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What are the Main Determinants for Companies to Behave in a Sustainable Way?

- A comparative study of institutional and basic economic factors for explaining why companies move towards corporate sustainability

Abstract: Using a novel dataset collected from a web survey sent out to Swedish large companies, this thesis examines whether institutional factors or basic economic factors are the main determinants for companies' level of sustainability work. This is done through studying a company's level of corporate sustainability in relation to their self-perceived determinants. OLS analysis is used to estimate the parameters. The results indicate that the institutional factors have a stronger positive relationship with the level of corporate sustainability than the basic economic factors. This raises important questions and addresses the need for further research on corresponding time-related effects as well as complementary empirical studies with a different dataset.

Key words: Sustainable Development, Corporate Sustainability, Institutional Theory, New Institutional Economics, Norms, OLS

Acknowledgment

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1. Introduction

Sustainability is the theme of our time, and the business sector has a key role to play in contributing to a sustainable future. In September 2015 world leaders adopted Agenda 2030 and its 17 Sustainable Development Goals. One year later the Paris Agreement entered into force. At the end of 2016, the EU-directive regarding sustainability reporting was adopted by Swedish law (SFS, 2016:947, Ch. 6 §12). In the wake of these three historical events, there is consensus among politicians, researchers and businesses that a paradigm shift is of importance for reaching the climate goal, as well as the goals of Agenda 2030. In particular for businesses, sustainability needs to become an essential part of the business strategy (Álvaro, 2016).

There is already a significant change in company commitment to sustainable development. The view on sustainability as some kind of corporate sidelines has changed towards a more holistic picture, where sustainability is central to a company's core business (PWC, 2015). Earlier studies have attempted to explain why these changes appear by using different methods and approaches. There are several previous studies emphasizing the economic dimension as the main determinant to why companies are moving towards corporate sustainability, for example Chang and Kuo (2008). Moreover, there are previous studies using *Institutional theory* to explain why companies move towards corporate sustainability, where the institutions in the society are the main determinants (Campbell, 2007; Kudlak, 2008; Bansal,2005). Further, most of the earlier empirical studies define and operationalize the determinants (i.e. the explanatory variables) by examining already existing numbers and values, for example in reports issued by the companies. This results in limited samples that include only a few companies within specific sectors (Bansal, 2005; Brown and Knudsen, 2015).

The aim of this study is to analyze the question of why companies commit to sustainable development by using a novel dataset. This is an empirical study where the companies' self-perceived driving forces to act in a sustainable way are examined. Instead of analyzing the already existing numbers and values, this study is evaluating the different companies' answers on self-reporting questions about their main determinants. Thus, it is possible to examine a larger sample that includes a wider range of industries, where the aim is to generalize. Additionally, this study aims to examine two different possible models of explanation. In order to achieve this, the explanations in this study are composed of both institutional factors and basic economic factors. Institutional factors explain change as firms striving to legitimize their behavior in terms of law and social expectations (Kudlak, 2008), while the Basic economic factors describe it as market driven and thereby incorporate financial performance and the competition companies face, as well as the health of the economy. This paper attempts to explain why companies commit to sustainable development by determining ***whether institutional factors or basic economic factors are the main determinants for the companies' level of sustainability work.***

Data was collected through a web survey compiled for this specific study where the respondents were 215 large Swedish companies representing a wide range of industries. The companies answered self-reporting questions about their work with sustainability today and how it is organized, their driving forces and their future goals. This is a totally novel data set, which contributes with new insights about the relationship between institutional and basic economic factors and the corporate sustainability level.

An OLS analysis is used to estimate the model. The paper's main findings show that among the basic economic factors, the turnover within a company has the strongest positive relationship with the company's level of corporate sustainability, while the normative variable has the strongest positive relationship among the institutional variables. The norm variable has an even stronger positive relationship with the corporate sustainability level than the turnover. Additionally, the strong positive relationship between the norm variable and the level of corporate sustainability seems to persist, independent of the company's turnover, which indicates that the institutional factors in this study are more important than the basic economic factors.

The remaining part of the paper proceeds as follows: It begins by a theory part where the terms *Sustainable Development* and *Corporate Sustainability* are defined, followed by a summary of previous research as well as explanations and a discussion about the *Institutional theory* which is the theory justifying the institutional variables included in the model. It will then go on to the data and analysis part where a description of the sample, the model and the variables included are found. The last part, before the conclusion, presents the empirical results and a discussion on the parameter estimates, followed by a robustness analysis and a deeper discussion about the findings.

2. Literature and Theoretical Framework

2.1 Sustainable Development and Corporate Sustainability

In order to understand *Sustainable Development* and *Corporate Sustainability*, the following section provides a definition of the terms.

Due to the complexity of these terms, the discussion about sustainability and sustainable development is vague and broad. *Corporate Social Responsibility (CSR)* is often used in these contexts, but there is no precise definition of the term. Some studies suggest CSR to be the social dimension of sustainable development as defined by Bruntland (World Commission on Environment and Development, 1987), others suggest the term as a synonym to sustainable development, while a few imply that CSR represents sustainable development on a corporate level (Ebner and Baumgartner, 2006). Because of this ambiguity in defining CSR, I will use *Corporate Sustainability* in its place.

In this study *Sustainable Development* is defined in line with what is probably the most common definition, adopted from the Bruntland Commission in the report "Our Common Future" 1987: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p.8). It consists of three pillars (economic, social, and environmental) where the purpose is to achieve economic development, social development and environmental performance.

Corporate Sustainability can be explained based upon this definition. The Swedish government states that corporate sustainability originates from the premise that enterprises shall pursue a business which favors a sustainable development, through an economic, social and environmental perspective. Corporate sustainability implies, according to the Swedish government, that companies strive to achieve a long-run sustainable business model, which means, among other things, an integration of sustainability into their business strategy and the governance of the company (Utrikesdepartementet, 2013). In this study corporate sustainability represents the three pillars, underpinning sustainable development, on a corporate level.

2.2 Earlier Literature

There has been extensive research concerning the impact of corporate sustainability on corporate financial performance (Chang and Kuo, 2008; Martínez-Ferrero and Valeriano, 2015; Lourenço et al.,2012). The findings all point to a positive relationship between corporate sustainability and financial performance, which also correspond with Álvaro's (2016) statement: "sustainability in business is an essential component which allows international organizations and business alike to succeed". Chang and Kuo (2008) underline the economic aspect as a key determinant for businesses when shifting towards corporate sustainability. However, there are several studies claiming that economic factors, such as financial performance, are not the sole answer to why companies commit to

a sustainable strategy or have a higher level of corporate sustainability (Bansal, 2005; Campbell, 2007; Kudlak, 2008; Brown and Knudsen, 2015)

Earlier research takes different approaches to answer the question on why companies commit to sustainable development. One theory, commonly used in these contexts, is *Institutional theory.* Campbell (2007) claims that an institutional framework is a plausible analyst tool for comparing the variation in corporate social responsible behavior across different institutional environments and countries. In his theoretical paper, Campbell discusses the determinants for corporations to behave in a socially responsible way by asking the question *under what conditions* a firm is more likely to do this. Further, Campbell argues that economic conditions do matter, specifically, a weak corporate financial performance and a relatively unhealthy economy will affect the corporate social responsibility in a negative way. However, the main argument is that institutional conditions, for example, public and private regulations, institutionalized norms and independent organizations that monitor corporate behavior, are the major determinants of the variation in corporate social responsible behavior.

Likewise, Kudlak (2008) holds the view that institutional theory is an effective tool in explaining the mechanisms and causes for corporate sustainability, although his study focuses on one branch of the theory called *New Institutional Economics (NIE).* Change in corporate sustainability behavior is explained as a consequence of the last decades' growing knowledge about the relationship between the socio-economic system and the natural system, resulting in a change in values and opinions of the society. These new values have led to institutional change with new formal and informal rules which the organizations, specifically the enterprises, have to adopt. Striving to legitimize their behavior both in terms of the law and social expectations, the enterprises adapt to the new conditions and go through a process of homogenization. Moreover, Kudlak emphasizes the necessity of more empirical studies on a greater number of enterprises to find out which of the institutional factors are most relevant. This study attempts to do this, and additionally to examine the basic economic factors as a supplementary model of explanation.

Brown and Knudsen (2015) have made empirical research built on the propositions Campbell (2007) suggests. By conducting cross-country analysis Brown and Knudsen made case studies of two large British companies and two large Danish companies. Their findings show that market factors, rather than domestic institutional structures, determine the content of the corporate CSR programs. This is interesting when examining an empirical research from 2005, made by Bansal, which shows that both institutional and resource-based factors affect corporate sustainable development. However, Bansal (2005) adds a time-related effect in his study, which shows that the institutional pressures are more important in *an early stage* while resource-based factors persist over time. In the study Bansal used data from 1986 to 1995 on Canadian firms in the oil and gas, mining, and forestry industries. Looking only at these three industries in the primary goods-producing sector makes it hard to generalize the findings because this sector has slightly different characteristics than for example the manufacturing or services sectors. Still, it is interesting that the importance of institutional pressure

seems to decline over time. Bansal (2005) states that "As sustainable development becomes increasingly institutionalized, the resource-based opportunities become more transparent" (p.214). In line with what the institutional theory states about isomorphism (which is explained in section 2.3.2), corporations may operate under a mimetic pressure which make the institutional factors less visible since they are pushed into the background as time passes. This would help explain the more recent study made by Brown and Knudsen (2015), which finds that the market factors determine the content of CSR to a larger extent. The main determinants for corporate sustainability may change over time.

2.3 Institutional Factors

Institutional theory is used for explaining the motives for corporate sustainability, as well as for justifying and backing up the explanatory variables in the analysis. Bansal (2005) makes it clear why this theory is relevant while examining corporate sustainable development:

> (1) individual value and belief systems judge a firm's commitment to sustainable development, affecting perceptions of the firm's acceptability and legitimacy (Bansal and Roth 2000 see Bansal 2005, p.202); (2) actors with differences of opinion on issues of corporate sustainable development will dialogue and debate to establish norms and common beliefs (Hoffman 1999; Wade-Benzoni et al., 2002 see Bansal 2005, p.202); and (3) elements of sustainable development are becoming institutionalized through regulations and international agreements" (Frank, Hironaka, and Schofer 2000 see Bansal 2005, p.202).

Institutional theory is an aggregated term for different theories, in a wide range of academic fields, with a similar basic idea. The idea is that human actions depend on, and are constrained by, social structures within the context they are operating. Campbell (2004) points out important similarities and disparities between the three major versions: rational choice institutionalism, organizational institutionalism and historical institutionalism. In this study I will mainly discuss *the rational choice institutionalism*, also known as the New Institutional Economics (NIE), which finds its theoretical roots in the field of Neoclassical economics.

2.3.1 New Institutional Economics

Recognizing the limitations in the neoclassical theory, researchers established a new way of explaining economic development in the beginning of the 1970s, which is known as *New Institutional Economics (NIE)* (Campbell, 2004). Its proponents claim that good institutions are the key to an efficient market, seeing that Smith's "invisible hand" is in need of support (Ankarloo, 2002). Neoclassical theory is built on two main assumptions. Firstly, that people, when making economic decisions, will act rationally, and secondly, that the most efficient way to allocate resources is through competition. By abandoning the instrumental rationality argument and retaining the assumption of

resource scarcity and competition, the NIE modifies and develops the neoclassical theory (North, 1993). North (1994), an early proponent of NIE describes institutions as:

> the humanly devised constraints that structure human interaction. They are made up of formal constraints (e.g., rules, laws, constitutions), informal constraints (e.g., norms of behavior, conventions, self-imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies." (p.360)

A central concept in NIE is the transaction cost. Coase introduced this concept in his article "The Nature of the Firm" (1937) and defines it as the "cost of using the price-mechanism" (i.e. the free market). Williamson (1985) divides the transaction cost into two categories: *ex ante* and *ex post*, where the former includes the costs before the contract is signed (e.g. negotiation and search costs) and the latter includes the costs which arise after the contract is signed (e.g. controlling and monitoring that the contract is satisfied). Institutions are the product of transaction cost, which arise in order to reduce this cost. The neoclassical theory about a free market is only efficient when the cost of transacting is equal to zero and in a world of complete and perfect information. However, in reality that is not the case. Transaction cost arises as a result of incomplete, or asymmetrical information, which is costly to firms and other economic actors (North, 1994).

In new institutional economics there is an important distinction between institutions and organizations. North (1994) makes this distinction clear: "It is the interaction between institutions and organizations that shapes the institutional evolution of an economy. If institutions are the rules of the game, organizations and their entrepreneurs are the players." (p.361). This distinction is highly important when justifying why NIE is relevant in this study. The organizations include, among other things, political parties, trade unions, churches, clubs, schools and *firms*. The organizations operate in an environment reflected by the institutions, both the formal and the informal ones, and the way the organizations act will depend on this environment, thus the institutions (North, 1994). The formal institutions are characterized by their source in generally accepted official organizations and include rules, laws, constitutions and regulations. The informal institutions have the contrary characteristics, as the rules are created outside of official organizations and are typically unwritten. These rules might incorporate norms of behavior, traditions, values and conventions (North, 1994).

2.3.2 Institutional Change

The institutional evolution, or the institutional change of the economy is an important concept in institutional theory, and the question about why institutions change generates different suggestions (Campbell, 2004). There are some researchers who might argue that the change follows an evolutionary pattern, with small changes during a long period of time, while others prefer to think of it as *punctuated equilibrium* or *punctuated evolution*, which means patterns that are more revolutionary

with sudden events or crises that will change the institutions (Campbell, 2004). New economic institutionalism explains institutional change as a feedback loop between institutions and organizations under conditions of resource scarcity and competition (North, 1994). The changes in institutions occur because the organizations realize they can perform better in a different environment. According to North (1994) the sources of this realization can be of different kinds, which Kudlak (2008) divides into exogenous and endogenous sources:

> (1) exogenous to a socio-economic system - e.g. a change in technology, prices, or quality of a competitive product in another economy, which in turn alters the perceptions of entrepreneurs in the first economy about profitable opportunities; and (2) endogenous, because the fundamental source of change is learning by entrepreneurs within organizations (p. 215).

This second source is explained by North (1994) and states that the rate of learning within the organizations reflect the intensity of competition among the organizations in a specific industry. This competition forces the organizations to engage in learning to be able to persist. North (1994) claims that the greater degree of monopoly power an organization has, the lower the incentives are to learn.

As reported by Campbell (2004), institutional change in new institutional economics might be a mix of the evolutionary pattern and the punctuated equilibrium. The endogenous sources develop during long period of time, while the exogenous sources can occur more disruptively.

A complementary way to explain institutional change might be captured by the concept of *institutional isomorphism*. DiMaggio and Powell (1983) discuss the fact that organizational fields, in their initial step, show a diffusion in approach and form, and along with the field becoming more established the organizations start to resemble each other. There is a process of homogenization. When institutions change, as a result of new conditions, organizations start to adjust in order to legitimize their activity. Since the organizations in a specific field meet the same institutional pressure and operate in the same environment there will be a growing similarity between these organizations (Kudlak, 2008). DiMaggio and Powell (1983) identify three types of institutional pressures that result in isomorphism:

> (i) coercive pressure
> (ii) normative pressure
> (iii) mimetic pressure

Below, I will explain each of these institutional pressures, clarifying their relation to corporate sustainability, as well as stating my hypothesis.

(i) Coercive Mechanisms

Coercive pressure stems from the political system and the formal institutions, e.g. the state. In this paper, when studying corporations and sustainable development, the coercive pressure could be instruments enforced by the state to protect the environment, for example regulations and legislation. Non-compliance might result in sanctions from the state, loss in earnings and a damaged reputation (Kudlak, 2008; Bansal, 2005). Therefore, this paper argues that coercive mechanisms will affect the level of corporate sustainability positively.

(ii) Normative Mechanisms

The normative pressure can be defined as the unwritten social rules that make the organizations act in accordance with social expectations and the standards within the industry where they operate (Kudlak, 2008). This occurs both on an industry level with differences in social expectations between industries, as well as on a national level. Campbell (2007) suggests that normative mechanisms develop through important business publications, business school curricula and other educational settings where corporate managers participate. As these normative considerations for corporate sustainability are being institutionalized, companies increase their work with sustainability. Media is another key player in the building and shaping of new norms. Besides the normative pressure, media can apply coercive pressure to companies to commit to corporate sustainability by the threat of negative media publicity (Bansal, 2005). The hypothesis is that normative mechanisms will affect the level of corporate sustainability positively.

(iii) Mimetic Mechanisms

The mimetic pressure implies that the organizations start to copy each other when they operate in the same institutional environment. The mimetic pressure, in contrast to normative pressure, leads to actions where the organizations do practices without considering the value of it. Instead of striving to legitimize their activity, there is a fear of losing competitive advantage or losing support from stakeholders (Kudlak, 2008). This behavior can be explained by asymmetrical information, and the fact that imitation might reduce the level of uncertainty (DiMaggio and Powell, 1983). Sustainable development, hence corporate sustainability, is a complex question and therefore incorporates significant uncertainty, which makes the mimicry a considerable factor (Bansal, 2005). The hypothesis is that mimetic mechanisms will affect the level of corporate sustainability positively.

2.4 Basic Economic Factors

As mentioned in earlier section (2.2), there are studies arguing that the economic factors do matter when companies move towards a higher level of corporate sustainability. Still, these studies show an ambiguity in the division of institutional and economic factors. In new institutional economics, *competition* is a central concept (North, 1993), while studies focusing on other branches of

institutional theory classify the strive of competitive advantage as an economic factor (Campbell, 2007; Brown and Knudsen, 2015). This study argues that the *competition a company faces* (i.e. the market share) is included in the economic factors, while the mimetic behavior, i.e. when a company acts in certain ways due to the *fear of losing competitive advantage*, is an institutional factor.

Further, the financial performance is of importance for companies' engagement in corporate sustainability. The argument is that companies with a weaker profitability have less resources to spend on corporate sustainability activities than a company that is more profitable (Bansal, 2005). A more profitable company can make investments in resources and capabilities that do not have an instant pay-off. This is often referred to as *slack resource theory* or *organizational slack* (Campbell, 2007; Bansal, 2005). In a similar way, the economic health matters for the corporate sustainability behavior. A weak economic climate will probably affect the company's work with sustainability negatively (Campbell, 2007).

Another factor when discussing corporate sustainability is the new business opportunities that turn up. The UN Sustainable Development Goals (SDGs), collectively, are often seen as a new business strategy and a development pathway. For example, energy efficiency, renewable energy and cleaner production are all components that may contribute to a higher level of corporate sustainability as well as a stronger financial performance (Mostyn and Brennan, 2017).

3. Data and Analysis

3.1 Sample

In the beginning of October 2018 a web survey was sent out to the largest 1169 companies in Sweden. The sample was based on companies covered by the law of reporting on sustainability (SFS, 2016:947, Ch. 6 §12), in order to examine companies operating in similar institutional environments as well as companies actively working with sustainability at some level. About 1600 companies are affected by the law and therefore fulfill two out of three criteria: more than 250 employees, over 175 million SEK in total assets and a turnover of more than 350 million SEK (Svenskt Näringsliv, 2016). The sample only includes 1469 of these companies, choosing companies that fulfill all three of these criteria, found in the database Orbis. This implies that some of the companies covered by the law might not be included. However, the risk of sending out the survey to a company that are not covered by the law is less likely, which is more important. The respondents were primarily workers from the Sustainability department (53%) or the CEOs (18%) The survey brought in information about how the companies perceive their work with sustainability today, the driving forces for their work, their main challenges and their future goals.

Out of the 1469 companies, the survey was sent out to 1169 of those. This was due to complications when finding the email addresses. Additionally, after sending out the survey, a problem occurred with non-responses because of bouncing emails. In the end, there were 248 respondents out of the 1169 surveyed companies (21.2%). Further, 33 of the answers had to be excluded from the analysis because some respondents did not answer all questions. This results in a respondent rate of 18.4% (215 responses). In the analysis the number of observations will vary depending on which variables are included. This is due to questions with "no opinion" answers.

Since there were non-responses there is a possibility of sample selection bias. It is feasible to expect that the companies more engaged in sustainability issues would be more likely to participate in a study concerning these issues. That would lead to estimates on a subgroup of the population, where only companies having a certain high level of corporate sustainability participate. Further, it may undermine the external validity of the study since companies that are more engaged in sustainability issues could have different determinants for their sustainability work than those companies that are less engaged. However, to ensure that the sample is representative for the population, some of the firm characteristics (sector and number of employees) were compared with the population of 1469 companies. *Services* is the largest sector among the 1469 companies in the population (61.3%). Likewise, the Services sector is the largest one in the sample (41.4%). Further, the *Manufacturing, Retail* and *Wholesale* sectors follow the same size order in both the population and the sample, although the percent distribution differs. This may be due to the option *Other* that is overrepresented in the sample. That in turn, may be due to an unclear definition of the sector *Services*. In the division

into sectors, made by the database Orbis, Services include companies in a wide range of industries: banking, finance, investment companies, restaurants, healthcare etc. When the respondents had to choose sector by themselves, there might be some confusion regarding this, and therefore there is an overrepresentation of the option *Other*. When looking at the number of employees, there were 67% of the companies in the population that had less than 1000 employees, and 32.9% that had more than 1000 employees. In the sample, the companies with employees exceeding 1000 were overrepresented with 50.2%. Worth noticing is that the numbers for the population are from 2017 and the sample numbers are collected through the web survey in October 2018. Therefore, there may be a difference.

3.2 Dependent Variables

The dependent variable in this study shows the level of corporate sustainability. This level is partly captured by a "Sustainability ladder" (see Appendix A), where the respondent answers to what extent the specific company has integrated sustainability into their business strategy. The original sustainability ladder is created by Tillväxtverket (Tillväxtverket, 2016), although the ladder used in this study is a revised version of it. The sustainability ladder is a suitable measure for a company's level of corporate sustainability since it captures the "sustainability maturity" within a company (Tillväxtverket, 2016).

The other dependent variable level is defined from the results of self-reporting on a question battery from the survey, which include 18 questions on the three pillars (economic, environmental, and social) underpinning sustainable development (see Appendix B). These questions have also been retrieved from the report made by Tillväxtverket, although a few extra questions were added. For example, the battery includes questions about suppliers, if the company is reporting on sustainability and if the company has a sustainability department. The respondents have answered on a scale from 1 to 5 where 1 is "disagree entirely" and 5 is "agree entirely". After analyzing the questions answered, one of them was excluded from the dependent variable due to 60 answers with "no opinion". Each of the seventeen questions that are included in the dependent variable had responses with "no opinion". Instead of creating missing values on these observations, I assume that "no opinion" implies that the respondent has no strong opinion about the statement or does not know surely. If the respondent does not know surely, I assume it is because the company does not have a clear or obvious position in the question asked. Therefore, I assume that "no opinion" indicates the three on the five-grade scale. This is a quite strong assumption which was made in this study due to time and resource scarcity. However, to check the robustness I will run a sensitivity regression with the original question battery, where the "no opinion" answers are counted as missing values. The 17 questions included are then summarized and divided by 17 in order to create an index which can take values between 1 and 5.

In order to investigate if there is a tendency for the respondents to overvalue the sustainability performance of one's company, I randomly divided the population into two groups and sent out two surveys with different designs. The one with the sustainability ladder first and the question battery last,

the other with the question battery first and the ladder last. The hypothesis was that putting the more subjective dependent variable (the sustainability ladder) first would make the respondents overvalue the sustainability performance of the company and therefore choose a higher step on the ladder. By conducting a t-test on the sustainability ladder, no significant difference between the versions was found. The two-tailed p-value was 0.2539 and it is not possible to reject the null hypothesis that the difference between the means is equal to zero. From this, it is not possible to state that the order matters, thus no conclusions can be drawn about the tendency of overvaluing.

3.3 Independent Variables

The independent variables are, based on the theoretical framework in section 2, divided into two main categories: (i) basic economic variables and (ii) institutional variables. Further, there are some firm specific variables. All variables included will be described in the sections below.

3.3.1 Basic Economic Variables

The basic economic variables include the companies' turnover and a proxy of the competition it faces: market share, as well as the health of the economy and how new business opportunities affect their work with sustainability.

In this study, the measure for financial performance is equal to the company's turnover. Due to a high degree of missing values in the turnover variable this study makes some assumptions. First, there is a positive relationship between firm size (measured as number of employees) and turnover. Therefore, I created three employees groups (or quantiles) where each of the groups had a different turnover mean. Next, I separated the turnover responses with no answer into these three groups and replaced the missing value with the mean for the specific quantile. To add some flexibility into the relationship, the natural log of turnover was calculated which creates the final turnover variable.

Further, the proxy of the competition a company faces is operationalized as the company's market share. Since the competition also may depend on other things, the price elasticity of demand, for example, the market share is only a proxy for the competition a company faces. It was calculated as the company's turnover divided by the total turnover of the specific sector. These numbers and the division into sectors were found at the database Orbis. The partition into sectors creates an uncertainty. The companies in the sample have determined their sector by themselves, since the survey was strictly anonymous. Therefore, it is not certain that it corresponds with the partition made by Orbis. However, there were 14 respondents that answered "other" as their sector and must therefore be excluded from the analysis.

Both the health of the economy (which in this study is divided into two stages: recession and boom) and new business opportunities incorporate self-reporting questions where the respondent answered to what extent these factors affect the scope of the company's work with sustainability. The answers can take a value between 1 to 7 where 1 is "affects negatively to a high degree", 4 is "not

affecting at all", and 7 is "affects positively to a high degree". Because of the potential problem that the intermediate alternatives (i.e., outcomes 2-3 and 4-5) could mean different things for different respondents the seven-grade scale was recoded to a five-grade scale. In this alternative specification the independent variables have five outcomes: affect negatively to a high degree, affect negatively, do not affect, affect positively, and affect positively to a high degree.

3.3.2 Institutional Variables

The institutional variables are divided into three groups: (i) coercive variables, (ii) normative variables, and (iii) mimetic variables. Just as for the basic economic variables, each of these institutional variables include self-reporting questions where the respondent answers to what extent the different factors affect the company's degree of work with sustainability. The full specific questions can be found in Appendix C. The three institutional variables incorporate three components that were summed and indexed and therefore take on values between 1 and 5.

The *coercive* variable unites questions about legislation, regulations and increased pressure on transparence. These three components capture the instruments enforced by the state, for example the legislation about reporting sustainability, and the pressure on increased transparence which can stem from the state as well as other stakeholders.

The *normative* variable includes questions about increased awareness in society on sustainable development, increased global focus on sustainability and the ambition to be an attractive workplace. The increased awareness in society and the increased global focus are components that capture, among other things, the role of media. The ambition to be an attractive workplace forms part of the norm variable since it is expected to comply with the norms of today's well-educated workforce. As mentioned in the theory section earlier, norms may develop through important business journals and business curricula, and if the ambition to be an attractive workplace is a strong driving force for the extent of a company's work with sustainability it may capture the importance of the norms built in these contexts.

The *mimetic* variable incorporates requirements from stakeholders (i.e. customers and investors) and an increased trend towards sustainability among corporations in the same industry. These components measure the importance of competitive advantage as well as the fear of losing support from stakeholders. If the requirements from customers and investors are significant for the extent of the company's work with sustainability it may be reasonable to assume that the mimetic mechanisms have a positive relationship with the level of corporate sustainability.

3.3.3 Firm Specific Variables

The firm specific variables include factors that affect both the basic economic and the institutional processes. Firm size is of importance since the larger firms tend to be more visible and therefore attract media attention and stakeholder scrutiny to a larger extent than small firms (Bansal, 2005).

Firm size is measured as number of employees. In this model firm size is a dummy variable equal to 1 if number of employees exceed 1000 and 0 otherwise. This division was made because it creates two groups with equal number of companies, which makes it easy to compare the possible size effects.

Form of ownership is important since there are different requirements on public and private companies in Sweden. For example, there has been legislation on reporting sustainability for public companies since 2008, while the corresponding law for private companies entered into force in the end of 2016 (Näringsdepartementet 2007;SFS, 2016:947, Ch. 6 §12). Form of ownership is a factor variable and can take a value between 1 and 4, where 1 is private, 2 is public, 3 is both private and public, 4 is other (i.e. municipal). In the sample, there are 176 private companies, 19 public companies, 7 public and private companies and 13 companies that answered "other". Since in total there are 47 companies in Sweden that are wholly or partly owned by the government (Regeringen, 2018) the sample can be seen as fairly representative.

Sector is the third firm specific variable and is of importance to control for since different sectors have different prerequisites when it comes to corporate sustainability. For example, the manufacturing sector may have different challenges than the services sector. Sector is a factor variable, which can take a value between 0 and 4, where 0 is other, 1 is Manufacturing, 2 is Retail, 3 is Wholesale and 4 is Services.

3.4 Empirical Methods

3.4.1 Econometric Model

With the model I will test whether institutional factors or basic economic factors have the strongest relationship with the outcome variable y, which indicates the corporate sustainability level. More specific, I will test how the company's self-perceived driving forces correlate with the company's level of sustainability. For example, if a company perceives that the legislation is a strong driving force, how does that correlate with the points scored on the question battery and the step on the sustainability ladder?

An *Ordinary Least Square (OLS)* analysis is used to obtain estimates of the parameters, in particular the corporate sustainability level (measured in two different ways: the sustainability ladder and the question battery) is regressed on the institutional variables, the basic economic variables and the firm specific variables. The OLS will estimate following relationship:

$$y_i = \alpha + \beta_j BE_i + \gamma_j I_i + \delta_j FS_i + e_{ji}$$

where y is the level of corporate sustainability, the vector BE_i contains the basic economic variables, the vector I_i contains the institutional variables and the vector FS_i are the firm specific

variables. Finally, an error term is added (e_{ji}). The error term captures the unobserved variation in the model. Table 1 summarizes the variables used in the empirical estimation and presents some descriptive statistics.

The method of OLS is easy to estimate and interpret and is therefore a commonly used method when estimating regression coefficients (Gujarati, 2015). In this case, when using two different outcome variables, it is convenient to estimate the parameters with similar methods. When using the indexed question battery as the dependent variable, the y variable can take a continuous value between 1 and 5. The sustainability ladder, on the other hand, has an ordinal scale between 1 and 7. Step 3 is a higher level of corporate sustainability than step 2, and step 2 is a higher level than step 1. However, the differences between these steps may differ. Within applied econometrics there are discussions whether ordinary linear model techniques or more special statistical methods (e.g. logit and probit analysis) should be used when estimating variables measured on an ordinal scale (Winship & D. Mare, 1984; Ferrer-i-Carbonell & Frijters, 2004). There are some studies which argue that assuming cardinality or ordinality of the variables is relatively unimportant to results (Ferrer-i-Carbonell & Frijters, 2004). I will therefore use OLS analysis as my baseline method for both of the dependent variables. Still, to check the robustness of the results, I will compare them with an *Ordered Probit Model.* The difference between an ordinary linear model and an ordered probit model is that the ordered probit model preserves the ordering of the different response options, although the model does not assume any interval distances between the options. To estimate this model, it is not applicable to use OLS method, instead *maximum likelihood* is used (Gujarati, 2015).

When using the OLS analysis, I will do a stepwise checking where I start to analyze each of the independent variables (basic economic variables, institutional variables and firm specific variables) and finish with a full specific model.

Table 1: Variables Included in the Econometric Analysis

Variables	Coding	Observations	Mean	Std. Dev	Min	Max
Dependent Variables						
Sustainability ladder	1 for minimum up to 7 for maximum	213	4.67	1.36	2	7
Question battery	1 for disagree entirely up to 5 for agree entirely	215	3.85	0.62	2.6	5
Independent variables						
Basic Economic Variables						
Market Share	%	201	0.305	0.731	0.00	6.88
Turnover	logged value of thousand SEK	215	15.07	1.47	9.52	19.57

Boom	1 for negative impact up to 5 for positive impact	190	3.61	0.746	1	5
Recession	1 for negative impact up to 5 for positive impact	188	2.79	0.857	1	5
Business Opportunities	1 for negative impact up to 5 for positive impact	206	4.34	0.685	1	5
Institutional Variables						
Coercive	1 for negative impact up to 5 for positive impact	200	4.12	0.584	2.33	5
Normative	1 for negative impact up to 5 for positive impact	206	4.25	0.451	2.67	5
Mimetic	1 for negative impact up to 5 for positive impact	175	4.19	0.537	2.33	5
Firm Specific Variables						
Employees	1 if over 1000 employees, 0 if less than 1000 employees	214	0.505	0.501	0	1
Ownership dummies						
Private	1 if Private, 0 if other forms of ownership	215	0.819	0.386	0	1
Public	1 if Public, 0 if other forms of ownership	215	0.088	0.284	0	1
Both Private/Public	1 if Both, 0 if other forms of ownership	215	0.033	0.178	0	1
Other	1 if Other, 0 if other forms of ownership	215	0.06	0.239	0	1
Sector dummies						
Manufacturing	1 if Manufacturing, 0 if other sectors	215	0.353	0.479	0	1
Retail	1 if Retail, 0 if other sectors	215	0.13	0.337	0	1
Wholesale	1 if Wholesale, 0 if other sectors	215	0.037	0.19	0	1
Services	1 if Services, 0 if other sectors	215	0.414	0.493	0	1
Other	1 if Other, 0 if other sectors	215	0.065	0.247	0	1

4. Empirical Results and Discussion

I will start by conducting some descriptive analysis on the main regressors and the two different outcome variables. Thenceforward, an OLS analysis is used to predict the relationship between each of the independent variables and the dependent variables, followed by a full specific model with all variables included. Next, I will check the robustness of the models before ending with a discussion of the main findings.

4.1 Descriptive Analysis

In reporting about the integration of sustainability into their business, the respondent companies could choose between seven steps on a sustainability ladder, ranging from "minimal work with sustainability" (alternative 1) up to "sustainability as a business objective" (alternative 7). The percentage distributions of the reported answers are presented in Table 2. The companies in this study have a high level of corporate sustainability. More than two thirds of the respondents report that they are doing more than having sustainability within certain areas (alternative 3). It is not clear whether this may be attributed to specific properties of this sample, or whether Swedish companies in general have a high level of corporate sustainability.

Table 2: Self-reported Step on the Sustainability Ladder (Percentage Distribution)

|	Minimal work with sustainability		Sustainability within certain areas		Sustainability forms an integrated part of the operations		Sustainability as a business objective	
	1	2	3	4	5	6	7	Total
Sustainability ladder	0	3.76	18.78	24.88	22.54	19.72	10.33	100

The strongest relationship among the economic factors is found between the turnover and the outcome variable, while the normative variable has the strongest relationship among the institutional variables. Therefore, these variables are the main regressors of interest. Figure 1 and Figure 2 show the raw relationships between the main regressors and the sustainability ladder. Turnover is divided into six quantiles and the mean on the sustainability ladder from each quantile is shown in the graph. A positive relationship can be determined. The norm variable is divided into four quantiles, since there is no such a large variance in that variable as compared to the turnover variable. An even stronger positive relationship can be determined while studying Figure 2.

Likewise, there is a positive relationship between the main regressors and points scored on the question battery. These relationships are shown in Figure 3 and Figure 4.
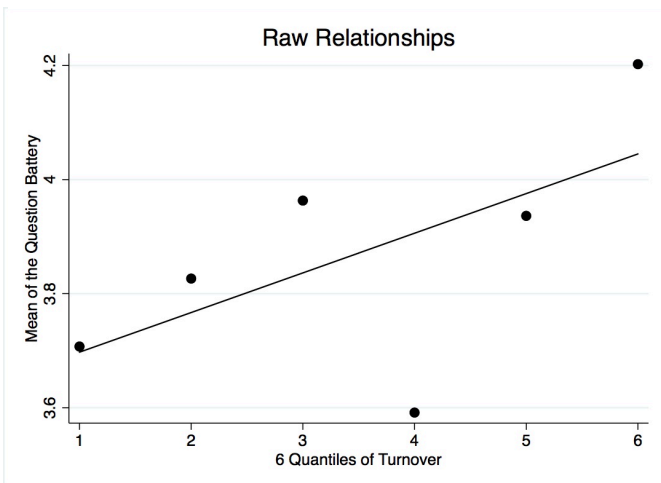
Figure 1: The Raw Relationship between Turnover and the Sustainability Ladder
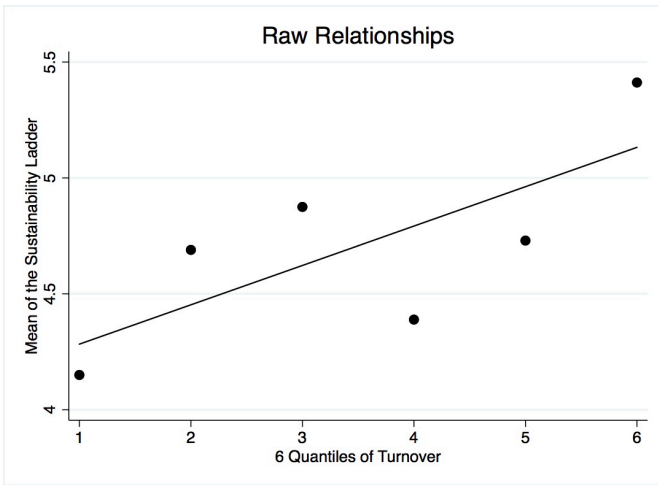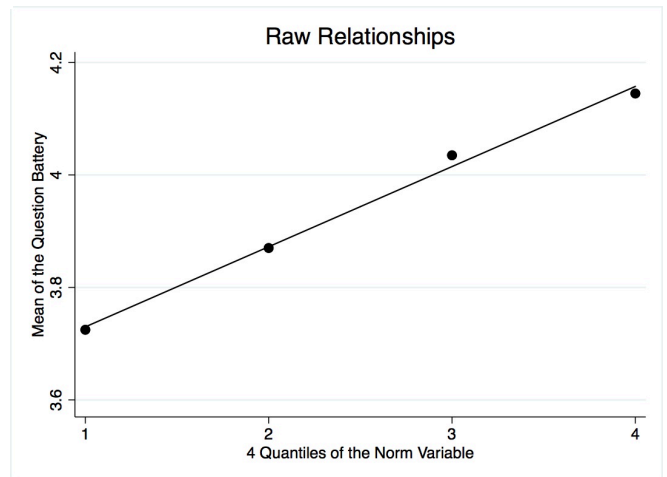

Figure 2: The Raw Relationship between the Norm Variable and the Sustainability Ladder
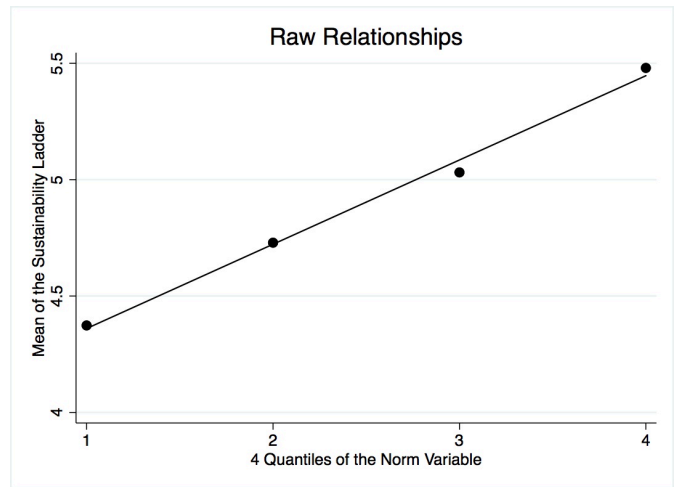
Figure 3: The Raw Relationship between the Turnover and the Question Battery

Figure 4: The Raw Relationship between the Norm Variable and the Question Battery

4.2 Baseline Results: OLS Regressions

The parameter estimates of the econometric models from the OLS regression are presented in Table 3a and 3b, where 3a shows the results from using the sustainability ladder as the dependent variable and 3b shows the results from the regression on the question battery. A stepwise checking is made to investigate the relationship between the dependent variables and the independent variables. To allow for heteroscedasticity all the OLS regressions are run with robust standard errors. Further, when running the regression with market share included there was a loss in observations which made other variables insignificant. When excluding the market share there were no big differences in

coefficients, but the variables were significant. Because of the uncertainty in partition, as mentioned earlier, as well as the loss of observations, market share will be excluded from the analysis.

In Table 3a the sustainability ladder is used as the dependent variable. The first model specially shows the relationship between *the basic economic variables* and the sustainability ladder. Among these variables the *natural log of turnover* is statistically significant at the one percent level. This highlights that an increase in turnover is associated with a higher step on the sustainability ladder. This is a rather expected result that goes in line with earlier research as well as the hypothesis. More surprisingly, *recession* has a positive significant relationship with the sustainability ladder. When a company goes one step in the positive direction on the five-grade scale showing how recession affect the extent of the company's work with sustainability, it is associated with a positive direction on the sustainability ladder. However, when interpreting this result, it is particularly important to be aware of the issue with reverse causality. There is a possibility that a company with an already high level of corporate sustainability are more positive to the state of recession and how it affects their work with sustainability, than a company with an initial low level of corporate sustainability. Therefore, it is only valid to state that there is a positive *relationship* between these two variables.

The second model shows the relationship between *the institutional variables* and the sustainability ladder. The coefficient for the *norm* variable shows the most interesting result. The sign of the coefficient is positive, as expected, and statistically significant at the one percent level. An increase of the normative variable is associated with an increase at the sustainability ladder. The coefficient takes on the value 1.150 which can be interpreted as "for every step a company takes in the positive direction on the five-grade scale (i.e. the more they perceive norms, in form of increased awareness in society, increased globally focus and ambition to be an attractive workplace, as a determinant for the extent of their work with sustainability) there is an increase of 1.15 steps on the sustainability ladder". This supports the hypothesis that the normative mechanisms have a positive relationship with the level of corporate sustainability.

Further, the *coercive* variable (i.e. how the companies perceive legislation, regulations and increased requirements on transparence as determinants for the extent of their work with sustainability) is insignificant. It is not possible to draw any conclusion from the coefficient, although the result implies that the coercive mechanisms do not seem to matter for the level a company has on the sustainability ladder. This is interesting since all surveyed companies are covered by the new law on sustainability reporting which entered into force in the beginning of 2017 (SFS, 2016:947, Ch. 6 §12). In the robustness analysis section, I will investigate how this relationship may differ depending on if it is a private or a public company. Since the public companies have been forced to report on sustainability since 2008, my hypothesis is that these companies do not perceive the coercive mechanisms as a determinant as strongly as the private companies do.

The third model shows how the firm specific variables correlate with the sustainability ladder. *Larger companies* (i.e. companies with employees exceeding one thousand) tend to be on a higher

level on the sustainability ladder than the smaller ones. *Ownership*, when having private companies as the benchmark, has no variable that is significant, and I cannot draw any conclusions from the outcome, although the positive sign on the public coefficient implies that public companies in general are on a higher level on the sustainability ladder. Among the *sector dummies* there are only *other* that is significant. Compared to the manufacturing sector, the companies that answered other are generally on a higher step on the ladder.

The fourth model is the *full specific model* that includes all the independent variables. When including all the variables, the *natural log of turnover* is no longer significant. However, the relationship between *recession* and the sustainability ladder is marginally stronger. The *normative* variable is still statistically significant at the one percent level, although the coefficient is slightly smaller. Noticeably, the factor variable *public* is now positively associated with the sustainability ladder. The interpretation is that a public company, in general, is 0.860 steps higher on the sustainability ladder than a private company. There is a loss in observations when including all variables which may be a possible explanation of why the log of turnover no longer is significant. The adjusted R-squared is 0.2949. Roughly 30% of the variation in the sustainability ladder is explained by this model.

Table 3a: Parameter Estimates for the OLS Model

Dependent Variable: Sustainability Ladder	(1)	(2)	(3)	(4)
Variables				
Log Turnover	0.219***			0.104
	(0.062)			(0.102)
Boom	0.096			-0.063
	(0.140)			(0.160)
Recession	0.209*			0.227*
	(0.119)			(0.134)
Business Opportunities	0.227			-0.013
	(0.141)			(0.197)
Coercive		0.099		0.044
		(0.201)		(0.189)
Normative		1.150***		0.948***
		(0.224)		(0.265)
Mimetic		-0.200		-0.089
		(0.199)		(0.224)
Other			0.999***	0.937**
			(0.383)	(0.411)
Retail			-0.359	-0.374
			(0.256)	(0.305)
Wholesale			0.495	0.514
			(0.370)	(0.574)

	(1)	(2)	(3)	(4)
Service			0.244	0.121
			(0.238)	(0.267)
Public			0.533	0.860***
			(0.351)	(0.320)
Both Private/Public			-0.520	-1.027
			(0.711)	(0.670)
Other			-0.311	0.123
			(0.332)	(0.533)
Employees over 1000			0.356*	0.322
			(0.183)	(0.276)
Constant	-0.501	0.287	4.327***	-1.307
	(1.107)	(1.063)	(0.188)	(1.790)
Observations	178	160	212	140
R-squared	0.096	0.146	0.093	0.295

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Table 3b the indexed question battery is used as the dependent variable. The output shows similar results with the sustainability ladder as the dependent variable, although the coefficients now are smaller in general. Still, in this model the R-squared is slightly higher (0.3243) which indicates that about 32% of the variation in the question battery is explained by the model.

In the first model an increase in the *log of turnover* is positively associated with points scored on the question battery. Remarkably, with the question battery as dependent variable the independent variable *new business opportunities* is statistically significant at the five percent level and has a positive relationship with the outcome variable. *Recession* has a small coefficient and is not statistically significant in this model.

When investigating the institutional variables, the *normative* variable still has a significant positive relationship with points scored on the question battery. Additionally, the *coercive* variable is significant and positively related with points scored on the question battery. However, when including all the variables both the variables business opportunities and coercive are no longer significant. The log of turnover is still statistically significant at the five percent level. Likewise, the normative variable is significant. Furthermore, the normative variable has a stronger positive association with the outcome variable than the natural log of turnover.

Table 3b: Parameter Estimates for the OLS Model

Dependent Variable: Question Battery	(1)	(2)	(3)	(4)
Variables				
Log Turnover	0.125***			0.127***
	(0.025)			(0.045)

	(1)	(2)	(3)	(4)
Boom	0.070			0.061
	(0.056)			(0.057)
Recession	0.033			0.029
	(0.043)			(0.043)
Business Opportunities	0.151**			0.072
	(0.074)			(0.079)
Coercive		0.136*		0.124
		(0.075)		(0.081)
Normative		0.555***		0.461***
		(0.090)		(0.099)
Mimetic		-0.108		-0.080
		(0.092)		(0.104)
Other			0.296*	-0.125
			(0.164)	(0.186)
Retail			0.055	0.001
			(0.126)	(0.115)
Wholesale			0.325	0.155
			(0.212)	(0.309)
Services			0.094	-0.000
			(0.103)	(0.107)
Public			0.113	0.128
			(0.172)	(0.127)
Both Private/Public			0.082	-0.130
			(0.298)	(0.288)
Other			-0.262	0.031
			(0.185)	(0.276)
Employees over 1000			0.084	-0.106
			(0.087)	(0.120)
Constant	1.021*	1.414***	3.729***	-0.711
	(0.518)	(0.477)	(0.095)	(0.830)
Observations	179	162	214	141
R-squared	0.147	0.202	0.042	0.324

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3 Robustness Analysis

As mentioned in section 3.3.1 the sustainability ladder has an ordinal scale. The full specific model (4) is therefore estimated with an *Ordit Probit Regression* to see if there is consistency between the ordinary linear model and the ordit probit model. The model shows similar results. A table with all the parameter estimates can be found in the Appendix D. Worth noticing when using maximum likelihood method to estimate the parameters is that the interpretation is different from an OLS method since the coefficients will contain a scaling parameter which prohibits us from interpreting the coefficients in a linear way. More interesting are the signs, which have an important economic interpretation. If an estimated coefficient has a positive sign it implies that an increase in the

independent variable will increase the probability that the respondent company is on step seven on the sustainability ladder ($y = 7$) and that the probability to be on step one ($y = 1$), doing minimal work with sustainability, will decrease (Hage, 2008). To gain information about the intermediate choices ($y = 2$, 3, 4, 5 or 6) the *marginal effects* of the regressors needs to be calculated. The marginal effect shows the change in probability of each different step on the sustainability ladder if there is a change in the investigated independent variable holding all other independent variables at their means. However, the marginal effect may not be correctly estimated since this is a small sample and I will therefore only compare the signs and the significance of the coefficients. Just as in the ordinary linear model, the natural log of turnover is not significant. The norm variable has a positive sign and is statistically significant at the one percent level, which indicates that an increase in the norm variable will increase the probability that the company is on a higher step on the sustainability ladder. This is consistent with the results from the OLS regression.

Further, I made an assumption about the turnover, mentioned in section 3.3.1, because of several missing values among the observations. I assumed that the turnover correlates with the size of the firm (measured in number of employees) and therefore replaced the missing values with a turnover mean corresponding to the number of employees. To control for this assumption, this paper runs an OLS regression with the missing values included. When doing this I find similar results, although less statistically significant and with larger standard errors. The parameter estimates are found in Appendix E. Because of the similarity, I would argue that it is appropriate to make the assumption above.

Additionally, an OLS regression was run with the original amount of observations from the question battery. Just as for the turnover, I made an assumption about the "no opinion" answers in the question battery to be able to include these among the observations. In Appendix F the parameter estimates are found. There is no major difference in the outcome, although several coefficients are less significant, and the standard errors are larger. An important factor to take into account is the potential problem with assuming the no opinion answers as an intermediate answer (3). These answers could be non-random missing values, which imply that more sustainable companies may answer the survey more carefully than companies with a lower level of corporate sustainability. Therefore, there is a risk of overestimating the company's level of corporate sustainability, when assuming that no opinion is equal to "medium level of corporate sustainability" (number three on the scale).

In section 4.2, I mentioned that the coercive variable was not statistically significant, and I will therefore check the robustness of the result by comparing the coercive variable coefficient for public and private companies. A dummy is created which takes the value 1 if it is a private company and the value 0 if it is a public company or both a public and private company (i.e. partly owned by the government). The option "other" is counted as missing values. Next, two interaction terms are generated between *private company* and the *coercive* variable as well as between *public company* and the *coercive* variable. The hypothesis is that the coefficient for private companies will be positive and larger than the coefficient for public companies, since for the private companies the exposure to

coercive pressure is more recent. After running the regression with the sustainability ladder as dependent variable, the result shows as expected a higher positive coefficient for private companies. The sign for public companies is negative. However, none of the coefficients are statistically significant and it is not possible to reject the hypothesis that the difference between the coefficients is equal to zero. The F-test shows a p-value 0.786, which indicates that there is no statistical difference between the two groups. The initial hypothesis is not valid.

4.4 Discussion

The different models show that the *norm* variable among the institutional variables, and the *natural log of turnover* among the basic economic variables, have a positive statistically significant relationship with the different outcome variables. Therefore, it is of interest to examine these variables closer.

The companies that perceive increased awareness in society and an increased global focus on sustainability as well as the ambition to be an attractive workplace as determinants for the extent of their work with sustainability seem to have a strong positive relationship with the degree of corporate sustainability (high mean on the question battery and a high step on the sustainability ladder). Turnover seems to have an impact on the company's level of corporate sustainability, although the relationship is weaker. From this, it is not possible to state that an increase in the norm variable has a stronger association with an increase of the outcome variable independently of the basic economic factors, in this case the turnover. It is conceivable to assume that when a company has a certain high degree of turnover, they are more likely to perceive norms as a determinant. A higher degree of turnover is often related to larger companies which in general are more visible and therefore attract more media and stakeholder scrutiny. Thus, norms should be more important for these companies. Another argument could be that when a company has a certain high degree of turnover, there is a diminishing return. When reaching this certain point, a higher turnover does not certainly indicate a higher level of corporate sustainability. One may assume that other factors become more important after this stage. Therefore, a hypothesis is that the norm variable, in this case, becomes more important when the company has a higher degree of turnover.

To be able to make some conclusions about the relationships I will examine the norm variable interacted with turnover. A dummy variable is created for the turnover, which takes value 1 if the company has a *higher degree of turnover* (more than 2.17 billion) and 0 if it has a *lower degree of turnover* (less than 2.17 billion). Two interaction terms are generated: one for the companies with a higher degree of turnover and one for the companies with a lower degree of turnover. The regression output splits the effect into two coefficients (similar as in section 4.3 above) which makes it easier to interpret. The parameter estimates are found in Table 4a. As expected the companies with a higher degree of turnover have a stronger positive relationship between the norm variable and the sustainability ladder. Companies with a lower degree of turnover still have a positive relationship with

the sustainability ladder, although it is weaker. However, it is not possible to reject the hypothesis that the difference between the coefficients is equal to zero. The p-value is larger than 0.1, and there is no statistically significant difference between the two groups. This would imply that companies perceiving norms as a driving force for the extent of their work with sustainability, in general, are on a higher step of the sustainability ladder, independently of the turnover.

A second way to test if the size of the company affects the importance of the normative variable is to create interaction terms between the number of employees and the normative variable. If there is a statistically significant difference between the coefficients for large and small companies the argument of larger companies being more visible holds. If not, it is more valid to believe that the argument of diminishing returns is more appropriate. In Table 4a the results are found. The normative coefficients for the different groups are almost identical and it is not possible to reject the hypothesis that the difference between the coefficients is equal to zero. This implies that the size of the company does not matter when it comes to the relationship between the normative variable and the sustainability ladder. Thus, this study cannot make any conclusions about it, although a suggestion is that the argument about diminishing returns, i.e. the norm variable becoming more important than the turnover after reaching a certain high degree of turnover could possibly make more sense.

Table 4a: Heterogeneity

Dependent Variable: Sustainability Ladder

	Turnover			Norms		
	D = 1	D = 0	p-value	D = 1	D = 0	p-value
Turnover (1=High degree 0=Low degree)				1.338***	0.653***	0.154
Employees (1=Large 0=Small)	0.085	0.198	0.561	0.956***	0.932**	0.959
Ownership (1=Private 0=Public)	0.122	-0.313*	0.009***	1.062***	0.790	0.727

Moreover, the factor variable *ownership* showed some interesting results when using the sustainability ladder as the dependent variable in section 4.2. It seems like the public companies in general are on a higher step on the sustainability ladder than the private companies. If the assumption that companies perceiving norms as a driving force for the extent of their work with sustainability in

general are on a higher step on the sustainability ladder is true, it is of interest to test the ownership variable interacted with both the turnover variable and the norm variable. A hypothesis would be that the public companies, that in general are on a higher step of the sustainability ladder, should have a relatively stronger positive relationship between the normative variable and the sustainability ladder than between the turnover and the ladder. To test for this, the dummy for ownership, described in section 4.3, is used. It takes the value 1 if it is a private company and the value 0 if it is a public company or both a public and private company (i.e. partly owned by the government). The option "other" is counted as missing values. Further, the dummy is used to generate four interaction terms in the same way as above. The result of the OLS regression is found in Table 4a. For public companies, the turnover coefficient has a negative sign, while the normative coefficient has a positive sign. This would be in line with the hypothesis that there is a stronger positive relationship between the normative variable and the sustainability ladder than between the turnover variable and the sustainability ladder for public companies. However, the normative coefficient is not statistically significant, hence no conclusions can be drawn from this. Nevertheless, the hypothesis that the difference between the turnover coefficients for the different groups is equal to zero can be rejected at the one percent level. There is a difference between public and private companies when it comes to the relationship between turnover and the sustainability ladder. Turnover seems to have a stronger positive relationship with the sustainability ladder for private companies than for public companies. However, also the normative variable seems to have a stronger relationship with the sustainability ladder for private companies. This might be explained by the difference in the amount of companies in the different groups. There are less public (and partly public) companies (26 pcs) than private companies (176 pcs) in the sample.

When doing the same process with the question battery as the dependent variable, the results are slightly different. The parameter estimates are found in Table 4b. There is still a larger positive norm coefficient for the companies with a high degree of turnover than for the companies with a low degree of turnover, although it is not possible to reject the hypothesis that the difference between the coefficients is equal to zero. This result has the same implications as with the sustainability ladder as dependent variable.

More interesting are the norm coefficients for the different number of employees. The coefficients show the opposite result from the hypothesis that larger companies (more than 1000 employees) would have a stronger positive relationship between the norm variable and the level of corporate sustainability than the smaller companies. Here, the results show that companies with more employees (which might indicate that it is a larger company) have a *weaker* positive relationship with the question battery than the companies with less employees. Further, it is possible to reject the hypothesis that the difference between the coefficients is equal to zero at the five percent level. There is a difference between small and large companies when it comes to the relationship between the normative variable and the question battery. Why this differ from the heterogeneity tests with the

sustainability ladder as dependent might partly be explained by respondents overvaluing their sustainability performance on the ladder, while being more realistic when answering the question battery. Therefore, it results in overall smaller coefficients when using the question battery as the dependent variable. However, to give a plausible explanation for this, further investigations are needed.

Just as with the sustainability ladder as dependent variable, public companies have a stronger relationship between the norm variable and the question battery than between the turnover and the question battery. However, the same was discovered for private companies, although the normative coefficient is smaller, while the turnover coefficient is slightly larger. Moreover, I cannot reject the hypothesis that the difference between the two groups is equal to 0. Ownership does not seem to have an impact on the relationships when using the question battery as the dependent variable.

Table 4b: Heterogeneity

Dependent Variable: Question Battery

	Turnover			Norms		
	D = 1	D = 0	p-value	D = 1	D = 0	p-value
Turnover (1=High degree 0=Low degree)				0.585***	0.520***	0.768
Employees (1=Large 0=Small)	0.110**	0.210**	0.370	0.333***	0.714***	0.064
Ownership (1=Private 0=Public)	0.139***	0.104	0.650	0.389***	0.759***	0.117

The institutional explanations, in particular the normative variable, seem to have the strongest positive correlation with a company's sustainability level when compared with basic economic factors. This is in line with previous research suggesting institutions as the main determinants when companies move towards corporate sustainability (Campbell, 2007; Kudlak, 2008). Interesting though, is that the normative variable has the strongest relationship among the institutional variables, and that the coercive and mimetic variables are not statistically significant. The mimetic variable implies that companies do practices without considering the value of it (copying other firms within the same industry, doing practices in fear of losing support from customers and investors, for example) and can be explained by asymmetrical information. When imitating other organizations, the uncertainty might be reduced. Bansal (2005) discusses the fact that sustainable development is a complex question and therefore incorporates uncertainty. In this study, it is not possible to draw any conclusions about the relationship between the mimetic variable and the corporate sustainability level. Almost twenty years

have passed since the research made by Bansal was published. Maybe, the mimetic mechanisms have decreased in importance because of a change in attitudes towards sustainability. Possibly, it is now a less uncertain question with more research underpinning the value of working with sustainability. This may result in norms being institutionalized and hence, an increase in importance of the normative mechanisms. However, this is a question that needs more research and support, although it raises interesting discussions.

5. Conclusion

The aim of this study was to investigate whether institutional factors or basic economic factors are the main determinants for the companies' level of sustainability work. Through a novel data set collected from a web survey, including 215 large Swedish companies, I found that the institutional factors, in particular the normative variable, have the strongest positive relationship with the level of corporate sustainability. Further, among the basic economic factors, the turnover seems to matter for a company's corporate sustainability level, although the relationship is not as strong as for the normative variable.

By comparing two models of possible explanations, the basic economic factors and the institutional factors, as well as using a novel dataset, this study contributes with a complementary insight into the question of why companies move towards corporate sustainability. Aware of the complications with endogeneity, I cannot draw any conclusions about causality. There is a possibility that a certain level of corporate sustainability has an effect on which determinants the companies perceive as important. Still, the relationship between the variables is interesting and raises possible questions for further research.

Sustainable development and corporate sustainability are complex issues and are therefore difficult to measure. The method in this study is one way of doing it, although web surveys have their weaknesses. For example, the formulations of the questions may be positively or negatively loaded which can result in bias. Further, a hypothetical bias can occur when the study is built on what companies *say* they do and not what they actually do. It would be an interesting research to compare the results from this study with an empirical study which investigates actual numbers for what companies do when it comes to corporate sustainability. Furthermore, it would be really interesting to add a time-related effect and see how the determinants change over time. That could help explain why the normative variable has the strongest relationship with the outcome variable, while the mimetic variable is not statistically significant, among the institutional factors.

The coercive variable does not have a statistically significant relationship with the corporate sustainability level. Perceiving coercive mechanisms as determinants for the extent of work with sustainability do not seem to have a certain relationship with the level of corporate sustainability. Building upon this insight, this is also an interesting question for further research as well as for policy makers.

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7. Appendix

Appendix A: Sustainability Ladder Used as Dependent Variable
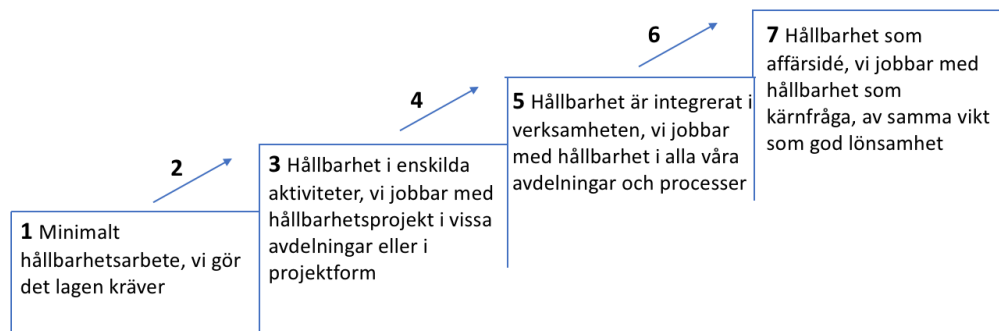
The figure illustrates the Sustainability Ladder that is used as one of the dependent variables in the analysis. The translation to English is made below.

1. Minimal work with sustainability. We only do what the law requires.

3. Sustainability within certain areas. We work with sustainability in certain departments or in various projects.

5. Sustainability forms an integrated part of our operations. We work with sustainability in all of our departments and business processes

7. Sustainability as a business objective. We work with sustainability as a part of our core values, of the same importance as good profitability.

Appendix B: Question Battery Used as Dependent Variable

9. Nedan följer ett antal påståenden om hållbarhetsarbete.
Ange hur väl er verksamhet stämmer in på följande påståenden.

	Stämmer inte alls 1	2	Stämmer till viss del 3	4	Stämmer helt 5	Ingen uppfattning
Hållbarhet ingår i våra styrdokument som vision och policydokument	○	○	○	○	○	○
Vi följer upp vårt hållbarhetsarbete	○	○	○	○	○	○
Vi publicerar hållbarhetsredovisning enligt ÅRL 947:2016	○	○	○	○	○	○
Vi publicerar hållbarhetsredovisning i enlighet med EU's miljö- och revisionsordning, FN's Global Compact, Integrated Reporting, Global Reporting Initiative eller liknande.	○	○	○	○	○	○
Vi är certifierade med ISO 14001	○	○	○	○	○	○
Vi följer ISO 14000	○	○	○	○	○	○
Vi följer ISO 26000	○	○	○	○	○	○
Vi ställer krav på ett aktivt hållbarhetsarbete hos våra leverantörer	○	○	○	○	○	○
Vi följer upp leverantörers hållbarhetsarbete	○	○	○	○	○	○
Vi använder oss av miljöanpassade transporter för frakt och distribution	○	○	○	○	○	○
Hållbarhet är ett centralt budskap i våra annonser och marknadskommunikation	○	○	○	○	○	○
Vi beskriver tydligt på företagets hemsida hur vi arbetar med hållbarhet	○	○	○	○	○	○

	Stämmer inte alls 1	2	Stämmer till viss del 3	4	Stämmer helt 5	Ingen uppfattning
Vi har en hållbarhetsavdelning eller dedikerade personer som är ansvariga för hållbarhetsfrågor	○	○	○	○	○	○
Vi bidrar och/eller sponsrar hållbarhetssatsningar utanför vår verksamhet	○	○	○	○	○	○
Vi jobbar aktivt med jämställdhet och mångfald i personalen	○	○	○	○	○	○
Vid inköp väljer vi ekologiska och miljö- och rättvisemärkta produkter	○	○	○	○	○	○
Vi har vidtagit åtgärder för att minimera utsläpp från personresor	○	○	○	○	○	○
Vi källsorterar på arbetsplatsen	○	○	○	○	○	○

Question Battery with 18 questions regarding a company's work with sustainability. Question number 7 (We comply with ISO 26000) was excluded due to 60 missing values. Translation to English below.

Below, there is a number of statements on sustainability. Indicate how well these statements are in line with your business (1= disagree entirely 3= agree to some extent and 5= agree entirely)

1. Sustainability is included in our control and policy documents

2. We monitor our work with sustainability

3. We publish a Corporate Sustainability Report in line with ÅRL

4. We publish a Corporate Sustainability Report in line with GRI, UN's Global Compact or similar

5. We are ISO 14001 certified

6. We comply with ISO 14000

7. We comply with ISO 26000

8. We require that our suppliers work actively with sustainability

9. We follow up on our suppliers

10. We utilize environment friendly transportations for freight and distribution

11. Sustainability is a central message in our campaigns and advertisements.

12. We clearly describe on our public website how we work on sustainability

13. We have a department for sustainability, or dedicated employees that are responsible for sustainability

14. We grant to and/or sponsor sustainability initiatives outside our business

15. We work actively with gender equality and diversity at our workplace

16. We prefer to purchase ecological, environmental friendly and fair-trade products

17. We have taken measures to minimize emissions from staff's travelling

18. We recycle at our workplace

Appendix C: Self-reporting Questions Used as Independent Variables

13. Ta ställning till hur följande faktorer påverkar *omfattningen* av er verksamhets arbete med hållbarhet

	Påverkar negativt i hög grad 1	2	3	Påverkar inte alls 4	5	6	Påverkar positivt i hög grad 7	Ingen uppfattning
Skärpta lagkrav	○	○	○	○	○	○	○	○
Skärpta regleringar	○	○	○	○	○	○	○	○
Ökade krav på transparens	○	○	○	○	○	○	○	○
Högkonjunktur	○	○	○	○	○	○	○	○
Lågkonjunktur	○	○	○	○	○	○	○	○
Ökad trend mot hållbar utveckling inom branschen	○	○	○	○	○	○	○	○
Kundönskemål	○	○	○	○	○	○	○	○
Ökat globalt fokus på hållbarhet	○	○	○	○	○	○	○	○
Ökad medvetenhet om hållbar utveckling i samhället	○	○	○	○	○	○	○	○
Ägarkrav	○	○	○	○	○	○	○	○
Krav från investerare	○	○	○	○	○	○	○	○
Tillgång till kapital	○	○	○	○	○	○	○	○
Nya affärsmöjligheter	○	○	○	○	○	○	○	○
Önskemål från anställda	○	○	○	○	○	○	○	○
Ambition att vara en attraktiv arbetsplats	○	○	○	○	○	○	○	○

Translation to English below

Take a stand on how the following factors impact the *extent* of your business' work with sustainability

1= affects negatively to a high degree 4 = not affecting at all 7=affects positively to a high degree

1. Stricter legal requirements

2. Stricter regulations

3. Increased demand for transparency

4. Boom

5. Recession

6. Increased trend towards sustainability within the industry

7. Requests from customers

8. Increased globally focus on sustainability

9. Increased awareness about sustainable development within the society

10. Owner requirements

11. Investor requirements

12. Supply of capital

13. New business opportunities

14. Requests from employees

15. Ambition to be an attractive workplace

Appendix D: Parameters Estimates in Ordit Probit Model

Dependent Variable: Sustainability Ladder	(1)
Variables	
Log Turnover	0.091
	(0.090)
Boom	-0.050
	(0.137)
Recession	0.212*
	(0.117)
Business Opportunities	-0.027
	(0.171)
Coercive	0.051
	(0.165)
Normative	0.875***
	(0.240)
Mimetic	-0.083
	(0.193)
Other	0.298
	(0.238)
Retail	0.852**
	(0.370)
Wholesale	-0.299
	(0.256)
Services	0.429
	(0.473)
Public	0.136
	(0.235)
Both Private/Public	0.715**
	(0.291)
Other	-0.929
	(0.618)

Employees over 1000	0.066
	(0.441)
Constant	3.482**
	(1.591)
Observations	140

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix E: Parameter Estimates in OLS with Original Value of Turnover

Variables	(1) Question Battery	(2) Sustainability Ladder
Log Turnover	0.138***	0.098
	(0.047)	(0.112)
Boom	0.007	-0.128
	(0.068)	(0.187)
Recession	0.053	0.212
	(0.053)	(0.169)
Business Opportunities	0.128	0.152
	(0.105)	(0.271)
Coercive	0.228**	0.239
	(0.097)	(0.245)
Normative	0.343***	0.668*
	(0.128)	(0.360)
Mimetic	-0.052	-0.016
	(0.138)	(0.296)
Other	-0.371**	0.675
	(0.154)	(0.570)
Retail	-0.064	-0.415
	(0.140)	(0.359)
Wholesale	0.050	0.356
	(0.355)	(0.662)
Services	-0.082	0.035
	(0.132)	(0.331)
Public	0.210	1.015**
	(0.143)	(0.439)
Both Private/Public	-0.524***	-1.337
	(0.195)	(0.872)
Other	0.405*	0.412
	(0.235)	(0.698)
Employees over 1000	-0.012	0.386
	(0.135)	(0.315)
Constant	-1.045	-1.569

	(0.934)	(2.128)
Observations	107	106
R-squared	0.395	0.282

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix F: Parameter Estimates in OLS with original observations of Question Battery

Dependent Variable: Original Question Battery	(1)
Variables	
Log Turnover	0.117**
	(0.056)
Boom	-0.042
	(0.066)
Recession	0.028
	(0.044)
Business Opportunities	0.080
	(0.111)
Coercive	0.075
	(0.097)
Normative	0.350***
	(0.116)
Mimetic	0.106
	(0.128)
Other	-0.034
	(0.145)
Retail	-0.242
	(0.250)
Wholesale	0.004
	(0.139)
Services	0.150
	(0.323)
Public	0.136
	(0.143)
Both Private/Public	0.134
	(0.157)
Other	-0.010
	(0.364)
Employees over 1000	-0.097
	(0.474)
Constant	-0.389
	(0.979)
Observations	98

R-squared		0.348

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1