Friedman doctrine prevails! Or does it?
Evidence from the views of practitioners on corporate sustainability in their firms

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Editor: Hasan Fleyeh

Nr: 2021:04
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Abstract
The purpose of this paper is to provide insights on the views of firms regarding corporate sustainability (CS) and how the structure of the board affects this. We surveyed the CEOs, CFOs, and Environment Officers of about 850 Swedish firms (response rate 21%) affected by mandatory sustainability reporting after the implementation of the EU Directive 2014/95/EU. The six-transcending ambition levels (namely: pre-CS, compliance-driven, profit-driven, caring, synergistic, and holistic) of corporate sustainability proposed by van Marrewijk & Werre (2003) were used to classify the views of key officers on the sustainability agenda of their respective firms. We find that the drive by firms for higher CS ambition levels is positively influenced by a diverse board (i.e., representation of female board members), and the effect is more pronounced if the board is constituted with a female top executive. Moreover, younger top executives are more likely to have a higher CS ambition level. On the other hand, external CEOs, external board members, and forceful disclosure of sustainability activity (e.g., EU Directive 2014/95/EU) do not significantly influence CS ambition levels, whereas firm size and industry affiliation do. Our findings are useful for top managers and regulators interested in corporate governance issues and influencing the sustainability efforts of their firms. Methodologically, the use of a survey method is an extension to an otherwise high reliance on archival research in the field of CS. Furthermore, the dataset is unique, and the results are robust to various sensitivity analyses.

Keywords: corporate sustainability, board diversity, sustainability regulations, gender, survey
JEL-codes: M14, M48

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1. Introduction

Inclusion of social and environmental concerns in business operations, more commonly known as corporate sustainability (CS hereafter), which was once novel, has become more of a norm for many firms around the world. Even though the concept of “corporate sustainability” is different from other commonly used concepts, such as “corporate social responsibility” or “corporate citizenship”, all three terms are often used interchangeably to discuss similar constructs (Dahlsrud, 2008; Garriga & Melé, 2004; Meuer, et al., 2020). At this point, we deliberately refrain from defining CS as we are interested in putting forward the working definitions of CS from the field. Previous attempts have been primarily to showcase the academic definitions of CS (e.g., Dahlsrud, 2008; Meuer, et al., 2020). But understanding the views of practitioners on “corporate sustainability” is equally important, if not more important. We use the term “corporate sustainability” because in the current work’s research setting, the Swedish context, there is no everyday equivalent Swedish terminology for “corporate social responsibility” or “corporate citizenship”. However, the term “sustainability”, corresponding to the Swedish word “hållbarhet”, is most commonly used to refer to the various concepts of “corporate sustainability”, “corporate social responsibility”, or “corporate citizenship.” Reasons for this and the implications of choosing the Swedish context are discussed later.

There is a plethora of academic research on CS across various disciplines, but knowledge about what CS actually means for firms around the globe is rather limited (Aguinis & Glavas, 2012; Williams, et al., 2021). Some of the recent review studies on CS show quite a fixation on studying determinants and consequences of CS reporting, and drawing inferences on what CS means from CS reporting in firms (Meuer, et al., 2020; for review see Aguinis & Glavas, 2012; Fifka, 2013; Hahn & Kühlken, 2013; Huang & Watson, 2015; Khan, et al., 2020). These reviews also show how previous studies heavily depend on either content analysis of CS disclosures or various proprietary CS matrices (e.g., ASSET4, Calvert, DJSI, FTSE4Good, Innovest, and MSCI), to measure CS performance and quality. But what exactly CS means for their day-to-day operation is often overlooked. There is no shortage of conceptual models (Aguinis & Glavas, 2012; Garriga & Melé, 2004) or academic definitions of CS (Dahlsrud, 2008; Meuer, et al., 2020), but there is an apparent knowledge gap regarding the working definitions used by practitioners (e.g., key officers of the firms). Surprisingly, very few studies have examined this aspect in CS research (Athanasopoulou, 2012; Kiron, et al., 2017; Lacy, et al., 2010).

We take a different approach to investigate what CS means for firms in their day-to-day operation by surveying the CEOs, CFOs, or Environmental Officers of 859 Swedish limited firms affected by the Swedish implementation of the EU directive 2014/95/EU – also known as the non-financial reporting directive (NFRD hereafter). We use the six ambition-levels of CS, proposed in van Marrewijk (2003) and van Marrewijk & Werre (2003), to classify how key officers view CS for their firms. We also investigate the effect of various firm-level and institution-level factors on the views of key officers of their firm’s ambition level of CS.1

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1 The EU directive 2014/95/EU stipulates the rules of disclosure on non-financial and diversity information for large firms. Firms are encouraged to disclose additional issues and determine the materiality of information before deciding on the extent of the disclosure (CSR Europe and GRI, 2017). The new directive amended the accounting directive (2013/34/EU) to require firms to include non-financial statements in their annual reports from 2018 onwards, thus effective for the 2017-2018 financial year(s) and onward. Some member states have adopted the directive at face-value, while others have adapted it further to their national context. In many countries, this directive is not restricted to listed firms only, thus it affects non-listed firms too. Nonetheless, it implies that a certain group of firms are now required by law to disclose CS-related information. Among the EU/EEA countries, Sweden has one of the lowest threshold levels regarding employees (i.e., greater than 250), other exceptions include Iceland (also greater than 250) and Greece, with an extended requirement for firms with more than 10 employees.
For various reasons, it is essential to understand the views of firms on CS, as represented by their key officers. Many scholars have raised the issue that the academic literature on CS is quite fragmented and often detached from practice (Aguinis & Glavas, 2012; Meuer, et al., 2020). However, practitioners’ views on CS are critical to understand because that is where the real CS activities take place, as opposed to the academic arena, where, primarily, conceptualization, theorization, and testing of various hypotheses take place. More empirical evidence on this issue will also help us assess the penetration of academic thinking into industry practice. Moreover, CS is becoming regulated by the clock. We know that the institutionalization process diffuses more reporting (both new reporters and additional reporting by existing reporters) (Tillväxtanalys, 2018), and perhaps also involves greenwashing, whitewashing or brownwashing in reporting (Huq & Carling, 2021; Kim & Lyon, 2015; Wu, et al., 2020). We also know that the NFRD did not improve comparability in CS reporting (Venturelli, et al., 2020), but we do not know if it influences firms’ CS thinking. This is especially the case among firms which do not have exposure, like the most researched firms (e.g., Top N global firms, or top N firms within an economy, or those on a particular list, such as Forbes, or Russell N firms, or S&P 500, etc.). Continuous and wider understanding of practitioners’ CS will also help close its proclaimed gap with academic CS, and help get a better sense of practitioners’ CS. This will also give policy-makers more hands-on information to effectively design future regulation on CS to propagate desired outcomes.

Sweden is an interesting example for investigating the views of key officers on CS in the wake of a regulatory reform. It has adopted one of the broadest threshold brackets, compared to what is recommended in the EU-wide NFRD. This has resulted in a greater firm size variation in the sample, which includes both SMEs and large firms, listed and non-listed firms, and affecting about 1000 firms, as opposed to about 100, if it was adopted at the EU recommended level (Tillväxtanalys, 2018). Past studies have shown firm size to be a significant determinant of CS initiatives and disclosures, while the majority of the studies in the CS literature are limited to listed or large firms only (Filka, 2013; Hahn & Kühnen, 2013; Huang & Watson, 2015). Moreover, studying firms subject to mandatory reporting requirements only will alleviate any selection bias which may otherwise arise due to firms voluntarily choosing to do CS reporting. Sweden implemented the new regulatory framework on 1 December, 2016 by amending existing legislation of the Swedish Annual Accounts Act (SFS 1995:1554). Before this amendment, from 1998, Sweden had voluntarily required the Director’s report section of the annual report to include information on environmental factors. In 2002, the Swedish Government launched the “Swedish Partnership for Global Responsibility” for Swedish firms, to strengthen work on human rights, labor standards, environmental protection, anti-corruption, based on the principles of the UN (Gjølberg, 2010). And from 2008 the Swedish Government required state-owned firms and municipalities to report on CS issues adapted to the GRI standard (Swedish Ministry of Economic Affairs, 2007). Therefore, it can be argued here that Swedish firms have a long-standing history of addressing CS. Moreover, European firms are argued to have “implicit” CS, which is deeply rooted in culture and norms (Matten & Moon, 2008). This can influence Swedish firms in having a higher ambition level of CS due to societal expectation (Meyer & Rowan, 1977; Suchman, 1995), with its normative roots firmly based on employees. However, it must be noted here that Iceland’s threshold levels for net turnover and balance sheet totals are well over Sweden’s maxima, and Greece’s ceilings are more geared towards micro firms. Nonetheless, in terms of GDP, Sweden is more comparable to other EU member states, such as Austria, Belgium, Denmark, Finland, Ireland, Norway, and Switzerland. The firms covered by this NFRD correspond to 3% of all limited firms in Sweden, 1.05 million employees (~ 45% of private sector workforce) and 4,470 billion SEK in net-turnover (~ two thirds of the total net turnover of the business sector). Furthermore, 62% of value is created by these firms, 58% of all fixed assets, 67% of the business sector’s carbon dioxide emissions, and 58% of other greenhouse gases (Tillväxtanalys, 2018).
humanitarian grounds (Gjølberg, 2010). Furthermore, Swedish firms have had a relatively higher early presence in various global CS initiatives and rankings amongst OECD countries (Gjølberg, 2009). As such, Swedish firms may have an upward bias when one tries to measure their CS along various matrices, compared to firms from other OECD countries. However, among their Nordic neighbors, Swedish firms would be more similar to Norway, rather than Denmark or Finland (Gjølberg, 2010).

Based on responses from key officers of 157 unique firms, we find that the typical firm’s CS ambition levels are profit-driven, according to the six-classification levels of van Marrewijk & Werre (2003). CS views of new reporters, who are small and not part of a group, are usually driven by either the dictionary definition of sustainability, or widely accepted definitions from a supra-national organization, such as the EU or the UN. While we did not find the NFRD to significantly affect a firm’s CS ambition level (based on regression analysis after controlling for various possible explanatory factors), about 45% of the respondents said they have either initiated additional CS initiatives or allocated additional resources to CS initiatives after the reform. It should be noted that about 85% of the respondents did not report on their CS initiatives before the mandatory disclosure requirement of the NFRD. We also find that sector affiliation (i.e., manufacturing vs non-manufacturing) significantly influences CS ambition levels. Finally, board diversity, in terms of the proportion of female board members, positively influences CS ambition level. The effect is more pronounced if the top executive of the firm, alongside a diverse board, is female. Multiple tests show that the results are robust and are not affected by non-response bias. Methodologically, we extend empirical evidence based on surveys, while the majority of the research in the CS domain is either archival or interview-based.

The remainder of the paper is organized as follows: conceptual framework in Section 2, methodology in Section 3, analysis in Section 4, and summary and conclusion in Section 5.

2. Conceptual framework

CS has numerous definitions and constructs, all of which are more or less compatible, but what varies is how CS is viewed in a specific context (Dahlsrud, 2008; Meuer, et al., 2020). Some of the most used theories to explain the CS phenomenon are legitimacy and stakeholder theories, while institutional theories are also often used (Naciti, et al., 2021). Positive accounting theories are also used to explain the economic argument of CS. Broadly speaking, CS theories can be grouped into four major types: instrumental, political, integrative, and ethical (see Garriga & Melé, 2004). Instrumental theories focus on “achieving economic objectives through social activities” – i.e., CS is seen as a means of increasing profits; political theories focus on “a responsible use of business power in the political arena” – i.e., there is a power relation between business and society, and businesses are expected to use this relation responsibly; integrative theories focus on “the integration of social demand” – i.e., going beyond laws and regulations and find the right balance in responding to social issues; and, finally, ethical theories focus on “the right thing to achieve a good society” – i.e., fiduciary duties are extended to all stakeholders of the firm (Garriga & Melé, 2004, p. 63-64).

The most dominant instrumental view of CS is considered to be that of Friedman (1970), i.e., “... the only social responsibility of a company is to increase its profit.” Regarding the political view of CS, Davis (1960) has argued that businessmen are increasingly becoming powerful, “and what they say and do influence their community. This type of influence is social power” (p. 71). The concept of Corporate Citizenship also stems from this view (Whitehouse, 2003). Together, these theories suggest there is a social contract between the firm and society (Deegan,
et al., 2002; Dowling & Pfeffer, 1975), and with power comes responsibility. Carroll’s (1979, 1991) conceptualization and the four-level pyramid of CS is arguably the most dominant integrative view on CS. The main argument is that firms must first secure profit for their survival (i.e., the foundational level of Carroll’s CS pyramid – economic responsibilities). Once that objective is met, firms should graduate through the subsequent CS responsibility levels, i.e., legal responsibilities, ethical responsibilities, and philanthropic responsibilities. The normative stakeholder theory approach to CS is arguably the most influential ethical view on CS. In this view, a firm’s fiduciary duties are argued to extend beyond shareholders and should encompass the stakeholder’s view (Freeman, 1984). These theories are good at explaining the institutionalization process of CS, e.g., why, and how firms undertake a certain CS. However, they are not so useful in classifying a firm’s CS beyond a binary classification. For example, so far, the legitimacy theory has been good for explaining if a firm’s CS efforts are legitimizing efforts or serious attempts, and if the firm has a legitimate state in the greater context or not (Deegan, 2019). Stakeholder theory is good in explaining if a firm takes a stakeholder approach or not, and what type of stakeholder approach is taken (instrumental, normative, or descriptive) (Donaldson & Preston, 1995). On the other hand, the assumption of Carroll’s (1991) CS pyramid, that firms must secure profit first, and then climb up the subsequent CS levels, is problematic for our purpose. It is problematic because of the mono-focus on securing profit at the first stage, and that all firms should climb up the CS pyramid in subsequent phases. Moreover, the underlying assumption of most of these CS concepts is that “one solution fits all” (Athanasopoulos, 2012). van Marrewijk (2003) posits there is no “one solution fits all” in CS and firms adopt their CS ambition level based on their specific context and constraints (Garriga & Melé, 2004).

In that spirit, in this paper we take a more nuanced approach and adopt the six-level CS construct (Figure 1), first proposed in van Marrewijk (2003), and further extended in van Marrewijk & Werre (2003) to classify a firm’s CS ambition level. The levels are pre-CS, compliance-driven, profit-driven, caring, synergistic, and holistic. This six-level CS ambition is built upon the eight core Gravesian value systems (Survival; Security; Energy & Power; Order; Success; Community; Synergy; and Holistic life system) developed by Professor Clare W. Graves (van Marrewijk & Werre, 2003, p. 108). The eight levels are fixed and transcending in order, thereby forming a natural hierarchy (van Marrewijk & Werre, 2003).

The basic assumption of the six-level CS ambition level is that entities (i.e., firms) are argued to adopt and align their values to a particular CS ambition level, based on constraints in their business environment. The assumption is firmly rooted in the institutional theory literature that firms adjust behavior to institutional forces for their legitimacy and survival (Ashforth and Gibbs 1990; DiMaggio and Powell 1983; Meyer and Rowan 1977; Suchman 1995). However,

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2 Some of the factors influencing the institutionalization process of CS are increased awareness among stakeholders, peer pressure, incorporation of CS-related information in investing, or consumption decisions by specific stakeholders (e.g., investors, lenders, and customers), managers’ discretion, good governance, and regulations (see Ferrell, et al., 2016; Goss & Roberts, 2011; Hong & Kacperczyk, 2009; Lev, et al., 2010; Shabana, et al., 2017). One of the major influencing factors, and rather contemporary, is perhaps increased regulatory requirement to report on CS-related information in recent years. Indeed, the Carrots & Sticks (2016) review showed mandatory CS-related reporting instruments have increased from 35 to 248 between 2006 and 2016, of which 170 were in the form of regulations in 2016 and were issued by governments (150), financial market regulators (13), stock exchanges (4), and other authorities (3). The Carrots & Sticks research was conducted jointly by KPMG International, GRI, United Nations Environment Programme (UNEP) and the Centre for Corporate Governance in Africa (at the University of Stellenbosch Business School). It involved the review of reporting environment in 71 countries, of which 60 are the top economies by GDP. According to the definition of Carrots & Stick, ‘reporting instruments’ are any instrument that requires or encourages organizations to report on their sustainability performance, be it mandatory or voluntary.
this assumption does not explicitly encourage firms to strive for the top level in the hierarchy, but rather that firms move to a different level, upward or downward, depending on the appropriateness of the response to the evolving context, or the business environment (van Marrewijk, 2003; van Marrewijk & Werre, 2003).

According to van Marrewijk (2003) and van Marrewijk & Werre (2003), at the Pre-CS level, (Law-abiding hereafter) firms do not have any ambition for CS and may only engage in CS if forced upon to do so, for example, due to legal requirements (e.g., government legislation) or public pressure (e.g., strikes, demonstration, etc.). Motivation to engage in CS is primarily driven by its effect on the state of the firm’s power. The firm is usually detached from the stakeholders and society and can behave in a rogue manner if not controlled. At the Compliance-driven level, firms acknowledge that the need to carry out CS exists but take the stance that social welfare is the responsibility of the state, while firms only need to adhere to what is required by law. Sometimes, in addition to responding to legal requirements firms may consider additional CS in the form of, for example, charities or other philanthropic activities, out of a sense of moral duty. Nonetheless, such efforts can be fragmented and lack strong motivation. Firms at Law-abiding and Compliance-driven levels may be argued to be primarily concerned with organizational legitimacy (Ashforth & Gibbs, 1990; Dowling & Pfeffer, 1975). The Profit-driven level can be argued to be the narrower business focus of CS (Carroll & Shabana, 2010), i.e., firms take up CS activities because they have been shown to affect the bottom line (i.e., profits) and stock prices. Various CS aspects, such as social, ethical, and ecological are integrated in the business decision-making as long as they contribute to increased profit. This ambition level of CS can also be argued to be an instrumental CS, as firms are primarily shareholder-focused and other stakeholders are largely ignored.

At the Caring level, a firm goes beyond the legal requirements and profit considerations to engage in CS and looks to establish a dialogue with the stakeholders and the society. The personal values and beliefs of top management promote CS and look to find a balance between its efforts towards the various aspects of CS (e.g., economic, social, and ecological aspects).
This ambition level is similar to integrative CS. Firms at the Synergistic level aim to integrate stakeholder involvement in CS decision-making. Stakeholder orientation rather than shareholder orientation is integrated in the core operations of the business. Therefore, a “win-together” approach is adopted after considering different stakeholders’ concerns for the various aspects of CS. This can be viewed as an ethical CS, more specifically, Freeman’s (1984) conceptualization of CS. Finally, when firms have fully integrated CS in every aspect of business activity so that it is embedded in the organization and they move beyond stakeholder value maximization to focus on the sustainability of the planet, these firms may be argued to be at the Holistic level. The sense of CS is no longer propagated only at firm level but more on a personal level. Moreover, they are not narrowly focused on economic stakeholders but on a more balanced approach towards important non-economic stakeholders (e.g., artistic, educational, political, religious, or scientific stakeholders), depending on situational demands (Roth, et al., 2020). It may be extremely rare that firms will adopt the holistic ambition-level of CS in their business culture in the largely capitalistic economic environment that is presently prevalent (Hofman, et al., 2017; Roth, et al., 2020; Schumpeter, 2010).

3. Methodology

3.1. Survey design

For the purpose of this study a large-scale survey questionnaire was distributed to the CEOs, CFOs or Environmental Managers of firms affected by the NFRD implementation in Sweden. The questionnaires in the survey were divided into two broad themes. Questions on one theme focused on the understanding of CS thinking in the firms, since we are interested in how the key officers view their firm’s CS. The first question on this theme was an open-ended question, “How is ‘sustainability’ defined in your company?” An open-ended question was chosen to avoid any restriction in the response and to allow the respondent respond as freely as possible. Open-ended questions do not suppress freedom of thought and can achieve greater diversity and volume of information than what the researcher might otherwise obtain in a close-ended response. Nonetheless, open-ended questions also have disadvantages, primarily regarding categorizing, sorting, and summarizing the results. The answers may have different directions from the choice of the respondents, and the questions can result in vague answers that may not be easily analyzed. There is also a risk that the respondents, for some reason, may fail to give information that is of importance for the research (Beins, 2017). To counteract this, in theme one, we also included five structured questions (presented in Appendix A1) to lead to a better classification of the CS ambition-level of the firms. For example, the respondents were asked what aspects/elements/factors are considered in deciding what are important sustainability activities for their firm; who decides what sustainability activities the firm should carry out; who decides what should be included in the sustainability report; what are the primary sustainability dimensions the firm is concerned with; and to what extent are the firm’s decision-makers aware of climate change-related risks. Figure 2 summarizes the distribution of the CS ambition-levels in our sample, based on the survey response.

Next, to further corroborate our understanding of the CS ambition levels of the firms included in our research, and to primarily assess the impact of the NFRD on the firms’ CS thinking, activities and reporting, the following structured questions were asked: if the firms reported CS activities before and after the change in the law; if firms’ CS definition of essential activities has been influenced by NFRD; and how NFRD affected CS reporting process, real CS activities, and resource consumption in CS activities and CS reporting. These questions comprised the
second theme. Respondents were also given the option to enter additional information as free text if the choices of the structured questions were not sufficient. By the mix of both open-ended and close-ended questions, it was possible to get a relatively in-depth understanding of how the representatives of firms think about their firm’s CS, thus leading to a better classification of a firm’s ambition level by the researchers.

The questionnaire consisted of a total of 19 questions of which two were open-ended and 17 had pre-determined options to choose from. The balance between structured and unstructured questions was motivated by two fundamental reasons. First, to obtain the optimal amount of data by utilizing the minimum amount of prospective respondent’s time. This choice was made since the long-term trend of response rates in typical business surveys is usually low and is increasingly so in recent years (Baruch & Holtom, 2008; Hiebl & Richter, 2018), additionally, these key officers are usually very busy individuals. A survey questionnaire requiring shorter time to complete generally leads to a higher response rate (Fan & Yan, 2010).

Nonetheless, surveys are prone to some inherent errors which may lead to various biases, and these errors and biases may arise during the different steps of the research process (Deming, 1944; for a detailed discussion see Bethlehem, 2010; Groves & Lyberg, 2010). We took several steps in an attempt to remedy such errors during the various stages of the research process. For example, to improve the validity of the instrument, the survey was first distributed among 15 graduate students in the Business Program and two colleagues at the University to check for clarity and completeness of the questions posed in response to the main research questions. The survey started with an opening text and was addressed directly to the recipient by their first and last names. Personalized and succinct introductory texts lead to a better response rate (Fan & Yan, 2010). Moreover, to reduce ambiguity, besides the introductory text, questions were posed in as simplified a version as possible, with careful wording, and avoidance of double-barreled questions. The respondents had the option to choose whether to remain anonymous. They were assured, in either case, their identity was for the sole purpose of tracking the responses and merging additional data, and under no circumstances would they be identified in any reports or publications. Anonymity helps to reduce the respondent’s tendency to give socially desirable
responses (Podsakoff, et al., 2003). These steps are likely to improve the validity of the instruments and help reduce causes of measurement errors in coding the responses (Bethlehem, 2010; Groves & Lyberg, 2010). The first email survey was sent on 17 March, 2021, with two subsequent reminders on 24 March, 2021, and 31 March, 2021.3

3.2. Sample and data collection

The principal idea of the study was to arrive at a census by including all Swedish firms affected by the NFRD implementation in Sweden. To identify these firms, historical financial information was collected from the Retriever database. Firms were subject to NFRD in Sweden from the financial year beginning 1 January, 2017, if their average number of employees was more than 250 (as compared to the EU maxima of 500 or more employees), and if their total assets exceeded SEK 175 million (EUR 17.1 million), or net sales exceeded SEK 350 million (EUR 34.1 million), in the past two consecutive years.4 Next, Företagskontakt, a company with a commercial database of contact information on Swedish firms, was contacted to collect contact information of the three key officers, CEOs, CFOs, and Environment Officers. The filtering option of Företagskontakt does not exactly match the threshold levels of NFRD, but overlaps. Therefore, we were forced to opt for a slightly wider sampling bracket than that of the target population of all the firms affected by the reform. Specifically, we collected contact info on firms with the number of employees between 100-499, total assets between SEK 100-499 million (EUR 10-98 million), and net sales between SEK 100-999 million (EUR 10-98 million). This resulted in 965 unique firms, of which the following were subject to the NFRD: 694 firms (2017), 809 firms (2018), 902 firms (2019), and 864 firms (2020). Note that since we were forced to include some firms which were just below the threshold and not subject to NFRD, we were likely to receive some responses which fall just outside the census. We did not include very large firms in the sample, for example firms with more than 499 employees, total assets of more than SEK 499 million (EUR 49 million), or net sales more than SEK 999 million (EUR 98 million). There were 46 such firms at the time of the survey. These types of firms are quite different from the other firms in question because of their exposure, due to size and cross listing (Khanna, et al., 2004; Laudal, 2011). Out of the 965 firms, email ids of 774 CEOs, 641 CFOs, and 312 Environment Officers were obtained for 859 unique firms. Contact info of the remaining 106 firms was not available. There is no reason to believe they are missing systematically, therefore this should not introduce any bias in the analysis. Sample distribution of the firms that participated in the survey are presented in Table 1.

Table 1: Sample distribution

<table>
<thead>
<tr>
<th>Industry</th>
<th>Total active firms</th>
<th>Response (1st email)</th>
<th>Response (reminders)</th>
<th>Total Response</th>
<th>Top executive gender (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>67</td>
<td>9</td>
<td>4</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Information &amp; communication</td>
<td>38</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>219</td>
<td>31</td>
<td>29</td>
<td>60</td>
<td>54</td>
</tr>
<tr>
<td>Real estate</td>
<td>15</td>
<td>12</td>
<td>1</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>Retail</td>
<td>112</td>
<td>11</td>
<td>9</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Services</td>
<td>60</td>
<td>8</td>
<td>2</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Transportation &amp; storage</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Utilities</td>
<td>91</td>
<td>11</td>
<td>12</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Wholesale</td>
<td>181</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>859</td>
<td>80</td>
<td>77</td>
<td>157</td>
<td>138</td>
</tr>
</tbody>
</table>

3 The survey was prepared in two languages, English and Swedish, and the respondents were given the choice to choose language. Three respondents chose to answer in English, and 154 respondents chose Swedish.
4 All exchange rates were obtained from Google on 20 July, 2021.
A total of 157 usable responses were received, of which 82 were from CEOs, 37 from CFOs, and 38 from Environment Officers. 118 email surveys were undelivered, resulting in a net response rate of about 21%. The survey questionnaire and forwarding letter are included in the Appendix. The survey was conducted through DU’s Sunet subscription, and data processing and analysis are done in the statistical program R. To control for common-method error or single-informant bias that may arise from collecting all data through the survey instrument only (Podsakoff, et al., 2003), data for various control variables were collected from archival sources.

3.3. Empirical method

To classify a firm’s view on sustainability according to the six CS ambition levels of van Marrewijk (2003) and van Marrewijk & Werre (2003), the two researchers first independently analyzed and coded the response to the first question of the questionnaire, “How does your firm define sustainability activities?”, followed by a review of the subsequent questions in the first theme with complementing information. Afterwards, the researchers discussed their individual classifications. For statistical analysis, the researchers classified Law-abiding as “1”, Compliance-driven as “2”, Profit-driven as “3”, Caring as “4”, Synergistic as “5”, and Holistic as “6.” Table 2, below, summarizes the classification matrix of the two researchers.

Table 2: CS ambition-level classification matrix of the two researchers

<table>
<thead>
<tr>
<th>Researchers scores (Researcher 1 on the vertical axis, and Researcher 2 on the horizontal axis)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>16</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>4</td>
<td>17</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
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<td>4</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>42</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

The two researchers’ classifications were similar on 76% (118 responses) of the occasions. There were disagreements on 24% (39 responses) of the occasions, with an average deviation of 0.36. The researchers were one ambition level apart on 23 occasions, and two and three ambition levels apart on 14, and two occasions, respectively. In the regression analysis, the average of the two researchers’ individual scores was used. Thus, scores of “1” and “1.5” are classified as Law-abiding, scores of “2” and “2.5” are classified as Compliance-driven, scores of “3” and “3.5” are classified as Profit-driven, scores of “4” and “4.5” are classified as Caring, scores of “5” and “5.5” are classified as Synergistic, and scores of “6” are classified as Holistic.

An average score is likely to reduce the individual researcher’s bias. Nonetheless, we compute Cohen’s kappa (Cohen, 1960), which is one of the most frequently used statistic to check interrater reliability for two raters. The kappa statistic obtained was 0.68, 95% confidence interval of 0.59 and 0.76, and z-value of 16.1, significant at 1% level. The strength of agreement between two raters is considered good for a kappa statistic between 0.61 – 0.80 (Altman, 1991).

To investigate how firm-level and institutional-level factors determine a firm’s CS ambition level, we build a statistical model (Equation 1) as follows: one of the six observed ambition levels of CS is the dependent variable \( CR\_level_i \) for firm \( i \), and it is the average score of the two researchers.\(^5\)

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\(^5\) Sensitivity tests were run using the score of each researcher independently, and un-tabulated results were qualitatively similar.
The explanatory variables are chosen based on prior literature of CS reporting and performance (Clarkson, et al., 2008; Dienes, et al., 2016; Hahn & Kühnen, 2013), with the assumption that firms’ CS ambition levels, reporting, and performance are correlated (Braam, et al., 2016; Godos-Diez, et al., 2018; Hummel & Schlick, 2016; Liao, et al., 2015). Table 3 has the summary statistics of the key variables.

Table 3: Descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Q1</th>
<th>Median</th>
<th>Mean</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR ambition-level</td>
<td>2</td>
<td>3</td>
<td>2.83</td>
<td>4</td>
</tr>
<tr>
<td>TotSusDim*</td>
<td>3</td>
<td>5</td>
<td>4.92</td>
<td>6</td>
</tr>
<tr>
<td>RepPriorReg*</td>
<td>0</td>
<td>0</td>
<td>0.26</td>
<td>0</td>
</tr>
<tr>
<td>BDiv(female)</td>
<td>0</td>
<td>0.14</td>
<td>0.17</td>
<td>0.33</td>
</tr>
<tr>
<td>BDiv(external)</td>
<td>0</td>
<td>0</td>
<td>0.16</td>
<td>0.25</td>
</tr>
<tr>
<td>ExtCEO</td>
<td>0</td>
<td>0</td>
<td>0.37</td>
<td>0</td>
</tr>
<tr>
<td>FirmAge</td>
<td>25</td>
<td>34</td>
<td>40</td>
<td>56</td>
</tr>
<tr>
<td>BoardAvgAge</td>
<td>50</td>
<td>53</td>
<td>53</td>
<td>56</td>
</tr>
<tr>
<td>HigExcAge</td>
<td>48</td>
<td>53</td>
<td>52</td>
<td>57</td>
</tr>
<tr>
<td>Growth</td>
<td>-0.44</td>
<td>0.025</td>
<td>0.093</td>
<td>0.068</td>
</tr>
<tr>
<td>Profitability</td>
<td>0</td>
<td>0.07</td>
<td>0.08</td>
<td>0.14</td>
</tr>
<tr>
<td>Total assets</td>
<td>176m SEK</td>
<td>259m SEK</td>
<td>271m SEK</td>
<td>341m SEK</td>
</tr>
<tr>
<td>Leverage</td>
<td>0</td>
<td>0.09</td>
<td>0.10</td>
<td></td>
</tr>
</tbody>
</table>

* Variable information was collected through the survey.

In the main analysis, $BDiv_i$ is measured as the percentage of female board members on the Board. In the sensitivity test, the percentage of outside board members was used to measure board diversity. In an average firm, 17% of the board members were female, and 16% were external members. $HigExcGen_i$ is an indicator variable equal to “1”, if the top executive is identified as male, or “0” otherwise. There were 19 female and 138 male top executive officers among the respondent firms at the time of the survey, according to the Retriever database. $ExtCEO_i$ is an indicator variable showing if the CEO is internal or external. It is common to have an external CEO if the firm is part of a group or funded by a small number of dominant investors. 37% of the responding firms had an external CEO at the time of the survey. $TotSusDim_i$ is a count variable of the number of sustainability dimensions a respondent said that the firm addresses in their CS efforts. This variable was only used as an explanatory variable in the regression analysis and not while classifying the firm’s ambition level. The choice was made so as not to introduce a bias where a researcher tends to classify the firm’s CS ambition level based on the number of dimensions addressed, and not on the motivation behind the firm’s CS engagement. $RepPriorReg_i$ is an indicator variable equal to “1”, if the firm disclosed CS-related information before the NFRD implementation in Sweden, and “0” otherwise. Only 26% of the firms responded that they reported CS-related activities before the NFRD, even though 98% of the firms claimed that they carried out some CS even before the implementation of NFRD. To control for $FirmSize_i$, we took the log of total assets. $Profitability_i$ is measured as the five-year average of net income over total assets, $Leverage_i$ is measured as interest-bearing debt over equity, and $Growth_i$ is measured as year over year (2019-2020) growth in sales. Among the respondents, the average firm in the sample had a total asset of 271m SEK (27m EUR), return on assets of 8%, leverage of 9%, and growth rate of 9%. Finally, to control for variation across industries, an indicator variable $Industry_i$ is included in the model. In the main analysis, a binary classification, indicating firms belonging to the manufacturing industry is included, since 38% of the responding firms were from the manufacturing industry, and firms in the manufacturing industry tend to differ in CS initiatives, compared to firms in other industries (Lacy, et al., 2010).
However, in additional analysis, a nine-level factor variable was also used to control for industry-level variation. Finally, to control for a respondent’s bias, we include a three-level factor variable indicating if the survey was responded to by CEO, CFO or Environmental Officers of the firm. In the sensitivity analysis, additional variables, including age of the firm, age of the top executive officer, and average age of the board, were included. The average firm in the sample is 40 years old, the average age of the top executive is 52 years, and the average age of board members in a typical board is 53 years. We refrain from including all these variables in the main model so as to not lose degrees of freedom.

4. Analysis

4.1. Description of questionnaire responses

When it comes to the regulatory impact on a firm’s CS definition, 59% of the respondents answered that the NFRD did not significantly affect the firm’s CS definition, while 33% responded that their CS scope was broadened, and for 8% it became more precise. The responses are in line with the findings of Venturelli, et al. (2020) who found that the NFRD did not improve the comparability of the CS reports of Italian firms. Among the respondents, 74% of the firms did not report on CS before the NFRD, and 13% did not report on CS after the NFRD, while 98% of the respondents carried out some form of CS activities. Recall that we were forced to include some firms which fell just outside the NFRD threshold, therefore, part of the 13% non-reporters, and the 2% firms with no CS activities, may fall into this category. Also note that some of the non-reporters may have been subject to NFRD in 2019-2020, but not anymore in 2021, for example, if their total number of employees at the time of the survey was less than 250, or if they have now become part of a group and the parent company collectively prepares the CS reports. These may, however, occur at random as there is no reason to believe firms will systematically reduce the number of employees or become part of a group to avoid CS reporting.

The most addressed CS dimension (response rate) is \textit{environmental impacts} (97%), followed by \textit{social conditions} (72%), \textit{staff-related issues} (63%), \textit{anti-corruption} (51%), \textit{diversity issues} (47%), and \textit{human-rights} (41%). The least addressed CS dimensions are \textit{governance, business model, innovation, and leadership}, all ranging between 27-34% response rates. It is not uncommon for Swedish key officers to have a high awareness and even commitment towards the environment because of Sweden’s long-standing environmental protection laws (Gjølberg, 2010). However, from a global survey of CEOs, Lacy, et al. (2010) found that 72% and 66% of the CEOs thought education and climate, respectively, are the two most important CS issues. While Lacy, et al. (2010) found that 96% of the global CEOs believed CS should be integrated in the strategy and the operation of firms, which would probably require a more decentralized approach to CS, we find a prevalence of a more centralized approach (Figure 3). Even though 58% of the firms have a committee, or a board or panel that decides what CS activity the firm should undertake, only about 7% respondents said such groups include representative(s) from non-shareholding stakeholders.

The average firm in the sample has a Profit-driven ambition for CS, and this is largely reflected in the response to one of the questions, where 74% of the respondents said CS activities are chosen based on the economic significance for owners or shareholders, while only 39% were concerned about the economic significance for other stakeholders. On the other hand, about 60% of the firms are concerned with the social significance of CS activities for stakeholders, and 50%
for owners and shareholders. Finally, about 80% of the firms decide on CS efforts based on the environmental affects inside and outside the firm.

Figure 3: Summary of survey response: Who decides what CS activity to undertake and to report

### 4.2. CS ambition level

We classified firms at the Law-abiding ambition level, if they either did not have a CS definition or mention that they just adhere to what is required by laws and regulations. We argue that firms which do not have a working definition of CS do not view CS beyond what is required by law. Some typical examples of a Law-abiding ambition from the questionnaire responses include:

- **There is no local definition:** “activities and products that do not have a long-term impact on the climate or people… negative.”
- **“In our factory and office, legislation must be complied with.”**
- **“The company has not taken any measures of its own for sustainability but relies on measures taken by manufacturers / suppliers of goods the company sells.”**

At the Compliance-driven ambition level, firms have adopted some general definitions of CS – which could be from the EU, UN, or other generally accepted definitions. This indicates that firms are complying to some form of social norm (Dowling & Pfeffer, 1975). In this classification level, those firms are included which show some indication of going beyond what is required by laws and regulations or social norms. Some typical examples include:

- **The classic definition of sustainable development** “Sustainable development is a development that satisfies today’s needs without jeopardizing the ability of future generations to meet their needs.”
- **“Manufacture and sell products with as little negative environmental impact as possible at a reasonable cost to the company.”**

The profit-driven ambition level is one of the most difficult levels to classify. Given there is a widespread diffusion of CS in both practice and research, firms with such intentions understand that the way CS is projected affects the bottom line (Hong & Kacperczyk, 2009; Hwang & Kim, 2017). Firms thus often tend to disguise profit motives behind CS (Deegan, et al., 2002). Nonetheless, some responses were more obvious than others, such examples are given below:

- **“To satisfy good economic development in harmony with environmental and social development.”**
- **“All decisions we make must be in the best interests of the company, the environment and society in the long term.”**
“Sustainability work creates value for our stakeholders.”

“Important component of our business and a prerequisite for our services”

“Our products must contribute to a more sustainable environment for society through reduced energy consumption and by contributing to a healthy indoor climate”

“We want to create products for our customers where we help them carry out sustainable use”

As we have seen, Swedish firms, at least those that responded to this survey, pay special attention to the environment and climate. This is reflected in the firms that have a caring ambition level. Examples include:

“How we can reduce our climate footprint”

“Products in a life cycle perspective”

“We work for our local community to be alive.”

“Contribute to a sustainable future in a responsible way.”

“Contribute to a sustainable society for future generations”

Very few firms have gone beyond the Caring level of CS, and even those at the caring level are only a handful. Firms at the Synergistic ambition level are really motivated, and we argue that they show a democratic process in deciding on the firm’s CS. In our respondent pool only ten firms (6%) have gone beyond the Caring ambition level, of which, eight are at the Synergistic ambition level, while two are at the Holistic ambition level. Some examples of responses at these two levels are as follows:

Synergistic level:

“Based on a stakeholder analysis, the overall sustainability goals are determined by the board.”

“The business must contribute to sustainable development and the sustainability work must be integrated into the business and give concrete results.”

“Sustainable thinking must be included in everything we do.”

Holistic level:

“As a company, we have a great opportunity to influence. That is why I have tried to be as careful with the environment as possible in production and the internal environment. Environmental thinking must “be a natural part of our decision-making processes.”

“XX will be Sweden’s healthiest county by 2025 and to get there, we must in all activities work long-term and strategically to promote each person’s right to good health, culture and education and to prevent disease and ill health”

We can observe a sharp contrast in firms between the Caring level and the Synergistic level. For example, in most cases, firms at the Synergistic level are very explicit that they work with various stakeholders directly for CS, while firms at the Caring level acknowledge the importance of the various stakeholders and state that they work for these stakeholders. The two firms at the Holistic level of our sample also have a very distinct view of CS. One of the firms considers CS to be integrated in the business strategy and a “natural part” of the decision-making process. While another firm has a CS view that is connected with the goals of the Region (U.S. equivalent of State). In both these cases, it may be argued that the CS thinking is beyond the boundaries of the firm.
4.3. Determinants of CS ambition level

To determine the factors affecting a firm’s CS ambition level, Equation 1 was evaluated. We start off with a model without including any interaction term (e.g., interaction of board diversity and gender of the top executive) following past studies (e.g., Godos-Díez, et al., 2018; Liao, et al., 2015). Column 1, Table 4 shows that none of the explanatory variables has significant effect on a firm’s CS ambition level, except for the industry indicator variable. The negative coefficient of the Industry Indicator variable suggests non-manufacturing firms have a higher CS ambition level compared to manufacturing firms.

Table 4: Regression results

<table>
<thead>
<tr>
<th>Variables</th>
<th>OLS estimates (non-standardized)</th>
<th>OLS estimates (non-standardized)</th>
<th>OLS estimates (Standardized)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Estimates</td>
<td>t value</td>
<td>Estimates</td>
</tr>
<tr>
<td>BDiv</td>
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<td>-0.80</td>
<td>3.59**</td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(1.35)</td>
<td>(0.28)</td>
</tr>
<tr>
<td>TopExcGen</td>
<td>-0.48</td>
<td>-1.33</td>
<td>1.32**</td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td>(0.64)</td>
<td>(0.46)</td>
</tr>
<tr>
<td>BDiv*TopExcGen</td>
<td>-</td>
<td>-</td>
<td>-4.86***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.47)</td>
<td>(0.30)</td>
</tr>
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<td>ExtCEO</td>
<td>0.24</td>
<td>1.08</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td>(0.22)</td>
<td>(0.22)</td>
</tr>
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<td>TotSusDim</td>
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<td>0.07</td>
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<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.10)</td>
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<td>RepPriorReg</td>
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<td>-0.11</td>
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<tr>
<td></td>
<td>(0.24)</td>
<td>(0.23)</td>
<td>(0.23)</td>
</tr>
<tr>
<td>Log (1+Total Assets)</td>
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<td>1.60</td>
<td>0.57*</td>
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<tr>
<td></td>
<td>(0.26)</td>
<td>(0.26)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Growth</td>
<td>-0.14</td>
<td>-1.24</td>
<td>-0.15</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.11)</td>
<td>(0.11)</td>
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<td>Profitability</td>
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<td>-0.57</td>
<td>-0.58</td>
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<tr>
<td></td>
<td>(0.86)</td>
<td>(0.84)</td>
<td>(0.11)</td>
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<td>Leverage</td>
<td>-0.17</td>
<td>-0.32</td>
<td>-0.17</td>
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<tr>
<td></td>
<td>(0.54)</td>
<td>(0.52)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Industry Indicator</td>
<td>-0.60***</td>
<td>-2.63</td>
<td>-0.61***</td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
<td>(0.22)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>Intercept</td>
<td>-2.07</td>
<td>-0.62</td>
<td>-5.27</td>
</tr>
<tr>
<td></td>
<td>(3.33)</td>
<td>(3.35)</td>
<td>(0.49)</td>
</tr>
<tr>
<td>Respondent’s effects</td>
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<td>Yes</td>
<td>Yes</td>
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<td>No of observations</td>
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<td>157</td>
<td>157</td>
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<td>Adj, R-squared</td>
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<td>0.11</td>
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<tr>
<td>F-statistic</td>
<td>1.86</td>
<td>2.77***</td>
<td>2.77***</td>
</tr>
<tr>
<td>p-value</td>
<td>0.06</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

***, **, and * significant at 0%, 1%, and 5% level. Standard errors in parenthesis. Standardized estimates are mean-centered and scaled by 1 standard deviation.

Our findings here are not directly comparable to past studies since a firm’s CS ambition level is seldom investigated. However, Godos-Díez, et al. (2018), who measure commitment to CS through participation in the United Nations Global Compact, found firm size positively influences CS commitment, while leverage negatively influences it. On the other hand, Liao, et al., (2015) found that diverse boards positively influence a firm’s commitment to greenhouse gas and in its reporting quality. Venturelli, et al. (2020) found that a diverse board increases the
probability of detecting misstatements in CS reporting. In the next step, we include the interaction term of board diversity and the gender of the top executive officer, and find that, when a diverse board is coupled with a female top executive, the governance structure positively influences the firm’s CS ambition level (Column 3, Table 4). Analysis of variance (Table 5) shows the differences are significant. In Column 5, Table 4, we present standardized estimates to help comparability. One can observe that one standard deviation change in interaction of board diversity and top executive gender changes a firm’s CS ambition level by one (0.99) standard deviation. Given male top executives are coded as one for the TopExcGen variable, taken at face value, a change from a male to female top executive is likely to positively affect the firm’s CS ambition level by one level.

Table 5: Analysis of variance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Degrees of freedom</th>
<th>Sum of squares</th>
<th>Mean of squares</th>
<th>F value</th>
<th>p value (&gt; F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDiv</td>
<td>1</td>
<td>0.50</td>
<td>0.50</td>
<td>0.32</td>
<td>0.571</td>
</tr>
<tr>
<td>TopExcGen</td>
<td>1</td>
<td>3.63</td>
<td>3.63</td>
<td>2.37</td>
<td>0.1275</td>
</tr>
<tr>
<td>BDiv*TopExcGen</td>
<td>1</td>
<td>16.83</td>
<td>16.83</td>
<td>10.67***</td>
<td>0.0012</td>
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<td>ExtCEO</td>
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<td>2.73</td>
<td>2.19</td>
<td>0.1860</td>
</tr>
<tr>
<td>TotSusDim</td>
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<td>6.15</td>
<td>6.15</td>
<td>3.61*</td>
<td>0.0480</td>
</tr>
<tr>
<td>RepPreReg</td>
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<td>0.05</td>
<td>0.05</td>
<td>0.02</td>
<td>0.854</td>
</tr>
<tr>
<td>Log (1+Total Assets)</td>
<td>1</td>
<td>2.53</td>
<td>2.53</td>
<td>1.65</td>
<td>0.2030</td>
</tr>
<tr>
<td>Growth</td>
<td>1</td>
<td>3.34</td>
<td>3.34</td>
<td>2.18</td>
<td>0.1436</td>
</tr>
<tr>
<td>Profitability</td>
<td>1</td>
<td>0.43</td>
<td>0.43</td>
<td>0.28</td>
<td>0.6001</td>
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<td>Leverage</td>
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<td>0.06</td>
<td>0.8054</td>
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<td>Industry Indicator</td>
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<td>10.87</td>
<td>7.09***</td>
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<td>0.80</td>
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<td>Residuals</td>
<td>143</td>
<td>220.97</td>
<td>1.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

***, **, and * significant at 0%, 1%, and 5% level.

Board diversity and firm size positively influence a firm’s CS ambition level only when the firm’s top executive is female, alongside a diverse board. We did not find growth, profitability, or leverage to significantly impact a firm’s CS ambition. Godos-Díez, et al. (2018) found leverage to negatively influence CS commitment and profitability not to have any significant impact. While Liao, et al. (2015) found leverage to positively affect a firm’s commitment to greenhouse gas emissions, and profitability to negatively affect it. The effect of these accounting variables is largely mixed in the CS reporting literature (Agunuis & Glavas, 2012; Fifka, 2013; Hahn & Kühnen, 2013; Huang & Watson, 2015; Khan, et al., 2020).

4.4. Impact of selection bias

Given that a 100% response rate was not achieved, the inferences drawn from the collected data may suffer from selection bias due to non-response (Bethlehem, 2010; Olson, 2006; Rubin, 1976). Selection bias occurs when the non-respondents are not missing completely at random or not missing at random, or if the observed are not observed at random (Rubin, 1976). Non-response may occur due to refusal to participate or simply because of non-availability (Potthoff, et al., 1993). Even though it is fundamental to know the process through which data become missing for bias adjustment (Rubin, 1976), it is often difficult and costly to gauge the reasons for missingness. Which is why, instead of investigating the causes of non-response, we made an attempt to investigate if and how selection bias due to non-response affects our analysis and main conclusions (Suchman, 1962).

The statistical analysis is based on the intuition that individuals who are reluctant to respond to a survey differ from those who are more eager (or available) to respond and are more similar to
those who never respond (Drew & Fuller, 1980, 1981; Lin & Schaeffer, 1995; Potthoff, et al., 1993; Suchman, 1962). The assumption of these types of models is that the non-respondents are similar to each other and that, if they took part in the survey, they would respond like a particular group of respondents, especially those respondents who were initially reluctant to respond (Suchman, 1962; Drew & Fuller, 1980, 1981). It is further assumed that everyone except the “hard-core” non-respondents would eventually respond after $R$ reminders (Suchman, 1962; Drew & Fuller, 1980, 1981). “A justification for assuming this model is that people who require more calls or contacts before being interviewed would have been non-participants if data collection had stopped earlier.” (Lin & Schaeffer, 1995, p. 238) Eagerness or reluctance to respond can be for various reasons, for example, respondent’s availability, the topic’s considered importance, age, gender, education, income, etc. (Bethlehem, 2010; Olson, 2006; Lin & Schaeffer, 1995; Potthoff, et al., 1993; Suchman, 1962). As such, the respondents who respond after the reminders are a good proxy for the non-responders. Coincidentally, we have a very even distribution between responses after the first email (80 responses) and responses after the two reminders (47 responses after the first reminder, and 30 after the second reminder).

We use this variation to test the influence of selection bias on our main estimations, using a rather simple ad-hoc model. Other forms of operationalization of these types of models are presented elsewhere (e.g., Lin & Schaeffer, 1995; Olson, 2006; Potthoff, et al., 1993; Suchman, 1962). Specifically, we estimate Equation 2:

$$ CR_{level_i} = \beta_1BDiv_i + \beta_2HiGExcGen_i + \beta_3BDiv_i \times HiGExcGen_i + \beta_4ExtCEO_i + \beta_5TotSusDim_i + \beta_6RepPriorReg_i + \beta_7FirmSize_i + \beta_8Growth_i + \beta_9Profitability_i + \beta_{10}Leverage_i + \beta_{11}Industry_i + \beta_{12}ResPos_i + \beta_{13}RemRes_i + \beta_{14}RemRes_i \times BDiv_i + \beta_{15}RemRes_i \times HiGExcGen_i + \beta_{16}RemRes_i \times BDiv_i \times HiGExcGen_i + \beta_{17}RemRes_i \times Industry_i + \epsilon_i \tag{2} $$

In Equation 2, we extend Equation 1 by including an indicator variable ($RemRes_i$) to indicate the responses that came after the reminders. This variable should be significant if there is a selection bias, and the direction could go either way. If firms with a higher CS ambition-level are more likely to self-select into responding, then the variable should be negatively significant, or vice versa. Results are presented in Table 6.

Furthermore, we also include interaction terms of the variable with other explanatory variables which were significant in our main analysis, as presented in Table 4. The intuition here is that, even if there is a selection bias, individual respondents should not have been able to theoretically hypothesize the significant relationships that were obtained in the main estimations, presented in Table 4. Hence, insignificant interaction terms (interaction of $RemRes_i$ with $BDiv_i$, $HiGExcGen_i$, $BDiv_i \times HiGExcGen_i$, and $Industry_i$) will indicate selection bias is not likely to be present, or vice versa. In the first analysis (Columns 1 and 2, Table 6), we use responses from both the first and the second reminders to proxy for the non-respondents, while in the second analysis (Columns 3 and 4, Table 6), we use the responses from the second reminders to proxy for the non-respondents.

Both the indicator variable, indicating responses from reminders, and its interaction with the key variables are insignificant. It shows that there is no influence of selection bias on our conclusion from the main analysis that firms with a diverse board in conjunction with a female top executive are more likely to have a higher CS ambition level. Past studies have shown these types of models usually fetch reliable and valid results when cross-referenced or triangulated through alternative data source (e.g., Olson, 2006; Potthoff, et al., 1993; Suchman, 1962).
### Table 6: Regression analysis to assess the impact of selection bias

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized OLS</th>
<th></th>
<th>Standardized OLS</th>
<th></th>
</tr>
</thead>
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<td></td>
<td>Estimates (1)</td>
<td>t value (2)</td>
<td>Estimates (3)</td>
<td>t value (4)</td>
</tr>
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<td>1.51</td>
<td>0.90***</td>
<td>2.94</td>
</tr>
<tr>
<td></td>
<td>(0.34)</td>
<td></td>
<td>(0.31)</td>
<td></td>
</tr>
<tr>
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<td>0.31</td>
<td>0.42</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>(0.60)</td>
<td></td>
<td>(0.52)</td>
<td></td>
</tr>
<tr>
<td>BDiv*TopExcGen</td>
<td>-0.94*</td>
<td>-2.41</td>
<td>-1.19***</td>
<td>-3.55</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td></td>
<td>(0.33)</td>
<td></td>
</tr>
<tr>
<td>ExtCEO</td>
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<td>0.87</td>
<td>0.17</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>(0.22)</td>
<td></td>
<td>(0.22)</td>
<td></td>
</tr>
<tr>
<td>TotSusDim</td>
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<td>1.98</td>
<td>0.18</td>
<td>1.72</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td></td>
<td>(0.10)</td>
<td></td>
</tr>
<tr>
<td>RepPriorReg</td>
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<td>-0.15</td>
<td>-0.64</td>
</tr>
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<td></td>
<td>(0.23)</td>
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<td>(0.23)</td>
<td></td>
</tr>
<tr>
<td>Log (1+Total Assets)</td>
<td>0.26*</td>
<td>2.40</td>
<td>0.24*</td>
<td>2.27</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td></td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>-0.16</td>
<td>-1.49</td>
<td>-0.17</td>
<td>-1.55</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td></td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
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</tr>
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<td></td>
<td>(0.11)</td>
<td></td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
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<td>-0.42</td>
<td>-0.03</td>
<td>-0.34</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td></td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>Industry Indicator</td>
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<td>-0.66**</td>
<td>-2.67</td>
</tr>
<tr>
<td></td>
<td>(0.30)</td>
<td></td>
<td>(0.25)</td>
<td></td>
</tr>
<tr>
<td>RemRes</td>
<td>-1.42</td>
<td>-1.52</td>
<td>-0.16</td>
<td>-0.15</td>
</tr>
<tr>
<td></td>
<td>(0.94)</td>
<td></td>
<td>(1.07)</td>
<td></td>
</tr>
<tr>
<td>BDiv* RemRes</td>
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<td>-1.59</td>
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<tr>
<td></td>
<td>(0.67)</td>
<td></td>
<td>(0.72)</td>
<td></td>
</tr>
<tr>
<td>TopExcGen* RemRes</td>
<td>1.02</td>
<td>1.08</td>
<td>0.08</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(0.95)</td>
<td></td>
<td>(1.08)</td>
<td></td>
</tr>
<tr>
<td>BDiv<em>TopExcGen</em> RemRes</td>
<td>-0.35</td>
<td>-0.49</td>
<td>1.125</td>
<td>1.55</td>
</tr>
<tr>
<td></td>
<td>(0.72)</td>
<td></td>
<td>(0.81)</td>
<td></td>
</tr>
<tr>
<td>Industry Indicator*RemRes</td>
<td>0.04</td>
<td>0.93</td>
<td>0.05</td>
<td>0.09</td>
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<tr>
<td></td>
<td>(0.44)</td>
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<td>(0.53)</td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>2.84***</td>
<td>4.53</td>
<td>2.47***</td>
<td>4.38</td>
</tr>
<tr>
<td></td>
<td>(0.59)</td>
<td></td>
<td>(0.56)</td>
<td></td>
</tr>
</tbody>
</table>

***, **, and * significant at 0%, 1%, and 5% level. Standard errors in parenthesis. Standardized estimates are mean-centered and scaled by 1 standard deviation.

### 4.5. Sensitivity tests

In additional analysis, the first sensitivity test was done by replacing the binary industry indicator variable indicating firms belonging to the manufacturing industry by a nine-level factor variable indicating all nine industries, from which at least one firm participated in the survey. This was done to account more succinctly for the industry differences. Results presented in Columns 1 and 2, Table 7 re-affirm our conclusion from the main analysis.

Liao, et al. (2015) and Venturelli, et al. (2020) had used the presence of external board members as a measure for board independence, we use the variable as an alternative measure for board diversity in the next sensitivity test. While there is still a significant difference between manufacturing and non-manufacturing firms (results presented in Columns 5 and 6, Table 7), a
diverse board of external board members does not significantly influence a firm’s CS ambition level. Nor does the presence of a female top executive have any significant influence, in the presence of a diverse board of external board members. This further corroborates our main findings.

Finally, motivated from the literature (Dienes, et al., 2016), we include certain age variables in our main estimation as they have shown to significantly affect a firm’s CS commitment and reporting. We include age of the firm, average age of the board, and age of the top executive. Together, estimation results of the additional analysis presented in Table 7 support our main findings and illustrate that the conclusions are robust.

While firm age and board’s average do not significantly affect a firm’s CS ambition level, age of the top executive has a negative effect. This suggests younger top executives are more likely to adopt a higher CS ambition level. We also included an interaction term of firm age and the indicator variable, indicating if the firm reported in CS activities. The idea was to check if the NFRD affected older and younger firms differently. The effects were insignificant, and together with the main analysis we conclude that the NFRD did not affect a firm’s CS thinking, irrespective if they are new or have been around for a longer time.

5. Summary and Conclusions

Corporate sustainability is one of the most studied topics within business administration and related disciplines for the past few decades (Aguinis & Glavas, 2012; Dienes, et al., 2016; Fifka, 2013; Hahn & Kühen, 2013; Huang & Watson, 2015). While there has been exceptional advancement in the conceptualization and theorization of CS along with the knowledge on causes and consequences of CS, we have rather limited direct evidence on what CS actually means for firms around the globe (Aguinis & Glavas, 2012; Williams, et al., 2021), and only a handful of studies have directly examined the practitioner’s aspect of CS (e.g., Athanasopoulou, 2012; Kiron, et al., 2017; Lacy, et al., 2010). We surveyed CEOs, CFOs, and Environmental Managers of Swedish firms affected by the implementation of the NFRD in Sweden to investigate the issue. We used the six-transcending CS ambition level framework proposed by van Marrewijk (2003) and van Marrewijk & Werre (2003) to classify a firm’s view on CS. All firms affected by the NFRD were the target population with the primary intention of building a census. We contribute to the CS literature by investigating the practitioner’s view of their firm’s CS and its determinants, and the effects of the NFRD on CS through the Swedish implementation of the EU-wide reform. Past studies primarily investigate the academic definition of CS, (Dahlsrud, 2008; Meuer, et al., 2020), and the effect of NFRD on reporting volume and reporting quality of CS (e.g., Venturelli, et al., 2020).

Sweden has a long-standing history of CS (Gjölberg, 2009; Gjölberg, 2010), primarily rooted in culture and norms (Matten & Moon, 2008), and has its normative roots firmly based on humanitarian grounds (Gjölberg, 2010). We expected such a context would be an ideal setting to observe CS at an upper half ambition level (e.g., Caring, Synergistic or Holistic) due to, for example, societal expectation (Meyer & Rowan, 1977; Suchman, 1995), and because Swedish firms have had a relatively higher early presence in various global CS initiatives and rankings amongst the OECD countries (Gjölberg, 2009). Surprisingly, we find that the typical firms in the economy, that are affected by the NFRD, have a Profit-driven ambition level of CS. Profit-driven CS is motivated by its positive impact on the bottom-line (van Marrewijk 2003; van Marrewijk & Werre 2003). It is even more alarming because things have not changed much in the last two decades, when Hedberg & von Malmberg (2003) found that Swedish firms report
on CS primarily to seek organizational legitimacy. It may be argued here that firms seeking organizational legitimacy are likely to be in the continuum of the Law-abiding to Compliance-driven ambition levels of CS.

Table 7: Regression analysis for sensitivity checks

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standardized OLS Estimates (1)</th>
<th>t value (2)</th>
<th>Standardized OLS Estimates (3)</th>
<th>t value (4)</th>
<th>Standardized OLS Estimates (5)</th>
<th>t value (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDiv(female)</td>
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<td>-</td>
<td>-</td>
<td>0.81**</td>
<td>2.83</td>
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<td>BDiv(external)</td>
<td>-</td>
<td>-</td>
<td>-0.42</td>
<td>-0.97</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TopExcGen</td>
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<td>1.08</td>
<td>-0.35</td>
<td>-1.06</td>
<td>0.69</td>
<td>1.46</td>
</tr>
<tr>
<td>BDiv(female)*</td>
<td>-1.05***</td>
<td>-3.40</td>
<td>-</td>
<td>-</td>
<td>-1.02***</td>
<td>-3.22</td>
</tr>
<tr>
<td>TopExcGen</td>
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<td></td>
<td>(0.32)</td>
<td></td>
<td>(0.32)</td>
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</tr>
<tr>
<td>BDiv(external)*</td>
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<td></td>
<td>0.70</td>
<td>1.58</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TopExcGen</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ExtCEO</td>
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<td>0.92</td>
<td>0.12</td>
<td>0.53</td>
<td>0.13</td>
<td>0.56</td>
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<tr>
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<td>0.15</td>
<td>1.43</td>
<td>0.18</td>
<td>1.71</td>
</tr>
<tr>
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<td>0.60</td>
<td>-0.20</td>
<td>-0.87</td>
<td>-0.06</td>
<td>-0.24</td>
</tr>
<tr>
<td>Log (1+Total Assets)</td>
<td>0.28***</td>
<td>2.48</td>
<td>0.10</td>
<td>0.95</td>
<td>0.24**</td>
<td>2.56</td>
</tr>
<tr>
<td>Growth</td>
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<td>-1.22</td>
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<td>-</td>
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<td>RepPreReg* FirmAge</td>
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<td>-2.67</td>
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<td>3.29***</td>
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<td>2.18***</td>
<td>4.25</td>
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Industry effects

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<th>Indicator for manufacturing industry</th>
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</tr>
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<tr>
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<td>Yes</td>
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<table>
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<tr>
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<th>Indicator for nine industries</th>
<th>Indicator for manufacturing industry</th>
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<tr>
<td>No of observations</td>
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<td>p-value</td>
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***, ***, and * significant at 0%, 1%, and 5% level. Standard errors in parenthesis. Standardized estimates are mean-centered and scaled by 1 standard deviation.

When it comes to the determinants of CS ambition level, one of our important findings is that firms with a diverse board, in terms of a higher representation of female directors, along with a female top executive officer, strive for a higher CS ambition level. While Liao, et al. (2015) and Venturelli, et al. (2020) found firms that have a higher proportion of external board members.
are more engaged and committed to CS and are also likely to disclose more accurate CS reporting, we did not find a higher proportion of external board members to significantly influence a firm’s CS ambition level. Rather, the positive effect of female top executives on a firm’s CS ambition level is not observable in such firms. We also find younger top executives are also more likely to pursue higher CS ambition levels.

Another important finding is that the NFRD does not have any significant effect on a firm’s CS ambition level, even though some firms claimed they have allocated additional resources to CS activities and reporting. Together, these findings have important implications for regulators and firms that are interested in CS and corporate governance issues related to CS.

Perhaps the Profit-Driven CS, or Friedman’s view on CS, is the desired state of CS around the globe, as firms adjust their behavior to contextual expectations (Ashforth and Gibbs 1990; DiMaggio and Powell 1983; Meyer and Rowan 1977; Suchman 1995). However, if regulators and other stakeholders of firms want to create a context which demands firms to commit to a Caring, Synergistic or Holistic ambition-level of CS then the regulations need to go beyond mere CS reporting. Present CS regulations are mostly directed towards CS reporting, as well as a vast majority of the current academic research. CS regulations, such as the NFRD, have failed to attain their primary goal, i.e., improve comparability in CS reporting (Venturelli, et al., 2020). And we found that the NFRD does not influence a firm’s CS thinking either. Moreover, firms usually provide CS information to shareholders in their CS reporting (Lindgren, et al., 2021), and there is a general trend of decrease in accountability in CS reporting worldwide (Huq & Carling, 2021). Thus, in order for firms to commit to CS ambition levels which are beyond the profit-driven level, such an environment needs to be created. For example, regulations can be geared towards promoting an environment that can lead to more diversity in the firm’s governance structure. Past studies have shown CEOs with daughters are better at CS, compared to the median firm (Cronqvist & Yu, 2017). Surely, regulations cannot influence the gender of a CEO’s child but can influence diversity in a firm’s board of directors and create an environment so that there is more gender balance among firms’ top executives.

We also found that Swedish firms prioritize environmental efforts, followed by CS activities related to social conditions, staff-related, anti-corruption, diversity issues, and human-rights. Firms catering for a higher number of CS dimensions, as stipulated in UN goals or Global Reporting Initiative, have significantly higher CS ambition levels. Firm size also positively influences a firm’s CS ambition level, while firm age and a board’s average age do not. There is also significant variation between the various industries, and non-manufacturing firms on average have a higher CS ambition level compared to manufacturing firms. The results are robust across various alternative model specifications. Ad-hoc analysis motivated by the survey non-response literature (Drew & Fuller, 1980, 1981; Lin & Schaeffer, 1995; Potthoff, et al., 1993; Suchman, 1962) showed that the impact of selection-bias can be claimed to be limited. Methodologically, we contribute with empirical evidence from the use of survey instrument, while there is over-dependency on the use of archival data in the field of CS. Inference drawn on archival data (i.e., CS reporting) does not often fully reflect the views of key officers on the CS of their firm (Aguinis & Glavas, 2012; Williams, et al., 2021).

Future studies can benefit from more in-depth analysis of why a higher proportion of female directors and female top executives have higher CS ambition levels and how this affects a firm’s CS initiatives in the short-term, and how, in the long-term, it affects a firm’s bottom line. Future studies can also test how the relationships that were found significant in a Swedish context relate to other contexts. For example, even though the Nordic countries are very similar, they have very different CS mindsets (Gjølberg, 2010). The CS context is also different between the US and Europe (Matten & Moon, 2008), or between countries of common law origin and civil
law origin (La Porta, et al., 1998). Future studies can also benefit from uncovering the various individual level factors that influence a firm’s CS ambition levels (Aguinis & Glavas, 2012). Note that these are all suggestions for future research and beyond the scope of the current study.

Acknowledgements

The authors would like to thank Kenneth Carling for exhaustive feedback on an earlier draft and for important suggestions on statistical analysis in addressing selection bias, and Carl Olsmats for useful feedback during the survey questionnaire development. The authors would also like to thank the participants of the Microdata Analysis Seminar, held on 18 June, 2021, and the participants of the Business Administration Seminar, held on 11 November, 2020, at Dalarna University, Sweden.

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[Accessed 5 April 2021].


Appendix A1: Structured question on the theme of firms’ CS view

<table>
<thead>
<tr>
<th>Additional questions to gather more information on firms’ CS views</th>
<th>Multiple choices (more than one option could be chosen)</th>
</tr>
</thead>
</table>
| **What aspects/elements/factors are considered in deciding what are important sustainability activities for your firm** | a) Economically significant for its owners or shareholders,  
b) Economically significant for other stakeholders,  
c) Socially significant for its owners or shareholders,  
d) Socially significant for other stakeholders,  
e) Activities that have significant environmental impact within the firm  
f) Activities that have significant environmental impact outside the firm  
g) Other: *<free text>* |
| **Who decides about what sustainability activities the firm should carry out** | a) CEO  
b) CFO  
c) Environmental manager  
d) Shareholders/Owners  
e) A committee/board/panel that includes management  
f) A committee/board/panel that includes other stakeholders  
g) Other individuals/groups/positions: *<free text>* |
| **Who decides what should be included in the sustainability report** | a) CEO  
b) CFO  
c) Environmental manager  
d) Shareholders/Owners  
e) A committee/board/panel that includes management  
f) A committee/board/panel that includes other stakeholders  
g) Other individuals/groups/positions: *<free text>* |
| **What are the primary sustainability dimensions that the firm is concerned with** | a) Environmental impact, climate  
b) Social conditions and impacts  
c) Staff-related issues  
d) Anti-corruption  
e) Human rights  
f) Diversity issues  
g) Business model  
h) Innovation  
i) Leadership  
j) Governance  
k) Other: *<free text>* |
| **To what extent are the firm’s decision makers aware of climate change related risks** | a) To a very large extent (always included in the decision basis and affects daily work in all operations)  
b) To a large extent (normally included in decision documents and affects parts of the business)  
c) To a small extent (may be included in the decision basis and may affect parts of the business)  
d) To a very small extent (is not normally included in the basis for decisions and does not normally affect any operations) |
Appendix B1: Survey forwarding letter

Accounting for sustainability in Swedish companies after implementing EU-Directive

17th of Mars, 2021

Invitation to participate in an international study on accounting for sustainability.

We are writing to you in our capacity as researchers. During spring 2021, we are conducting a study of how Swedish companies report activities for sustainability. We have selected your enterprise from a list of potential Swedish participants that meet certain criteria to fit this study.

Those involved in the study are myself, Klas Sundberg, PhD in Business administration at Dalarna University, and Asif M. Huq, PhLic in Microdata analyses at the same university.

We would appreciate your assistance with this research that will provide new knowledge on accounting for sustainability. You may forward the questionnaire to any person in your organization whom you know to be well versed in the issues being investigated, although we find you very suitable by your formal position in your company.

To complete the questionnaire should require about 10 minutes, and we would be very grateful if you took that time.

We hope you will respond as soon as possible but please no later than the 31st of Mars 2021.

Of course, your response will be kept anonymous and treated in strict confidence. No individual response will be identified as the survey will use only the data aggregates.

If you have any enquiries about the study, please contact Doctor Klas Sundberg by e-mail ksu@du.se or by phone ++46 (0)23 778954.

As a token of our appreciation, we will be sharing the results of the study with you and the other participants.

Thank you and hoping for your participation in this survey.

Yours sincerely,

Klas Sundberg
PhD in Business Administration,
Dalarna University
S-791 88 Falun, Sweden
Phone: +46 (0)23 778954, Email: ksu@du.se
Appendix B2: Survey questionnaire

Q1. How does your firm define material sustainability activities that the firm should carry out?
Q2. Did your company report sustainability activities before the 2016 law change?
   a) Yes
   b) No
Q3. Does your company report sustainability activities after the change in the law??
   a) Yes
   b) No
If no to q3…
Q4. Does your firm carry out any sustainability activities?
   a) Yes
   b) No
If yes to q3 and q4…
Q4. What aspects/elements/factors do you consider in deciding what are material sustainability activities for your firm? (Choose all that apply)
   a) Economically significant for its owners or shareholders,
   b) Economically significant for other stakeholders,
   c) Socially significant for its owners or shareholders,
   d) Socially significant for other stakeholders,
   e) Activities that have significant environmental impact within the company
   f) Activities that have significant environmental impact outside the company
   g) Other: ________________________________
   h) Other: ________________________________
Q5. Who in your company decides about what sustainability activities your firm should carry out? (Choose all that apply)
   a) CEO
   b) CFO
   c) Environmental manager
   d) Shareholders/Owners
   e) A committee/board/panel that includes management
   f) A committee/board/panel that includes other stakeholders
   g) Other individuals/groups/positions: ________________________________
Q6. Who in your company decides about what should be included in the sustainability report? (Choose all that apply)
   a) CEO
   b) CFO
   c) Environmental manager
   d) Shareholders/Owners
   e) A committee/board/panel that includes management
   f) A committee/board/panel that includes other stakeholders
   g) Other individuals/groups/positions: ________________________________
Q7. How has the definition of material sustainability activities in your firm been influenced by the new sustainability-regulations (on 1 December 2016)?
   a) The definition has been sharpened/delimited,
   b) The definition has broadened/expanded,
   c) The definition has not changed significantly since the entry of new rules.
Please briefly explain your choice in 7 above: ________________________________
Q8. What are the primary sustainability dimensions your firm is concerned with? (Choose all that apply)
   a) Environmental impact, climate
   b) Social conditions and impacts
   c) Staff-related issues
   d) Anti-corruption
   e) Human rights
   f) Diversity issues
   g) Business model
   h) Innovation
   i) Leadership
   j) Governance
   k) Other

Q9. To what extent can you say that the company's decision makers are aware of climate change-related risks?
   a) To a very large extent (always included in the decision basis and affects daily work in all operations)
   b) To a large extent (normally included in decision documents and affects parts of the business)
   c) To a small extent (may be included in the decision basis and may affect parts of the business)
   d) To a very small extent (is not normally included in the basis for decisions and does not normally affect any operations)

Q10. How did this new regulation affect the workload of reporting process?
    a) Very much
    b) Quite much
    c) Little
    d) Very little
    e) No effect

Q11. How did this new regulation affect your firm’s sustainability activities?
    a) Sustainability activities have significantly increased,
    b) Sustainability activities have increased,
    c) No change
    d) Sustainability activities have decreased,
    e) Sustainability activities have significantly decreased,

Q12. How did this new regulation affect your firm’s resource allocation for sustainability activities?
    a. Significant increase in resource allocation
    b. Marginal increase in resource allocation
    c. No change
    d. Marginal decrease in resource allocation
    e. Significant decrease in resource allocation

Estimated cost change in Swedish kronor
Q13. How did this new regulation affect your firm’s resource allocation for sustainability reporting?
    a. Significant increase in resource allocation
    b. Marginal increase in resource allocation
    c. No change
    d. Marginal decrease in resource allocation
    e. Significant decrease in resource allocation
Q14. What kind of sustainability activities do your firm include in reporting?
   a. All sustainability activities carried out by the firm
   b. only material sustainability activities carried out by the firm
Q15. Does your firm use assurance services for sustainability disclosures?
   a. yes
   b. no
   c. have used in the past not any more
   d. considering using in the near future
Q16. Where does your firm report sustainability related activities? (Check all that apply)
   a. Annual report
   b. Stand-alone sustainability/CSR/environment reports
   c. Integrated reports
   d. Website
Q17. How much are the external auditors concerned with the sustainability reporting in relation to financial reporting?
   a) Equally
   b) More concerned than financial report auditing
   c) Less concerned than financial report auditing
Q18. Would you like to make any additional comment about the mandatory sustainability reporting regulation?

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

Q19. Can we contact you for supplementary questions?
   a) Yes, contact by e-mail/phone:___________________________________________
   b) No

Thank you for your contribution!