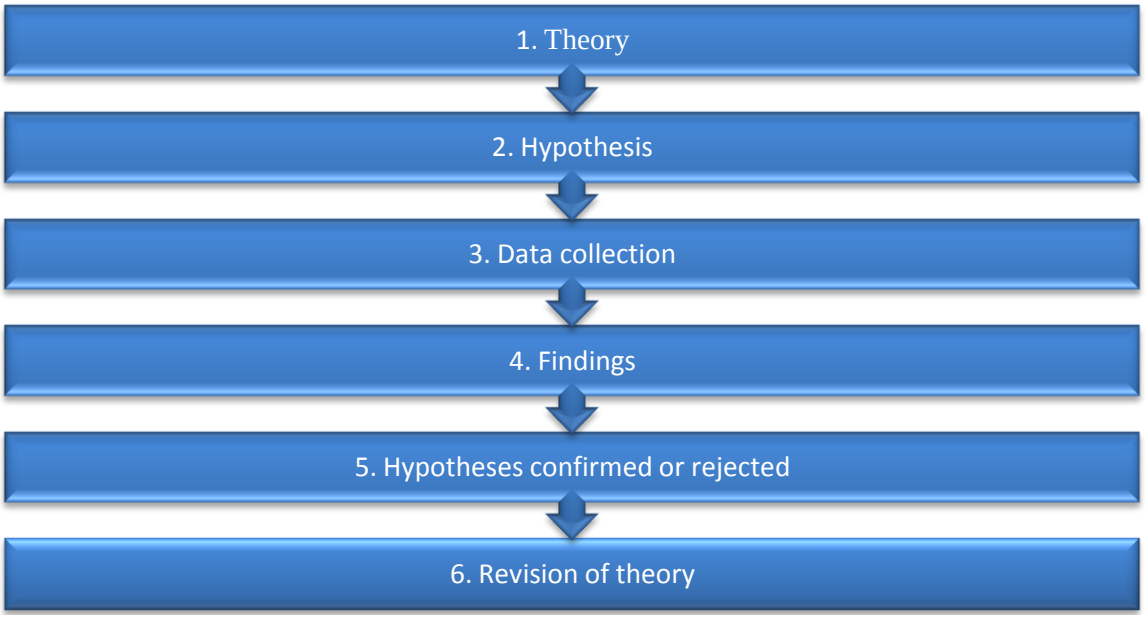


Figure 1. The process of deduction (Bryman & Bell, 2011, p. 11)

The logic is the reverse one for the inductive approach for which the researcher goes from particular to general and makes the theory the result of research (Bryman & Bell, 2011, p. 13). The aim is to find a general theory from a particular phenomenon (Saunders et al., 2009, p. 125). To be complete, a third research approach exists: the abduction theory, which is a combination of both the induction and deduction approaches. However, this research approach is less frequently used than the two other aforementioned (ibid).

We have decided to follow a deductive approach in our thesis. From our perspective, its logic better fits with our research question than any other research approach. First, we aim to gather knowledge from relevant literature sources about sustainability, the different ways to measure it with an emphasis on the GRI, the rules and legislations concerning its reporting, the size of the company and the industrial sector. The literature used will therefore be in relation with our research question and will help us to make five hypotheses in order to answer the research question – these hypotheses will be mentioned in the theoretical chapter. Then, we will collect data from the large Swedish companies belonging to the industrial sector. The data collected will help us to test the hypotheses we made and enable us to know if there is a relation between the size of a Swedish company in the industrial sector and the use of the GRI as a sustainability performance indicator by this company, and if there is a relationship between the size of a Swedish company in the industrial sector and the quantity of indicators disclosed in the GRI by this company. Thanks to the results we will get from the analysis, we aim to have enough knowledge to answer with confidence to our research question.

The choice of the research approach by the researcher is linked with his ontological and epistemological approaches – that we will define in the following section – as the research approach depends on the researcher's way of thinking.

2.4. Research philosophy

The determination of the research philosophy is an important step in the thesis process because it enables to state the methodological assumptions the researcher is making. Creswell (2009, p. 18) states that philosophy in research shapes how we formulate the research question and how we seek information to answer it. According to Bryman & Bell (2011, p. 4), two main assumptions have to be made. The first one consists in establishing what knowledge the researcher considers as appropriate – his epistemological approach – and the second one in defining the view of reality the researcher has – his ontological approach.

When the researcher establishes his epistemological approach he determines his way to study reality, to create knowledge from it (Saunders et al., 2009, p. 106). The reality can be studied in two possible ways: positivism and interpretivism (Saunders et al., 2009, p. 112-113). If the researcher adopts the positivist standpoint, he considers that knowledge about the reality can be get only by following the scientific method of testing hypotheses, that knowledge "confirmed by senses can genuinely be warranted as knowledge" and that the study of reality has to be value-free to get knowledge (Bryman & Bell, 2011, p. 15). However, if the researcher adopts the interpretivist standpoint, he considers that the reality has to be interpreted to extract knowledge from it. According to Bryman & Bell (2011, p. 17), this process of interpretation implies that social actions have a subjective meaning and are analyzed from the values, norms and subjective position of the researcher.

The epistemological approach we are following in our thesis is mainly positivist even if some elements of it let place to interpretation. Our thesis is about the use of a sustainability reporting tool, the GRI, on large Swedish companies performing in the industrial sector, and the quantity of GRI indicators disclosed by these companies. The GRI defines precisely the different elements of sustainability it takes into consideration through the large quantity of indicators it asks disclosure on. As these indicators ask specific information to companies, it does not let much room to interpretation. As regards the size of the companies, we measure it according to their turnover and their number of employees. The definitions of "turnover" and "employee" have been originally social constructed; however they have now a unique meaning and therefore an objective existence. These concepts are now value-free. The figures we will get as regards these two criteria are hard data and then cannot change according to the perception of social actors when they collect them. Nevertheless, even if the criteria we chose in order to define the size of a company can be defined objectively, these criteria are the results of our vision of a large company. Therefore, telling we are studying large companies lets place to the interpretation of the reader who may have a different conception of it. The notion of company has also been built by social actors as companies do not naturally exist; but, as the concepts of turnover and employee, its definition is considered as granted. The nationality of the companies we study – Swedish – does not let place too much interpretation neither. The last concept we have to deal with is the concept of "industrial sector". This concept could be defined differently from one another and is therefore the result of interpretation. As a consequence, the screening of the companies and the conclusions we will draw later on will probably defer according to the definitions of both "the industrial sector" and "large companies".

When the researcher defines his ontological approach, he determines what reality is (Saunders et al., 2009, p. 110) and its characteristics (Creswell, 2009, p. 20). The reality can be assessed in two possible ways: objectivism and constructionism (Bryman & Bell, 2011, p. 20). If the researcher adopts the objectivist standpoint, it means the social reality exists independently of the presence of social actors; and that social phenomena and their meanings are true and cannot be perceived another way by social actors as they accurately correspond to a state of affairs in the real world (Bryman & Bell, 2011, p. 20; Saunders et al., 2009, p. 110). Then, the reality exists objectively. However, if the researcher adopts the constructionist standpoint, it means the reality would not exist without the presence of social actors; social actors who both create and give a meaning to the reality (Bryman & Bell, 2011, p. 20; David & Sutton, 2011, p. 85-86). Creswell (2009, p. 24) writes that individuals seek understanding of the world which they know, live and exist in. Therefore, the reality is constructed and malleable as each social actor contributes at its elaboration.

The ontological stance chosen for our research is mostly objectivist. As explained previously, our thesis will be grounded on the collection of sustainability data coming from GRI reports and financial data – turnover and number of employees. The reality of the data collected does not depend on the social actors, as the definitions of these data are considered as established. However, our ontological stance cannot be considered as totally objectivist as the notions of "large" companies and "industrial sector" are in adequacy with the constructionist approach.

The choice of both the ontological approach and the epistemological approach are connected. Two "standard" associations depending on the social science the researcher believes in exist. It is traditionally thought that if the researcher believes in "naturalistic" social science he will associate an objectivist approach with a positivist one – as both of them emphasize the idea of independence of the reality from social actors – ; whereas if he believes in constructivist social science he will match a constructonist approach with an interpretivist one. In our thesis, we follow the "naturalistic" social science model described beforehand.

2.5. Research strategy

Bryman & Bell (2011, p. 26) explain that the research strategy defines the way data are collected and analyzed. Two main research strategies exist - the quantitative research and the qualitative research (Bryman & Bell, 2011, p. 28; David & Sutton, 2011, p. 81) – and a third one – the mixed research – is developing (Creswell, 2003, p.3).

A quantitative research generally implies the collection of quantitative data – and, or quantifiable qualitative data – which are then, once the data collection done, analyzed using statistical methods (Bryman & Bell, 2011, p. 26). The quantitative research process is divided in the 11 following steps: elaborating theory, devising hypothesis, selecting research design, devising measures of concepts, selecting research site(s) and research subjects, collecting, processing and analyzing data, developing and writing up findings and conclusions (Bryman & Bell, 2011, p. 151). According to Johnson & Christensen (2012, p. 36), quantitative researchers operate under the assumption of objectivity and they try to remain as neutral as they possibly can to avoid human bias. Hence, quantitative researchers try to study a phenomenon "from a distance".

The choice of a quantitative research by a researcher is explained, according to Bryman & Bell (2011, p. 154, 163-165), by the needs to measure a phenomenon – in order to detect the tiniest differences among the data collected regarding this phenomenon and be able to say that these data have been classified objectively –, to explain it – through the determination of the relationship between a dependent variable (the phenomenon) and independent variables (the possible explanations of the phenomenon) –, to generalize it – in order to develop "lawlike principles" and say that the findings on the studied phenomenon the researcher made from the data collected on a specific sample can be extended to a broader population –, and to replicate it – in order to say that the methodology followed for getting the findings always lead to the same conclusions on the phenomenon.

A qualitative research implies the collection of qualitative data which are then analyzed using interpretative methods. The qualitative research process is divided in the 6 following steps: developing general research questions, selecting relevant sites and subjects, collecting relevant data, interpreting them, developing a conceptual and theoretical work – which can lead to a tighter specification of the research question, the collection and interpretation of further data – and writing up conclusions (Bryman & Bell, 2011, p. 390). Qualitative researchers argue the importance of getting close to their objects of study, to be able to ask questions, observe and understand their participants (Johnson and Christensen, 2012, p. 36). Five main reasons lead the researcher to the choice of a qualitative research. Bryman & Bell (2011, p. 401-406) explains that the researcher can analyze the phenomenon "through the eyes of" the selected subjects, qualitative data are much more descriptive than quantitative data and are understood considering the special context of the data collection moment, a qualitative research is process-oriented, flexible –in order to let as much freedom as possible to the respondent in his way to answer – and enables to generate theory through the data collected.

Bryman & Bell (2011, p. 628) also mention that a third research strategy exists: the mixed research. This research strategy which combines quantitative and qualitative research (Creswell, 2003, p. 12; Johnson & Christensen, 2012, p. 429; Saunders et al., 2009, p. 152) is becoming more and more common.

In our thesis, we aim to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector; to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector; and to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector. Our aims imply that we have to measure the use of the GRI, the number of indicators disclosed by the companies using the GRI, and the frequency of disclosure of the GRI indicators by Swedish companies performing in the industrial sector according to their size. The use of the GRI by companies is quantifiable qualitative information, whereas the numbers of indicators disclosed by companies in their GRI report, and the frequency of disclosure of the GRI indicators are quantitative information. We also need to gather information as regards the size of the companies. In the following chapters we will explain we used the turnover and the number of employees to determine the size of a company. This is quantitative information. As our study requires the use of quantitative information, our research strategy is quantitative.

The choice of the research strategy is connected to the research approach – as in a quantitative research the data collected is used to support or not the established theory – and the research philosophy (especially the epistemological considerations) – as in a quantitative research the researcher tries to test scientifically hypotheses to get knowledge. Previously in this chapter we determined that we were using a deductive research approach, and as David & Sutton (2011, p. 84) wrote, most of the time a deductive approach is associated with a quantitative research strategy.

The following table sums up the two main positions which are adopted by researchers and shows the logical connections we made when we determined the different elements belonging to the methodological chapter.

	Quantitative research	Qualitative research
Research approach	Deductive	Inductive
Ontological approach	Objectivism	Constructionism
Epistemological approach	Positivism	Interpretivism

Table 1. Fundamental differences between quantitative and qualitative research strategies (adapted from: Bryman & Bell, 2011, p. 27)

2.6. Research design

As aforementioned, the selection of the research design is the third step in a quantitative research strategy. The research design is a framework for both the data collection and the data analysis (Bryman & Bell, 2011, p. 40; Royse, 2011, p. 136). We can distinguish five main research designs: the experimental design, the cross-sectional design, the longitudinal design, the case-study design, and the comparative design (Bryman & Bell, 2011, p. 41). The choice of the research design is according to Bryman & Bell (2011, p. 40) influenced by the answers the researcher gives to the following questions: "Can I distinguish some causes explaining the phenomenon I am studying?" "Can I generalize the findings on the phenomenon to a broader population than the one from which I collected the data?", "Do I analyze the collected data taking consideration of the special context on which the data were gathered?", "Do I understand the collected data considering the time period on which they were gathered?".

As part of our thesis, we decided to use a cross-sectional research design. It can be defined that way: "A cross-sectional design entails the collection of data on more than one case (usually quite a lot more than one) and at a single point in time in order to collect a body of quantitative and quantifiable data in connection with two or more variables (usually many more than two) which are then examined to detect patterns of association" (Bryman & Bell, 2011, p. 53). The choice of a cross sectional design is therefore in adequacy with the quantitative research strategy we decided to adopt.

2.7. Truth criteria

According to Bryman & Bell (2011, p. 40), in order to see if a business research is relevant, three criteria are taken into consideration: reliability, replication and validity.

A research is considered as reliable if the results get by the researcher are repeatable and the indicators used in order to obtain the results are consistent. The replication's criterion point is to be transparent in the whole procedures used during the research so that it lets the opportunity to future researchers to repeat the experience made in case a doubt would exist as regards the findings (Bryman & Bell, 2011, p. 41). The validity's criterion's aim is to show that the researcher has been honest on the conclusions he made according to the results he get (Bryman & Bell, 2011, p. 42). It is considered as the most important quality criterion in a business research. Different validity criteria exist: the measurement validity, the internal validity, the external validity and the ecological validity (Bryman & Bell, 2011, p. 42-43). The measurement validity criterion is used to determine if an indicator chosen to measure a concept really reflects that concept. The internal validity criterion aims to see the strength of the causality relationships between variables to be sure the findings cannot be attributed to reasons not taken into consideration by the researcher (Bryman & Bell, 2011, p. 42). The external validity criterion is applied to find out if the results of a specific research can be generalized to a larger context (Bryman & Bell, 2011, p. 43). Finally, the ecological validity criterion is used to determine if the findings of a research can be applicable to people's every-day. Each of these criteria aims to remove some concerns about the quality of the findings made by the researcher (ibid.).

The importance of these criteria varies according to the research design (Bryman & Bell, 2011, p. 151); and the research strategy (Bryman & Bell, 2011, p. 394-395). In the methodological chapter, we mentioned we are using a cross-sectional design and a quantitative research strategy. In both the cases of a cross-sectional design and a quantitative research approach, reliability, measurement validity, and external validity are key issues (Bryman & Bell, 2011, p. 43, 54, 56). Indeed, reliability and measurement validity aim to show if the indicators chosen to measure a concept are relevant; which is important for us as our findings will be based on the results we will get from the analysis of the indicators we have chosen. We have to be sure that our indicators are consistent, what Bryman and Bell (2011, p. 158) define as internal reliability. External validity is of importance when the elements of the sample the researcher is taking data from have been randomly selected (Bryman & Bell, 2011, p. 56). It emphasizes the will of the researcher to have a representative sample (Bryman & Bell, 2011, p. 43). We aim to have a representative sample in order to be able to generalize our findings, which is one of the main aims of a quantitative research strategy. Therefore, as we are using a cross-sectional design with a quantitative research strategy, we know which quality criteria will be especially of importance when we will make our empirical observations, analyses, and conclusions, hence making both internal and external validity key issues for our work.

2.8. Data collection

Data collection is one of the key steps in a quantitative research strategy. Data collection is guided and influenced by the theory and is only possible once the research sites and the research subjects have been selected. Researchers need to know the means

they will use to obtain a successful data collection, and also which method they will implement to establish their sample from the collected data.

2.8.1. Choice of secondary resources

When the researcher analyses data for his study, two kinds of data can be at his disposal: primary data and secondary data. Bryman & Bell (2011, p. 313) explains that primary data are data the researcher needs to collect by himself for the purpose of his research. These data do not exist before the researcher gathers them. Several methods such as interviews, questionnaires or observations can enable the researcher to get these new data. Secondary data are already existing data collected by anyone but the researcher – other researchers, organizations, … –, which were gathered to answer a need which differs from the one the researcher is following when he uses them.

As part of our thesis, we have decided to use secondary data. It will enable us to have enough material in order to answer our research question. Secondary data will be really precious in order to establish our theoretical framework. It is supposed to provide lots of advantages to the researcher as the latter is saving lots of time and energy by having at his disposal a large quantity of high-quality data he does not have to collect on his own (Bryman & Bell, 2011, p. 313, 314, 320). Therefore, by using secondary data the researcher can spend more time in the analysis of the data he is using (Bryman & Bell, 2011, p. 313, 314, 320). We will benefit from the time saving advantage as we would not have enough time to make contact with every Swedish listed company to personally ask them about their sustainability reporting. Indeed, in theory, if we wanted to have primary data, we would have had to ask every Swedish company about their activity – to know if they fit with our definition of "industrial companies" – , as well as if the size criteria of the company is relevant for us –so that we could find out if we can consider them as "large" companies belonging to the "industrial" sector and reporting on sustainability. Then, for the companies which would have answered and would have fitted with our criteria, we would have had to collect information about their use – or not – of the GRI and about the indicators they would disclose information on. This would represent a colossal work we do not have time to implement in the frame of our thesis. We expect to benefit from the high-quality-data advantage too, as most of the data and information we plan to use would be extracted from primary sources such as audited annual reports or sustainability reports of companies.

Nevertheless, Wegner (2008, p. 27) mentions various criticisms which can be attributed to the use of secondary sources. We will evocate them so that our thesis does not seem biased. In his book "Applied Business Statistics: Methods and Excel-based Applications", Trevor Wegner identified four main limitations to the use of secondary sources. As the data used were at first time collected to answer another purpose, there is a risk they may not be totally relevant as part of a new research (Wegner, 2008, p. 27). Another point Wagner highlights is that the data used may be too old and so do not help to answer the current question of the researcher. It may also be difficult to check the accuracy of the data used (Wegner, 2008, p. 27). The last mentioned point is that the combination of several secondary data can introduce some bias in the research (ibid.). In our case, we plan to spend time reading a huge quantity of literature to select the most appropriate information to answer our research question. We also plan to use accurate data as the information we will use as regards the companies are audited.

2.8.2. Sample selection

Considering the large amount of information we need to have per company to lead our quantitative research properly – we need to know the turnover of the company, its number of employees and its reporting on the 79 different indicators of the GRI -, the determination of a sample is needed. As mentioned by Bryman and Bell (2011, p. 175), "the need to sample is one that is almost invariably encountered in quantitative research".

Different methods of sampling exist. We have decided to use a simple random sample. The simple random sample is seen as "the most basic form of probability sample" (Bryman & Bell, 2011, p. 179). In a simple random sample, each unit of the population has the same probability to be chosen by the researcher. This can be materialized by the following formula known under the name of "sampling fraction" where n represents the sample size and N represents the population size:

$$Sampling\ fraction\ = \frac{n}{N}$$

The main advantages of the simple random sample are to reduce bias in the selection of the elements of the sample as these elements are chosen randomly, and to be representative of the population N. The fact that a simple random sample is representative of the population has for main consequence that the results got for the sample can be generalized to the whole population. Generalization would have been compromised if we had chosen to use a non-probability sample.

The determination of the sample size is often "a compromise between the constraints of time and cost, the need for precision" (Bryman & Bell, 2011, p. 187). Bryman & Bell specify that it is the absolute size of a sample which matters; and so that the bigger n is, the highest the likelihood to have a sample leading to precise results (Bryman & Bell, 2011, p. 187). This also has consequences on the risk of sampling errors which decreases with a higher n (Bryman & Bell, 2011, p. 187).

2.9. Data processing

The step following the data collection in a quantitative research is the data processing. It consists in transforming the information collected into "data" so that, in the context of quantitative research, the information can be quantified and later on analyzed (Bryman & Bell, 2011, p. 152). Some variables can already be quantitative and so the difficulty in data processing is limited. The turnover of the companies and the number of companies' employees are among these variables. Other variables can be used in a quantitative research: quantifiable qualitative data. Quantifiable qualitative data need to be coded, that is to say transformed into numbers, so that the researcher can analyze them later on (Bryman & Bell, 2011, p. 152). The use of the GRI by companies is a quantifiable qualitative data as it has to be coded to become a quantitative data.

We use descriptive statistics in order to process data. Descriptive statistics enables to "present quantitative description in a manageable form by using graphs, charts, and tables and the calculation of various statistical measures to organize and summarize information" (Zemichael & Basazinew, 2010, p. 26). The use of graphics can be

explained by two main reasons: it can help to show changes over time and therefore be relevant in the case of a longitudinal study, and it can enable to establish relationships between variables (Curwin & Slater, 2008, p. 100).). In our study, the use of descriptive statistics will help us to summarize our information collected as well as organize it.

2.10. Data analyzing

In a quantitative research strategy, the data collection and the data processing are followed by the data analysis. The data analysis is directly influenced by the data collection as the different methods of data analysis depend on the number of variables the researcher has been able to collect and the way he is thinking to analyze them. If the researcher analyses the variables separately, one by one, he will use a univariate analysis (Bryman & Bell, 2011, p. 334). In the case the researcher would like to establish a relationship between two variables, he has to implement a bivariate analysis (Bryman & Bell, 2011, p. 334). Finally, Bryman & Bell (2011, p.334) suggest that if the researcher wants to get knowledge about the relationship between three or more variables, the recommended data analysis method is the multivariate analysis.

As we aim to know the relationship between the use of the GRI and the size of a company, and the relationship between the number of indicators disclosed by a company and its size, we expect to use bivariate analyses. This would be in adequacy with the explanatory aim of a quantitative research strategy as we have the intention to explain a dependent variable – either the use of the GRI or the number of indicators disclosed by a company – with an independent variable – the size of the company. In this case, as we would have to determine the correlation between the different variables, the use of the Statistical Package for the Social Sciences tool – also known as SPSS – would be necessary. The last aim of our thesis is to know about the frequency of the disclosure of each GRI indicator by companies. We expect to get information about this element thanks to a univariate analysis. Indeed, the representation of frequencies can be done thanks to frequency tables and diagrams which are used for an univariate analysis (Bryman & Bell, 2012, p. 342-343).

2.11. Ethical considerations

The researcher has to ensure he is acting ethically during all the different steps of the research process so that the integrity of his work cannot be questioned (Bryman & Bell, 2011, p. 122). He has to show his intellectual honesty while gathering information and writing his research paper, proving he is acting with high standards of behavior.

Avoiding harming the participants of the research, being sure that their consent to participate to the research is informed, respecting their privacy and not deceiving them while doing the research are among the key practices the researcher has to follow to act ethically (Bryman & Bell, 2011, p. 128). These issues imply that the researcher aims to create his own set of data, that he is using primary sources. This is not our case as we are using secondary data. However these ethical considerations are not the only ones the researcher has to be aware of. The researcher also has to deal with the plagiarism issue. We plan to use a large set of secondary sources such as books, articles or annual reports all along our thesis. The quasi-totality of the sources we will use and which will come from the internet will be extracted from the Umeå University library database and the search engine Google scholar, which are considered as reliable tools. Therefore, the

information we will use is supposed to be authentic, valuable and give credit to our work. Besides, the documents we will use should be known by the database of the university and so make plagiarism impossible. For the integrity of our research, we confirm that all the secondary sources we used and we will use while writing our thesis were and will be quoted and referenced properly as it is explained in the thesis manual.

3. THEORETICAL FRAMEWORK

In this chapter, our theoretical framework will be presented. It provides definitions of the terms of interest in our thesis, and develops the different theories which exist as regards the elements we have to make decisions on. First of all, we describe sustainability thanks to its different pillar. This section is followed by an explanation on the interest of sustainability for companies. The third section sheds light on the interest of measuring sustainability. Then we develop on sustainability reporting, its evolution and its pros and cons. This is followed by a section on the main indicators and frameworks of sustainability, which leads us to the framework we will use in our empirical observations: the GRI.

3.1. Sustainability

Gallo and Christensen (2011, p. 318) describe sustainability as corporate agendas which integrate a mix of financial and extra-financial goals, and these goals include social responsibility, environmental protection, poverty alleviation and stakeholder commitment. Furthermore, Gallo and Christensen (2011, p. 316) write that to strive for full "sustainability", organizations must address financial, social, and environmental impacts of their actions. However, the authors explain that to date, most work in this field has effectively focused on corporate social responsibility or environmental management instead of on sustainability composed of these elements. Thus, studies of sustainability as a broader concept that capture the integrative and interdependent nature of the financial, social, and environmental dimensions of the sustainability definition are rare, and usually the studies focus on single industries or on a single dimension within the sustainability concept (Gallo & Christensen, 2011, p. 316).

As mentioned in the introduction chapter, Moldan et al. (2011, p. 5) describe in their article three key areas, or "pillars"; economic, social and environmental, which are essential to the sustainability field. The authors present a foundation of the three pillars, which can provide an impression of what the different areas involve. The three areas will be described in more detail below, followed by theory of the importance of sustainability.

3.1.1. Economic aspect

In the World Summit on Sustainable Development held in Johannesburg in 2002 it has been emphasized that because of the connections of most of the economies worldwide, an "integrated approach" towards economic sustainability was needed in order to enable a "responsible long-term growth" which would include all nations and communities (UN, 2002, ref in Moldan et al., 2011, p. 5). Furthermore, the economic aspects have been even more under close control since the global economic and financial crisis, as countries facing the recession have to take actions domestically to handle the crisis (Asmussen, 2009, p. 197-198). Therefore, Moldan et al. (2011, p. 5) imply that economic growth is both an important and universally accepted objective for the society. Growth is so important that it has been considered, at a world scale, the most essential goal for societies for the last five decades, (Moldan et al., 2011, p. 5). The authors also mention the difficulty of achieving a balance between sustainability and economic growth; which Alam and Kabir (2013, p. 86) indicate the importance of when they explain that increased economic growth has an impact on the environmental

sustainability due to increased production and consumption. The global economic and financial crisis could be used as an opportunity for improving the approach between sustainable development and economic growth. The crisis has brought into focus the economic pillar, and as economic growth has an effect on social, economical and environmental issues (Alam & Kabir, 2013, p. 86), the economic aspect has become an important part for companies, as well as for the society as a whole, to put focus on when handling sustainability matters.

3.1.2. Social aspect

The social field has originally been defined as a pillar because the growing needs of people ("jobs, food, education, energy, health care, water and sanitation") have to be satisfied in a way that ensures that everyone can contribute in the creation of their own future meanwhile "the rich fabric of cultural and social diversity, and the rights of workers are respected" (UN, 2002, ref in Moldan et al., 2011, p. 5). For instance, when an environmental issue gets a solution, a central part contributing to that solution is the human behavior and knowledge. Therefore, the social aspect is fundamental for companies to handle, building a social environment where knowledge of sustainability can be created and maintained (Faber, Peters, Maruster, van Haren & Jorna, 2010, p. 9-10) Several definitions of social sustainability have been brought up to the surface during the years (Black, 2004; Torjman, 2000; Gilbert et al., 1996, ref in Moldan et al., 2011, p. 5), but despite all of the different definitions, it is still not totally clear what the most important elements of social sustainability are (Moldan et al., 2011, p. 5.). One reason could be the difference between countries, in terms of economic, social and cultural aspects, which makes a uniform definition of social sustainability difficult to achieve (ibid.). According to Faber et al. (2010, p.), collective and individual human behavior is linked to knowledge, and thereby is of importance for sustainability. Hence, it is clear that a company needs to cope with the increasing social pressure from employees and the society (Ekins & Vanner, 2007, p. 87) at the same time as being both economic and environmental conscious.

3.1.3. Environmental aspect

The initial idea when the environmental pillar was recognized as such was that human beings have to take care of the natural resources they have at their disposal and so "reduce resource consumption, stop pollution and conserve natural habitats", so that the future generations can live decently (UN, 2002, ref in Moldan et al., 2011, p. 6). If we go back in the genesis of this pillar, originally the term "environmental responsible development" was used by the World Bank in 1992. Later, "environmentally sustainable development" was introduced (Serageldin & Streeter, 1993) before the term was finally transformed in "environmental sustainability" (Goodland, 1995). According to Goodland, protecting the sources of raw materials for human needs and welfare was a major part of environmental sustainability (Moldan et al., 2011, p. 6). An important addition to the environmental sustainability concept was made by the OECD Environmental Strategy for the First Decade of the 21st Century (OECD, 2001, ref in Moldan et al., 2011, p. 6). It defines four criteria for environmental sustainability: *regeneration* (resources which are renewable shall be used in en efficient way and not exceed their natural regeneration rates), *substitutability* (non-renewable resources shall be substituted with renewable resources or other forms of capital when they have been efficiently used to a certain limit), *assimilation* (releases of pollution or similar

substances shall not exceed their given capacity) and *avoiding irreversibility* (Moldan et al., 2011, p. 6). The authors explain that these criteria engender five objectives for improving the outcome of environmental, within sustainable development:

- Efficient management of natural resources which will maintain the ecosystems integrity,
- De-coupling different environmental pressures from economic growth,
- Improving decision-making information by measuring progress through indicators,
- Social and environmental interface by enhancing the quality of life,
- and improving governance and co-operation.

The list of objectives can be enlarged with more objectives (Moldan et al., 2011, p. 6), but these five principles are a basis for improving environmental policies (ibid.).

3.2. The importance of sustainability

We have just mentioned the principal objectives companies can try to reach in order to be more respectful of the environment - which is one of the three pillars of sustainability we described-; however, the motivations which push companies to consider sustainability as one of their main objectives have not been developed yet.

3.2.1. Satisfying the shareholders and reputation issues

There is a tight bond between the companies and their shareholders according to the main theories of corporate governance, and it is of interest for companies to satisfy their shareholders as they are the ones who provide capital to the companies (Solomon, 2010, p. 5-17). In the cases of the agency theory and the transaction-cost theory, both sides aim to maximize their profits (Solomon, 2010, p. 5 & 13); and in the specific case of the stakeholder theory, the link between companies and shareholders is extended to stakeholders - who include shareholders, but also customers, suppliers,…- and the impact and the responsibilities companies have on their stakeholders is taken into consideration by the companies (Solomon, 2010, p. 17). Hespenheide et al. (2010, p. 52) put forward the constantly rising interest shareholders as well as stakeholders vow to sustainability on the companies their investments are placed in. Nondisclosure on sustainability could be interpreted as a proof of a poor condition of the company and therefore influence negatively the decisions of shareholders and stakeholders (Joshi & Gao, 2009, p. 33-34). Indeed, an increasing number of investors consider that a company's involvement in sustainability is a proof of a disciplined management and constitutes a key success factor for companies (RobecoSam, 2013), and therefore communicating on it is beneficial for companies. Acting sustainable and reporting on it is therefore a way to manage the reputation risk for companies (Bebbington et al., 2008, p. 373), and companies are aware of it (Michelon, 2011, p. 80).

Kajander et al. (2012, p. 666) also notice that, increasingly, amounts of investments in the environmental area, and within the sustainability area as a whole, have been made by companies. The authors attribute mainly the investments to two factors: first of all, sustainability is attractive to investors because of the long-term value created; and secondly, sustainability leaders are expected to present better performance to the company (Kajander et al., 2012, p. 666). They agree with the Dow Jones Sustainability

Index's definition considering that the long-term shareholder value is the result of both the embracement of opportunities and the management of the risks issued from the development of the three pillars of sustainability (Kajander et al., 2012, p. 666). Their reflection on the growth of investments made on the sustainability field was conducted inside a larger reflection on climate change mitigation; an environmental issue they consider as one of the greatest challenges facing society, and which according to them has become an important factor for businesses as well as for investors (ibid).

3.2.2. Compliance with legal regulations

The compliance with legal regulations is also evoqued by Hespenheide et al. (2010, p. 52) as a reason for companies to focus on sustainability. The authors highlight the increasing quantity of laws requiring companies to both act sustainably and report on their actions (Hespenheide et al., 2010, p. 52); whereas Cowan et al. (2010, p. 525) indicate that the fear of future legislations and retaliation constitute a motivation to act sustainable for companies. Hespenheide et al. take the example of the regulations on carbon credits and greenhouse gas emission to support their sayings, advancing that international institutions such as the FASB and the IASB are involved in projects which aim to include these sustainability issues in accounting standards (Hespenheide et al., 2010, p. 52). Even though international guidance as regards greenhouse gas emissions has not be done yet by the two aforementioned institutions, the authors explain that companies which implement plans to reduce carbon emissions perform better on the stock market in comparison to companies that do not, which brings evidence on both the need for sustainability amongst companies and of the benefits companies could get from laws they may be reluctant to see enacted.

A PricewaterhouseCoopers study from 2002, brought up by Cowan et al. (2010, p. 525), also showed the importance of legislation as a motivation for companies to adopt sustainable practices. Indeed, according to this study, the main reasons leading companies to sustainability were preferably enhanced reputation, competitive advantages, but also the threat of legislation and overall awareness of being environmentally responsible. This shows, according to the authors, that some companies participate in sustainability programs because of business opportunities. However, the threat of future legislations seems to keep companies acting into producing sustainability reports. Studies by Hendry & Vesilind, 2005; Dummett, 2006; and Granek & Hassanali, 2006 (referenced in Cowan et al., 2010, p. 525) also give credit to the theory according to which legislation is a motor of sustainability as they consider that the forces which drive companies to make efforts in sustainable practices focus on three broad areas: legal, financial and ethical. The threat of legislation, the reduction of risks, market advantage, reputation gaining, consumer and stakeholder pressure, cost savings and societal expectations are seen as possible drivers for companies. However, these drivers are not the only ones as the authors also shed light on the importance of the client base of the company or its sector of operation for instance.

3.2.3. Operational benefits

Not only is sustainability important for outside actors, but also for the companies themselves (Gallo & Christensen, 2011, p. 318). Sustainability can provide lots of other benefits than those related to the interaction with the stakeholders and the compliance with laws when it is effectively integrated in the company's business strategy

(Hespenheide et al., 2010, p. 52). Cowan et al. (2010, p. 525) explain that many companies find that sustainable practices can create value for their businesses through increased revenue, reduction in operating costs and more effectively increasing profits than most other business activities. Granek & Hassanali (2005, p. 576) prove that process improvement, energy reduction and reduction of the waste can lead to an improvement of the economic situation of a company. The authors take the example of two companies from the Toronto area which by investing in sustainability succeeded in getting important economic benefits. The first company, a commercial lithographic printing company of 44 persons, reduced significantly its emissions of volatile organic compounds and greenhouse gases, as well as its water consumption and its generation of waste by making some process modifications, input material substitution and by developing on-site recycling (Granek & Hassanali, 2005, p. 575-576). Its payback period was of two years and the savings made were of $14,000 a year (Granek & Hassanali, 2005, p. 575-576). The second company, a 90-person manufacturing facility of after-market brake parts and shoes, reduced significantly its wastewater, oil wastes and hazardous wastes by improving operating practices, implementing in-process recycling and by substituting input material (Granek & Hassanali, 2005, p. 577-578). Its payback period was of one year and savings of $39,000 a year were associated to the investments made (Granek & Hassanali, 2005, p. 577-578). Hespenheide et al. (2010, p. 52) agree on the fact that sustainability can provide a large variety of benefits to companies. They put forward the benefits of sustainability in terms of corporate strategy and risk management mentioning that the implementation of sustainability programs "can help improve operations, attract talent, promote positive public relations, enhance transparency and accountability and streamline regulatory compliance. It can also inspire supply chain partners, draw investors, energize stakeholders, heighten competitiveness and, ultimately, boost the company's bottom line." (Hespenheide et al., 2010, p. 52).

This makes companies wanting to be at the forefront of developing sustainable programs, also since the actions within the programs often pay for themselves in terms of energy reduction, less waste and process improvements (Cowan et al., 2010, p. 525). However, to know if these benefits are allocated to companies, or at least knowing how the developments towards achieving them are proceeding, the requirement of measuring the sustainability progress and reporting the progress for outside users is natural.

3.3. The need of measuring sustainability

As mentioned at the end of the second section of this chapter, companies need to measure their sustainability performance to know how they perform in terms of sustainability. According to Mintz (2011, p. 27), measuring sustainability progress is possible thanks to Key Performance Indicators (KPI). These KPI are quantifiable measurements which reflect the outcome factors of a company and depend according to the aforementioned organization (Mintz, 2011, p. 27). KPI can be used for translating sustainability issues into different quantifiable measures of economic, environmental, and social performance, which enables an interested actor to see both the concerns of the companies and how they deal with sustainability (Krajnc & Glavic, 2005, p. 191).

3.3.1. The interest of the use of indicators

Rajesh Kumar Singh et al. (2012, p. 281) consider indicators as an increasingly useful tool for both a company's public communication and policy making. They enable to connect information on companies and countries' performance in areas such as environmental, social and economic development (Rajesh Kumar Singh et al., 2012, p. 281). Using the research made by Lundin in 2003 and by Berke & Manta in 1999, Rajesh Kumar Singh et al. emphasize four reasons to develop sustainable development indicators. Sustainable development indicators can help to forecast trends, to better detect future potential economic, social and environmental damage, to state strategies and to support decision-making (Rajesh Kumar Singh et al., 2009, p.193). Using the research made by Godffrey & Todd in 2001 and by Warhust in 2002, the Indian scholars also explain that the aim of indicators is to "summarize, focus, and condense" data in order to get meaningful information as indicators enable to "simplify, quantify, analyse and communicate" information which are difficult to understand at first time (Rajesh Kumar Singh et al., 2009, p.191; Rajesh Kumar Singh et al., 2012, p. 281).

The using of indicators is popular when creating and establishing league tables (Moldan et al., 2012, p. 7). League tables can help in ranking the universities, cities,… thanks to defined criteria. However, when it comes to sustainability, these tables have their limitations (ibid), as the ranking does not say much about sustainability alone. Moldan et al. claim that when different sustainable indicators are defined, they need to be measured in a wider sense in both quantitative and qualitative ways. The availability of sustainability indicator data is not a problem, but the interpretation, selection and use of them is more difficult, according to the authors (ibid). If having a numeric value for sustainability, it can give the indicator a purpose and thereby sorting it out from raw data (ibid).

3.3.2. The creation of indicators

Rajesh Kumar Singh et al. reckon that it is valuable to define the policy goals for achieving sustainability, and then that the indicators which are appropriate need to be identified based on their materiality. There is an important requirement for a comprehensive approach towards indicators' definition and measurement (Rajesh Kumar Singh et al., 2012, p. 282), as more emphasis is given on measuring all important aspects of the sustainability area by countries and businesses. Rajesh Kumar Singh et al. consider that only an "integral systematic approach to indicators definition and measurement" would enable to provide a true overview of the real state of sustainability as it would give birth to easily reproducible well-structured methodologies including all the aspects of sustainability (Rajesh Kumar Singh et al., 2009, p.191). The main problem in the elaboration of this approach resides in the divergences of opinion as regards the definition of sustainability. This can lead to complicated situations for selecting and developing the indicators. Therefore, aligning successfully the goal with an identified indicator is a difficult task which can become even more problematic when several dimensions are summarized into one single indicator (Rajesh Kumar Singh et al., 2012, p. 282).

Once the difficulties identified, a guideline to build indicators for measurement is provided by the Indian scholars. Rajesh Kumar Singh et al. (2009, p. 195-196) consider that the "number and nature of the components that will make up part of the composite

index need to be determined based on theory, empirical analysis, pragmatism or intuitive appeal, or some combination thereof", and that "other important selection criteria include validity, reliability, comparability, simplicity, and data availability". They add that "the weighting system and method employed in aggregating component scores into one composite index" has to be determined and that "after weights have been assigned to each component index and the component scores weighted accordingly, these scores are aggregated into a composite score" (Rajesh Kumar Singh et al., 2009, p.196-197). However the creation of composite indicators is seen as a difficult exercise because it is based on the assumptions of the researcher and therefore it lets some space to uncertainty. The Indian scholars give some advice as regards the creation of indicators emphasizing the importance of the choice of the studied phenomenon –as the researcher will have to determine if the creation of a composite indicator would be relevant to measure it -, and the choice of the sub-indicators. The authors also highlight the need of:

- good data quality
- clear relationships between the different indicators
- a normalization and weighting of the indicators
- robustness and sensitivity tests.

Numerous sustainability indices exist. During their research, Rajesh Kumar Singh et al. identified 41 different indices they classified in 12 categories – Innovation, knowledge and technology indices; Development indices; Market- and economy-based indices; Eco-system-based indices; Composite sustainability performance indices for industries; Investment, ratings and asset management indices; Product-based sustainability index; Sustainability indices for cities; Environmental indices for policies; nations and regions; Environmental-indices for industries; Energy-based indices; and Social and quality of life-based indices. For each index a definition is provided, as well as its different components, the scaling/normalization method used and the weighting method used. However, the constant growing interest in sustainability contributes to the need for an easier and more comprehensive method amongst companies.

3.4. Sustainability reporting

Since the beginning of this chapter, we have noticed that an increasing number of companies has made of sustainability a goal to achieve, has implemented actions to go this direction and is measuring its progress to reach its goal. Therefore, a large amount of information concerning sustainability gravitates around companies. Information as regards sustainability inside an organization is mentioned in sustainability reports (GRI, 2013).

3.4.1. The evolution of sustainability reports

Sustainability reporting has evolved swiftly from an ambitious concept to a widely adopted practice, and to date, as a result of the increasing popularity of sustainability reporting around the world, several thousands of corporate environmental, social or sustainability reports have been published on voluntary basis (GRI, 2013). Since the publication of the first environmental report in 1989, the number of companies which disclose about their sustainability actions has not stopped increasing (Kolk, 2004, p. 51; Lozano & Huisingh, 2011, p. 100); and as more and more emphasis is put on

sustainability, the research within this area will most certainly continue to increase the number of reports on this subject. Indeed, from 1992 to 2001, the number of reports issued by companies with sustainability information has grown, at a world scale, from 26 in 1992 to 5819 in 2011 according to CorporateRegister.com data (Eccles et al., 2012, p.8). Beside, Kolk (2004, p. 51-54) and Eccles et al. (2012, p. 8) also notice that the quantity of information disclosed inside sustainability reports has not stopped broadening (Cormier et al., 2005, p. 1), and that the quality of the disclosure keep improving. Indeed, during the first years of sustainability reporting, the only pillar companies communicated on was the environmental one (Kolk, 2004, p. 54); but now all the pillars of sustainability are taking into consideration by companies when they report (Adams & Frost, 2008, p. 288; Ekins & Vanner, 2007, p. 87; Kolk, 2004, p. 51 & 54; Lozano, 2013, p.58). The sustainability reports integrate the financial, environmental, and social performances of the company into one report.

Ekins & Vanner (2007, p. 88) also conclude that many companies are seeking to both report on and measure their economic, social and environmental performance. When sustainability reports were reviewed at the end of the twentieth century, a desire for more common procedures and indicators was expressed to enable the very different dimensions to be compared in an easy way (Elkington et al., 1999; White & Zinkl, 1999, ref in Ekins & Vanner, 2007, p. 88). Both specific indicators of a certain sector (for example Measuring the Environmental Performance of Industry, MEPI) and general reporting frameworks for the sustainability field (for example the GRI) have been proposed as possible solutions to simplify the reporting (Ekins & Vanner, 2007, p. 88). The accounting approaches within the area of sustainability have developed in connection with the changes in the area, and the social dimension of sustainability is treated in terms of both internal and external stakeholder relationships.

3.4.2. The aims of sustainability reporting

Sustainability reporting, which is a voluntary activity for companies, has two general purposes; firstly, to assess a company's economic, social and environmental aspects; and secondly, to communicate the efforts and progress of a company's sustainability actions to their stakeholders (Lozano, 2013, p. 58). Ekins and Vanner (2007, p.87) agree with the first goal of sustainability reporting mentioned by Lozano et al.. Indeed, Ekins and Vanner (2007, p. 87) explain that inside each business sector companies need to create an increasing economic value while using the environment and natural resources sustainably, and at the same time cooperate to the society's social aims to be able to contribute to sustainable development; which leads them to the conclusion that there is an important need for companies to use tools to monitor, manage and report the performance in the sustainability area. As regards the second purpose of sustainability reporting – the communication with stakeholders – Lozano is supported by Cowan et al. (2010, p. 525-526) who remind us that companies do not have to report according to a standardized sustainability reporting framework; and so that the increasing number of published reports is partly a decision companies are making. One reason, according to the authors, is that the expectations from the society on a company's business sector put pressure on the company to present a sustainability report.

We notice that these motivations at the source of sustainability reporting have been mentioned earlier among those pushing companies to act sustainable. This may be explained by the fact that the companies first evaluate the reasons they have to consider

sustainability, then act sustainable, and finally report on what they are doing. Reporting may therefore be the end of a process which starts with the interest companies have on sustainability. Kolk (2004, p. 54) mentions the different considerations companies have while choosing to report on sustainability which we report in the following chart.

Companies' motivations for reporting or non-reporting	
Reasons for reporting	**Reasons for non-reporting**
• Enhanced ability to track progress against specific targets	• Doubts about the advantages it would bring to the organization
• Facilitating the implementation of the environmental strategy	• Competitors are neither publishing reports
• Greater awareness of broad environmental issues throughout the organization	• Customers (and the general public) are not interested in it, it will not increase sales
• Ability to clearly convey the corporate message internally and externally	• The company already has a good reputation for its environmental performance
• Improved all-round credibility from greater transparency	• There are many other ways of communicating about environmental issues
• Ability to communicate efforts and standards	• It is too expensive
• Licence to operate and campaign	• It is difficult to gather consistent data from all operations and to select correct indicators
• Reputational benefits, cost savings identification, increased efficiency, enhanced business development opportunities and enhanced staff morale	• It could damage the reputation of the company, have legal implications or wake up 'sleeping dogs' (such as environmental organizations)

Table 2. Companies' motivations for reporting or non-reporting (Kolk, 2004, p. 54)

As we explained, most of the reasons which are in favour of reporting on sustainability have already been mentioned when we underlined the motivations companies have for acting on a sustainable way. This chart also underlines, the reasons companies may find not to implement reporting; however, as Kolk mentions in his paper (2004, p. 53), the arguments encouraging reporting are prevailing on those which do not for an increasing number of companies.

In addition to all these reasons pro-sustainability-reporting, Lozano (2013, p. 58) explains that sustainability reporting has been recognized as an important part and driver of a company's sustainability contribution; which legitimizes even more the need for companies to report when they establish their sustainability process. In order to master this process, it is essential that companies control, assess and measure their different operations (ibid.). Therefore, sustainability reports can be used for measuring sustainability performance over time, showing how the company is influenced by, and influences, various expectations of sustainable development, and benchmarking against other companies on the market (ibid).

In order to report on their sustainability performances, companies need to have evaluated their performances with indicators. According to GRI (2013), indicators represent an important part of the sustainability reports. In the second section of this chapter we identified the need of indicators for measuring sustainability, the advantages of indicators, the process to select indicators, and the potential difficulties in doing so. We aim to define the indicators or frameworks we will use to do our empirical observations. Therefore, we will gather information on indicators to make our selection.

3.5. Indicators

When reporting on sustainability, companies generally produce reports including many different units (GRI, 2013). According to Krajnc & Glavic (2005, p. 191-192), although it is important to assess sustainability with several indicators, it may be difficult to make business decisions and comparisons among companies based on a large number of performance measurements. To help decision makers in this respect, it may be useful to use composite sustainable development index, linking many sustainability issues and so reducing the number of decision-making criteria that need to be considered. However, a complex problem still consist of the aggregation of different indicators into a properly constructed index, which would enable quick and efficient assessment of sustainability of company as well as benchmarking of companies within a particular sector (ibid.).

3.5.1. An example of indicator: the EPI

Several approaches towards integrating values directly into indicator calculation exist. One of them is known as the Environmental Performance Index (EPI) (Moldan et al., 2012, p. 9).The authors write that this index is similar to the concept of environmental sustainability, and its purpose is to numerically benchmark and quantify the environmental performance of a country's policies. EPI is focusing on two general objectives: promotion of sound resource management and ecosystem vitality, and reducing environmental stresses on humans. These goals are the result from policy priorities of authorities, which have an environmental point of view, from around the world. The quantitative measurement of the EPI consists of twenty five different indicators, based on the above mentioned goals and six policy categories: biodiversity and habitat, air pollution, water, climate change, environmental health and productive natural resources. Furthermore, the authors describe that the indicators can be linked to an ecosystem sustainability target or a public health target. These targets, whose values can be calculated based on the gap between the policy target and a country's result in meeting the targets, are collected from four sources: (1) internationally agreed goals or treaties, (2) international organizations standards, (3) regulatory requirements on a national level and (4) judgments based on current scientific consensus. The EPI ranking can provide a clue on which countries are in forefront when it comes to reaching different environmental targets, but it does not show which country that actually is on a sustainable path (Moldan et al., 2012, p. 9-10). However, the EPI has two main inconvenient which will prevent us to use it. First of all, it has been especially applied on countries until there and so finding all the information for each indicator of the EPI inside companies may be difficult and above all time consuming. Second of all, the EPI is focusing on environmental issues, which is one of the three pillars of sustainability, but it does not bear interest in social and economic issues. We want our thesis to focus on all the aspects of sustainability; therefore, the use of EPI is not an option when it comes to assessing all the different sustainability indicators.

3.5.2. The most successful frameworks: the Global Reporting Initiative and the United Nations Global Compact

Numerous frameworks have been done to report on the different issues of sustainability. In their paper, Rajesh Kumar Singh et al. report on the most important ones and several among them include information on the three pillars of sustainability. We can find among these frameworks the GRI Framework which focus on the social, economic and environmental areas, the United Nations Commission for Sustainable Development Theme Indicator Framework which divide the four following parts of sustainable development – economic, social, environmental, institutional – in 15 themes and 38 sub-themes (see Appendix 1 for more details); and the Wuppertal Sustainable Development Indicator Framework which is also based on the same four dimensions plus their connections (Appendix 2) (Rajesh Kumar Singh et al., 2009, p.193-194).

However, other frameworks exist and are emphasized by other authors. According to Dumay et al. (2010, p. 538), the three international guidelines reporting on the three pillars of sustainability which are the most commonly used are the Global Reporting Initiative – GRI -, the AccounAbility standards, and the United Nations Global Compact – UNGC. This proves the huge diversity of conceptions as regards sustainability, and the existing frameworks are clearly on different levels of difficulty. Among all the existing frameworks, a number of authors (Dumay et al., 2010, p. 532, 536; Hussey et al., 2001; Legendre & Coderre, 2012; Lozano, 2006b; Morhardt et al., 2002; ref in Lozano, 2013, p. 58) have indicated that the best option for companies reporting on sustainability is the GRI's Guidelines. Several arguments enable to understand their point of view. Regardless of size, sector or location, the GRI's Guidelines provide a reporting framework for formal sustainability reports for companies or organizations. Therefore, this framework is supposed to be accessible to every company. When adopting this framework, which currently is the G3 generation, the reporter are able to compare progress in the sustainability area, both within and among companies, and monitor improvement (Cowan et al., 2010, p. 525-526). Besides, the GRI is largely used by companies worldwide. Indeed, a KPMG survey made in 2011 indicates that among the 250 largest companies in the world, 95 per cent report on their corporate social responsibility and 80 per cent of them report their performances with the GRI Guidelines (SIDA, 2013). Nevertheless, we are going to compare the GRI with another framework, the United Nations Global Compact, to be sure we will use the most interesting framework possible in our thesis.

As mentioned in the paragraph above, the Global Reporting Initiative and the United Nations Global Compact are among the three international guidelines reporting on the three pillars of sustainability which are the most used in the world (Dumay et al., 2010, p. 538). This is of importance for us as we want to use a framework widely recognized - in order to be able to collect as much data as possible - and to report on the three pillars of sustainability. We did not choose to use the AccountAbility standards as it was not mentioned in any other document we consulted.

The UN Global Compact is defined as "a strategic policy initiative for businesses that are committed to aligning their operations and strategies with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption" (UNGC, 2013). Therefore, as we were writing, the United Nations Global Compact

reports on the three pillars of sustainability. The detail of the ten principles of the UN Global Compact can be found in Appendix 3.

Like the GRI, the UNGC is largely used worldwide as more than 10, 000 companies and organizations from over 130 countries use it to report on sustainability; which makes the UNGC the "largest voluntary corporate responsibility initiative in the world" (UNGC, 2013).

The benefits of the UNGC are of interest as well. Here are, the ones mention in the UNGC's website:

Benefits of the United Nations Global Compact
Adopting an established and globally recognized policy framework for the development, implementation, and disclosure of environmental, social, and governance policies and practices
Sharing best and emerging practices to advance practical solutions and strategies to common challenges
Advancing sustainability solutions in partnership with a range of stakeholders, including UN agencies, governments, civil society, labour and other non-business interests
Linking business units and subsidiaries across the value chain with the Global Compact's Local Networks around the world
Accessing the United Nation's extensive knowledge of and experience with sustainability and development issues
Utilizing UN Global Compact management tools and resources, and the opportunity to engage in specialized workstreams in the environmental, social and governance realms

Table 3. Benefits of the United Nations Global Compact (adapted from: United Nations Global Compact, 2013)

These arguments pro UNGC can make us have a doubt on the relevancy of the choice of the GRI. However, there is one argument we did not develop yet which make us choose the GRI instead of the UNG. This argument is the partnership between the two organizations. Since December 2001, the collaboration between the two organizations has not stopped increasing (UNGC, 2003). Inside his speech of March 17th, 2003 which strengthened the relations between the two organizations, the former Executive Head of the UNGC declared that companies participating to both the initiatives consider the GRI as a "practical expression" of the Global Compact (UNGC, 2003). On May 28th, 2010 a new step was made in the will of convergence between the two organizations through the signature of a Memorandum of Understanding.. The GRI agreed to integrate the principles of the Global Compact inside its next version of its Guidelines, and the UNCG, to adopt the GRI Guidelines as the framework they will advise companies to use for reporting on sustainability (UNGC, 2010). The commitments between the two organizations can be found in Appendix 4. In 2011 were released the G3.1 Guidelines (GRI, 2013) which include the principles of the UNGC and make the collaboration between the two organizations really effective. Therefore, we can expect companies to report on sustainability using the G3.1.Guidelines from the end of 2011 and more

certainly in 2012. To analyze how companies report on sustainable development, the choice of the GRI is more indicated than the choice of the UNGC which focuses less on the practical aspects of reporting than the GRI. These reasons lead us to pay attention to the use of the GRI as a tool to report on sustainability by the companies. We will now develop more on this framework which will be at the center of our thesis.

3.6. The Global Reporting Initiative

The Global Reporting Initiative (GRI) is a network-based, non-profit organization headquartered in Amsterdam, Netherlands. They have a network of around 30,000 people who contributes to the work , many of them are sustainability experts, and in addition to the GRI headquarter; they also have regional offices in USA, Brazil, Australia, China and India. GRI promotes economic, environmental and social sustainability and provides companies from all around the world with a comprehensive reporting framework, which has become widely used. Thousands of organizations, from all sectors and of all sizes, use the framework to communicate and understand their own sustainability performance (GRI, 2013).

The GRI Sustainability Reporting Framework assists both companies and organizations in measuring and reporting on their performance in the sustainability area, and by reporting with accountability and transparently, the companies and organizations can gain trust from stakeholders. GRI's vision is "A sustainable global economy where organizations manage their economic, environmental, social and governance performance and impacts responsibly and report transparently", and their mission is "To make sustainability reporting standard practice by providing guidance and support to organizations" (GRI, 2013).

3.6.1. History

GRI was established in Boston in 1997, and its roots are from the non-profit organizations the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. In the early 1990s, CERES founded a 'Global Reporting Initiative' project to develop a framework for environmental reporting. The aim of this project was to form an accountability mechanism to make sure that companies followed the CERES Principles of responsible environmental behavior (GRI, 2013).

In 1998, the GRI guidance was developed. The aim was to broaden the framework's range of "just" including the environmental aspect, and therefore social, economic and governance issues were adopted. The guidance became the Sustainability Reporting Framework, with the Reporting Guidelines as a major part of it (GRI, 2013).

The first version of the Guidelines was created in the year 2000, and on the following year, GRI was separated from CERES as an independent institution. In 2002, the second generation of Guidelines, or G2 as it were called, was disclosed to the world. The United Nations Environment Program (UNEP) embraced GRI and UN member states were invited to host it with Amsterdam as the host country. Later that year, GRI became an independent organization with headquarter in Amsterdam (GRI, 2013).

In 2006, the current generation of Guidelines, G3, was launched and the usage of GRI's Guidelines received a boost. GRI expanded its strategy and build alliances with, for

example, the United Nations Global Compact. Regional offices were established in different parts of the world and sector-specific guidance was produced. The services for GRI's users also expanded to include training, software certifications, and others. In 2011, an updated version of the G3 Guidelines was released, called G3.1 Guidelines, which includes human rights-related performance, community and gender reporting (GRI, 2013).

3.6.2. Reporting

Companies, which report according to G3 or G3.1 Guidelines, receive an Application Level; A, B or C. This level reflects the degree of transparency against the Guidelines reporting and the amount of contents that has been addressed in the report .Hence, a reporting company or organization can decide themselves on which, and how many, issues and indicators to report on. The levels do not give a statement of the sustainability performance of the reporting company or organization, nor how the quality of the report is (GRI, 2013).

To receive a C, the report needs a minimum of ten performance indicators; a B needs a minimum of 20; and to get an A needs a respond to each core and Sector Supplement indicator or at least an explanation why it is not reported. For C and B (and obviously A which needs all core indicators), at least one from each of economic, environment, human rights, labor, society and product responsibility needs to be reported on (GRI, 2013). If a company or organization gets their sustainability reporting externally assured, they receive a plus (+) to their level.

3.6.3. Performance indicators

In our thesis, we aim to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector; to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector; and to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector. We have chosen to examine companies GRI reports, because of the global use of the GRI Guidelines and the numerous sustainability indicators that are presented in the GRI reports.

The G3 Guidelines, which is the current generation Guidelines in use around the world, can be divided in two parts: the first part features information and guidance on how to report, and the second part features guidance on what should be reported. This second part includes Disclosures on Management Approach (which we mention in our analysis but does not evaluate) and Performance Indicators. As we aim to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector, we consider it would be interesting to have further information as regards the GRI Performance Indicators.

The GRI's G3 sustainable Performance Indicators is divided into three categories: Economic, Environmental and Social. The Social category is broken down into subcategories: Labor, Human Rights, Society and Product Responsibility. Table 4 shows the hierarchical structure of the different categories.

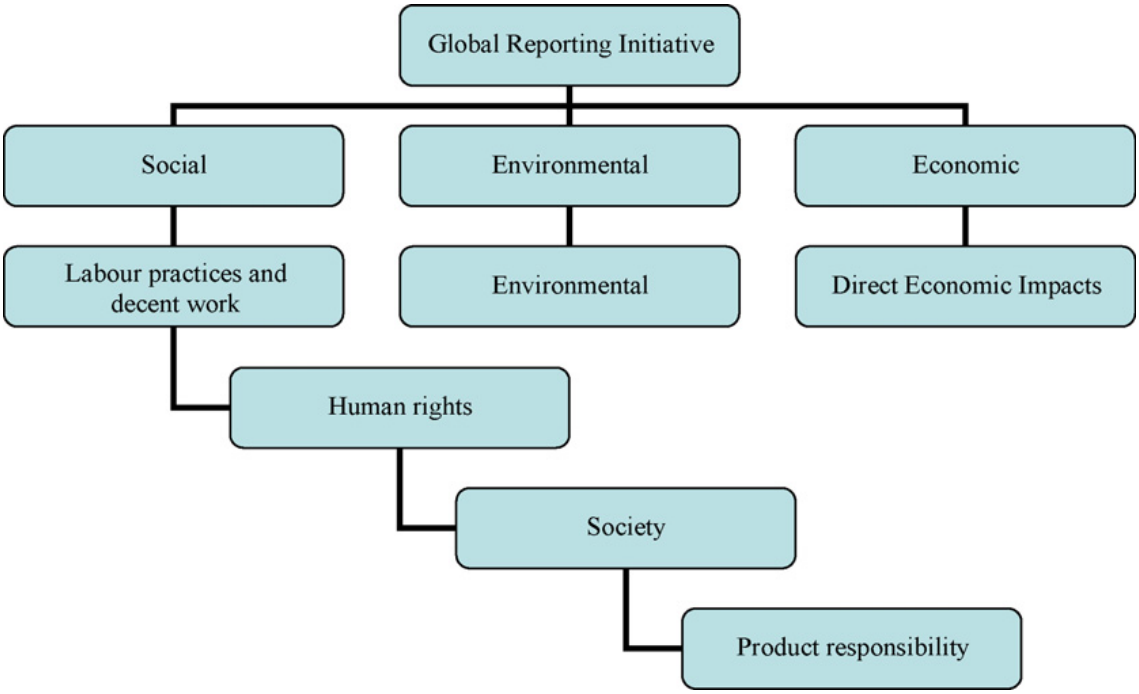


Table 4. The hierarchical structure of the global reporting initiative (GRI) framework (Rajesh Kumar Singh et al., 2009, p.193).

The *Economic* category consists of nine indicators, divided into three aspects: Economic Performance (addresses the direct economic impacts and the value added of organizations activities), Market Presence (providing information on specific market interactions) and Indirect Economic Impacts (measures the economic impacts which are created as result of organizations economic activities) (GRI, 2013).

The *Environmental* category consists of 30 indicators, divided into different aspects. These aspects are structured to reflect on an organizations inputs, outputs and impact modes on the environment (GRI, 2013). The aspects are Material, Energy, Water, Biodiversity, Emissions/Influence/and Waste, Products and Services, Compliance, Transport, and Overall.

The *Social* category is, as mentioned before, divided into subcategories. The first one, *Labor*, consists of 14 indicators, divided into the aspects of Employment, Labor/Management Relations, Occupational Health and Safety, Training and Education, and Diversity and Equal Opportunity. The Labor indicators are broadly based on the notion of decent work. The second subcategory, *Human Rights*, discloses on the impact and activities an organization has on political and human rights. This category consist of nine indicators, divided into the aspects of Investment and Procurement Practices, Non-discrimination, Freedom of Association and Collective Bargaining, Child Labor, Forced and Compulsory Labor, Security Practices, and Indigenous Rights. The third subcategory, *Society*, focuses on the impact that an organization have on the community it operates in and how the interaction with other social institutions proceed. There are eight indicators in the Society category, which are divided into Community, Corruption,

Public Policy, Anti-Competitive Behavior, and Compliance aspects. The last subcategory, *Product Responsibility*, consists of nine indicators divided into Customer Health and Safety, Product and Service Labeling, Marketing Communications, Customer Privacy, and Compliance. These indicators address the effects services management and products have on the customer and users of the products (GRI, 2013).

To sum it all up: GRI's sustainability Performance Indicators consist of a total of 79 indicators, whereof 49 are core indicators, that companies can report on when applying GRI's Guidelines. Also, as companies can choose on which indicators to report on, the variation between companies' reports may be great. How the Swedish industrial companies report on GRI indicators will be under a closer look in this thesis, as mentioned in our introduction chapter (for more detailed descriptions and definitions of the different aspects and indicators used in GRI's Guidelines, please see Appendix 5 or visit www.globalreporting.org).

4. PRACTICAL METHOD

In this chapter, we present the criteria we use to determine the population we study in our thesis. A development on the importance of the selection of a country conducts us to explain why we choose Sweden. Then, we emphasize the importance of the size of the companies in sustainability reporting and explain why we want to focus on large companies, determining what "large" companies are. This comes before a discussion on the importance of the sectors in sustainability reporting, and the choice of the industrial sector. The determination of these criteria is of major importance as it enables us to reach our research hypotheses.

4.1. Rules and legislations in Sweden

4.1.1. The influence of countries in reporting

A large number of studies agree on the fact that the level of disclosure and the nature of sustainability reporting are influenced by the company's country, and the country the company is reporting in (Joshi & Gao, 2009, p. 35; Legendre & Coderre, 2012, p. 185; Kolk, 2004, p. 53). Joshi and Gao (2009, p. 35) shed light on the fact that the country in which a company is reporting has an influence on the reporting which is made as the company has to respect "the culture, economic development, legal system, taxation, and political and civil systems" of the country when redacting its sustainable report. However, the authors also mention that variations in reporting can be found inside a country because of the various perceptions of costs and benefits financial managers have while deciding which information their company will disclose on (ibid). In his article, Kolk (2004, p. 53) mentions that the legislations of a country as well as the attention the country's society is bearing on sustainability issues are among the reasons which explain differences in sustainability reporting between countries. Indeed, some countries have their own legislations as regards sustainability matters or encourage disclosure (ibid).

The importance of the legislation on sustainability reporting practices is also emphasized by Legendre and Coderre (2012, p. 185) who consider that sustainability reporting practices are influenced by the business culture of a country –mainly shareholder business culture and stakeholder business culture – which is linked with the legislation system of the country –Common law, Civil law, and Germanic law. The shareholder business culture is linked with the agency theory whereas the stakeholder business culture is linked with the stakeholder theory. The agency theory highlights the separation between ownership and control as the shareholders (or principal), who provide capital to the company, let the control to managers (or agents). According to the agency theory, potential conflicts of interest exist between the principal and the agents due to information asymmetry and the will of both sides to maximize their profits (Solomon, 2010, p. 5). In the stakeholder theory, a "web of relationships [exists]… between a company and… its stakeholders, [including its shareholders], employees, customers, suppliers…" (Solomon, 2010, p. 5). The stakeholder theory underlines the connection of the companies with issues such as corporate social responsibility, sustainability, and ethics as a key point of the stakeholder theory is the impact and morale responsibilities companies have on their stakeholders (Solomon, 2010, p. 17). Legendre and Coderre (2012, p. 185) consider that companies belonging to Common law countries have in general a shareholder business culture, contrary to Civil law

countries which have in majority a stakeholder business culture. The Common law, which is the legal basis in Anglo-American countries, is grounded on few codes, and uses jurisprudence as its main legal source. The Civil law, which is applied in most European countries, their former colonies and Japan, uses written laws as its main legal source and distinguishes public and private law. The Common law system provides the highest level of investor legal protection. As regards the Civil law, it can be divided in two parts: the French system or Napoleonic code which provides the lowest level of investor protection, the lowest quality of law enforcement but a high ownership concentration to compensate; and the German system which provides a level of investor protection between the Common law and French law ones and the best quality of law enforcement (La Porta et al., 1999, p.1116).

All these elements establishing the variation of reporting from one country to another lead us to focus on companies settled in one unique country.

4.1.2. The choice of Sweden

We opt for Sweden for two reasons. First of all we think it could be relevant to know more about the way the companies are performing and reporting on sustainability in the country we are studying in. Secondly, Sweden is famous for being a country which respects the different pillars of sustainability. Sweden is known for being one of the most respectful countries as regards the environment what is supposed to provide us more advanced information to analyze later on. Sweden has for instance been ranked in overall 9th out of 132 countries by the Yale Center for Environmental Law and Policy on the EPI (Environmental Performance Index) 2012 which has been recognized as one of the most relevant indicators as regards environmental performance; and more especially 1st in Environmental Health and 39th in Ecosystem Vitality, the two main objectives of the EPI (Yale University, 2012). Sweden is also known for being a model as regards its society. For instance, Sweden has been ranked first country in the world in 2013 with the Social Progress Index (SPI), an index made by the Harvard Business School Professor Michael Porter, which is ranking countries according to parameters such as the living standards, the infrastructure, or the individual opportunity (The Telegraph, 2013; Skoll Foundation, 2013). With those rankings in mind, we find it interesting to deeper investigate Swedish companies to see how sustainability performance, and not only the environmental performance, is reported.

4.1.3. The link between GRI and national legislations

An increasing number of countries have made sustainability reporting mandatory, and some of these countries use the GRI's Guidelines as a reporting tool (GRI, 2013). For example, Denmark has made the GRI's Guidelines a compulsory sustainability reporting tool for its companies which have more than 250 employees (Swedish International Development Cooperation Agency [SIDA], 2013). In France by 2010, the law Grenelle II, or more especially its Article 225, stipulates that listed companies on the French Stock Exchange and unlisted companies – under certain conditions - located in the French territory have to include in their annual reports information about "the social and environmental consequences of their activities, as well as their societal commitments for sustainable development" (Ernst & Young, 2012, p. 1). By January 2016, all the unlisted companies whose turnover reaches at least 100,000,000€ and the number of employees is higher than 500 will have to comply with this decree (Ernst &

Young, 2012, p. 2). The requirements the companies under the French legislation have to meet are based on both the GRI and the norm ISO 26000 (Ernst & Young, 2012, p. 3). The GRI Guidelines are also used by large companies in Norway (Norwegian Ministry of Foreign Affairs, 2008-2009, p. 68).

4.1.4. Sustainability reporting in Sweden

As regards Sweden, the partly or fully state-owned companies have been mandated to report on their sustainability performances using the GRI G3's Guidelines from January 2008 (Regeringskansliet, 2007, p. 1). The companies have a certain freedom in the application of the Guidelines are they are expected to respect the principle of "comply or explain", which means they have the possibility not to report on some indicators of the GRI Guidelines if they provide an explanation for not doing so (GRI, 2013). Besides the reports have to be externally audited (ibid), so the reports will have the "+" annotation as we explained in the sixth section of this chapter. The reporting of Swedish state-owned companies with the GRI has been analyzed in 2011 (ibid). At the beginning of the year 2011, 55 Swedish companies were partly or fully state-owned companies (ibid). It appeared that 53 of the 55 companies presented a report for their 2011-closing; which represents 96% of the companies under a legal obligation (ibid). The two other companies did not report because one was not anymore a state-owned company, and the other was a new state-owned company and did not have enough time to comply with all the legal obligations of the Guideline for external reporting by state-owned companies which is the Swedish legal document mandating the reporting with the GRI G3's Guidelines (ibid). Among the 53 disclosing companies, 49 -92%- were externally audited (ibid).

These figures prove that Swedish state-owned companies have succeeded in adapting to the GRI Guidelines as the enforcement of the law is really strong. This could be explained both by the fact that sustainability is an important matter in Sweden as Sweden is a stakeholder country, and also by the Civil Law system based on the German law which is in vigor in Sweden.

Other government initiatives concerning sustainability have been taken in Sweden. In 1999, the amendment to the Annual Accounts Act –or Årsredovisningslagen- obliged companies to include a succinct disclosure of environmental and social information inside their annual report in the Board of Directors'Report section; and since the modifications brought in 2005 the scope of this reporting has broadened (ibid). To this initiative, we can add the Guidelines on environmental information in the Director's Report section of the Annual report (ibid). These Guidelines were created in 1998 and force companies which are considered as "large" by the Annual Accounts Act to make their Annual Report and a possible Consolidated Account Statement in accordance with the guidelines provided by the Swedish Accounting Standards Board, plus to disclose on environmental and social issues with other specific guidelines (GRI, 2013).

4.2. Companies' size

4.2.1. Companies' size influence on reporting

The number of reports issued by companies with sustainability information as well as the quantity and the quality of the information disclosed in these reports does not stop

increasing worldwide as we mentioned in the fourth section of the present chapter (Eccles et al., 2012, p. 8; Kolk, 2004, p. 51-54). A number of studies (Hackston and Milne, 1996; Neu et al., 1998; Patten, 2002; García-Sánchez, 2008; Joshi and Gao, 2009; Da Silva Monteiro and Aibar-Guzmán, 2010; Prado-Lorenzo et al., 2009; Sotorrío and Fernández Sánchez, 2010, ref in Legendre and Coderre, 2013, p. 184; Cornier et al., 2005, p. 31; Guo & Zhao, 2011, p. 47; Joshi & Gao, 2009, p. 38; Prado-Lorenzo et al., 2009, p. 104) have shown that the size of the company has an influence on the quality and the quantity of information disclosed in sustainability reports. These studies concluded that a company's size has a positive impact on sustainability reporting practices. Legendre and Coderre (2012, p. 187) also proved in the research they conducted that small companies are less likely to report on sustainability using the GRI than large ones. A KPMG survey made in 2011 indicates that among the 250 largest companies in the world, 95 per cent report on their corporate social responsibility and 80 per cent of them report their performances with the GRI Guidelines (SIDA, 2013). This survey proves that the largest companies in the world report on sustainability and it confirms that the GRI Guidelines is one of the main tools as regards reporting.

Even though a large number of authors agree on the conclusion that large companies report more on sustainability than small ones, we have to mention that other theories exist. Indeed, Nayak and Venkatraman (2011, p. 294-295) conducted a study of sustainability reporting and performance by comparing small, medium and large Australian companies. It was shown that large companies report significantly more on environmental aspects than the small and medium sized companies, but when it comes to economic and social aspects, the three size categories were equal. This shows, according to the authors, that small and medium sized companies do not see the link between environmental reporting and cost savings, and that they have the least regulatory and community pressure (Nayak & Venkatraman, 2011, p. 294-295).

4.2.2. The reasons for which the large companies disclose more than the small ones

4.2.2.1. Stronger importance of the shareholders and reputation

Large companies disclose more on their sustainability practices than small ones as they are under the spotlight and in need of investors (Joshi & Gao, 2009, p. 33; Gallo & Christensen, 2011, p. 321-322. Legendre & Coderre, 2012, p. 184). Legendre and Coderre (2013, p. 184) claim that there is a greater pressure to conform to the stakeholders norms for larger companies compared to smaller companies. This is confirmed by Gallo and Christensen (2011, p. 321-322) who explain that larger companies are by nature more visible organizations and therefore attract the attention and the closer inspection from a greater number of stakeholders. The influence of stakeholders, and especially shareholders, on large companies is huge as they are investing on them, which make the shareholders take part on the decision making process. Companies also seek to increase the number of their shareholders in order to have more financial resources to keep performing and extending the scale of their activities as well as increasing their profits. Hence, large companies interact with both a greater number and greater variety of stakeholders, which would influence how complex and multidimensional a formalized sustainability policy from such a company is. These last years, due to an important number of huge financial scandals, such as

Enron, and the global crisis the trust of shareholders has been tested severely. Therefore, according to Ioannou & Serafeim (2012, p. 6), to keep trusting in companies but also to do the best possible decision-making, shareholders and stakeholders demand transparency from them; which includes reporting on sustainability. This idea is mentioned by Gallo and Christensen (2011, p. 323) too. The authors add that by publishing reports, companies aim to gain legitimacy benefits (ibid).Therefore, larger companies are more expected to engage in sustainability reporting to communicate their sustainability policies to the parties interested in and affected by the companies' operations (Gallo & Christensen, 2011, p. 323).

Also, a company's profitability and industry type has an impact on its sustainability reporting. When it comes to profitability, companies with average or better profitability disclose more information about social and environmental performance to legitimize their activities, and profitability is a factor which makes companies afford the flexibility to communicate and conduct extensive sustainability reports to various stakeholders (Legendre and Coderre, 2013, p. 184). Companies which operate in high-risk industries, such as industries having a high level of political risk or intensive competition, are more likely to get high pressure from stakeholders. For example, the BP catastrophe increased the public awareness and attention to environmental issues of selected industries (Adams, 2009, ref in Legendre and Coderre, 2013, p. 185). Legendre and Coderre (2013, p. 185) explain that high-risk industries disclose more information and in greater quality than companies operating in low-risk industries.

4.2.2.2. Resources

Kohl (2004, p. 54) mentions that the cost of reporting can be a reason for some companies not to report on sustainability. As the means of small companies are more limited than large ones, we can expect small companies to be more affected by the cost issues than large companies. Some scholars confirm this theory. Meek, Roberts and Gray (1995, p. 558) explain that large companies disclose more information than small companies for several reasons among which lower costs of competitive disadvantages, complex and wide ownership base and higher agency costs. These reasons could indicate that large companies have additional incentives for voluntary disclosures compared to smaller companies (ibid.). The costs, which are affected by the implementation and reporting of a company's sustainability practices, are also considered to be lower for larger companies by Joshi and Gao (2009, p. 34). To the cost restrictions, Orth and Kohl (2013, p. 31) add the time restriction as a reason explaining why small and medium sized companies often suffer when they want to go sustainable.

Gallo and Christensen (2011, p. 321-322) write that large companies most commonly have more resources in the form of human and financial capital. Previous research (Ramus & Steger, 2000; Sharma et al., 1999; Seifert, Morris, & Bartkus, 2004, ref in Gallo & Christensen, 2011, p. 322) has shown that environmental and social initiatives require such resources. With enough funds and enough manpower to respond to stakeholders, and to react to sustainability-related issues, larger companies can allocate more time and consideration to sustainability-related details and for the usage of more comprehensive practices (Gallo & Christensen, 2011, p. 322).

Disclosing information about their sustainability practices can also be explained for several companies by legal obligations as in some countries sustainability reporting

becomes mandatory, as we mentioned in the second section of this chapter. However, this can also be harder for smaller companies. Indeed, according to Laurinkevičiūtė and Stasiškienė (2011, p. 798), the lack of knowledge about environment and the legislation about environment are elements to take into consideration when explaining why sustainability is harder to achieve for SMEs. The authors explain that the environmental impact from large companies is bigger and more visible than from small companies, which make the measuring, evaluation and interpretation of smaller companies' impacts harder (ibid). Furthermore, the authors claim that many small and medium-sized companies, especially in well-developed countries, are operation in service sectors which may explain why those companies have inadequate environmental management techniques and less developed environmental policies (ibid).

4.2.3. Size criteria

While thinking about the way to define the companies which would constitute the population we would study, we considered that information about sustainability practices would be easier to find for large companies. Then, some criteria needed to be established in order to define what a large company would be. Those criteria can vary as the size of a company can be measured in a number of ways, such as number of employees, the company's market value, equity and/or turnover (Joshi and Gao, 2009, p. 39). For example, Cooke (1991, ref in Joshi and Gao, 2009, p. 39) used turnover, total assets and number of shareholders to measure a company's size. In the study by Legendre and Coderre (2013, p. 186), the company size was measured by revenues, and the companies were collected from the Fortune Global 500 list in Fortune Magazine.

In Sweden, both the Book Keeping Act and the Annual Accounts Act establish a definition distinguishing "small" and "large" companies (European Commission, 2011). These acts provide the same unique definition for all legal forms of companies (ibid). All the companies which are listed on a statutory market belong to the group of the large companies (ibid). Furthermore, companies which are respecting more than one of the three following criteria during a two-financial-year period are considered as "large" by the Swedish legislation:

- Net turnover: more than SEK 50,000,000 (approximately €5,000,000);
- Balance sheet total: more than SEK 25,000,000 (approximately €2,500,000);
- Number of employees: more than 50 (ibid).

Hence, the companies which are not listed on a statutory market or which are not able to reach more than one of these criteria are small companies, which makes Sweden a country without any medium sized companies.

We can compare the Swedish definition of "large" companies with those provided by other countries using the GRI. We mentioned in the seventh section of this chapter a report from Ernst & Young (2012, p.2) explaining that in France, in July 2010, the law Grenelle II was adopted which expects all listed companies by 2012 and unlisted companies whose turnover is higher than 100,000,000€ and number of employees higher than 500 by 2016 to report about their sustainability practices. Therefore, the French government considered that companies respecting these size criteria are able to report on sustainability using the GRI, and also probably that these companies were large enough to support the constraints of the application of the GRI.

4.2.4. Our definition of "large" companies

We can compare those criteria with the ones Sweden uses to define "large" companies and see that the ones France establishes are consequently higher. Therefore, we can expect that many "large" companies according to the Swedish definition would not be able to report on sustainability using the GRI.

We decide to use the criteria the French government has established when determining which companies would have to report on the GRI as our criteria for defining large companies. We also consider these criteria are relevant as France and Sweden are perceived on an equal footing as regards sustainability. Indeed, France is ranked 6th as regards its EPI with an overall grade of 69% whereas Sweden is ranked 9th with 68.82%; which makes them be considered as members of the "strongest performers" as regards EPI (Yale University, 2012). As the companies will be of the same size as the French ones which will have to disclose about sustainability and that France and Sweden are on an equal footing as regards sustainability we expect to have a large enough population in order to make our study.

4.3. Industrial sector

4.3.1. The importance of sectors in reporting

The sustainability approach which is chosen by a company has to be adapted to the company (Eccles et al., 2012, p.8). Some studies have revealed that the sector of activity of a company has an influence on the use of sustainability reporting (Cowan et al., 2012, p. 525; Joshi & Gao, 2009, p. 34; Kolk, 2004, p. 53), as well as on the quantity and quality of the information the company discloses (Joshi & Gao, 2009, p. 34). Eccles et al. explain that according to companies' activities, the companies will not have proportionally the same needs in terms of water and energy, not emit the same quantities of CO2, or reuse, recover and recycle the same proportion of their waste. This is the kind of issues which are considered as "material" as they are "relevant to decision making" and we consider, as the Harvard scholars did, that the importance of these issues has to be defined according to the specific sector on which the company is working (Eccles et al., 2012, p.8). One of the main problems in determining materiality for non-financial information comes from the absence of generally accepted accounting standards for non-financial information (Eccles et al., 2012, p.10). Some organizations have tried to define materiality for non-financial information, but did not take into account the specificities related to the sectors the companies belong to (Eccles et al., 2012, p. 9). Furthermore, the Harvard scholars argue that good quality disclosure of sustainability is expected from companies whose sector is closely related to sustainability issues, and therefore companies belonging to the same sector can be expected to report in a similar way, which could make the comparison of companies' performances easier (Eccles et al., 2012, p. 11-13).

Furthermore, according to a study made by Gallego, the conclusions according to which the use of sustainability reporting, the quantity of information disclosed, and the quality of information disclosed vary from a sector to another are valid with the GRI framework (Dumay et al., 2010, p. 183). The GRI also noticed the existence of differences in disclosure from a sector to another and therefore developed a pilot version of a sector specific supplement in 2005 (Dumay et al., 2010, p. 536). However, the use of this

sector supplement has been analyzed and it was found by Tort that the awareness and use of this supplement was really restricted (ibid). Therefore, studying sectors using the GRI is still of interest. Considering these arguments, we decide to have one sector of activity studied in our thesis.

4.3.2. The choice of the industrial sector

Block et al. (2006, p. 43) mention in their article the need of indicators for measuring the progress of the industrial sector to sustainability. Some studies have already been conducted on the industrial sector. Indeed, research studies sponsored by the Center for Waste Reduction Technologies (CWRT), were carried out by The Institution of Chemical Engineers (IChemE) in 2002 and by AIChE in 2004 for the benefits of the process industry (Krajnc & Glavic, 2005, p. 91). Krajnc and Glavic also refer to Veleva & Ellenbecker's (2001) study which discusses the indicators of sustainable industry production. We can also notice that in 2004 Azapagic developed a framework for sustainability indicators for the use of mining and minerals industry, and that Krajnc & Glavic (2003) collected and developed a standardized set of sustainability indicators for companies, covering the main aspects of sustainable development (Krajnc & Glavic, 2005, p. 191). However, none of these studies on the industrial sector was using the GRI.

Besides, our thesis is focusing on Swedish companies, and, in this condition, the study of the industrial sector is still of interest. Indeed, the Dow Jones Sustainability Index of Nordic countries (Denmark, Finland, Norway, and Sweden) (DJSI, 2013) is basing its index on the long-term economic, environmental and social performances of the 30% largest Nordic companies referenced in the Dow Jones Global Total Stock Market Index. The industrial sector plays a prominent role in this index. The biggest companies are from Sweden (54.67% of the revenues) and the sector which creates the most important quantity of revenues is the industrial sector (DJSI, 2013). Volvo AB B, Atlas Copco AB A and Sandvik AB, which are listed as Swedish companies in the industrial sector, are among the top 10 largest companies in Nordic countries according to the Dow Jones Sustainability Nordic Index (DJSI, 2013), which gives indications on the importance of the industrial sector in Sweden.

As we have chosen to focus on the industrial sector, we need to provide definitions of this sector to make it clear what our view of "industrial" is. The literature provides different definitions of it, which we will put forward below. We will mention both the definition given by Newsweek when it established its Green Rankings 2012 and the definition by the Dow Jones Sector Specifications, which is used by Dow Jones in order to categorize securities by sector.

4.3.3. Definition of the industrial sector

4.3.3.1. Newsweek definition

The Newsweek Green Rankings in 2012 aimed to rank the largest 500 companies by "revenue (most recent fiscal year), market capitalization, and number of employees" at April 30, 2012 according to their "Green score"; an index created by Newsweek which is based on three main criteria: the environmental footprint, the management of that footprint, and the transparency of the companies (Newsweek Green Rankings, 2012a).

Newsweek get its data for establishing its rankings from Trucost and Sustainalytics, two important groups in environmental research (Newsweek Green Rankings, 2012a). The sector of each company is mentioned in the ranking, and we can also sort the companies in order to have for a specified sector its companies' ranking. Newsweek identified 19 sectors in its rankings such as "aerospace and defense", "financials", "information technology and services", or "telecommunications". Our definition of industrial sector relate essentially to the "industrial goods" sector mentioned by Newsweek. According to Newsweek, "this sector includes industrial conglomerates, trading companies, and distributors; construction and engineering companies; and producers of building products, electrical equipment, and machinery" (Newsweek Green Rankings, 2012b). Newsweek also defines the environmental stakes for each sector. As regards the industrial goods sector, companies' main issues concern their consumption of energy and their production of greenhouse gas. A general lack of end of life recycling programs has been noticed too, what could threaten the environment as most of companies working in this sector are involving in intensive manufacturing processes which require both extensive water consumption and the use of toxic materials for the disadvantage of the environment (Newsweek Green Rankings, 2012b). Newsweek also mentions that more than 80% of the total environmental footprint for this sector is due to both "greenhouse-gas emissions and waste generation and disposal" (Newsweek Green Rankings, 2012b), which clearly show that the industrial sector has an impact on environment, and thereby the sustainability area.

4.3.3.2. Dow Jones definition

The Dow Jones Sector Classification (DJSC, 2012) also provides a definition of the industrial sector. What we call "industrial sector" is named "Industrials" by the Dow Jones and is considered as an industry (DJSC, 2012). The Industrials is divided into two super-sectors: "Construction and materials" and "Industrial goods and services". The Industrial goods and services super-sector includes aerospace and defense, containers and packaging, diversified industrials, electrical components and equipment, electronic equipment, industrial engineering, industrial transportation, and support services, and the Construction and materials super-sector includes building materials and fixtures, and heavy construction (DJSC, 2012). These definitions given by both Newsweek and Dow Jones will provide a better understanding of the meaning of industrial sector in our thesis.

4.3.3.3. Our definition of the industrial sector

We mentioned two definitions for the industrial sector: the ones provided by Newsweek and the Dow Jones. We can then notice some differences between the two aforementioned definitions.

The Dow Jones definition, as the Newsweek's definition, includes industrial engineering in the industrial sector; nevertheless, their definitions of industrial engineering differ. The Dow Jones considers that "Commercial vehicles and trucks" and "Industrial Machinery" are a part of industrial engineering, whereas Newsweek only consider "Industrial Machinery" as a part of industrial engineering. It implies that a company like Volvo would therefore be considered as belonging to the industrial sector by the Dow Jones but not by Newsweek which classifies Volvo in the sector "Vehicles and components". Aerospace and defense is also considered as a sector independent of

the industrial sector by Newsweek. A company like Saab, if it was in the 500 biggest largest companies in the world, could not be perceived as a company belonging to the industrial sector by Newsweek whereas the Dow Jones includes it in its supersector "industrials". Another difference between the two definitions comes from the notion of building materials. They are not considered as belonging to the industrial sector by Newsweek. For Newsweek, building materials belong to the sector called "Materials". To materalize the difference between the two definitions, we can take the examples of the companies CRH plc (Ireland), Heidelberg Cement AG (Germany), Holcim Ltd. Reg (Switzerland), or Lafarge SA (France) which are refered as building materials and fixtures in the Dow Jones and so belong to the industrial sector, which is not the case in Newsweek's classification. We can notice another difference concerning industrial transportation which belongs to the sector "Transportation and Logistics" in Newsweek as we can see with CSX Corp, FedEx Corp, Norfolk Southern Corp or Union Pacific Corp (United States). Support services belong to the sector "Information Technology and Services" in Newsweek as we can see with the American companies Accenture and Automatic Data Processing. The last difference we saw between the two industrial sector's definitions we found involves the companies specialized in containers and packaging such as Ball Corp, Sealed Air or Sonoco (United States) which are categorized in the sector "Materials" by Newsweek.

The important number of differences between the two definitions of industrial sector we found in the literature highlights the need that we have to establish our own definition of the industrial sector in order to be able to have a better idea of the population we are going to study when we will make our empirical observations. From our perspective, and considering the definitions provided by the Dow Jones and Newsweek, the industrial sector includes:

- industrial engineering – including both industrial machinery and commercial vehicles and trucks as defined by the Dow Jones –
- electronic equipment
- electronic components and equipment
- heavy construction
- building materials and fixtures
- aerospace and defense

Therefore, we choose to exclude support services, industrial transportation and containers and packaging from our definition.

4.4. Summary of our research criteria

To summarize, in the literature review we have mentioned that numerous indicators have been created in order to measure sustainability. Among all the indicators and frameworks available, we have decided to use the GRI G3 Guidelines. The GRI is among the three most used frameworks in the world for reporting on sustainability and includes the three pillars of sustainability inside its various indicators.

We consider that analyzing the performances of Swedish companies with the GRI is of interest as the Swedish legislation demands that state-owned companies reveal their sustainability information with the GRI, and as in some other European countries as advanced as Sweden in the sustainability field large companies have to use this

indicator to report on sustainability too. Besides, it is totally conceivable that in the upcoming years large Swedish companies would be under a legislation asking them to disclose their sustainability practices with the GRI.

We have also chosen to focus on large companies as large companies are expected to report more on sustainability – even with the GRI – which will give us larger opportunities in our data collection. We define large companies considering two parameters: the turnover and the number of employees of the companies.

Finally we have decided to focus on the industrial sector as it appears necessary to adapt the sustainability approach according to the sector the company is evolving in, and that the industrial sector has been considered in the theory as a sector needing sustainability to focus on.

Therefore, the aims of our thesis are to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector; to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector; and to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector. We did not find any previous research investigating about the use of the GRI as a sustainability indicator for large Swedish companies performing in the industrial sector. We did not find any research about the GRI's indicators disclosed by large Swedish companies in the industrial neither.

4.5. Research hypotheses

Prior researches have proved that the large companies are keen to report more on sustainability than the small ones (Eccles et al., 2012, p. 8; Kolk, 2004, p. 51-54); which could be explained by the fact that small companies suffer more from impact of the implementation costs (Joshi & Gao, 2009, p. 34) and the time and cost restrictions (Orth & Kohl, 2013, p. 31) than the large companies. The small companies can also be limited by their lack of knowledge about environment and its legislations, or by inadequate environmental management techniques which make sustainable development more difficult to achieve for them (Laurinkevičiūtė & Stasiškienė, 2011, p. 798; Shearlock et al., 2000, p. 51). These difficulties SMEs can have to go sustainable are materialized in reporting as according to Legendre and Coderre (2012, p. 187) small companies are less likely to report on GRI than large ones. Our problematic is not to see if large companies use more the GRI to disclose on sustainability than small companies as it has already be proved, but to see if inside the companies we consider as "large" - according to the definition we provided – there would be a distinction on the use of the GRI between the "largest" large companies and the "smallest" large companies. Indeed, until now it has been proved there is a threshold in reporting between the small and large companies; but we could imagine that a threshold could also exist among large companies. The two parameters we use to define the size of a company are its turnover and its number of employees. We can create our two first hypotheses from these elements.

First of all, we assume that among the large companies, the ones with the largest turnover report more with the GRI's Guidelines.

First hypothesis:

H0: *There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.*

H1: *There is no positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.*

Second of all, we assume that among the large companies, the ones with the biggest number of employees report more with the GRI's Guidelines.

Second hypothesis:

H0: *There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.*

H1: *There is no positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.*

Prior research have also shown that the quantity of information disclosed by companies in their sustainability reports is influenced by the size of the companies (Hackston and Milne, 1996; Neu et al., 1998; Patten, 2002; García-Sánchez, 2008; Joshi and Gao, 2009; Da Silva Monteiro and Aibar-Guzmán, 2010; Prado-Lorenzo et al., 2009; Sotorrío and Fernández Sánchez, 2010, ref in Legendre and Coderre, 2013, p. 184; Cornier et al., 2005, p. 31; Guo & Zhao, 2011, p. 47; Joshi & Gao, 2009, p. 38; Prado-Lorenzo et al., 2009, p. 104). We aim to see if the difference as regards the quantity of indicators disclosed would still exist inside the large companies between the "largest" and the "smallest" large companies. We will test this theory with the two size-criteria we defined. Our third hypothesis tests this theory with the turnover criterion whereas the fourth hypothesis tests the hypothesis with the number of employees' criterion.

Third hypothesis:

H0: *There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.*

H1: *There is no positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.*

Fourth hypothesis:

H0: *There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.*

H1: *There is no positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.*

Finally, a study made by Navak and Venkatraman mentioned that large companies disclose more on the environmental pillar than small ones, and that the disclosure on the economic and social pillar is the same between large and small companies. In the industrial section we also used some theories arguing that the sector of activity of a company has an influence on the information disclosed by the companies (Joshi & Gao, 2009, p. 34) as they do not have the same needs according to their activity (Eccles et al., 2012, p. 8). Eccles et al. also explained that companies from the same sector are expecting to disclose the same way on sustainability. In our study, we are expecting all the GRI indicators not to be disclosed identically. However, testing if all the indicators are disclosed the same way is easier. Therefore our fifth hypothesis is the following.

Fifth hypothesis:

H0: *All of the GRI's indicators are equally disclosed by large Swedish companies belonging to the industrial sector.*

H1: *All of the GRI's indicators are not equally disclosed by large Swedish companies belonging to the industrial sector.*

Therefore our study can enable to test the findings of Navak and Venkatraman, and also to establish a mapping of the indicators used by the industrial companies. This is of interest as Block et al. (2006, p. 43) mentioned there is a need to measure sustainability in the industrial sector.

5. EMPIRICAL OBSERVATIONS AND ANALYSIS

In the methodology chapter we developed earlier, we have opted for a deductive research approach. The theoretical chapter made us find the theory relative to our research question and establish research hypotheses. To follow the scheme of a deductive research approach, a data collection has to be accomplished. Thereafter, findings on the empirical observations made from the data collection as well as an assessment of the research hypotheses have to be fulfilled.

5.1. Practical data collection method

In the methodology chapter, we have explained the reasons leading us to opt for a quantitative research strategy and the use of secondary resources. Therefore, we will to select the data we need from secondary sources and the use of a database seems indicated to do so. While looking for the information as regards the nationality, the turnover, the number of employees, the sector, and the sustainability practices of companies, we have noticed that numerous databases provide a huge amount of information as regards companies. However, a few amount of information about companies' sustainability performances and practices can be found in these databases whose focus is clearly more oriented on financial information. Therefore, we have to make our companies' selection from a database and then, when the companies we will study will have been elected, collect information about their sustainability reporting from other sources.

The first step in our data collection is finding a database providing a listing of all Swedish companies which had in 2012 a turnover higher than 100,000,000€, more than 500 employees, and which belong to the industrial sector. After some researches we discovered the website "http://www.largestcompanies.com/". On this website can be found a numerous amount of financial information as regards Nordic companies – from Sweden, Denmark, Finland, Norway - among which their turnover and their number of employees. This database provides information about 112 544 companies. However, the use of this database is complicated when we use its free version – Basic Access - because not much information can be sorted at the same time. The Advanced Access version, which users have to pay for, is more practical as it enables the users to export the information of the companies in an excel chart, which is easier for sorting companies. We will use the free version, Basic Access, all along our thesis.

We begin our research by entering on this database the criteria defining the industrial sector. The definitions of the sectors on this database are not exactly the same as ours; therefore we have to establish associations between our definition and those of this database. As our definition is a mix between the definitions given by Newsweek and the Dow Jones and that these sources provide a listing of the biggest companies belonging to the sectors they define; we apply our definition to their database in order to find the Swedish companies fitting with our definition, list them, and find them back in the "largest companies' database in order to refine the criteria in the "largest companies" database. Furthermore, we also look at the other Swedish companies which are referenced in the Dow Jones and Newsweek and do not belong to the industrial sector according to our definition in order to check we establish properly our industrial sector definition in the "largest companies" database. We even extend these two tests to the

whole Nordic companies. This is possible as there are 98 different Nordic companies referenced in the Dow Jones basis and 36 in the Newsweek basis, most of these ones being already referenced in the Dow Jones basis. Thanks to this process, we choose on the "largest companies" database the following sectors: B22, B23, B25, B261, B271, B272, B273, B274, B28, B29, B30 and B41. This gives us access to a population of 12 641 companies. As explained, these sectors – B22, B23, B25, B261, B271, B272, B273, B274, B28, B29, B30 and B41 - in the "largest companies" database fit with our definition of industrial sector mentioned in the practical method chapter; and therefore the 12 641 companies which belong to these sectors according to the database respect our definition of industrial sector. Nevertheless, it is important to remind that several definitions of industrial sector were tackled in the practical method chapter; which means that our definition of industrial sector is the result of our choices and not a universal definition. Besides, in the "largest companies" database, the companies can belong to several sectors. Therefore, some companies will be considered by us as belonging to the industrial sector as one of their sectors will be part of our definition of industrial sector even if its other sector(s) do not respect our definition.

The industrial sector defined, we sort these 12 641 companies according to their turnover. The 406 first have a turnover higher than 100,000,000€. Among these 406 Nordic companies, 181 companies are settled in Sweden. However, lots of these companies are subsidiaries of large Swedish groups such as Volvo, Sandvik or Atlas Copco. We decide not to take them into consideration as we consider their way to report on sustainability would have been the same as the group they are belonging to. It reduces the number of companies to 139. Some of these 139 companies are subsidiaries of foreign groups. We also decided to exclude them as we want to focus solely on Swedish companies. We look at the website of each of these 139 companies to be sure they are Swedish companies. Finally we check if the companies have more than 500 employees. It gives us a final population of 60 companies (see Appendix 6).

As regards the use of the GRI by companies, we did not find any database. This is therefore the same as regards the indicators on which companies disclose information. We have established that the population studied – that is to say Swedish companies belonging to the industrial sector with at least 500 employees and a turnover higher than 100,000,000€ would be of 60 companies. We expect most of these companies to disclose on sustainability as they are considered as "large" and as most of the large companies according to the theory are disclosing on sustainability. We also expect most of them to disclose on sustainability using the GRI framework. This is of particular importance. Indeed, we need to know if companies are reporting on sustainability using the GRI framework as our first research purpose is to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector. As we have just mentioned, we did not find any database providing information on the use of the GRI by Swedish companies. Besides, the GRI is constituted by 79 different indicators and we need to find information on each of these indicators to lead our thesis. Therefore, we have to look on the sustainability reports of the companies we are interested in so that we collect the information we need; and in case the information would not be available on sustainability reports we have to look in the annual reports of the companies as some companies include their sustainability report inside their annual report.

The ideal would be to collect information on the 60 companies which fit with our criteria. However, doing an integral study of the 60 companies appears to us to be too time-consuming for leading our thesis considering the quantity of information to collect. Therefore, as we explained in the methodology chapter, we consider the simple random sample a good sampling solution in our case. Indeed, in order to make our study as valid as possible, we want to be able to generalize our results on the sample to the whole population of the 60 companies. The simple random sample is the best sampling solution to reach this aim as the sample is chosen randomly among the population and so is representative of the population, as we explained in the second chapter. We have opted for a sample of 30 companies.

Nevertheless, even if we have considered it would be positive in our case to use a sample considering the time constraints we have; we have to be aware that the choice of a small n has a negative effect on the precision of our thesis (Bryman and Bell, 2011, p. 187). Indeed, the bigger "n" is, the more likely we will have precise results, and the lower the risk of sampling errors will be. This is a point we have to take into consideration while drawing our conclusions.

In order to select our sample using the simple random sample method, we attribute a number to every company of the whole population of 60 companies and use the excel function "randbetween" which returns a number between the numbers we specify – in our case, numbers between 1 and 60. Once we get 30 different numbers our sample is determined.

5.2. Descriptive statistics

In the table below are presented the companies we have sampled and on which we collect data. As described previously, a total of 30 companies from the industrial sector are present in this table out of a total population of 60 companies.

In this table, the companies are sorted according to their turnover from largest to smallest, with Volvo as the largest company and Ostnor as the smallest. The turnover is based euro. The data we collected on "www.largestcompanies.com" were already in euro, and as we are focusing on companies which have a turnover higher than €100,000,000; as we explained in the theoretical framework chapter. We can notice huge differences as regards the turnover of the companies. Indeed, Volvo's turnover is 343 times higher than Ostnor's one. The mean turnover of the sample is of €2,925,968,900, whereas the median turnover is of $465,010, 000. This means that half of the companies of the sample have a turnover lower than $465,010,000 but that the richest companies among the ones we selected have in proportion a really more significant influence on the mean turnover as the mean turnover is 6.3 times higher than the median turnover. A mean close to the median would have meant that the distribution is symmetric (Statistics & Research Methodology, 2010). We have a right skew distribution as regards the turnover of the selected companies as the mean turnover is higher than the median turnover (ibid).

The numbers of employees of each company is also present in the table next to the turnover column. The number of employees by company can also vary a lot from a company to another as Volvo's number of employees – which is the highest in the

sample – is 203 times higher than the one of the company which has the lowest number of employees in the sample, Ostnor. The sample has in average 12,224 employees, whereas the median for the sample as regards the number of employees is of 2,258. Therefore, the mean is 5.4 times higher than the median which means that the companies which have the more employees have a higher impact on the mean.

In the far right column it is shown if the company reports on GRI. If a company has a '1', it means that the company is reporting on GRI, and if the company has a '0', it means that the company is not reporting on GRI. We want to remind the reader that our first research purpose is to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector. This is the reason why some companies of our sample could have used a reporting framework which is not the GRI or even could have used no reporting framework at all to report on sustainability as we aim to know if the GRI framework is used by the large Swedish companies which belong to the industrial sector. We can see that 13 of the 30 companies of the sample have reported on sustainability with the GRI Guidelines at the end of the year 2012; that is to say 43% of the sample. We can also notice at first sight that only one company – Nolato - which is under the median turnover of €465,010,000 is reporting on sustainability using the GRI. Besides, this company is the second biggest under the median turnover, which may indicate that the bigger the turnover is, the more the Swedish company belonging to the industrial sector is likely to report on sustainability using the GRI if we find that most of the companies above the median turnover report on sustainability with the GRI. It appears that 12 of the 15 companies of the sample whose turnover is above the median turnover are reporting on sustainability using the GRI; among which 11 of the 12 biggest whose turnover is higher than $600,000,000. We can also point out that all the 7 companies of our sample whose turnover is above the mean turnover of the sample of €2,925,968,900 are reporting on sustainability with the GRI. This strengthens our thought that the bigger the turnover of "large" companies is, the more they will report on sustainability using the GRI.

If we sort the companies according to their number of employees, we can also point out that only one company of the sample – De Laval International - which is below the median number of employees – 2,258 – is reporting on sustainability using the GRI. We may think that the more employees a company has, the more the company is likely to report on sustainability using the GRI if the companies whose number of employees is higher than the median of our sample report more with the GRI. 12 of the 15 companies above the median number of employees are reporting with the GRI, and 7 of the 8 companies above the mean number of employees of 12,224 report on sustainability using the GRI too. Therefore, it seems that the bigger the number of employees of a "large" company is, the more the company is likely to report on sustainability using the GRI.

Therefore, globally our sample lead us to think that the "largest" a "large" company is, the more this company will use the GRI framework for reporting on sustainability. A graph representing the use of the GRI by the large Swedish companies belonging to the industrial sector which are in our sample can be found in Appendix 7.

	Turnover (in €)	Number of employees	GRI
Volvo	35 239 770 000	102082	1
Sandvik	11 434 789 000	49385	1
Atlas Copco	10 506 812 000	39113	1
SKF	7 494 255 000	44 168	1
Assa Abloy	5 410 371 000	42 762	1
Alfa Laval	3 459 949 000	16 060	1
Trelleborg	2 928 881 000	16 702	1
Hexagon	2 379 999 000	13 203	0
JM	1 448 367 000	2 386	1
Hexpol	929 253 000	3 112	1
Lindab International	772 462 000	4 509	1
DeLaval International	618 724 000	792	1
Camfil	542 288 000	3 484	0
Trioplast Industrier	491 438 000	1 262	0
Riksbyggen ekonomisk förening	473 575 000	2 315	1
Haldex	456 445 000	2 200	0
Nolato	449 597 000	8 421	1
Munters	441 602 000	2 576	0
PMC Group	344 352 000	1 390	0
Swegon	323 231 000	1 340	0
Nederman Holding	263 747 000	1 613	0
Åkers	218 560 000	1 351	0
Weland	192 174 000	861	0
HL Display Holding	183 720 000	1 138	0
Permobil Holding	161 256 000	721	0
Diab Group	136 317 000	1 387	0
XANO Industry	135 958 000	768	0
VBG Group	128 217 000	518	0
Consilium	110 264 000	605	0
Ostnor	102 694 000	504	0

Table 5. The general related information of the 30 companies
(from www.largestcompanies.com for the turnover and number of employees, and the companies websites and reports mentioned in the reference list p.78-81 for the use of the GRI)

In the Appendix 8 - we did not insert here considering its size -, we have presented the 13 companies of our sample which report on the GRI and compiled the indicators that each company report on. The companies are put in the top of the table, and the indicators are presented in the far left of the table, starting with the economic indicators and followed in a descending way by the environmental and social indicators. The companies received an 'X' for each of the indicators they reported on, and in the bottom of the table, the total sum of indicators reported on by each company is shown. The total number of times an indicator is reported on is presented at the far right of the table. This data offers a good overview of the indicators that each company reports on.

In average a company discloses on 39.31 information of the GRI out of 85 (79 indicators plus the disclosure on management approach of each of the 6 sections of the GRI), that is to say on 45.9% of the information. A company discloses in average on 42.3% of the information as regards the economic pillar of the GRI, on 48.4% of the information as regards the environmental pillar of the GRI, and on 45.7% of the information as regards the social pillar of the GRI. The social pillar of the GRI is divided in four subcategories in the reporting: labour practices and decent work, human rights, society, and product responsibility. The "labour practices and decent work" subcategory has in average 48.7% of its information disclosed, the "human rights" subcategory 46.1%, the "society" subcategory 52.1% , and the "product responsibility" subcategory 34.6%.

We also point out that the "large" companies which have the smallest turnover and number of employees in our sample are likely to disclose on less indicators than the other. Indeed, there are 7 companies in our sample which use the GRI and whose mean turnover was higher than the mean of the sample. Among the companies using the GRI, these companies are also the only ones whose number of employees is higher than the mean number of employees of the sample we study. These 7 companies – Volvo, Sandvik, Atlas Copco, SKF, Assa Abloy, Alfa Laval, and Trelleborg – disclose on average on 58.7% of the GRI indicators. When it comes to the 6 other companies – JM, Hexpol, Lindab, De Laval International, Riksbyggen, and Nolato – the average disclosure is of 31.8% of the indicators. Their disclosure is nearly twice less than the one of the 7 largest companies of our sample which use the GRI. As we give every pillar of sustainability the same importance, the mean disclosure on sustainability for the "largest" company is of 56¨%, whereas it reaches 33.1% for the "smallest" companies as we can see in the table below. These figures can be found in Table 6 below.

		Pillars of sustainability				**Social pillar subcategories**			
		ECO	**ENV**	**SOC**	**TOT**	**LAB**	**HR**	**SOC**	**PR**
7 largest companies of the sample disclosing with the GRI	Mean number of indicators disclosed	4.86	18.14	26.86	49.86	9	6	6.72	5.14
	Mean % of indicators disclosed	**48.6**	**58.5**	**61**	**56**	**60**	**60**	**74.6**	**51.4**
6 smallest companies of the sample disclosing with the GRI	Mean number of indicators disclosed	3.5	11.33	12.17	27	5.33	3	2.33	1.5
	Mean % of indicators disclosed	**35**	**36.6**	**27.7**	**33.1**	**35.6**	**30**	**25.9**	**15**

Table 6. Main trends as regards the disclosure on the GRI by the "large" Swedish companies performing in the industrial sector which are available in our sample

The Table 6 also enables to assess the trends as regards the disclosure of each pillar of sustainability. The table indicates that the Swedish "largest" companies of the industrial sector report on more indicators of the GRI than the "smallest" ones for each pillar of sustainability. The differences between the "largest" and "smallest" companies in their GRI reporting is important for each pillar of sustainability, and especially as regards the social pillar for which the "largest" companies perform more than twice better than the "smallest" companies. The economic pillar is the pillar of sustainability the "largest" companies disclose the least on inside their GRI reports and the social pillar the one on which they disclose the most. Among the subcategories of the social pillar, the subcategory "society" is the most filled by these companies with nearly 75% of information disclosed, whereas the product responsibility subcategory is the one on which the least information is disclosed. The "smallest" companies disclose the most on the environmental pillar and the least on the social pillar which is, as we said, the one on which the "largest" companies disclose the most. Inside the social pillar, the disclosure on the product responsibility subcategory appears to be particularly weak with only 15% of the information disclosed.

		Pillars of sustainability				**Social pillar subcategories**			
		ECO	**ENV**	**SOC**	**TOT**	**LAB**	**HR**	**SOC**	**PR**
7 largest companies of the sample disclosing with the GRI	Mean number of indicators disclosed	3.71	12.57	17.86	34.14	6.29	4.57	4.43	2.57
	Mean % of indicators disclosed	**53.1**	**73.9**	**71.4**	**69.7**	**69.8**	**76.2**	**73.8**	**64.3**
6 smallest companies of the sample disclosing with the GRI	Mean number of indicators disclosed	3.33	8.33	10.83	22.49	4.67	2.83	2.33	1
	Mean % of indicators disclosed	**47.6**	**49**	**43.3**	**45.9**	**51.9**	**47.2**	**38.9**	**25**

Table 7. Main trends as regards the disclosure on the core items of the GRI by the "large" Swedish companies performing in the industrial sector available in our sample

In the Table 7 just above, we can find the information present in Table 6 but as regards the core items of the GRI. This table shows that the disclosure is higher for the core indicators of every pillar of sustainability and subcategory than for the whole set of GRI indicators studied in Table 6. Like in table 6, the "largest" companies disclose on more indicators than the "smallest" companies when the indicators selected are the core indicators; but the difference between the "largest" and the "smallest" companies in their disclosure is lower. It appears in Table 7 that more than 40% of the core indicators

of each pillar of sustainability are disclosed for the "smallest" companies, which was the case for none of them in Table 6. This table also highlights that the disclosure on the pillars of sustainability is not equal from a pillar to another as regards the core indicators. We can finally add that the core indicators the pillar on which companies most disclose is the environmental pillar, which was not the case as regards the "largest" large companies in Table 6 which disclosed more on the social pillar.

If the disclosure is not equal from a pillar to another, it indicates that the disclosure on sustainability indicators can vary depending on the indicator for the companies of our sample which belong to the industrial sector. Appendix 9 and Appendix 10 shed light on this expectation. The use of Appendix 5 is necessary for the understanding of Appendix 9 and especially Appendix10.

Appendix 9 shows that the number of indicators disclosed in each category of the GRI is not constant. Some indicators will be disclosed by every company such as LA7 for instance, whereas some others will not be disclosed by any company, like EC6 for instance. In this Appendix we can see which indicators are used by less than 4 of the 13 companies, by between 4 and 6 companies, by between 7 and 9 companies, and by at least 10 of the 13 companies. This chart may not be as formal as the other ones but enables to have a quick overview on the disclosure of the indicators.

Appendix 10 is going deeper in the analysis of the disclosure of the indicators of the GRI. Indeed, the aim of Appendix 10 is to see which indicators inside each of the 6 categories of the GRI are disclosed by the companies belonging to the industrial sector. These indicators are placed in the graph according to their mean disclosure for the 6 "smallest" large companies of our sample in the X-axis, and according to their mean disclosure for the 7 "largest" large companies in the Y-axis. The indicators which will be at the top right of the graph are largely disclosed by the companies belonging to the industrial sector. These indicators are essential for companies belonging to the industrial sector. The indicators which will be at the bottom left of the graph are poorly disclosed by the companies belonging to the industrial sector. These indicators have either no interest for the companies belonging to the industrial sector or even do not concern the industrial sector. The companies which will be at the top left are disclosed mainly by the "largest" large companies. These indicators are of interest for the industrial sector but the efforts to accomplish to disclose on these indicators are more important for the "smallest" companies. A few companies are supposed to be on the bottom right part of the graph.

As regards the economic pillar of the GRI, the main trends which appear on our graph are that the indicators of the aspect "Economic performance" are largely disclosed, those of the aspect "Market presence" are poorly disclosed, and those of the aspect "Indirect economic impact" are mainly poorly disclosed except EC8.

As regards the environmental pillar, the main trends which appear on our graph are that there is a large disclosure of the indicators belonging to the aspects "Materials", "Energy", and "Compliance", and a poor disclosure on those concerning the aspects "Biodiversity" and "Overall". The aspect "Emissions, effluents, and waste" has most of its core indicators largely disclosed and especially the ones on greenhouse gas emissions. The core indicators of the aspect "Water" are largely disclosed too; and the indicator EN26 of the aspect "Products and services" is largely disclosed as well.

The main trends in the "Labor Practices and Decent Work" subcategory are that the core indicators of the aspects "Employment", and "Occupational health and safety" are largely disclosed; the indicators of the aspects "Labor/management relations" and "Training and education" are more disclosed by large companies; and the aspect "Diversity and equal opportunity" has a large disclosure for the indicator LA13 and a poor disclosure for LA14.

The main trends in the "Human Rights" subcategory are that the indicators of the aspects "Non-discrimination", "Child labor" and "Forced and compulsory labor" are largely disclosed. The indicators of the aspects "Security practices" and "Indigenous rights" are poorly disclosed", and those of the aspects "Investment and procurement practices", "Freedom of association and collective bargaining" are disclosed mostly large companies.

As regards the "Society" subcategory, it appears that most of the indicators of the aspects "Corruption", "Public policy", "Anti-competitive behavior", and "Compliance" are disclosed by the "largest" companies. However, the indicators SO3-in corruption- and SO5 – in public policy – are largely disclosed. One of our results seems abnormal as only the "smallest" companies seem to disclose on the indicators of the aspect "Community".

Finally, in the case of the "Product Responsibility" subcategory, the indicators of the aspects "Product and service labeling", "Communications" and "Customer privacy" are poorly disclosed, whereas the core indicators of the aspects "Customer health and safety" and "Compliance" are disclosed for the "largest" companies. Two exceptions are the indicator PR1 of the aspect "Community" which is largely disclosed and the non-core indicator PR5 which is disclosed by the "largest" companies.

5.3. Hypothesis test and analysis

As mentioned in the methodology chapter, in a quantitative research strategy, the data collection and the data processing are followed by the data analysis which is done accordingly to the number of variables the scholar aims to analyze the relationship (Bryman & Bell, 2011, p. 334).

5.3.1. First hypothesis

H0: *There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.*

H1: *There is no positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.*

In order to test this hypothesis, we ranked our 30 companies by turnover from the lowest to the highest in SPSS. Then, we created a new variable on which we split the companies in 6 groups according to their turnover. Each group was constituted by 5 companies. The first group was composed of the 5 companies with the lowest turnover and the second one of the companies with the 6^{th} to 10^{th} lowest turnover. We applied the

same process until we finished creating the sixth group which was composed of the 5 companies with the highest turnover. We called this variable "Turnover groups". This variable is an ordinal variable because the categories of companies can be ordered according to their turnover but "the distances between the categories are not equal across the range" (Bryman & Bell, 2011, p.341). The use of the GRI Guidelines by companies is a dichotomous variable as only two possible alternatives exist – yes or no – and cannot be rank ordered. The aim of our research hypothesis is to see if there is a relationship between these 2 variables. It implies the use of a bivariate analysis. As one variable is a dichotomous one and the other an ordinal one, the test we have to apply is the Spearman's rho (Bryman & Bell, 2011, p.346).

First of all, we looked at the P value – referred as "Sig. (2-tailed)" in the tables. The P-value enables the researcher to know if the association between the two variables is a coincidence or not (Graphpad, 2001, p. 101). The smaller the P-value is, the more the likelihood that the correlation between the variables is a coincidence is weak. When a P-value is inferior to 0.05, it is considered to be a small one because it means that the researcher can be more than 95% sure that the relation he will find between the 2 variables, whatever this relation is, is not a coincidence. We found a P-value of 0.00000072, and $0.00000072<0.05$. This means that there is a really high probability that the relation we will find between the use of the GRI by large Swedish companies performing in the industrial sector and the turnover of these companies will be accurate.

Then we looked at the Spearman's rho – also written ρ – to determine the relationship between our two variables. The value of the Spearman's rho is included between -1 and 1 (Graphpad, 2001, p.102). The higher, in absolute value, the Spearman's rho is the more the variables are correlated (Graphpad, 2001, p.102). The closer to 0 the Spearman's rho is, the less the variables are correlated (Graphpad, 2001, p.102). Finally, if the Spearman's rho is positive, then the variables are positively correlated what means that when one variable is increasing the other does too; whereas if the Spearman's rho is negative, the variables are negatively correlated (Graphpad, 2001, p.102). However, in a paired test as the Spearman's rho, a negative correlation is not of any interest as the aim of a paired test is to see values "moving together" (Graphpad, 2011, p. 64). The website Statstutor (Statstutor, unknown) indicates that if ρ is included between:

- 0 and 0.19, the correlation between the 2 variables is very weak,
- 0.20 and 0.39, the correlation between the 2 variables is weak,
- 0.40 and 0.59, the correlation between the 2 variables is moderate,
- 0.60 and 0.79, the correlation between the 2 variables is strong,
- 0.80 and 1, the correlation between the 2 variables is very strong.

In the charts we made using SPSS, the Spearman's rho is referred as the correlation coefficient. For this hypothesis, $\rho = 0.768$ which indicates that there is a strong correlation between the use of the GRI by large Swedish companies performing in the industrial sector and their turnover. This strong correlation between the 2 variables is likely to be not coincidental since the P value is weak.

Therefore, our first hypothesis is confirmed: there is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.

Correlations

			Use of GRI	Turnover groups
Spearman's rho	Use of GRI	Correlation Coefficient	1,000	,768**
		Sig. (2-tailed)	.	,00000072
		N	30	30
	Turnover groups	Correlation Coefficient	,768**	1,000
		Sig. (2-tailed)	,00000072	.
		N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

Table 8. Results of the Spearman's rho for the first hypothesis

5.3.2. Second hypothesis

H0: *There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.*

H1: *There is no positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.*

To test this hypothesis, our sample of 30 companies was ranked by the number of employees from the lowest to the highest in SPSS. As in the first hypothesis, we created a variable on which we divided the companies in 6 groups of 5 companies, but this time according to their number of employees. The repartition of the companies in the different groups was done following the same process we used in our first test. We called this variable "Employeesgroup2". This variable is an ordinal variable. Therefore we used again the Spearman's test to determine the relationship between the use of the GRI's Guidelines by large companies belonging to the industrial sector and their number of employees.

This time we found a P-value of 0.00000498 and a ρ of 0.729. As P-value < 0.05 and $0.6<\rho<0.79$, there is a strong relationship between the use of the GRI's Guidelines by large Swedish companies performing in the industrial sector and their number of employees. Besides, this relationship is likely not to be due to chance.

Our second hypothesis is confirmed: there is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.

Correlations

			Use of GRI	employeesgroup2
Spearman's rho	Use of GRI	Correlation Coefficient	1,000	,729**
		Sig. (2-tailed)	.	,00000498
		N	30	30
	employeesgroup2	Correlation Coefficient	,729**	1,000
		Sig. (2-tailed)	,00000498	.
		N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

Table 9. Results of the Spearman's rho for the second hypothesis

5.3.3. Third hypothesis

H0: *There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.*

H1: *There is no positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.*

Through this hypothesis, we want to know if the number of GRI indicators disclosed by large companies belonging to the industrial sector depends on the turnover of these companies. In our initial sample of 30 companies, only 13 companies disclosed information on sustainability using the GRI's Guidelines. We will only use the information provided by these thirteen companies to answer the third and fourth hypotheses. This limited sample reduces the precision of our results.

In order to test our hypothesis, we have ranked our thirteen companies according to the number of GRI indicators they disclose information on. We decided to create a new variable "Numberofitemsgroups" on which we split in two groups the companies according to the number of GRI indicators for which they present information. The first group was composed of the seven companies disclosing on the less important number of GRI indicators, and the second of the six companies which disclose on the more important number of GRI indicators.

We created a second variable, "turnovergroup". This one is composed of two sub-groups, the first one containing the seven companies with the smallest turnover, and the second one the six others. We are aware that these groups are different to the ones made in hypothesis 1. Normally the groups are supposed to be the same from the beginning to the end of a thesis to make it more stringent but several reasons we will now explain

motivated us to change the groups made previously to test this new hypothesis. First of all, not any company belonging to the groups 5 and 6 we used in hypothesis 1 reports with the GRI framework, Therefore, to keep these groups in our tests is irrelevant. We can now wonder about our groups 1, 2, 3, and 4 that we described previously. All these groups have at least one company which uses the GRI as a sustainability reporting framework. However, the number of companies using the GRI framework can vary a lot from a group to another. Indeed, five companies out of five use the GRI in group 1, four out of five in group 2, three out of five in group 3, and only one out of five – Nolato – in group 4. To compare the results of a group of one company with those of groups of five, four, and three companies would not make any sense as the results of a group of one company would be the results of that company. It would not be statistically relevant. Therefore, the groups have to be remade. We could have decided to keep the two first groups we had and to merge the groups 3 and 4 to have a new group 3 with 4 companies. However, these groups would be really small ones and the larger groups are, the more the results obtained are statistically reliable (Bausell & Li, 2002, pp. 1& 17). Considering the fact that our sample is already really small we thought that having the larger groups possible would give us results which would be more reliable even if the reliability would still be limited.

For this hypothesis we found a P-value of 0.009 and a ρ of 0.69. As P-value < 0.05 and $0.6<\rho<0.79$, there is a strong relationship between the number of GRI indicators disclosed by large Swedish companies performing in the industrial sector and their turnover.

Our third hypothesis is confirmed: there is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.

Correlations

			Numberofitemsgroups	turnovergroup
Spearman's rho	Numberofitemsgroups	Correlation Coefficient	1,000	,690**
		Sig. (2-tailed)	.	,009
		N	13	13
	Turnovergroup	Correlation Coefficient	,690**	1,000
		Sig. (2-tailed)	,009	.
		N	13	13

**. Correlation is significant at the 0.01 level (2-tailed).

Table 10. Results of the Spearman's rho for the third hypothesis

5.3.4. Fourth hypothesis

H0: *There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.*

H1: *There is no positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.*

We used the variable "Numberofitemsgroups" we defined while testing the third hypothesis. The other variable we used for this hypothesis is the variable "Employeesgroup" we created. This one is composed of 2 sub-groups, the first one containing the six companies with the smallest number of employees, and the second one the seven others. For the same reasons which conducted us not to replace the variable "Turnover groups" in hypothesis 1 by the variable "turnovergroup" in hypothesis 3, we replaced the variable "Employeesgroup2" defined in hypothesis 2 by the variable "Employeesgroup". We expect to get more reliable results by doing so.

For this hypothesis we found a P-value of 0.00018 and a ρ of 0.857. As P-value < 0.05 and 0.8<ρ<1, there is a very strong relationship between the number of GRI indicators disclosed by large Swedish companies performing in the industrial sector and their number of employees.

Our fourth hypothesis is confirmed: There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.

Correlations

			Numberofitems groups	Employeesgroup
Spearman's rho	Numberofitemsgroups	Correlation Coefficient	1,000	,857**
		Sig. (2-tailed)	.	,00018
		N	13	13
	Employeesgroup	Correlation Coefficient	,857**	1,000
		Sig. (2-tailed)	,00018	.
		N	13	13

**. Correlation is significant at the 0.01 level (2-tailed).

Table 11. Results of the Spearman's rho for the fourth hypothesis

5.3.5. Fifth hypothesis

H0: *All of the GRI's indicators are equally disclosed by large Swedish companies belonging to the industrial sector.*

H1: *All of the GRI's indicators are not equally disclosed by large Swedish companies belonging to the industrial sector.*

This hypothesis only implies one variable; therefore we will do an univariate analysis in order to test the hypothesis. In order to make the univariate analysis clearer, we can reformulate the hypothesis this way: "Is the frequency of disclosure of each indicator of the GRI the same?". For this hypothesis, our sample is also of 13 companies as only 13 companies of our sample of 30 provided the detail of the GRI indicators they disclose information for. A GRI indicator can then have been disclosed between 0 and 13 times. In order to answer to our hypothesis, we have chosen to use a bar chart. It seemed to us that it was giving the best visual representation.

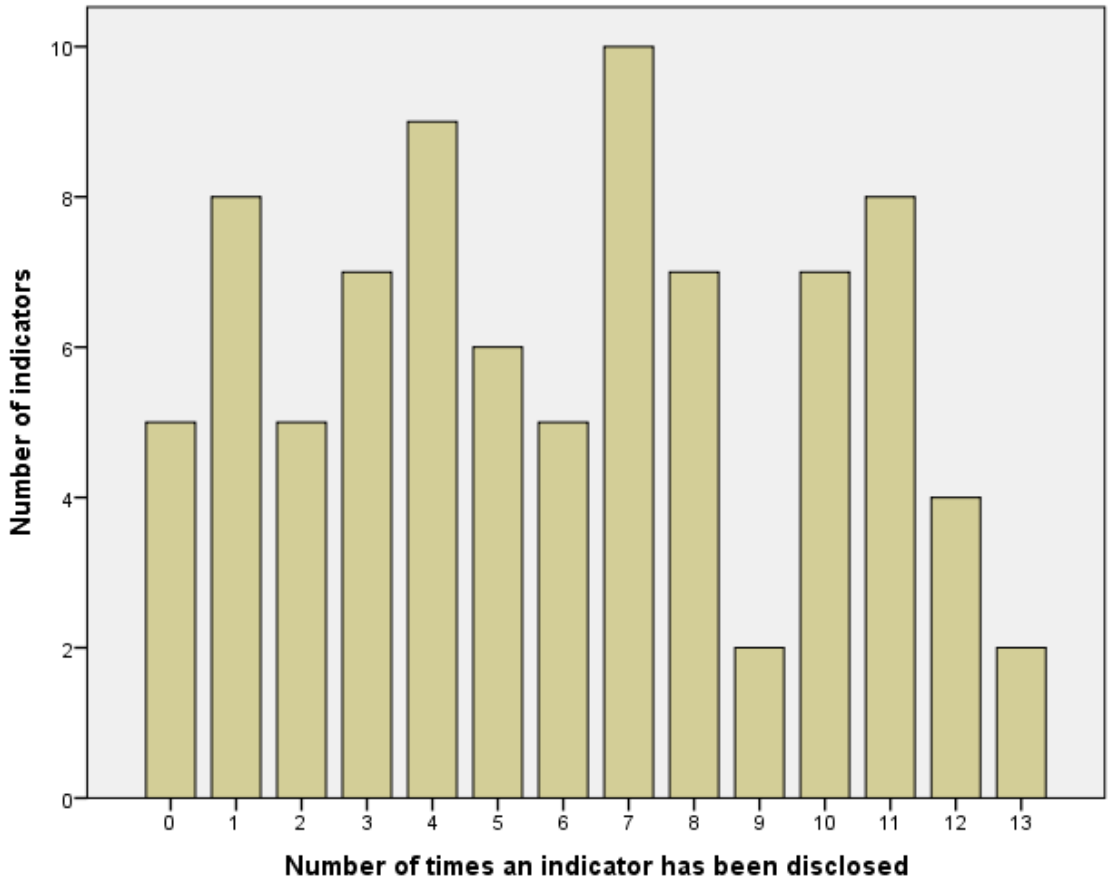


Table 12. Bar charts showing the number of times a GRI indicator has been disclosed

If all the items were equally disclosed, only one bar would be filled. Therefore, we can conclude that the disclosure of GRI indicators by large Swedish companies belonging to the industrial sector varies from an indicator to another.

5.4. Summary

Hypotheses	Findings
Hypothesis 1	*There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their turnover.*
Hypothesis 2	*There is a positive association between the use of the GRI's Guidelines by large Swedish companies belonging to the industrial sector and their number of employees.*
Hypothesis 3	*There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their turnover.*
Hypothesis 4	*There is a positive association between the number of GRI indicators disclosed by large Swedish companies belonging to the industrial sector using the GRI's Guidelines and their number of employees.*
Hypothesis 5	*All of the GRI's indicators are not equally disclosed by large Swedish companies belonging to the industrial sector.*

Table 13. Main findings of the hypotheses

5.5. Discussion

The purposes of our thesis are:

- to have an overview of the use of the GRI as a guideline to report on sustainability inside the group of the "large" Swedish companies which belong to the industrial sector;
- to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector;
- to analyze the disclosure of the GRI indicators by "large" Swedish companies belonging to the industrial sector

The viewpoint in the two first purposes of our thesis is that the company's size influences both the use of the GRI as a sustainability reporting tool, and the quantity of GRI indicators disclosed. The viewpoint of the last purpose is to prove that some indicators may be considered as more important to disclose on by the companies evolving in the industrial sector. In order to answer the totality of these questions we defined the five research hypotheses you read about on the previous sections.

In the theoretical framework chapter, in the companies' size section, we have mentioned that numerous scholars agree on the fact that large companies report more on sustainability than small ones (Eccles et al., 2012, p. 8; Kolk, 2004, p. 51-54). We have also pointed out that according to Legendre and Coderre (2012, p. 187) small companies are less likely to report on GRI than large ones. Our problematic is to see if inside the companies we consider as "large" - according to the definition we provided in the theoretical framework chapter – there would be a distinction on the use of the GRI between the "largest" large companies and the "smallest" large companies. As the theory we found mentioned that large companies use more the GRI, we were expecting this relation to stay true among the group of large companies but with slighter differences between the "largest" large companies and the "smallest" large companies. In our study, we found out that the "largest" large companies report more on sustainability using the GRI than the "smallest" large companies. Therefore, the conclusions of the theories we used in the theoretical framework can be extended inside the group of large companies. However, the distinction between the "smallest" large companies and the "largest" large companies in the use of the GRI as a sustainability reporting tool was neat, what we did not expect.

Inside the companies' size section of the theoretical framework chapter, we also wrote that numerous studies emphasize the fact that the company's size has an influence on both the quantity of information disclosed and the quality of information disclosed by companies (Hackston and Milne, 1996; Neu et al., 1998; Patten, 2002; García-Sánchez, 2008; Joshi and Gao, 2009; Da Silva Monteiro and Aibar-Guzmán, 2010; Prado-Lorenzo et al., 2009; Sotorrío and Fernández Sánchez, 2010, ref in Legendre and Coderre, 2013, p. 184; Cornier et al., 2005, p. 31; Guo & Zhao, 2011, p. 47; Joshi & Gao, 2009, p. 38; Prado-Lorenzo et al., 2009, p. 104). However, these studies are also comparing small companies to large companies. Therefore our study is necessary as we aim to to determine the importance of the size of a company as regards the quantity of GRI indicators disclosed inside the group of "large-size" Swedish companies performing in the industrial sector. We found out that the "largest" large companies which use the GRI as their sustainability reporting framework report on nearly twice more indicators than the "smallest" large companies – 56% and 33.1%. Besides, the reporting on core indicators is also really higher for the "largest" large indicators than for the "smallest" large indicators – 69.7% and 45.9%.

Finally, in the theoretical chapter, in the companies' size section, we mentioned a study made by Navak and Venkatraman which mentioned that large companies disclose significantly more on the environmental pillar than the small companies, and that as regards the disclosure on the economic and social pillar the disclosure is the same between large and small companies. In the industrial section we also used some theories arguing that the sector of activity of a company has an influence on the information companies disclose (Joshi & Gao, 2009, p. 34) as companies do not have the same needs according to their activity (Eccles et al., 2012, p. 8). Eccles et al. also explained

that companies from the same sector are expecting to disclose the same way on sustainability. In our study, we were expecting companies not to have the same disclosure for each of the GRI indicators. Our study can enable to test the findings of Navak and Venkatraman, and also to establish a mapping of the indicators used by the industrial companies, as there is a need to measure sustainability in the industrial sector according to Block et al. (2006, p. 43). We found out, as we expected, that the disclosure would not be the same for each pillar of sustainability, and for each indicator in general. If we have a look on both the core and non-core indicators of the GRI for each pillar of sustainability, we found that the disclosure is always higher for the "largest" large companies. This is also true as regards solely the core indicators. Therefore we contest the theory of Navak and Venkatraman. As regards the mapping of the industrial sector we found that the indicators of the aspects "Economic performance", "Materials", "Energy", "Compliance", "Emissions, effluents, and waste", "Non-discrimination", "Child labor" and "Forced and compulsory labor", "Security practices" and "Indigenous rights", and the core indicators of the aspects "Water", "Employment", and "Occupational health and safety" are largely disclosed. We also noticed that the indicators EC8, EN26, LA13, SO3, SO5, and PR1are largely disclosed.
At the contrary, the indicators of the aspects "Market presence", "Biodiversity", "Overall", "Product and service labeling", "Communications" and "Customer privacy" are poorly disclosed.

6. CONCLUSION

In this sixth and final chapter, we will present our conclusions of our thesis. The conclusion is followed by the limitations of our thesis. Finally, we will bring forward some recommendations for future research.

6.1. Conclusion

In order to answer our research question, we used the following approach. First of all, we gathered our theoretical background and established our hypotheses for the analyzing of our data. Secondly, we collected our data from 30 companies' sustainability. To help us analyze our findings, we used the statistical instruments SPSS and EXCEL.

We established five hypotheses in order to see how the large Swedish companies in the industrial sector report on sustainability using the GRI.

Our first and second hypotheses were based on a large number of theories according to which large companies report more on sustainability (Eccles et al., 2012, p. 8; Kolk, 2004, p. 51-54), which is also the case as regards reporting with the GRI Framework (Legendre and Coderre, 2012, p. 187). However, no studies have shown differences in the reporting among the group of large companies; which means it would be possible to assume that all the large companies, whatever their differences are, would report equally on sustainability. We assumed there would be differences in the way large companies report on sustainability using the GRI framework and therefore made our hypotheses in consequence. Our hypotheses were to test if among the Swedish large-size companies belonging to the industrial sector, the largest would use more the GRI Guidelines than the smallest. In the first hypothesis we tested this assertion with the turnover of the companies for separating the largest and the smallest size companies. In the second hypothesis our size criterion was the number of employees. We expected to have the same results at both tests. We wanted to show that whatever the size criterion was, the results would be close. We expected the conclusion of the theories to stay true among the group of the large companies, and so to find that the "largest" large companies disclose more on sustainability than the "smallest" large companies, but with slight differences among the two groups. Our results indicate in both cases that the larger turnover of a company or the bigger the number of employees, the more likely the company reports with GRI's Guidelines. Indeed we found that 13 of the companies of our sample were reporting on sustainability with the GRI and in both the case of the turnover hypothesis and the number of employees hypothesis, 12 of the 13 companies were in the upper median of the sample of the 30 companies. Therefore, our conclusion is that the larger the large company is, the more the company is likely to report with the GRI's Guidelines.

Our third and fourth hypotheses were grounded on theories which establish that large companies disclose on more information in their sustainability reports than the small ones (Hackston and Milne, 1996; Neu et al., 1998; Patten, 2002; García-Sánchez, 2008; Joshi and Gao, 2009; Da Silva Monteiro and Aibar-Guzmán, 2010; Prado-Lorenzo et al., 2009; Sotorrío and Fernández Sánchez, 2010, ref in Legendre and Coderre, 2013, p.

184; Cornier et al., 2005, p. 31; Guo & Zhao, 2011, p. 47; Joshi & Gao, 2009, p. 38; Prado-Lorenzo et al., 2009, p. 104). Our hypotheses were to test if among the Swedish large-size companies belonging to the industrial sector, the largest would disclose on more indicators of the GRI than the smallest. In the third hypothesis the size-criteria was the turnover and in the fourth one the number of employees. We expected the largest large companies to disclose on more indicators than the smallest, which would have shown that the theory about large-size and small-size companies can be extended inside the group of the large companies. We found that the "largest" large companies which use the GRI as their sustainability reporting framework report on nearly twice more indicators than the "smallest" large companies – 56% and 33.1%. Besides, the reporting on core indicators is also really higher for the "largest" large indicators than for the "smallest" large indicators – 45.9% and 69.7%. Our findings indicate that the number of employees and the turnover affect the number of indicators a company report on; that is the more employees or the higher the turnover, the more indicators are reported on.

Our fifth and final hypothesis was derived from both Eccles et al. (2012, p. 11-13), who declared that companies belonging to the same sector are expected to report in a similar way, and to Navak and Venkatraman who considered that the large companies disclose significantly more on the environmental pillar than the small companies, and that as regards the disclosure on the economic and social pillar the disclosure is the same between large and small companies. Besides, a mapping of the indicators used by the industrial companies is of need according to Block et al. (2006, p. 43).Therefore, we tested if all of the GRI's indicators are equally disclosed by companies. We discovered that the disclosure is always higher for the "largest" large companies for both the core and non-core indicators of the GRI for each pillar of sustainability. This conclusion is also true in the case of only core indicators. These elements make us reject the theory of Navak and Venkatraman. Indeed, our mapping provided the following results: the indicators of the aspects "Economic performance", "Materials", "Energy", "Compliance", "Emissions, effluents, and waste", "Non-discrimination", "Child labor" and "Forced and compulsory labor", "Security practices" and "Indigenous rights", and the core indicators of the aspects "Water", "Employment", and "Occupational health and safety" are largely disclosed. We also noticed that the indicators EC8, EN26, LA13, SO3, SO5, and PR1are largely disclosed. At the contrary, the indicators of the aspects "Market presence", "Biodiversity", "Overall", "Product and service labeling", "Communications" and "Customer privacy" are poorly disclosed. The result we found is therefore that the indicators were not equally disclosed which made us reject the null-hypothesis.

To summarize our conclusions; our findings show that the among the Swedish large-size companies belonging to the industrial sector, the largest report more on sustainability using the GRI. Besides, among the large companies which disclose on the GRI the largest disclose on more indicators than the smallest. Finally, we succeeded in identifying several indicators of the GRI which are largely disclosed by the Swedish large-size companies belonging to the industrial sector, and also several indicators which are poorly disclosed.

6.2. Limitations of the thesis

Our definition of the "industrial sector" as well as our definition of "large-size" companies can be contested. We developed in the theoretical framework the reasons which led us to define these criteria the way we did, but the definitions we provided are not internationally recognized and unique ones.

The population we have studied was defined with the "largest companies" database. According to this database, companies can belong to several sectors. We have considered that the companies which have one of their sectors fitting with our definition of industrial sector were belonging to our population. However, some holding companies and Riksbyggen which is a company performing both in construction – construction of real estate in the case of Riksbyggen, which fits with our definition of industrial sector – and real estate managing are among our population of studied companies and have a part of their activity which is not considered as industrial sector activities. With this in our mind and being aware of the potential disadvantage of our chosen population, we still decided to use the population we retrieved from the database. Hence, these companies fit with our definition of industrial but not only, which constitutes a limitation.

In order to gain and refine our conclusions through the analysis, we collected secondary data for the use in our thesis. Due to time and resource limitations, no empirical survey was of use. The outcome of our secondary data was analyzed against theory of previous studies.

We may not have mentioned enough that the data we used are those concerning the use of the GRI as a sustainability reporting tool. It is important to remind that even if in our sample only 13 companies out of 30 used the GRI, this does not mean that the other companies do not report on sustainability. Indeed, lots of the companies of the sample used the United Nations Global Compact for instance for reporting. Besides, some companies act sustainably and do not report on some of the aspects they are acting on.

Since the beginning of our study we used a sample of 30 companies to see how many were reporting using the GRI. This "n" of 30 is quite low considering the fact that this is the absolute size of the sample which is important and is likely to give more precision to the results of a study (Bryman & Bell, 2011, p. 187). It occurred that only 13 out of the 30 companies were reporting on the GRI, what we were not expecting. Therefore, for the rest of our study, we had a "n" of 13. With a rather small sample, our internal validity might be low compared to studies including larger samples. As all of our conclusions are based on the results from the analysis of our collected data from these companies, our result cannot be 100% accurate and therefore represent main trends.

We have also changed the groups we made in hypothesis 1 and 2 in our hypotheses 3 and 4. We considered we would get more reliable results by doing so, however the groups made are normally the same from the beginning to the end of a thesis.

We have to add that all the companies we collected information on did not have their sustainability report audited. Therefore, some of the information they provided may not have been considered the same way by auditors. However the importance of the advice

of the auditors has more weight as regards the quality of the disclosure than the number of indicators disclosed.

Furthermore, we collected data from companies' sustainability reports, and we chose to use the latest report available. Therefore, our result does not show any trends or developments within the area of sustainability, as we exclusively collected data from one year. We used large companies for our sample, which makes the result apply to this category of companies. Also, we used Swedish companies of the industrial sector, which limits our findings to this field. We cannot compare the results we found as regards the industrial sector with those of other sectors and see if what we found fits with a general trend in sustainability or is special to the industrial sector as we did not find any study providing general results for each indicator as regards their disclosure.

Finally, we focused on two main variables (number of employees and turnover) in our study. Other related factors were not taken into consideration in this study.

6.3. Recommendations

For further research, we believe it would be interesting to pay attention to the quality of the disclosure of each GRI indicator made by the large Swedish companies belonging to the industrial sector. When we collected the information about the reporting of indicators, we noticed that companies report both fully and partly on different indicators. Therefore, we suggest a deeper quantitative investigation for exploring the quality of the sustainability reporting. We collected and summarized our findings in the Appendix 11 for the disposal of the reader.

Furthermore, as we conducted a quantitative method in our thesis, we believe that a qualitative approach would be interesting direction for this subject. Then, the researchers could conduct a survey for sustainability managers at companies which may help the researchers to understand why certain indicators are reported on and eventually collect a more comprehensive conclusion.

Finally, we recommend exploring other sectors for investigating the reporting. It would be interesting to compare the result from different sectors, or even different countries. A cross-sectional analysis would present the researcher with indications of the difference between sectors, and the reporting on sustainability of companies within them.

6.4. Postscript

In the introduction of our thesis we mentioned that the indicators which are used in order to report on sustainability change over time. In this sentence, we could read implicitly that the indicators or the framework we would use could be obsolete or need improvements in the upcoming months or years following the writing of our thesis.

A development of the GRI occurred before the submission of our thesis. Indeed, in May 2013, a new generation of GRI Guidelines appeared: the G4 (GRI, 2013). The G4 is the fourth generation of Guidelines created by the GRI (ibid). The G4 strengthens the links between the GRI and the UNGC as all the principles of the Global Compact are

incorporated in it, and is considered as "the fullest alignment of the GRI Guidelines with the Global Compact principles to date" (UNGC, 2013). Considering the changes companies will have to make in their sustainable reports in order to comply with this new Guideline, the GRI will keep recognizing the reports made by companies in compliance with the G3 or G3.1 Guidelines until the end of the civil year 2015 (GRI, 2013). To ease the transition to the G4 Guideline for companies using the G3 or G3.1 Guidelines, the GRI has made available an overview of the changes companies will have to accomplish to go from a guideline to another (ibid). Nevertheless, companies which did not report with the GRI Guidelines yet and which would like to do so will have to comply directly with the G4 Guideline (ibid).

Therefore, our thesis is still valid as companies will be able to report in accordance with the G4 Guidelines only from the end of 2013; which made it impossible for us to collect data with the G4 Guidelines. Future thesis writers will have to consider the G4 Guideline instead of the G3 or G3.1 for their research, which will make any longitudinal analysis more difficult as the comparisons will not be made on the same basis.

References:

Adams, C.A., & Frost, G.R. (2008). Integrating sustainability reporting into management practices. *Accounting Forum*, 32, 288-302.

Alam, S., & Kabir (2013). N. Economic Growth and Environmental Sustainability: Empirical Evidence from East and South-East Asia. *International Journal of Economics and Finance*, 5 (2), p. 86-97.

Alfa Laval (2012). GRI and cross reference 2012. [electronic].
Available via:
http://www.alfalaval.com/about-us/sustainability/reports/Pages/reports.aspx#grireports
[Retrieved: May 9, 2013]

Asmussen, J. (2009). Mastering Global Financial Crises: A German Perspective. *The Washington Quarterly* , 32 (3), p. 197-204.

Assa Abloy (2012). Sustainability Report 2012. [electronic].
Available via:
http://www.assaabloy.com/Global/Sustainability/Sustainability-Report/2012/ASSA%20ABLOY%20Sustainability%20Report%202012.pdf
[Retrieved: May 9, 2013]

Atlas Copco (2012). Atlas Copco Annual Report – sustainability information 2012. [electronic].
Available via:
http://www.atlascopco.com/Images/Atlas%20Copco%20Annual%20report%202012%20-%20GRI%20Index_tcm40-3522752.pdf
[Retrieved: May 8, 2013]

Azapagic, A. (2004). Developing a framework for sustainable development indicators for the mining and minerals industry, *Journal of Cleaner Production*, 12, 639–662.

Bausell, R.B., Li Y.-F. (2002). *Power Analysis for Experimental Research : A Practical Guide for the Biological, Medical and Social Sciences*. 1st Edition. New-York: Cambridge University Press.

Bebbington, J., Larrinaga-González C., & Moneva-Abadía, J.M. (2008). Legitimating reputation/the reputation of legitimacy theory, *Accounting, Auditing & Accountability Journal*, 21 (3), p. 371-374.

Bingham, J. (2013). Britain ranked second only to Sweden in table of most advanced countries. The Telegraph, [online] April, 11th.
<http://www.telegraph.co.uk/finance/economics/9984829/Britain-ranked-second-only-to-Sweden-in-table-of-most-advanced-countries.html>
[Retrieved: 2013-10-13].

Block, C., Van Gerven, T., & Vandecasteele, C. (2007). Industry and energy sectors in Flanders: environmental performance and response indicators. *Clean Technologies and Environmental Policy*, 9, 43–51.

Bryman, A., & Bell, E. (2011) *Business Research Methods*. 3rd edition. Oxford: Oxford University Press.

Camfil (2012). Sustainability Report 2012. [electronic].
Available via:
http://www.camfil.ca/FileArchive/Brochures/Sustainability/Sustainability%20Report%202012.pdf
[Retrieved: May 8, 2013]

Consilium (2012). Årsredovisning 2012. [electronic].
Available via:
http://consilium.se/sites/default/files/arsredovisning_2012.pdf
[Retrieved: May 14, 2013]

Cormier, D., Magnan, M., & Van Velthoven, B. (2005). Environmental Disclosure Quality in Large German Companies: Economic Incentives, Public Pressures or Institutional Conditions. *European Accounting Review*, 14(1), 3-39.

Cowan, D.M., Dopart, P., Ferracini, T., Sahmel, J., Merryman, K., Gaffney, S. & et al. (2010). A cross-sectional analysis of reported corporate environmental sustainability practices *Regulatory Toxicology and Pharmacology*, 58, 524–538.

Creswell, J.W. (2003). *Research Design Qualitative, Quantitative and Mixed Approaches. 2nd edition.* Thousand Oaks: SAGE Publications.

Creswell, J.W. (2009). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches. 3rd edition.* Thousand Oaks: SAGE Publications.

Curwin, J., & Slater, R. (2008). *Quantitative Methods for Business Decisions*. 6th edition. UK: Thomson.

David M., & Sutton C. (2011). *Social research and introduction. 2th edition.* London: Sage.

DeLaval (2012). Environmental and Social Report 2012. [electronic].
Available via:
http://www.delaval.com/Global/About%20DeLaval/Sustainability/DeLaval_ESR_report_2012.pdf
[Retrieved: May 10, 2013]

Diab Group (2013). Sustainability. [electronic].
Available via:
http://www.diabgroup.com/en-GB/About-us/Sustainability
[Retrieved: May 13, 2013]

Dobers, P. (2009). Corporate Social Responsibility: Management and Methods. *Corporate Social Responsibility and Environmental Management*, 16, 185-191.

Dow Jones Sector Classification: Structure Definitions (2012) <http://www.djindexes.com/mdsidx/downloads/Sector_Classification_Structure_Definitions.pdf> [Retrieved 2013-04-30]

Dow Jones Sustainability Index of Nordic Countries (2013) <http://djindexes.com/mdsidx/downloads/fact_info/Dow_Jones_Sustainability_Nordic_Index_Fact_Sheet.pdf > [Retrieved 2013-04-30]

Dumay, J., Guthrie, J., & Farneti, F. (2010). GRI Sustainability Reporting Guidelines for Public and Sector Organizations. *Public Management Review*, 12 (4), 531-548.

Eccles, R.G., Krzus, M.P., Rogers, J., & Serafim, G. (2012). The Need for Sector-Specific Materiality and Sustainability Reporting Standards. *Journal of Applied Corporate Finance*, 24 (2), 8-14.

Ekins, P., & Vanner, R. (2007). Sectoral sustainability and sustainability assessment methodologies: A review of methodology in light of collaboration with the UK oil and gas sector, *Journal of Environmental Planning and Management*, 50 (1), 87-111.

Eriksson, L.T., & Wiedersheim-Paul, F. (2006). *Att utreda, forska och rapportera*. 8th edition. Malmö: Liber

Ernst & Young (2012). Implications of the French Grenelle II law and Article 225 for US companies. <http://www.ey.com/Publication/vwLUAssets/Frances_sustainability_law_to_impact_US_companies/$FILE/How_Frances_new_sustainability_reporting_law.pdf > [Retrieved: 2013-05-24]

Ethos International (2009) <http://www.ethosinternational.se/ethosinternational/parse.php?p=choice_of_indicators_eng_new.html> [Retrieved 2013-12-08]

European Commission (2011) <http://ec.europa.eu/enterprise/policies/sme/business-environment/files/annexes_accounting_report_2011/sweden_en.pdf> [Retrieved 2013-10-17]

Faber, N.R., Peters, K., Maruster, L., van Haren, R., & Jorna, R. (2010). Sense Making of (Social) Sustainability: A Behavioral and Knowledge Approach. *International Studies of Management & Organization*, 40 (3), p. 8-22.

Farhat Kassab, S. (2013). Sweden is ranked most socially advanced country – Britain ranked ahead of Germany, the United States and Japan in new Social Progress Index. Skoll Foundation, [online]. April, 10th. <http://www.skollfoundation.org/sweden-is-ranked-most-socially-advanced-country-britain-ranked-ahead-of-germany-the-united-states-and-japan-in-new-social-progress-index/> [Retrieved: 2013-10-13]

Gallo, P.J., & Christensen, L. J. (2011). Firm Size Matters: An Empirical Investigation of Organizational Size and Ownership on Sustainability-Related Behaviors. *Business & Society*, 50(2), p. 315-349.

Global Reporting Initiative (2013)
<https://www.globalreporting.org/Pages/default.aspx> [Retrieved 2013-04-28]

Goodland, R. (1995). The concept of environmental sustainability. *Annual Review of Ecology and Systematics*, 26, 1–24.

Gou, M., & Zhao, X. (2011). *What is the impact of industrial environmental events on the quality of environmental disclosure in corporate annual reports? A longitudinal study*. 30 hp Master thesis. Umeå: Umeå University.

Granek, F., & Hassanali, M. (2006). The Toronto Region Sustainability Program: insights on the adoption of pollution prevention practices by small to medium-sized manufacturers in the Greater Toronto Area (GTA), *Journal of Cleaner Production*, 14, p. 572-579.

Haldex (2012). Annual Report 2012. [electronic].
Available via:
http://www.haldex.com/Global/Global/Investors/AGMdocuments/2013/eng%202013/Haldex_AR_2012_ENG_FINAL.pdf
[Retrieved: May 8, 2013]

Haugh, H. (2012). The importance of theory in social enterprise research. *Social Enterprise Journal*, 8(1), p. 7-15.

Hespenheide, H., Pavlovsky, K., & McElroy, M. (2010). Accounting for sustainability performance. *Financial Executive*, 26 (2), 52-58.

Hexagon (2012). Annual Report 2012. [electronic].
Available via:
http://investors.hexagon.com/files/press/hexagon/Hexagon_AR2012_Eng_Web.pdf
[Retrieved: May 9, 2013]

Hexpol (2012). Sustainability Report 2012. [electronic].
Available via:
http://investors.hexpol.com/files/press/hexpol/Hexpol_2012_SustainabilityReport.pdf
[Retrieved: May 10, 2013]

HL Display (2013). Finansiella data. [electronic].
Available via:
http://www.hldisplay.se/swe/investors/index.asp?pID=33
[Retrieved: May 10, 2013]

Ioannou, I., & Serafeim, G. (2012). The Consequences of Mandatory Corporate Sustainability Reporting. *Harvard Business School Research Working Paper*, (11-100), 1-44.

IUCN (1980). *World conservation strategy: Living resource conservation for sustainable development*. IUCN/UNEP/WWF, Gland, Switzerland.

Johnson, B., & Christensen, L. (2012). *Educational Research: Quantitative, Qualitative, and Mixed Approaches*. 4th edition. London: Sage.

Joshi, P.L., & Gao S.S. (2009). Multinational corporation's corporate social and environmental disclosures (CSED) on web sites. *International Journal of Commerce and Management*, 19 (1), 27-44.

Kajander, J-K., Sivunen, M., Vimpari, J., Pulkka, L., & Junnila, S. (2012). Market value of sustainability business innovations in the construction sector. *Building Research & Information*, 40 (6), 665-678.

Kolk, A. (2004). A decade of sustainability reporting: developments and significance, *International Journal of Environment and Sustainable Development*, 3 (1), 51-64.

Krajnc, D., & Glavič, P. (2003). Indicators of sustainable production. *Clean Technologies and Environmental Policy*, 5 (3-4), 279–288.

Krajnc, D., & Glavič, P. (2005). A model for integrated assessment of sustainable development. *Resources, Conservation and Recycling*, 43, 189–208.

JM (2012). JM GRI Index 2012. [electronic].
Available via:
http://www.jm.se/om-jm/hallbarhet/gri-index/
[Retrieved: May 10, 2013]

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., (1998). Law and Finance. *Journal of Political Economy*, vol. 106 n°6

Laurinkevičiūtė, A., & Stasiškienė, Z. (2011). SMS for decision making of SMEs. *Clean Technologies and Environmental Policy*, 13, 797-807.

Legendre, S., & Coderre, F. (2012). Determinants of GRI G_3 Application Levels: The Case of the Fortune Global $_{500}$. *Corporate Social Responsibility and Environmental Management*, 20, 181-192.

Lindab (2011). GRI Index. [electronic].
Available via:
http://www.lindabgroup.com/English/about/lindablife/Pages/GRIindex.aspx
[Retrieved: May 10, 2013]

Lozano, R. (2013). Sustainability inter-linkages in reporting vindicated: a study of European companies. *Journal of Cleaner Production*, 51, p. 57-65.

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

Meek, G. K., Roberts, C. B., & Gray, S. J. (1995). Factors Influencing Voluntary Annual Report Disclosures by U.S., U.K. and Continental European Multinational Corporations. *: Journal of International Business Studies*, 26 (3), p. 555-572.

Michelon, G. (2011). Sustainability Disclosure and Reputation: A Comparative Study. *Corporate Reputation Review*, 14 (2), p. 79-96.

Milne, M.J., & Gray, R. (2012). W(h)ither Ecology? The Triple Bottom Line, the Global Reporting Initiative, and Corporate Sustainability Reporting. *Journal of Business Ethics*, 1-17.

Mintz, S.M. (2011). Tripple Bottom Line Reporting for CPAs. *The CPA Journal*. 81 (12), 26-33.

Moldan, B., Janoušková, S. & Hák, T. (2011). How to understand and measure environmental sustainability: Indicators and targets. *Ecological Indicators*, 17, 4-13.

Munters (2013). Hållbar utveckling. [electronic].
Available via:
http://www.munters.se/sv/se/Om-Munters/Hallbar-utveckling/
[Retrieved: May 9, 2013]

Nayak, R., & Venkatraman, S. (2011). Does the business size matter on corporate sustainable performance?: The Australian business case. *World Review of Entrepreneurship, Management and Sust. Development*, 7 (3), p. 281-301.

Nederman (2013). Våra värderingar. [electronic].
Available via:
http://www.nederman.se/about/company-values
[Retrieved: May 9, 2013]

Newsweek Green Rankings 2012: Full methodology (2012, a)
<http://www.thedailybeast.com/newsweek/2012/10/22/newsweek-green-rankings-2012-full-methodology.html> [Retrieved 2013-04-30]

Newsweek Green Rankings 2012: Industrial goods (2012, b)
<http://www.thedailybeast.com/newsweek/2012/10/22/newsweek-green-rankings-2012-industrial-goods.html> [Retrieved 2013-04-30]

Nolato (2012). Nolato 2012 Sustainability Report. [electronic].
Available via:
http://www.nolato.com/downloads/nolato-sustainable-2012-en.pdf
[Retrieved: May 13, 2013]

Orth R., & Kohl H. (2013). Towards Corporate Sustainability – a Small and Medium-Sized Enterprise Perspective. In Garcia L., Rodriguez-Castellanos A., & Barrutia-Guenaga J., ed. Abstract of Papers at the 5th European Conference on Intellectual Capital. Reading: Academic Conferences and Publishing International Limited.

Ostnor (2012). Årsredovisning 2012. [electronic].
Available via:
http://www.ostnor.se/Global/reports/Ostnor_AR2012_sve.pdf
[Retrieved: May 14, 2013]

Oxford Dictionaries (2013) <http://oxforddictionaries.com/> [Retrieved 2013-04-24]

Permobil (2013). Om oss - miljö. [electronic].
Available via:
http://countries.permobil.com/Sverige/Foretaget/Om-Oss/Miljo/
[Retrieved: May 10, 2013]

PMC Group (2011). Årsredovisning 2011. [electronic].
Available via:
http://www.pmcgroup.se/Global/About-PMC/Annual-Reports/Svenska/PMC_ar2011_sve.pdf?epslanguage=sv
[Retrieved: May 9, 2013]

Prado-Lorenzo, J.M., Gallego-Alvarez, I., & Garcia-Sanchez, I.M. (2009). Stakeholder Engagement and Corporate Social Responsibility Reporting: the Ownership Structure Effect. *Corporate Social Responsibility and Environment Management*, 16, 94-107.

Proctor, P. (1995). *Cambridge International Dictionary of English*. 1st edition. Cambridge: Cambridge University Press.

Rajesh Kumar Singh, Murty, H.R., Gupta, S.K., & Dikshit, A.K. (2009). An overview of sustainability assessment methodologies. *Ecological Indicators*, 9 (2), 189-202.

Rajesh Kumar Singh, Murty, H.R., Gupta, S.K., & Dikshit, A.K. (2012). An overview of sustainability assessment methodologies. *Ecological Indicators*, 15 (1), 281–299.

Regeringskansliet (2007). *Guidelines for external reporting by state-owned companies*. Regeringskansliet, Sweden.

Riksbyggen (2011). En hållbar berättelse 2011. [electronic].
Available via:
http://www.riksbyggen.se/Documents/Ekonomiska%20rapporter/Riksbyggen_verksamhet_2011.pdf
[Retrieved: May 10, 2013]

RobecoSAM (2013)
<http://www.sustainability-indices.com/sustainability-assessment/sustainability-investing.jsp> [Retrieved 2013-05-29]

Royse, D.D. (2008). *Research Methods in Social Work*. 5th edition. Belmont: Thomson Learning Inc.

Sandvik (2012). GRI index 2012. [electronic].
Available via:
http://www.sandvik.com/Global/About%20Sandvik/Reports/GRI%20index%202012.pdf
[Retrieved: May 8, 2013]

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. 5th edition. Harlow: Pearson Education.
Serageldin, I., & Streeter, A. (1993). Valuing the environment: proceedings of the First Annual Conference on Environmentally Sustainable Development. *Environmentally Sustainable Development Proceedings Series*, 2.

Shearlock C., Hooper P., & Millington S. (2000). Environmental Improvement in Small and Medium-Sized Enterprises: A Role for the Business *Support Network. Greener Management International*, 30, 50-60

SKF (2012). GRI Index Table - compliance table to GRI G3 guidelines. [electronic].
Available via:
http://www.skf.com/irassets/sites/default/files/report/compliance_table_to_gri_g3_guidelines_2012-2.pdf
[Retrieved: May 8, 2013]

Solomon, J. (2010). *Corporate Governance and Accountability*, 3rd Edition. John Wiley & Sons: Chichester

Statistics & Research Methodology (2010)
<https://epilab.ich.ucl.ac.uk/coursematerial/statistics/summarising_centre_spread/measures_centre/comparing_mean_median.html>
[Retrieved 2013-16-10]

Statstutor (unknown) < http://www.statstutor.ac.uk/resources/uploaded/spearmans.pdf>
[Retrieved 2013-05-29]

Swegon (2013). Kvalitet och miljö. [electronic].
Available via:
http://www.swegon.com/sv/Om-Swegon/Kvalitet-och-miljo/
[Retrieved: May 9, 2013]

Trelleborg AB (2012). Corporate Responsibility 2012. [electronic].
Available via:
http://www2.trelleborg.com/Global/Corporate-Responsibility/CR%20Web%202012/CR_Report%202012_Trelleborg.pdf
[Retrieved: May 9, 2013]

Trioplast (2013). Environment Certificates. [electronic].
Available via:
http://www.trioplast.com/about_trioplast/certificates_2/environment
[Retrieved: May 8, 2013]

United Nations Global Compact (2003)
<http://www.unglobalcompact.org/NewsAndEvents/news_archives/2003_03_18.html>
[Retrieved 2013-10-02]

United Nations Global Compact (2010)
<http://www.unglobalcompact.org/news/50-06-24-2010> [Retrieved 2013-10-02]

United Nations Global Compact (2013)
<http://www.unglobalcompact.org/> [Retrieved 2013-10-02]

VBG Group (2013). Certifiering. [electronic].
Available via:
http://www.vbg.se/sv/about/certificates/
[Retrieved: May 13, 2013]

Veleva, V., & Ellenbecker, M. (2001). Indicators of sustainable production: framework and methodology. *Journal of Cleaner Production*, 9, 519–549

Volvo (2012). Volvo Cars GRI Report 2012. [electronic].
Available via:
http://www.volvocars.com/SiteCollectionDocuments/TopNavigation/Corporate/Sustainability/GRI/Volvo_Cars_GRI_Report_2012.pdf
[Retrieved: May 9, 2013]

WCED (1987). *Our Common Future: Report of the World Commission on Environment and Development*, WCED, Switzerland.

Weber, M. (1949). *The Methodology of the Social Sciences*. 1st edition. New York: Free Press.

Wegner, T. (2008). *Applied Business Statistics: Methods and Excel-based Applications*. 2nd edition. South Africa: Juta & Co. Ltd.

Weland (2013). Certifikat. [electronic].
Available via:
http://www.weland.se/?ID=LADDAHEM&sLang=sv-se#CERT
[Retrieved: May 10, 2013]

Willis, 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

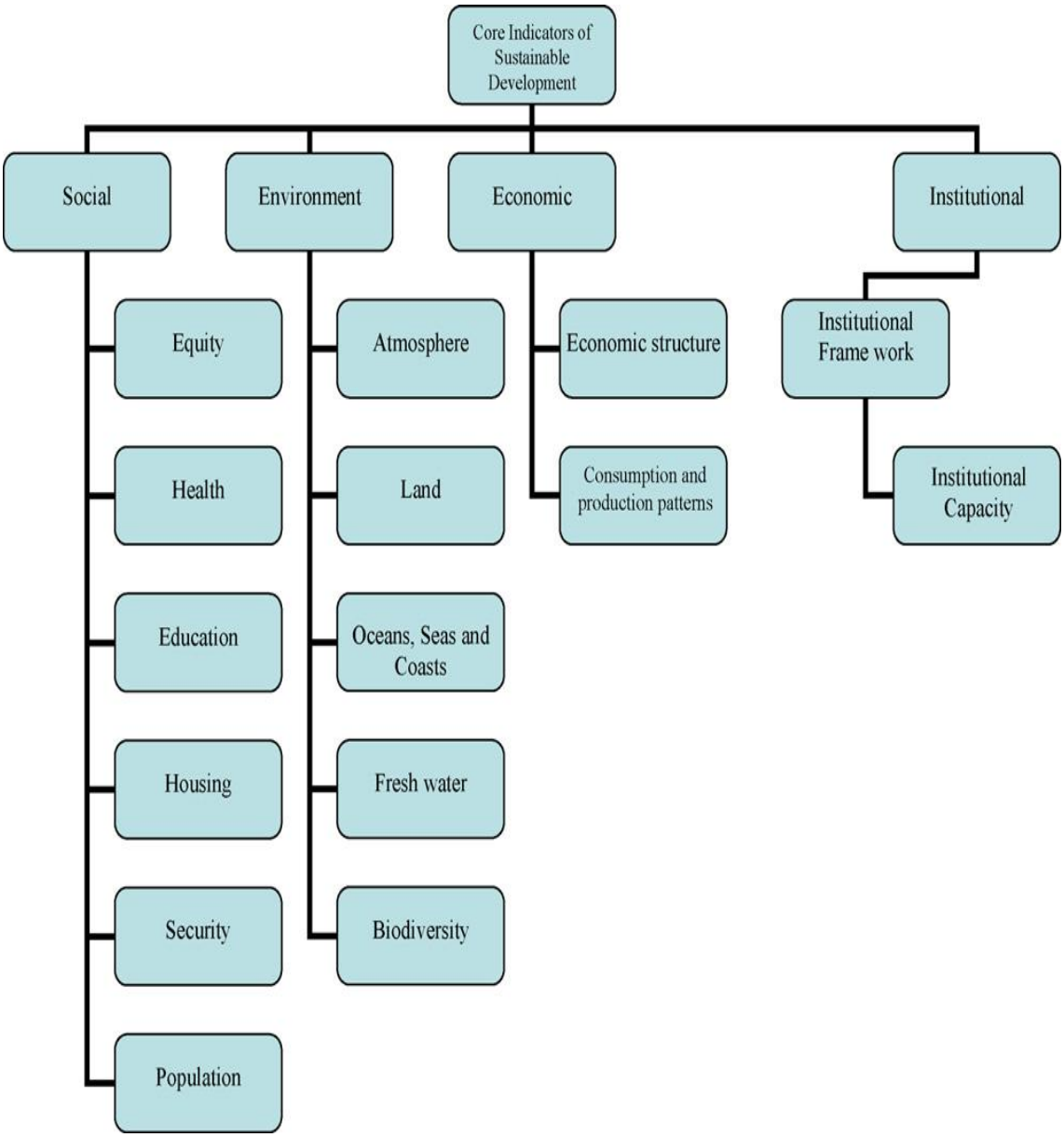
XANO Industry (2012). Årsredovisning 2012. [electronic].
Available via:
http://www.xano.se/MediaBinaryLoader.axd?MediaArchive_FileID=52ca2cfa-7428-4073-a560-949426f9a0a5&FileName=XANO_2012_SVE.pdf
[Retrieved: May 13, 2013]

Yale University Environmental Performance Index (2012) <http://www.epi.yale.edu/>
[Retrieved 2013-04-15]

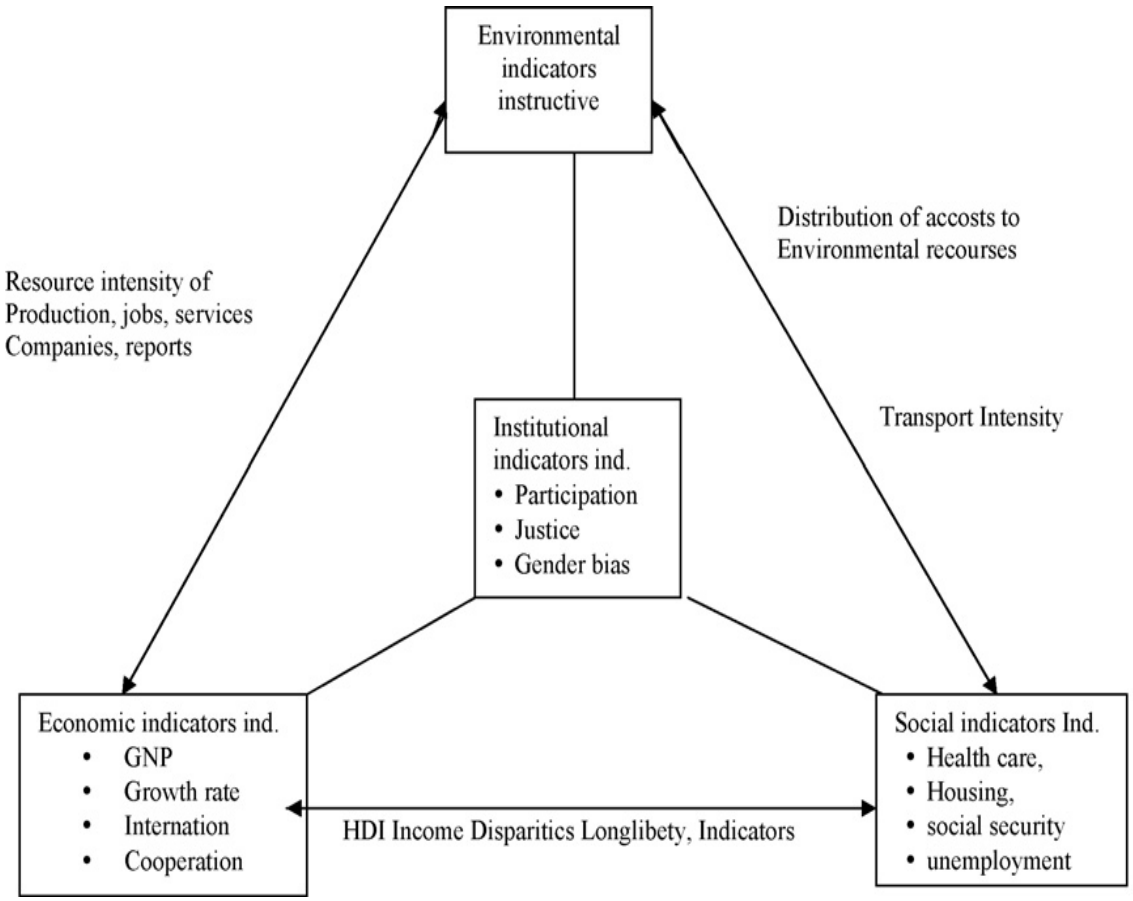
Zemichael, R.T., & Basazinew, S.T. (2010). *The Impact of Board composition on Accounting Profitability of the Firm*. 15 hp Master thesis. Umeå: Umeå University.

Åkers (2013). Certificates. [electronic].
Available via:
http://www.akersrolls.com/templates/TwoColumnList____165.aspx
[Retrieved: May 10, 2013]

Appendix 1: The United Nations Commission for Sustainable Development (UNCSD) Theme Indicator Framework. (Rajesh Kumar Singh et al., 2009, p.193).



Appendix 2: The Wuppertal Sustainable Development Indicator Framework. (Rajesh Kumar Singh et al., 2009, p.194).



Appendix 3: United Nations Global Compact's ten principles
(UNGC, 2013)

Human Rights	
Principle 1:	• Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2:	• make sure that they are not complicit in human rights abuses.
Labour	
Principle 3:	• Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4:	• the elimination of all forms of forced and compulsory labour;
Principle 5:	• the effective abolition of child labour; and
Principle 6:	• the elimination of discrimination in respect of employment and occupation.
Environment	
Principle 7:	• Businesses should support a precautionary approach to environmental challenges
Principle 8:	• undertake initiatives to promote greater environmental responsibility; and
Principle 9:	• encourage the development and diffusion of environmentally friendly technologies.
Anti-Corruption	
Principle 10:	• Businesses should work against corruption in all its forms, including extortion and bribery.

Appendix 4: Specific Commitments of the New Alliance
(UNGC, 2010)

1. GRI, subject to due process, will integrate the Global Compact issue areas and principles centrally in the GRI Guidelines, through the current and upcoming revisions of the Guidelines.

The GRI will, through this revision under its due process, explore how a reference to the Global Compact principles can be best integrated in key sections of the GRI Guidelines, such as the Profile Disclosure, Strategy and Analysis section and the Disclosure on Management Approach, and explore the extent to which the GRI configuration (economic, social, environment) could be aligned with the Global Compact issue areas (human rights, labour, the environment, and anti-corruption).

2. The Global Compact will adopt the GRI Guidelines as the recommended reporting language for companies to communicate progress. GRI provides a common language that helps Global Compact participants to communicate their progress in implementing the principles, using widely accepted reporting principles and best practice indicators.

The GRI Sustainability Reporting Framework is a voluntary ESG reporting and stakeholder engagement and management tool and should not be viewed as a compliance framework. GRI's Framework provides a good basis to communicate progress on key, corporate sustainability actions advocated by the Global Compact with various levels of sophistication.

3. The Global Compact will, with the support of GRI, develop guidance on the use of GRI as the recommended reporting language, introducing progressive differentiating levels, and detailing specific expected report content at each level.

The Global Compact and GRI will work together on the development of reporting elements for relevant areas lacking robust existing guidance, including the Millennium Development Goals, specific industry sectors and for areas relevant to the issues covered by the Global Compact.

4. The Global Compact and GRI will collaborate on local outreach and training to increase the quantity and quality of reporting, with a special focus on less developed markets and medium and smaller companies. Joint efforts will include encouraging and enabling a closer collaboration of Global Compact Local Networks and GRI's focal points, both at the governance level and through joint training and other activities.

5. The Global Compact and GRI will share information on their respective participants, including the level of Global Compact participation and GRI reporting levels.

Appendix 5: GRI's sustainable Performance Indicators

Economic Performance Indicators

Aspect: Economic Performance

- (Core) **EC1**: 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.

- (Core) **EC2**: Financial implications and other risks and opportunities for the organization's activities due to climate change.

- (Core) **EC3**: Coverage of the organization's defined benefit plan obligations.

- (Core) **EC4**: Significant financial assistance received from government.

Aspect: Market Presence

- (Add) **EC5**: Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.

- (Core) **EC6**: Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.

- (Core) **EC7**: Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.

Aspect: Indirect Economic Impacts

- (Core) **EC8**: Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.

- (Add) **EC9**: Understanding and describing significant indirect economic impacts, including the extent of impacts.

Environmental Performance Indicators

Aspect: Materials

- (Core) **EN1**: Materials used by weight or volume.

- (Core) **EN2**: Percentage of materials used that are recycled input materials.

Aspect: Energy

- (Core) **EN3**: Direct energy consumption by primary energy source.
- (Core) **EN4**: Indirect energy consumption by primary source.
- (Add) **EN5**: Energy saved due to conservation and efficiency improvements.
- (Add) **EN6**: Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.
- (Add) **EN7**: Initiatives to reduce indirect energy consumption and reductions achieved.

Aspect: Water

- (Core) **EN8**: Total water withdrawal by source.
- (Add) **EN9**: Water sources significantly affected by withdrawal of water.
- (Add) **EN10**: Percentage and total volume of water recycled and reused.

Aspect: Biodiversity

- (Core) **EN11**: Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.
- (Core) **EN12**: Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
- (Add) **EN13**: Habitats protected or restored.
- (Add) **EN14**: Strategies, current actions, and future plans for managing impacts on biodiversity.
- (Add) **EN15**: Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.

Aspect: Emissions, Effluents, and Waste

- (Core) **EN16**: Total direct and indirect greenhouse gas emissions by weight.
- (Core) **EN17**: Other relevant indirect greenhouse gas emissions by weight.
- (Add) **EN18**: Initiatives to reduce greenhouse gas emissions and reductions achieved.

- (Core) **EN19**: Emissions of ozone-depleting substances by weight.

- (Core) **EN20**: NO, SO, and other significant air emissions by type and weight.

- (Core) **EN21**: Total water discharge by quality and destination.

- (Core) **EN22**: Total weight of waste by type and disposal method.

- (Core) **EN23**: Total number and volume of significant spills.

- (Add) **EN24**: Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.

- (Add) **EN25**: 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.

Aspect: Products and Services

- (Core) **EN26**: Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.

- (Core) **EN27**: Percentage of products sold and their packaging materials that are reclaimed by category.

Aspect: Compliance

- (Core) **EN28**: Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.

Aspect: Transport

- (Add) **EN29**: Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.

Aspect: Overall

- (Add) **EN30**: Total environmental protection expenditures and investments by type.

Social Performance Indicators

Labor Practices and Decent Work Performance Indicators

Aspect: Employment

- (Core) **LA1**: Total workforce by employment type, employment contract, and region.

- (Core) **LA2**: Total number and rate of employee turnover by age group, gender, and region.

- (Add) **LA3**: Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.

Aspect: Labor/Management Relations

- (Core) **LA4**: Percentage of employees covered by collective bargaining agreements.

- (Core) **LA5**: Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.

Aspect: Occupational Health and Safety

- (Add) **LA6**: Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advice on occupational health and safety programs.

- (Core) **LA7**: Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region.

- (Core) **LA8**: Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.

- (Add) **LA9**: Health and safety topics covered in formal agreements with trade unions.

Aspect: Training and Education

- (Core) **LA10**: Average hours of training per year per employee by employee category.

- (Add) **LA11**: Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.

- (Add) **LA12**: Percentage of employees receiving regular performance and career development reviews.

Aspect: Diversity and Equal Opportunity

- (Core) **LA13**: Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.

- (Core) **LA14**: Ratio of basic salary of men to women by employee category.

Human Rights Performance Indicators

Aspect: Investment and Procurement Practices

- (Core) **HR1**: Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.

- (Core) **HR2**: Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.

- (Add) **HR3**: 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.

Aspect: Non-discrimination

- (Core) **HR4**: Total number of incidents of discrimination and actions taken.

Aspect: Freedom of Association and Collective Bargaining

- (Core) **HR5**: Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.

Aspect: Child Labor

- (Core) **HR6**: Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.

Aspect: Forced and Compulsory Labor

- (Core) **HR7**: Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor.

Aspect: Security Practices

- (Add) **HR8**: Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.

Aspect: Indigenous Rights

- (Add) **HR9**: Total number of incidents of violations involving rights of indigenous people and actions taken.

Society Performance Indicators

Aspect: Community

- (Core) **SO1**: Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.

Aspect: Corruption

- (Core) **SO2**: Percentage and total number of business units analyzed for risks related to corruption.

- (Core) **SO3**: Percentage of employees trained in organization's anti-corruption policies and procedures.

- (Core) **SO4**: Actions taken in response to incidents of corruption.

Aspect: Public Policy

- (Core) **SO5**: Public policy positions and participation in public policy development and lobbying.

- (Add) **SO6**: Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.

Aspect: Anti-Competitive Behavior

- (Add) **SO7**: Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.

Aspect: Compliance

- (Core) **SO8**: Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.

Product Responsibility Performance Indicators

Aspect: Customer Health and Safety

- (Core) **PR1**: Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.

- (Add) **PR2**: Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.

Aspect: Product and Service Labeling

- (Core) **PR3**: Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.

- (Add) **PR4**: Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.

- (Add) **PR5**: Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.

Aspect: Marketing Communications

- (Core) **PR6**: Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.

- (Add) **PR7**: Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.

Aspect: Customer Privacy

- (Add) **PR8**: Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.

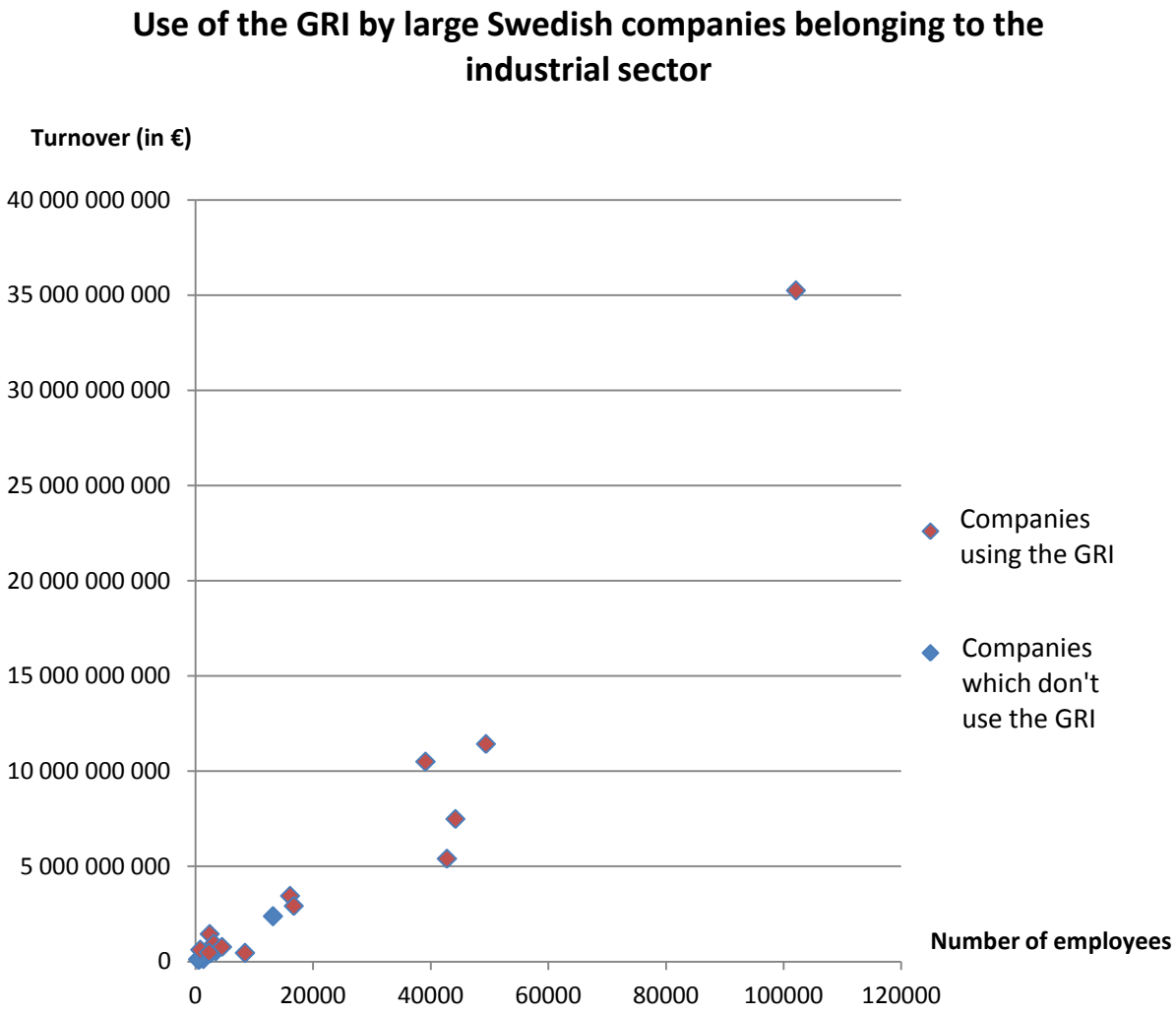
Aspect: Compliance

- (Core) **PR9**: Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.

Appendix 6: Swedish companies of the industrial sector with a turnover higher than 100 000 000€ and more than 500 employees

Swedish companies of the industrial sector with a turnover higher than 100 000 000€ and more than 500 employees		
Volvo, AB	Lindab International AB	Strängbetong, AB
Skanska AB	Thule Group AB	Åkers AB
Sandvik AB	DeLaval International AB	Väderstad-Verken AB
Atlas Copco AB	Gunnebo AB	Weland AB
Scania AB	Camfil AB	HL Display Holding AB
SKF, AB	Trioplast Industrier AB	Electrolux Laundry Systems Sweden AB
NCC AB	Riksbyggen ekonomisk förening	Permobil Holding AB
Peab AB	Haldex AB	Dynapac Compaction Equipment AB
Assa Abloy AB	Nolato AB	Lesjöfors AB
Autoliv AB	Systemair AB	Strömsholmen AB
Gränges AB	Munters AB	Diab Group AB
Husqvarna AB	Swerock AB	XANO Industri AB
Alfa Laval AB	Vattenfall Services Nordic AB	VBG Group AB (publ)
Trelleborg AB	PMC Group AB	Roxtec AB
Saab (koncernen)	FinnvedenBulten AB	Erlandsson Bolagen i Kungsbacka AB
Hexagon AB	Swegon AB	Polinova AB
JM AB	Sapa Profiler AB	Combitech AB
Ovako AB	Thomas Concrete Group AB	Consilium AB
Nibe Industrier AB	Grimaldi Industri AB	Elfa International AB
Hexpol AB	Nederman Holding AB	Ostnor AB

Appendix 7: Representation of the use of the large Swedish companies belonging to the industrial sector of our sample according to their turnover and their number of employees



Appendix 8: GRI indicators disclosed by a panel of 13 large Swedish companies belonging to the industrial sector

	VOLVO	SANDVIK	ATLAS COPCO	SKF	ASSA ABLOY	ALFA LAVAL	TRELLEBORG	JM	HEXPOL	LINDAB	DE LAVAL	RIKSBYGGEN	NOLATO	Total
ECONOMIC	4	9	4	6	6	0	5	6	3	3	1	4	4	
Disclosure on management approach	X	X	X	X	X		X							6
EC1	X	X	X	X	X		X	X	X	X		X	X	11
EC2	X	X		X	X		X	X	X				X	8
EC3	X	X	X	X	X		X	X	X	X		X	X	11
EC4		X					X	X		X		X	X	6
EC5*		X						X						2
EC6														0
EC7		X	X	X	X									4
EC8		X		X	X			X			X	X		6
EC9*		X												1
ENVIRONMENTAL	18	19	14	21	17	19	19	11	14	10	8	10	15	
Disclosure on management approach	X	X	X	X	X		X							6
EN1	X	X	X	X	X	X	X		X	X			X	10
EN2	X	X	X	X	X	X	X	X	X	X			X	11
EN3	X	X	X	X	X	X	X		X	X	X	X	X	12
EN4	X	X	X	X	X	X	X		X	X	X	X	X	12
EN5*		X		X	X	X	X	X	X	X	X		X	10
EN6*	X	X	X	X	X	X	X	X			X	X		10
EN7*				X	X			X				X		4
EN8	X	X	X	X	X	X	X		X	X	X		X	11
EN9*				X										1
EN10*				X		X								2
EN11	X			X			X					X		4
EN12							X							1
EN13*						X								1
EN14*						X								1

	VOLVO	SANDVIK	ATLAS COPCO	SKF	ASSA ABLOY	ALFA LAVAL	TRELLEBORG	JM	HEXPOL	LINDAB	DE LAVAL	RIKSBYGGEN	NOLATO	Total
EN15*														0
EN16	X	X	X	X	X	X	X	X	X	X		X	X	12
EN17		X	X	X		X		X				X	X	7
EN18*		X	X	X	X	X	X	X	X	X		X	X	11
EN19	X	X		X	X	X								5
EN20	X	X					X		X				X	5
EN21	X	X			X	X					X			5
EN22	X	X	X	X	X	X	X	X	X	X	X		X	12
EN23	X	X		X	X		X		X				X	7
EN24*														0
EN25*														0
EN26	X		X	X	X	X	X	X	X		X	X	X	11
EN27	X	X				X								3
EN28	X	X	X	X			X	X	X	X		X	X	10
EN29*	X	X	X	X	X	X	X	X						8
EN30*							X		X				X	3
SOCIAL	26	24	33	32	23	22	28	24	14	12	4	6	13	
LABOUR PRACTICES & DECENT WORK	9	7	11	11	7	7	11	12	5	4	2	4	5	
Disclosure on management approach	X	X	X		X		X							5
LA1	X	X	X	X	X		X	X	X	X		X	X	11
LA2	X	X	X	X		X	X	X		X				8
LA3*					X									1
LA4	X		X	X			X	X	X			X	X	8
LA5			X	X			X	X						4
LA6*			X	X		X	X	X						5
LA7	X	X	X	X	X	X	X	X	X	X	X	X	X	13
LA8	X	X	X	X		X	X	X						7
LA9*				X				X						2
LA10	X		X			X	X	X	X				X	7
LA11*				X	X			X						3
LA12*		X	X	X	X	X	X	X						7

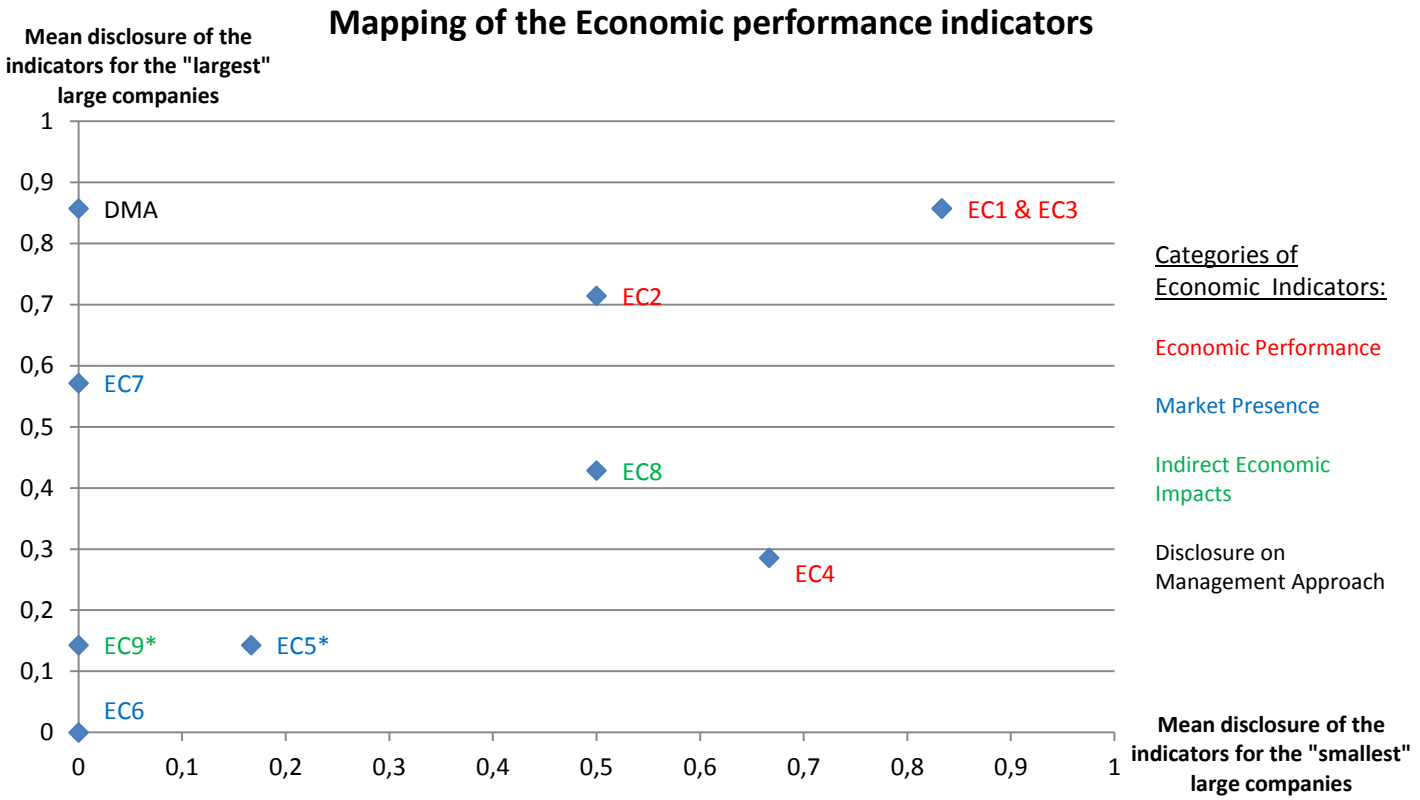
	VOLVO	SANDVIK	ATLAS COPCO	SKF	ASSA ABLOY	ALFA LAVAL	TRELLEBORG	JM	HEXPOL	LINDAB	DE LAVAL	RIKSBYGGEN	NOLATO	Total
LA13	X	X	X	X	X	X	X	X	X	X	X	X	X	13
LA14	X													1
HUMAN RIGHTS	4	7	8	8	6	2	7	6	5	3	0	1	3	
Disclosure on management approach	X	X	X				X							4
HR1			X	X	X									3
HR2	X	X	X	X	X	X	X	X	X				X	8
HR3*	X	X	X	X			X	X						6
HR4	X	X	X	X	X		X	X	X	X		X	X	11
HR5		X	X	X	X		X	X	X					7
HR6		X	X	X	X		X	X	X	X				8
HR7		X	X	X	X	X	X	X	X	X			X	10
HR8*														0
HR9*				X										1
SOCIETY	6	7	8	5	7	7	7	3	3	2	1	1	4	
Disclosure on management approach	X	X	X	X			X							5
SO1						X		X	X				X	4
SO2		X	X	X	X	X	X			X				7
SO3	X	X	X		X		X	X	X		X		X	9
SO4	X	X	X	X	X	X	X			X				8
SO5	X		X	X	X	X	X	X				X	X	9
SO6*		X	X		X	X								4
SO7*	X	X	X	X	X	X	X							7
SO8	X	X	X		X	X	X		X				X	8
PRODUCT RESPONSIBILITY	7	3	6	8	3	6	3	3	1	3	1	0	1	
Disclosure on management approach	X	X	X				X							4
PR1	X		X	X	X	X	X	X	X	X			X	10
PR2*	X			X						X				3
PR3			X			X	X	X						4
PR4*			X	X		X								3
PR5*	X		X	X	X	X		X			X			7
PR6	X	X		X										3

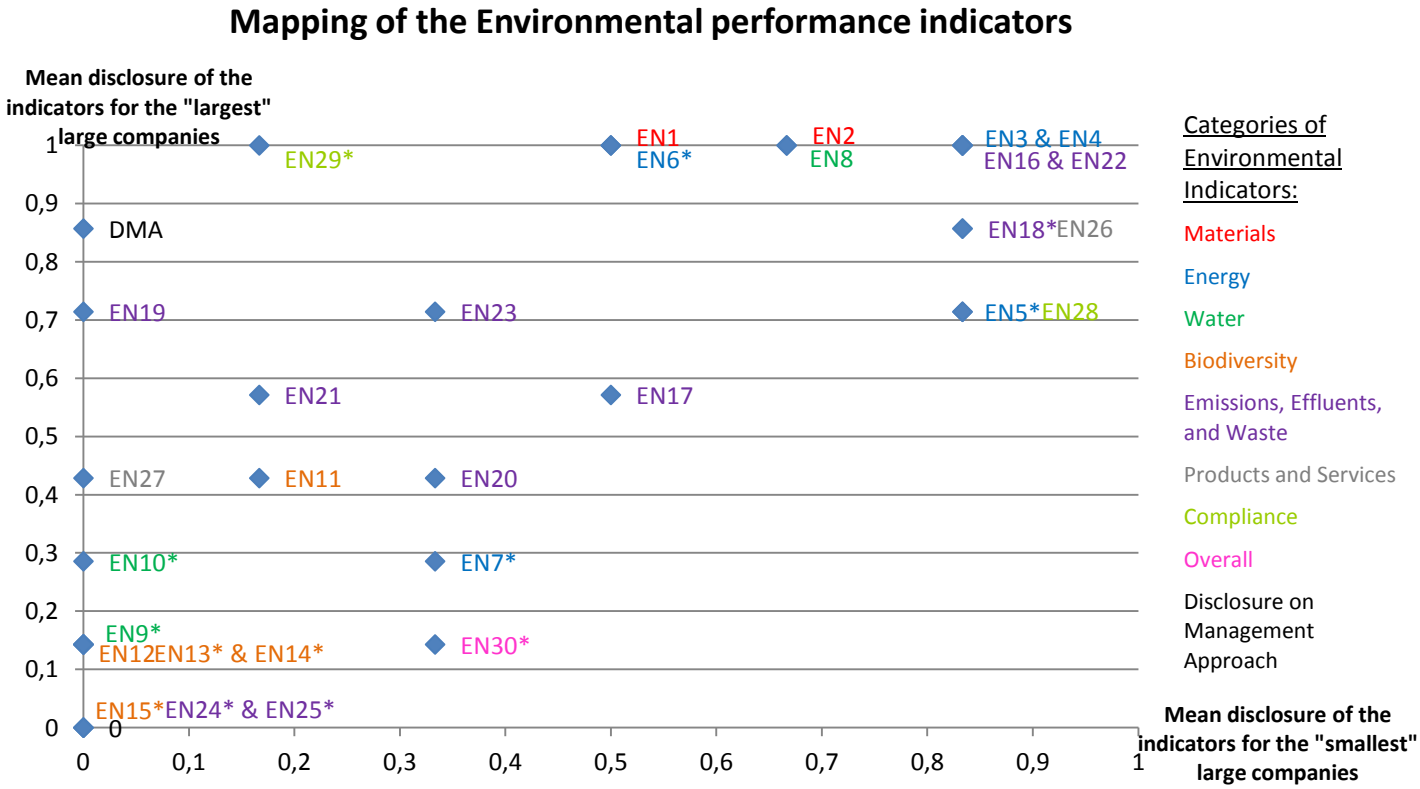
	VOLVO	SANDVIK	ATLAS COPCO	SKF	ASSA ABLOY	ALFA LAVAL	TRELLEBORG	JM	HEXPOL	LINDAB	DE LAVAL	RIKSBYGGEN	NOLATO	Total
PR7*	X			X										2
PR8*				X		X								2
PR9	X	X	X	X	X	X				X				7
TOTAL OF INDICATORS PER COMPANY	**48**	**52**	**51**	**59**	**46**	**41**	**52**	**41**	**31**	**25**	**13**	**20**	**32**	

Appendix 9: Frequency of disclosure of the different GRI indicators on a basis of 13 companies

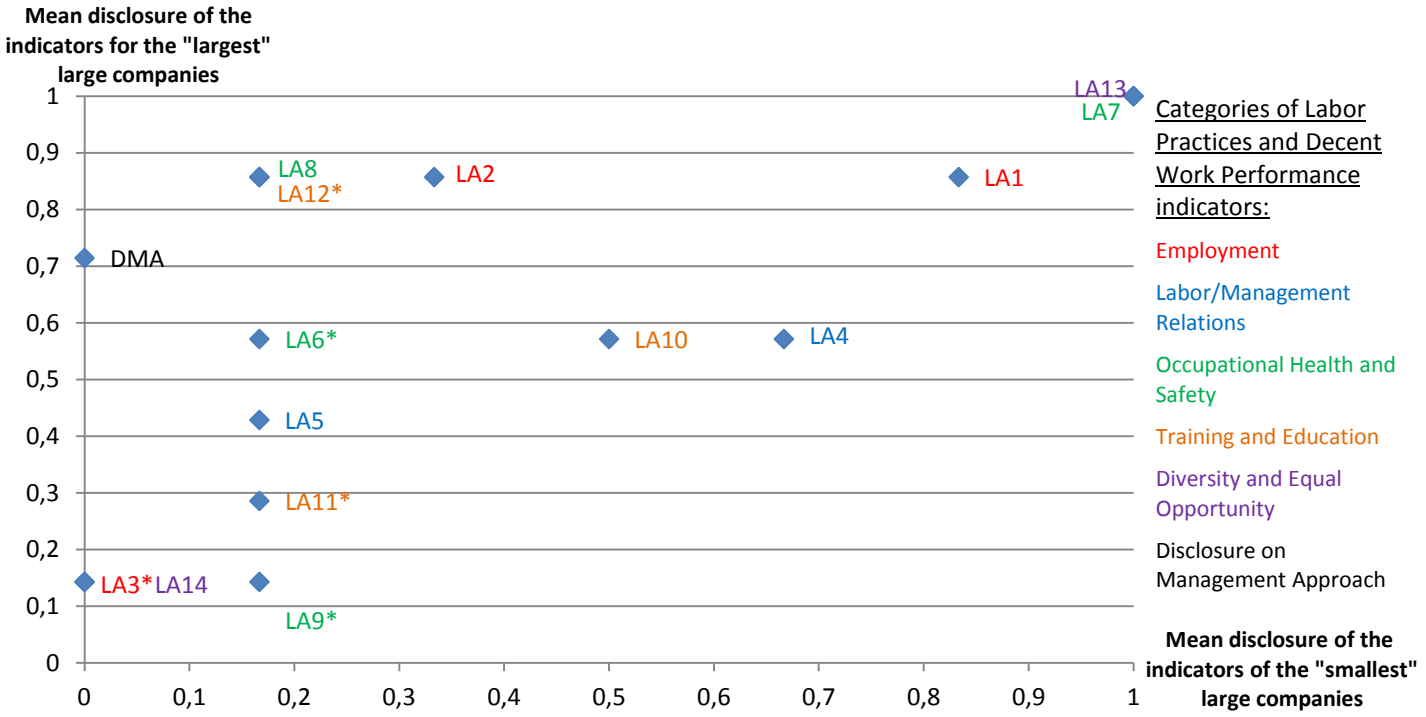
Indicators used by at least 10 companies	Indicators used by 7 to 9 companies	Indicators used by 4 to 6 companies	Indicators used by less than 4 companies
ECONOMIC PERFORMANCE INDICATORS			
EC1	EC2	Disclosure	EC5*
EC3		EC4	EC6
		EC7	EC9*
		EC8	
ENVIRONMENTAL PERFORMANCE INDICATORS			
EN1	EN17	Disclosure	EN9*
EN2	EN23	EN7*	EN10*
EN3	EN29*	EN11	EN12
EN4		EN19	EN13*
EN5*		EN20	EN14*
EN6*		EN21	EN15*
EN8			EN24*
EN16			EN25*
EN18*			EN27
EN22			EN30*
EN26			
EN28			
LABOUR PRACTICES AND DECENT WORK PERFORMANCE INDICATORS			
LA1	LA2	Disclosure	LA3*
LA7	LA4	LA5	LA9*
LA13	LA8	LA6*	LA11*
	LA10		LA14
	LA12*		
HUMAN RIGHTS PERFORMANCE INDICATORS			
HR2	HR5	Disclosure	HR1
HR4	HR6	HR3*	HR8*
HR7			HR9*
SOCIETY PERFORMANCE INDICATORS			
	SO2	Disclosure	
	SO3	SO1	
	SO4	SO6*	
	SO5		
	SO7*		
	SO8		
PRODUCT RESPONSIBILITY PERFORMANCE INDICATORS			
PR1	PR5*	Disclosure	PR2*
	PR9	PR3	PR4*
			PR6
			PR7*
			PR8*

Appendix 10: Mappings of the indicators of the GRI in accordance with our sample

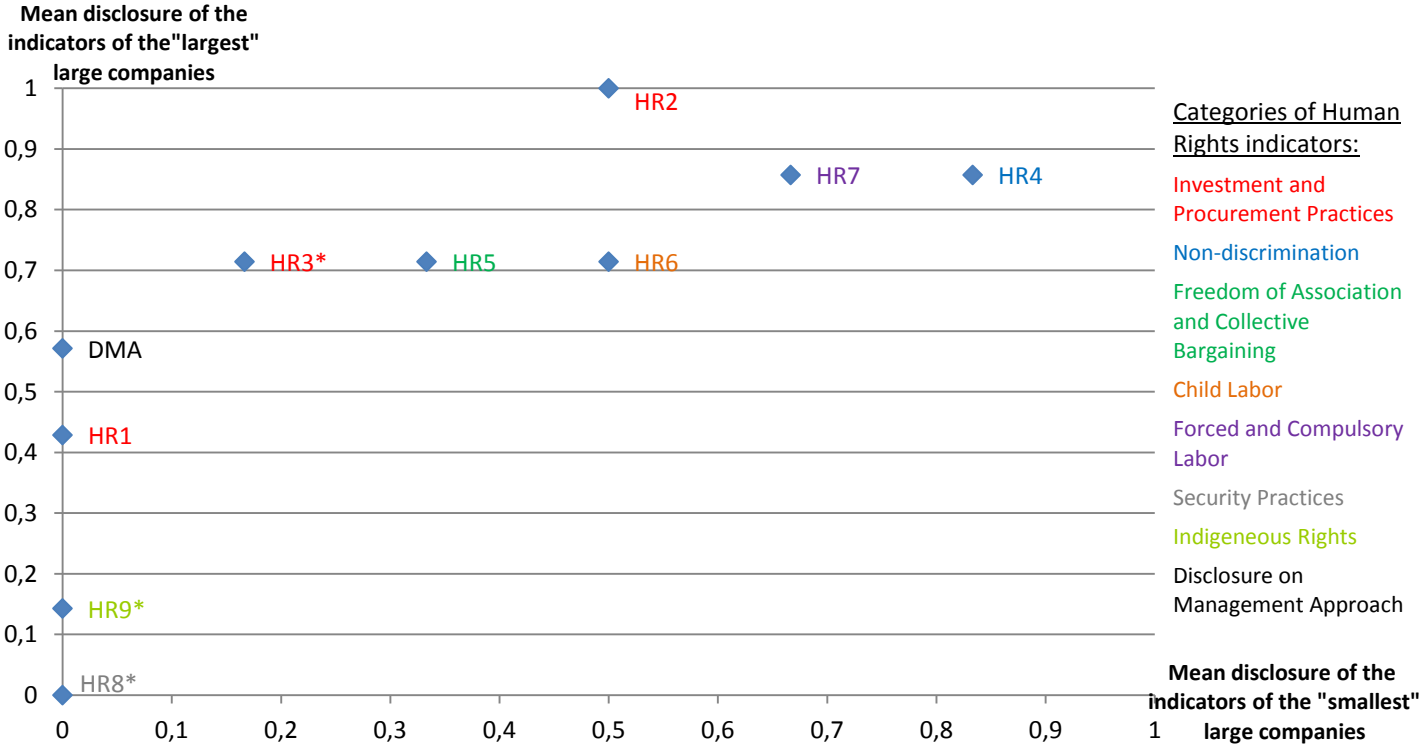




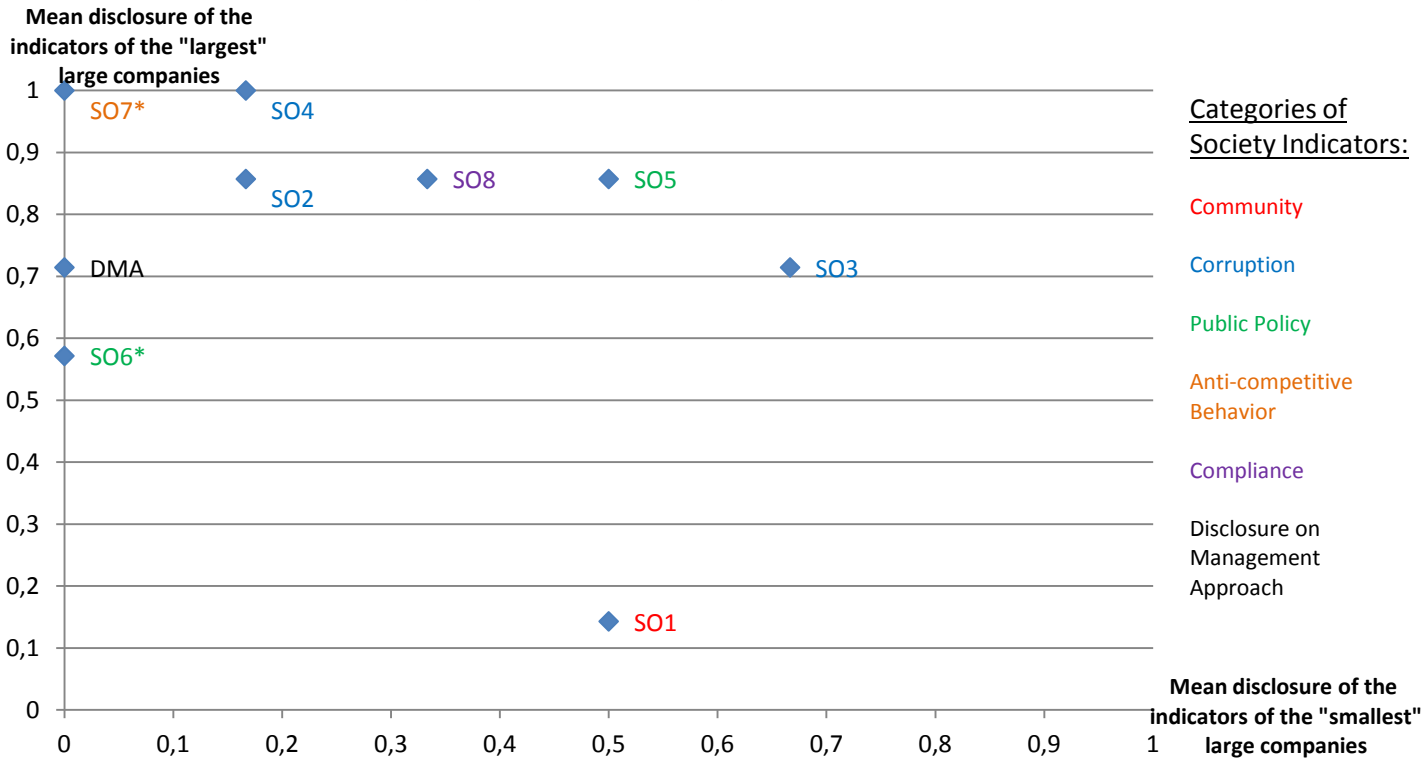
Mapping of the Labor Practices and Decent Work performance indicators



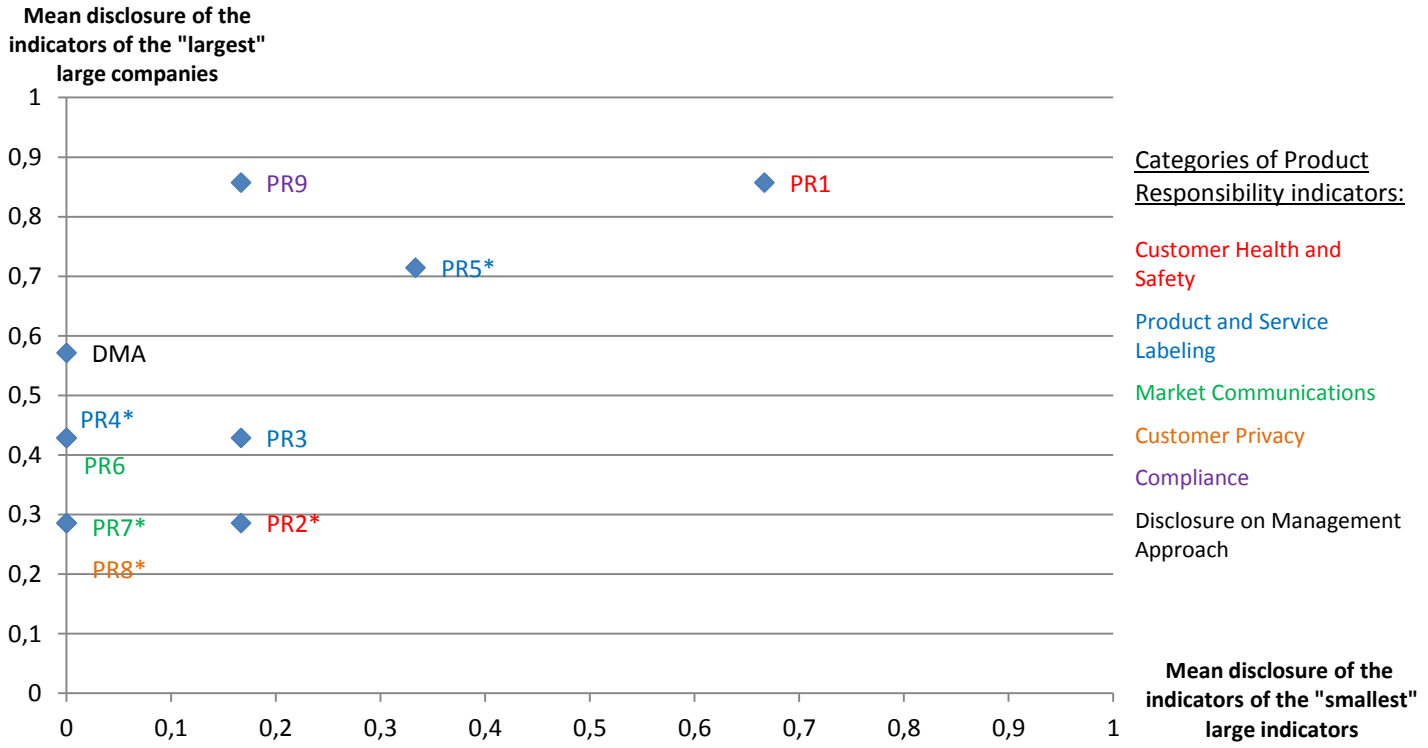
Mapping of the Human Rights performance indicators



Mapping of the Society performance indicators



Mapping of the Product Responsibility performance indicators



Appendix 11: Quality of the disclosure of the GRI indicators for a panel of 8 companies

	VOLVO	SANDVIK	ATLAS COPCO	ASSA ABLOY	TRELLEBORG	JM	LINDAB	RIKSBYGGEN
ECONOMIC								
Disclosure on management approach	P	F	F	F	P			
EC1	F	F	F	F	F	F	F	F
EC2	F	P		F	P	F		
EC3	F	F	F	F	F	F	F	F
EC4		F			F	F	F	F
EC5*		P				F		
EC6								
EC7		F	F	P				
EC8		P		P		P		P
EC9*		P						
ENVIRONMENTAL								
Disclosure on management approach	F	F	F	F	F			
EN1	P	F	F	P	P		F	
EN2	P	F	P	P	P	P	F	
EN3	F	F	F	F	F		F	F
EN4	F	F	F	F	F		F	F
EN5*		P		P	F	F	P	
EN6*	P	P	F	F	F	F		P
EN7*				P		F		P
EN8	P	F	F	F	P		P	
EN9*								
EN10*								
EN11	F				P			P
EN12					P			
EN13*								
EN14*								

	VOLVO	SANDVIK	ATLAS COPCO	ASSA ABLOY	TRELLEBOTG	JM	LINDAB	RIKSBYGGEN
EN15*								
EN16	F	F	F	F	F	F	F	F
EN17		F	F			P		F
EN18*		P	F	F	P	F	F	F
EN19	F	F		F				
EN20	F	F			F			
EN21	P	P		P				
EN22	P	F	F	F	F	P	P	
EN23	F	P		F	F			
EN24*								
EN25*								
EN26	P		F	F	P	F		F
EN27	P	P						
EN28	F	F	F		F	F	F	F
EN29*	P	P	P	P	P	P		
EN30*					P			
LABOUR PRACTICES & DECENT WORK								
Disclosure on management approach	F	F	F	F	F			
LA1	F	F	F	P	P	P	P	F
LA2	F	P	P		P	P	P	
LA3*				P				
LA4	F		F		F	F		F
LA5			F		F	P		
LA6*			F		F	F		
LA7	F	F	F	P	F	P	P	P
LA8	P	F	F		P	P		
LA9*						P		
LA10	P		F		F	P		
LA11*				F		P		
LA12*		F	F	F	P	P		
LA13	F	F	F	F	P	P	F	F

	VOLVO	SANDVIK	ATLAS COPCO	ASSA ABLOY	TRELLEBORG	JM	LINDAB	RIKSBYGGEN
LA14	F							
HUMAN RIGHTS								
Disclosure on management approach	P	F	F		F			
HR1			P	F				
HR2	P	F	F	F	P	F		
HR3*	F	P	P		P	P		
HR4	F	F	F	P	F	F	F	F
HR5		F	F	P	F	F		
HR6		F	F	P	F	F	F	
HR7		F	F	P	F	F	F	
HR8*								
HR9*								
SOCIETY								
Disclosure on management approach	F	F	F		F			
SO1						**P**		
SO2		F	F	P	P		F	
SO3	F	F	F	F	P	P		
SO4	F	F	F	P	P		F	
SO5	F		F	F	F	F		F
SO6*		F	F	F				
SO7*	F	F	F	F	F			
SO8	F	F	F	F	F			
PRODUCT RESPONSIBILITY								
Disclosure on management approach	P	F	F		F			
PR1	P		F	P	P	P	F	
PR2*	F						F	
PR3			P		P	P		
PR4*			P					
PR5*	P		P	P		F		
PR6	F	F						
PR7*	F							

	VOLVO	SANDVIK	ATLAS COPCO	ASSA ABLOY	TRELLEBORG	JM	LINDAB	RIKSBYGGEN
PR8*								
PR9	F	F	F	F			F	
Number of Indicators fully reported (F)	31	39	43	27	29	21	19	15
Number of indicators partly reported (P)	17	13	8	19	23	20	6	5