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Thesis

Board Composition and CSR Performance in Swedish Listed Firms

Board Insiders, ownership Concentration and CSR performance

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Abstract

It is no longer surprising that attention paid to corporate social responsibility (CSR) has increased lately, which could be due to the fact that firms action have negative or positive impacts on their stakeholders–employees, customers, investors, suppliers and community. It is the board responsibility to ensure firms pay attention to CSR matters, therefore, board composition will relatively play significant role in CSR implementation. However, prior studies have focus on board diversity, female proportion and independent directors and paid very little attention to inside board member and CSR. In order to study inside board member and CSR, the study found it interesting to look at the institutional norms of Swedish because different institutions structure board different and as such would likely influence CSR differently. The study therefore, focus on ownership concentration, employees representative director (ERD), and CEO presence on board and found out that firm with ownership concentration and also firms having CEO on board have negative relationship with CSR, meanwhile ERD have a positive relationship with social responsibilities. According to the findings in general board comprises of insiders have negative relationship with overall CSR (economic, governance and environmental concern) meanwhile strictly independent directors (of management, CEO, major shareholders, and firm) and female proportion have significant relationship with CSR.

Theoretical/Academic implication: The paper contribute to prior theoretical and empirical literature by looking at board composition and CSR and by extending literature towards ownership concentration around the board, CEO presence on board, and employees' representative directors on board. Also, using OLSDV and FGLS, the paper contributes to methodological strength of the existing literature in the field of corporate governance

Practical Implication: The paper has also contributed to the following practical implications; 1) the text-rich approach might be of interest to multinational enterprise (MNEs) that strive for local adoption with respect to CSR. 2) International investors and fund managers might find the findings of interest to understand local markets or who seek the best portfolio in terms of social investments. 3) Local (home) firms can benefit from the findings when implementing strategic decisions towards CSR

Key words

Board Composition, corporate social responsibility (CSR), ownership concentration, employees' representative directors, CEO, institutional norms, resource dependency and stakeholder theory.

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Contents

1 Introduction

1.1 Background of the Study

It is no longer surprising that attention paid to corporate social responsibility (CSR) concept has increased ever since the early 2000s. Attention to the concept of CSR has come from government bodies, policy decision makers (Midttun, Gjølberg, Kourula, Sweet, & Vallentin, 2015), managers, and researchers. One fundamental reason for such attention is reason being that the firm's actions has positive or negative effect(s) on their stakeholders and also, firms' stakeholders contribute to the success of the firm's operation, and therefore should have economic returns (Freeman, 1984 : Donaldson, 1995). Engaging CSR concept into corporate managerial decision making in an integral fashion, by balancing the needs of customers, suppliers, investors, employees and community (Freeman, 1984: Freeman, 2010) gives management and firm competitive advantage in the market (Midttun et al., 2015 : Gelbmann, 2010). It helps firms to identify and avoid risk (Tran, Bui, Phan, Dau, & do, 2019), build trustful relationship with their environment and enhance corporate image (Louche, Idowu, & Filho, 2017 : Mcwilliams & Siegel, 2000 : Tang, Hull, & Rothenberg, 2012). Moreover, CSR attract long-term financial and sustainable growth in the firm (Story & Neves, 2015 : Bučiūnienė & Kazlauskaitė, 2012), and management turns to enjoy long-term financial benefit in order to secure their jobs, otherwise will be disciplined by stock market and market for takeover (Fama & Jensen, 2016 p.313).

Although empirical findings of (Jo & Na, 2012: Lopez et al., 2007) suggest that CSR is negatively related to financial performance in the short-run, and when firms profit and the price of stock reduces the company fires the board of directors (Friedman, 1970). Often, it is the management to be blamed (Jansson, 2013 : Bednar, 2012) for poor decision making, especially the upper echelon of the organisation as they are in charge of decision making process (Hambrick & Mason, 1984).

The paper refers to upper echelon of decision makers as the board of directors; this is in accordance to Fama & Jensen, (2016) who defined board of directors as the apex of the decision control systems, delegated by residual claimants and have the power to fire, hire and compensate the top level decision managers. Also, they have the power to ratify and monitor important decisions of the firm, p. 311 as well as the function to provide advice, legitimacy, counselling and to link the firm with it environment to increase firm's performance, (Hillman & Dalziel, 2003). Investigating the relationship between board of directors and CSR

performance is very important in today's business world. First because board are a reflection of how the firm is to be operated and directed as they are the apex of decision control system (Fama & Jensen, 2016). Secondly, investors trust so much on the board performance, and thus the relationship between board of directors and the firm has an impact on the investors, and the firm stakeholder. Such impact is exhibited especially in listed firms where decisions making are in the hands of an agent instead of the residual claimant (Fama & Jensen, 2016 : Baysinger & Butler, 1985 p.105 : Dhaliwal, Li, Tsang, & Yang, 2011 : Fama & Jensen, 2016).

Previous research have investigated the relationship between board and CSR performance and concentrated on board diversity such as female on the board and/or foreign directors (Al-Shaer & Zaman, 2016 : Fernández-Gago, Cabeza-García: Nekhili, Nagati, Chtioui, & Nekhili, 2017 : McGuinness et al, 2017 : & Nieto, 2018). Others paid more attention to independent board of director and gender (Chang, Oh, Park, & Jang, 2017 : Dienes & Velte, 2016 : Husted & Sousa-Filto, 2019 : Kiliç, Kuzey, & Uyar, 2015 : Pucheta-Martínez & Gallego-Álvarez, 2019: Rao & Tilt, 2016). A handful, studied independency of board and paid little attention to ownership structure (Ahmed et al., 2017 : Oh, Chang, & Jung, 2019 : Qa'dan & Suwaidan, 2019).

To the best of our knowledge most researchers have undermined the importance of inside directors and CSR performance. One of the prominent reasons for such fact can be drawn from most theoretical framework of prior empirical works, as they lay more emphasis that independent directors are better monitors than inside directors provided they are motivated to do so and as such good at reducing agency cost and maximizing firm value. Those findings are theorized and build from the Agency perspective of governance. However, depicting from resource base theory, inside directors are good at providing advice, counselling, legitimacy, and able to link the firm with its environment (Hillman & Dalziel, 2003). Meanwhile stakeholder advocate argues that board functions expand from principals to a larger group of stakeholders which is in line with the view of modern debates of the relevance of board in an organisation, (Freeman, 1984: Freeman, 2010). Therefore, in as much as independent board of director contribute to the firm performance to implement the CSR concept in the firm, inside board will definitely play a relative significant role.

Nevertheless, few studies have study the composition of the board and lay emphasis on inside board and CSR relationship (Galbreath, 2017). Galbreath study had sampled 300 large public

firms in Australia, and posits assumptions from temporal orientation theory by attributing managerial decisions making into past, present and future frames (Galbreath, 2017) and found out that inside directors is negatively related with CSR.

In order to study board composition and CSR, the study departed from prior empirical studies by choosing Swedish large firms as a point of focus and by looking at the composition of the board in terms of insiders and ownership concentration. We found out that it is interesting to look at ownership concentration in the board environs due to the coherent social orders that has define the features of the Swedish board composition over time (Jonnergård & Laisson-Olaison, 2016 : Larsson-Olaison, 2010 : Thomsen, 2016). This is because, countries are influenced by their different institutional norms that influence their corporate governance practice (Filatotchev, Jackson, & Nakajima, 2013) and their performance to CSR matters (Ahmed, Rashid, & Gow, 2017 : McGuinness, Vieito, & Wang, 2017).

Moreover, Sweden, as part of the Nordic countries has strong stakeholder orientation way back even before the stakeholder concept became a world concern. This is because of their strong traditions for welfare and economic development which are in harmony with CSR goals, and thus has made Sweden one of the leaders of CSR public policy as compared to other non-Nordic countries around the world (Midttun et al., 2015). Also CSR has long begun in Sweden ever since 2002 (Midttun et al., 2015). With the dominance of insiders often constitute of employees' representative directors from the labour union, board member elected by major shareholders and executive directors for instance CEO (Jonnergård & Laisson-Olaison, 2016 : Larsson-Olaison, 2010 :Thomsen, 2016 : Vallentin, 2015) this could imply that insiders have always played greater contribution to the CSR concept of governance.

1.2 Purpose of the study

The paper aimed to explain the relationship between inside directors, ownership concentration and CSR performance in large Swedish Listed Firms.

1.3 Research Question

1) What is the relationship between inside board members and CSR performance?
2) What is the relationship between board with CEO and CSR performance?
3) What is the relationship between ownership concentration and CSR performance?

4) What is the relationship between employees' representative directors and CSR performance?

In order to explain the relationship between inside directors, ownership concentration and CSR performance, the paper constructs the study by answering the research questions and sampled large Swedish firms, using a panel data from 2016 to 2018. The econometric method used is the Ordinary Least Square (OLS) with Robust Standard Errors and comparatively with feasible generalized least square (FGLS) using panel specific autoregressive process, to control for heteroskedacity and autocorrelation of which the data suffered from. Consequently, the data had rejected both fixed effect and random effect model as a base of analyses. Also, an ANCOVA test was used to test the relationship between employees' representative directors and CSR performance and also serve as a robustness test for CEO on board, ownership concentration and CSR performance.

Moreover, the studies reviewed both prior theoretical and empirical findings and use them to deduce hypothesis which are constructed from the four main questions. The remainder of the paper is structured as follows: **Chapter 2** Theoretical framework (which discusses board composition and CSR performance, corporate social responsibility theory, the Swedish corporate governance system, corporate social responsibility in Sweden). In addition deduce hypothesis from (Inside board of directors and CSR performance, CEO on board and CSR performance, Ownership concentration and CSR performance and Employees' representative directors and CSR performance. **Chapter 3** discusses the research methodology, approach, scientific perspective, ethical consideration, database, and operationalization of concept. **Chapter 4** presents the Analyses, results; **Chapter 5** discussion; and **Chapter 6** outlines the Conclusion.

2 Theoretical Framework

This chapter discusses both prior theories and empirical studies about board composition and CSR performance both at global and institutional level.

2.1 The Board Composition and CSR Performance

The board composition and CSR performance has drawn a lot of attention lately. Prior scholars have use Agency theory, resource dependency theory and voluntary disclosure to explain the CSR concept and board composition. However, lately there has been increased attention on the stakeholder theory to explain such relationship. Evidently, one can draw from prior studies that preceding 1990s, the necessity for boards in the firm was aimed at managing the affairs of the firm to the best interest of the shareholders/investors (Baysinger & Butler, 1985 : Fama, 1980) . (Ahmed, Rashid, & Gow, 2017 : Dienes & Velte, 2016 : Fernández-Gago et al., 2018) found the need to illustrate board need and CSR performance building from the agency perspective and settling at resource dependency theory to explain the modern need for board. Jensen & Meckling (1976), define the agency theory as the supposition that there is separation of ownership and control in a corporation and that both principal (owners) and agents (controllers) can consider their own interest over the entire shareholder's interest due to information asymmetric problems. So to mitigate this problem the need of board arose which have delegated power from owners to supervise and control the executive management. The demand for board was aimed to maximized and or protect investors' or the minority groups' wealth from being expropriated by scrupulous managers or from controlling interest group. Thus, stationing the need for board to solve agency problems such as information asymmetric, risk aversion, and bounded rationality (Eisenhardt, 1989: Fama, 1980: Clarke & Branson, 2012 p.7).

On the other hand, resource dependence theory explains the role of board to achieve the CSR objectives. Resource dependence theory perspective explains board as the provision of resource to manage the external dependencies relating to environment and social activities (Mallin et al, 2013). Hillman & Dalziel (2003) explains the major contributions of the board including the enhancement of reputation of corporation, wise advice, improving external relations & enhancement of legitimacy by linking the different stakeholders. And as such board composition plays a relative role in order for board to provide resources for the

organisation best interest. Additionally, in corporate governance literature it is widely accepted that board composition and attributes impacts on overall performance of firm including matters related to CSR (Welsbach, 1998).

Looking back around the 1900s to late 1990s, companies' main purpose remained to make profit and follow demands of shareholders (see Friedman, 1970: Lazonick & O'Sullivan, 2000). However, things started getting change in the early 2000s and onward firms' objective not only remain to generate profit but stakeholder relationship also become the part of success which covers many interest and most critical to be consider social and environmental issues (Russo & Perini, 2010). Although the stakeholder concept can be traced right back the last two decades prior to the 2000s, with the conceptual framework of Freeman in his work *Strategic Management: A stakeholder approach* (see Freeman, 1984), one can attest that the early 2000s and onward, board task has expatiated to account to a greater set of stakeholders known as the employees, customers, communities, suppliers and investors. This is because there has been increase in reforms in the current area, and also globalisation have been said to enhance the stakeholder concept.

Furthermore, new laws have been enacted demanding board to be responsible for the internal control department in order to look after the welfare of the firm entire stakeholders and to ensure greater transparency between the firm and its stakeholder (Epstein & Buhovac, 2006). Therefore, modern shareholders and owners want boards to do much more than just controlling the management. The stakeholder model of governance is built on the stakeholder theory, which implies that firm is accountable to it overall stakeholders, because firm activities has an impact on the stakeholders and the stakeholders contribute to the success of the firm in one way or the order (Freeman, 1984: Freeman & Moutchnik, 2013). As such, all the stakeholders receive benefit without prioritizing one set over another (Donaldson, 1995). Also according to (Dill, 1958; Murray & Vogel, 1997) stakeholders of an organization also involve government, competitors, regulatory agencies, and political groups which significantly impact organization.

Moreover, according to Freeman, Harrison, Wicks, Parmar, & Colle, (2010), it is the responsibility of the board of directors, top executives to embrace and integrate the stakeholder concept of governance into managerial decision to look after the health of the overall enterprise, both within and outside the organisation. In order to do so, board has the duty to address the corporate social responsibilities of the firm which is integrating the

Economic, Social and Governance responsibility (ESG) into the production of goods and services (Freeman, 1984).

2.1.1 Board composition

Boards are the reflection of the corporate governance system of the firm, because board are the apex of decision making in the organisation, are a body of power, and play a central role in decision process ((Fama, 1980 : Fama & Jensen, 2016). Boards' decisions and functions have influence the manner in which the firm is directed and controlled, i.e. influencing the corporate governance system of the organisation. Corporate governance on the other hand, can be defined as the way companies are directed and controlled by owners, board, incentives, company law, and other mechanism, (Thomsen & Conyon, 2012 p.5). Simply put, the study of power and influence over decision making within the corporation (Clarke & Branson, 2012 p.3).

Furthermore, globally, board composition is normally made of executive directors and non-executive directors. Executive directors are those directly related with the day to day management of the firm and often occupy top management/departmental head positions in the firm. They are often known as 'strategic partners with management' and are more engage in firms to manage market complexity and uncertainty (Useem, 2014 p.137). Meanwhile the non-executive directors, sometimes referred to as independent board of directors are those directors who do not take part in the management of the firm and are often referred to as 'directors monitoring of management'(Useem, 2014 p.137)

Board composition is one of the major factor that influence CSR performance and reporting (Hung, 2011). Composition includes the diversity–inside, outside directors with different age, gender, experience and education. According to Siciliano (1996), more diverse board impact positively on CSR performance as it provides the different human capital and visions. Also, previous study found that the different type of composition behaves differently towards CSR (Ingley, 2008: Elkington, 2006). Furthermore, the study by Huang, (2010) found that the different characteristics of board strongly impacts on CSR performance.

However, the relationship between board composition and CSR is more complex at institutional level due to institutional differences like norms, social values, culture and strong traditional values (see Ahmed, Rashid, & Gow, 2017 : Chang, Oh, Park, & Jang, 2017: Husted & Sousa-Filto, 2019 : McGuinness, Vieito, & Wang, 2017). Different countries or region structure board differently to address CSR engagements although, globally firms have

increased the disclosure of non-financial data on their corporate annual reports to portray attentiveness to CSR matters.

2.1.2 Corporate Social Responsibility

Corporate Social Responsibility has appeared in many literatures lacking clear definition of what the concept is all about. *A stakeholder Approach* by Freeman (1983) decided by many as base of stakeholder theory, have been used by many as the theoretical foundation of theories about CSR and financial performance, like Brooks and Oikonomou 2018) and Jinwook, Chung, and park (2013). However, CSR is a comprehensive concept and it is all up to industries and society on how they execute CSR. CSR is equally valuable for society as much as it's important for company. Corporation can be held accountable for any damage they might cause to the society or the environments through criticism, especially from the media (see Bednar, 2012 : Jansson, 2013). This shifting role of corporations and the realization of their role towards society and environment can be termed as corporate social responsibility.

This paper deduced the definition from the European commission and other prior CSR practitioners' ideology. This imply, CSR can be defined as *'the enterprise responsibility to be socially accountable for their impacts on the society and the firm commitment to integrate social, environmental, ethical, consumer, human rights concern to their business strategy and operations in an egalitarian manner in which all firm stakeholder have intrinsic benefits'* (europeancommission, 2011 : Donaldson, 1995 : Freeman, 2010). The concept lays emphasis on employee welfare, relationship with the community, customers' satisfaction, supply chain management, investors' protection and the application of code of good conduct. Also, it promotes ethical behaviour, health and safety, human rights, gender equality, green investment, and eco efficiency (Freeman, 1984). A corporation takes many voluntary steps under CSR like emphasis on re-use and recycle, fund donations, and support labour policy development for the improvement of society and thus raise the brand value, (Albuquerque et. al. 2018)

Though the CSR concept remain a prominent aspect in business, however, some still argue that it is costly for the company to undertake and therefore, it is the government responsibility to implement for its citizens see for instance (Friedman, 1970). See also, (Jo & Na, 2012: Lopez et al., 2007), whose study suggest a negative relationship between financial performance and CSR. Notwithstanding, firms that have poor ESG ratings which usually

pollute the environment or high risk industrial firms usually strengthen their legitimacy with CSR concept to reassure investors that the business has going concern and intern to survive in the long run (Semenova & Hassel, 2016). Or managerial decision makers usually implement the concept in order to justify their poor performance (Fernández-Gago, Cabeza-García, & Nieto, 2016) in order to escape from naming and shaming from the media (see Bednar, 2012). In such scenario, CSR serve as a gatekeeping strategy for firms. Sometimes boards are face with constant pressure to construct strategies that satisfy the needs of every stakeholder, not just because it is good but because of its long-run surviving benefits. Thus, this makes the demand for the CSR concept a competitive and innovative tool for firms (Gelbmann, 2010). Though it has featured in some literature as being a political driven tool in order to attract foreign/multinational investors, strengthen legitimacy at country level and attract micro economic benefits (Midttun et al., 2015). Nevertheless, the CSR reduce cost of equity, and has positive relationship with expected cash flow (Dhaliwal et al., 2011 : Nekhili et al., 2017), risk management (Tran et al., 2019: Harjoto & Laksmana, 2018), long-term financial benefits and corporate legitimacy (Tang, Hull, & Rothenberg, 2012 : Mcwilliams & Siegel, 2000).

2.2 The Swedish Corporate Governance System

Looking at the Swedish corporate governance system, i.e. looking at how power and decision making is governed and controlled in the Swedish corporation will necessitate one to look at the institutional norms of Sweden, thus depicting from institutional theory. According to (Janićijević, 2014), institutions can be group into three types namely; regulative, normative and cultural-cognition institutions. Normative institutions are professional standards, values and behaviour norms meanwhile cultural-cognitive institutions are mutual beliefs and concepts defining social reality and determining its meaning where in this meaning, the institution is a kind of crystallization or sedimentation of the meaning (Janićijević, 2014).

However, according to (Jonnergård & Laisson-Olaison, 2016), institutions arise as a result of a social order, where social order is the result of collective action and can be achieved in a social group with a degree of social cohesion. Therefore, looking at the institutional norms of Sweden to explain it corporate governance system, can oblige one to look at it normative and cultural-cognitive institutions and by so doing could mean looking at it social order that has occur with a degree of social cohesion. Evidently from prior literature the Swedish social order can be seen as Swedish welfare traditions, ownership concentration, the annual general

meeting, and employees' representative on the board, trust of controlling owners and Swedish corporate governance code (see Thomsen, 2016 : Stafsudd, 2009). In regards to that, social institutional norms influence corporate governance system of a particular country, by influencing the board composition, ownership concentration and modify a country basic principal-agent relationship (Filatotchev, Jackson, & Nakajima, 2013).

Moreover, majority of Swedish firms comply under the Swedish code of corporate governance. The code is drafted by the "Government Commission of Trust" and the "Code group" whereby the group is formed jointly by the commission and the business society (Larsson-Olaison, 2010). The code oblige that majority of the corporate board should be non-executive directors and the board should comprise of at least three members, and also of diversity/different gender (Swedish Corporate Governance Board, 2016 p.9,18).

Though the code remains voluntary for non-listed firms, and it is mandatory for Swedish public listed companies in Nasdaq Stockholm Stock Exchange. All listed companies are to comply with all recommendation of the corporate governance code or explain why for not doing so (Swedish Corporate Governance Board, 2016 p.12). Board of directors are appointed at the annual general meeting which serve as a body of power through which shareholders exercise their voting right and influence decision making, (Thomsen, 2016 p.196) except otherwise provided by law or the company's article of association (see Swedish Corporate Governance Board, 2016 p.8).

The remainder of the paper shall look at the Swedish corporate governance systems while paying attention to the Swedish social orders in order to explain the relationship between Swedish board composition and CSR performance.

2.3 Corporate Social Responsibilities (CSR) in Sweden

Sweden as being part of the Scandinavian countries is not a new comer in the field of CSR performance and has often received credit in prior literature (McGuinness, Vieito, & Wang, 2017 p.77). Notwithstanding, the Sweden being part of the leaders of CSR policy around the world have been ranked high on the World Bank governance indicators alongside with other Nordic countries, closed to the highest possible average rank of 2.5 in many of the governance indicators and above the world average (Thomsen, 2016 p.194 Table 1). Such indices are; rule of the law, government effectiveness, regulatory quality, control of corruption, voice and accountability, political stability and overall governance p.194.

Moreover, obtaining best rank in CSR concept is due to their strong welfare traditions, such as good relationship with labour union which promote good relationship between the firm and their employees (Midttun et al., 2015). Also, good relationship between firms and the government, the Swedish states extend their leadership in welfare state policies into equally enthusiastic policy engagement in CSR. Besides, the welfare state tradition is characterised by large government sectors, strong labour unions, income distribution and high taxes which has emerged through market discipline, tax reforms and restructured government services (Thomsen, 2016 p.190). Wherefore, the CSR concept is in harmony with their strong tradition welfare of socially developed economic or the three partite bargaining among the state, the labour Union and the Industry (Midttun et al., 2015) which has also being referred to as *an explicit negotiating culture* (Jonnergård & Laisson-Olaison, 2016 p.17).

Therefore, promoting egalitarianism in businesses is seen as an all-inclusive strategy to account for a greater set of stakeholders in Sweden. This is in line with the definition of CSR concept, and as such CSR is seen as a means to reinforce values central to advance welfare states that are harder to promote under liberalism (Midttun et al., 2015). Thus this makes the CSR concept as a contributing factor to their already stronger traditions. However, Vallentin, (2015) suggested that there are three strong characteristics that promote CSR implementation in the Danish corporate governance and likewise any Nordic country for example Sweden, and unless these three characteristics are viewed in a unified manner, the old Nordic welfare tradition is not in harmony with CSR goals. Namely, inclusiveness–strong egalitarian policies and welfare traditions, accountability–firms act in accordance with international principals like UN global compact, OECD principals to promote transparency, and lastly competitiveness–where firms implement CSR to gain international competitive advantage (Vallentin, 2015). This implies, when a country policy promotes inclusiveness alongside with accountability and competitiveness, it is demonstrating corporate social responsibilities.

Moreover, Vallentin argued that though the strong tradition welfare promotes CSR engagement, it fails to sufficiently take into account environmental concern, supply chain management and customers' satisfaction/competitiveness and transparency which are promoted by globalisation (Vallentin, 2015). Furthermore, another institutional norm that has influence Swedish corporate governance and add to it contribution to CSR performance is their long history of honesty and trust, which has strengthen firms' legitimacy with their investors and improve the protection of the minority interest from the controlling interest

group (Stafsudd, 2009). Thence, controlling shareholders are disciplined through social norms.

Therefore, CSR is regarded as an all-inclusive measures, competitive measures, accountability measures, ethical policies, environmental concern, and supply chain management in the Swedish listed firms driven by social welfare traditions, trust, and globalisation.

2.4 Inside Board of Directors and CSR performance

The inside board of directors play a substantial role in CSR implementation especially as the CSR goals are in accordance with the long-run sustainability of the firm. The study define an insiders in the board as "*one who has social ties; demographic ties of CEO/founder or management, elected by controlling shareholder, and/or part take in the day to day running of the firm while occupying a seat on the board of directors"* (see Swedish Corporate Governance Board, 2016). Unlike in Agency model of governance where managers are motivated to align their interest to that of shareholders through incentives package, board monitoring and stock ownership (Fama, 1980 : Eisenhardt, 1989); The stakeholder perspective necessitate insiders or decision makers to align their interest with that of firm survival. Therefore, implementing the CSR concept into the firm is an indistinguishable objective for managers inclined with the firm sustainability. And also, board insiders comprise of CEOs, employee representatives, and major shareholder dependent, definitely could align their interest to that of long-term firm survival interest (see Bammens, Voordeckers, & Gils, 2008). Another point of view recommend that inside directors possess more quality details which helps to assess managers more productively (Baysinger & Hoskisson, 1990).

Furthermore, firm sustainability can be defined as "meeting the need for future generation without compromising the ability of future generations to meet their own needs" (Willard, 2012). In order words, firm sustainability imply doing business in a responsible manner to ensure long-run sustainable growth.

More scholars have focus on the Agency theory assumption to explain the relationship between board composition and CSR performance and paid little attention to insiders with the assumption that outside directors are good at monitoring and are at the fore front to increase transparency. For instance, (Ahmed et al., 2017 Cabeza-García et al., 2018: Chang et al.,

2017 : Fernández-Gago et al., 2016: Kaymak & Bektas, 2017 : Kiliç, et al., 2015 : Nekhili et al., 2017 : Pucheta-Martínez et al., 2019) found a significant positve relationship between Independent director and CSR performance while (Chang et al., 2017 : McGuinness et al., 2017 : Rao & Tilt, 2016) who found no significant relationship.

However, Galbreath, (2017) deviated the study from the agency perspective and study board inside structure using temporal orientation theory which implies past, present, and future time frame in decision making. After sampling 300 large public listed firms in Australia Security Exchange for the year 2012, found out that there is a negative relationship between board insiders and CSR performance. His findings were that competition mounted pressure on insiders and also insiders have consistently linked to actions that are likely to trade-off future firm benefits in favour of short-termism gain (Galbreath, 2017).

Moreover, few studies conducted in the U.S.A (Ibrahim & Angelidis, 1995 : Ibrahim, Howard, & Angelidis, 2003) try to study the relationship between inside director and CSR however, unlike prior studies, their study seek to determine whether a relationship exist between a board member's directorial type (inside/outside) and the level of CSR orientation. After obtaining list of directors from Standard and Poor's Register of Corporations Directors and Executives, questions were sent out demanding if they were inside or outsider board member in order to measure variables of interest. CSR orientation variables were; Economic– requires the firm to produce goods and service of value to the society; ethical–follow general held belief, discretionary–voluntary disclosure and legal–if the business operate within legal framework (Ibrahim & Angelidis, 1995 : Ibrahim et al., 2003). Their findings were both similar, firstly significant difference exist between inside and outside directors for economic responsibility, secondly inside director have high score for economic responsibility and weaker score for discretionary responsibility as compared to outside directors. Lastly, they found no significant difference between the type of director and legal and ethical concern (Ibrahim & Angelidis, 1995 : Ibrahim et al., 2003).

Depicting from their study, one can say it is difficult to judge if inside or outside director has "*a significant relationship"* with CSR because the study only brought forth the difference in performance for both inside and outside directors toward CSR concept. So far to the best of our knowledge, Galbreath research is the only study so far that has study if there is a significant relationship between board insiders and CSR performance. However, his results are to be interpreted with care because training and incentives moderate the relationship

(Galbreath, 2017) and recently, most firms have engage training of their board members as a means to fulfil the UN Global Compact 2015 and also a way of demonstrating CSR engagement to comply with international standards, for sample see (VITROLIFE AB , 2018 p.14).

Furthermore, Independent and inside/executive directors play two substantial roles in the board room which has developed new source of tensions in prior literature (Useem, 2014 p.137) and one can draw from prior literatures that till date there have not been a consensus for that. Ibrahim, Howard, & Angelidis, (2003), studies helped business bodies, regulatory agencies and scholars that there are dissimilarities among inside and outside board members. However, according to (Baysinger & Butler, 1985), independent directors append more usefulness to company production as they work without depending on inside directors. Meanwhile, Ibrahim and Angelidis, (1995), advocate that outside directors gives more focus on stakeholder's interest as they are quick to social demands and encourage companies to attach more with sustainability.

Moreover, board comprises of independent directors is likely to know little about the industry and business (Roberts et al., 2005 in Zattoni & Cuomo, 2010) but are expert as shareholders monitors. Meanwhile inside directors have understanding of the customers, employees, management, day to day aspect of the organisation, firm history and growth (Brunninge, Nordqvist, & Wiklund, 2007). In addition, According to Nicholson & Kiel (2007), inside directors live in the company they govern; they better understand the business than outside directors and so can make better decisions".

From the findings, different corporations could have different priorities and strategies, however, often companies which consider financial performance more than the long-term sustainability, have more inside directors. This is because inside directors also want to maintain their reputation in the labour market to remain in demand. Financial performance of company directly impacts on the stock prices. If stock prices increases, thus reputation of the inside directors will increase automatically (Brochet et al, 2012). Research by (Beasley, 1996: Dechow et al, 1996), also found that companies with short term and misleading financial statements usually have more inside directors.

Deducing from those researches' view point one can say that the relationship between inside directors and CSR have not truly been defined. However, one can deduce from prior findings that an element of choice has been the core drive behind insiders' contribution to CSR

performance that is choosing between short-termism and long-termism. If we see from Swedish context, the ownership structure is concentrated. Inside board members usually have major shareholdings or being elected by a major holder (Vallentin, 2015). So we propose that their priorities are different because these members are also/or represent the shareholders , so they also want to long term sustainability (see Slawinski & Amp; Bansal, 2015).

Nevertheless, in order to conduct the study, the paper took into consideration differences in institutional norms. Looking at institutional norms of the Swedish culture, inclusiveness is one of the key strategies to implement CSR concept and works in a unified state with accountability and competitiveness (Vallentin, 2015). One major way to incorporate inclusiveness, competitiveness and accountability into the business is through social interactions and networking or through social partnership with the firm. Insiders or executives directors are strategic managerial partners (Useem, 2014 p.137) and have strong interactive backgrounds with the firms and are good at providing legitimacy, counseling, advice (Hillman & Dalziel, 2003).

In the course of interactions, communication and information sharing, between insiders and the firm environment both within and outside the firm, insiders are able to identify the need of every stakeholder. This can in turn enable board to conform with local norms appropriate to carry business task (van Ees, Grabrielsson, & Huse, 2009) such as eco-efficiency, employee satisfaction, investors' wealth maximization, customers and supply chain management, and society engagement. Also, insiders have less information asymmetric problems and thus the absent of information asymmetric problems makes investors not to question the authenticity of the financial operations (Ahmed, Rashid, & Gow, 2017). Moreover, according by Brunninge et al., (2007), insiders on a board has, have more knowledge, norms, values, interest about corporate social responsibilities board and thus can effect changes and interpret market and customers.

Therefore, the paper proposed that insiders will relatively play a positive relationship with CSR in the Swedish corporations because CSR implementation is stressed at inclusiveness, competiveness and accountability meanwhile insiders have mastery of the organisation and are partnership oriented in managing the firm. In regards to that fact, the paper deduce the following hypothesis

Hypothesis 1 = Inside directors have a significant positive relationship with Corporate social responsibilities

2.5 CEO on board and CSR performance

This research has categorized CEO as an insider of the board of directors in situation where a CEO resides on the board. Prior study have aim to study the relationship between CEO and CSR by looking at CEO duality and found a negative relationship between CEO duality and CSR performance, (Galbreath, 2017 : Husted, 2005 : McGuinness et al., 2017 : Nekhili et al., 2017 Rao & Tilt, 2016). However, this research departed from that respect and study CEO on board as the presence of CEO on Swedish board. We found out that not all board have CEO meanwhile some board have CEO (see **Chapter 4.1**). Moreover, unlike the UK board, where the CEO has the right to sit on the board as chair person and partake in the running of the firm operation as an executive manager. Meanwhile, in Sweden the situation is different; the CEO can hold a position of the board but prohibited to be chairman of the board (Larsson-Olaison, 2010). Also, in the Swedish board the CEO is the only executive management being allowed on the board as an executive director (Brunninge, Nordqvist, & Wiklund, 2007 p.300).

Often CEO sits on board in order to maintain control of the organisation and to ensure that the firm survive in the long-run (Brunninge et al., 2007) which is in line with the CSR objectives. Notwithstanding, governance debates has surface in many literature that the CEO negatively influence governance by impairing the functions of inside directors, wherefore, directors having social ties with CEO can act with low integrity and low monitoring abilities, thus reduce performance on CSR (Galbreath, 2017 : Husted, 2005 : McGuinness et al., 2017 : Nekhili et al., 2017 Rao & Tilt, 2016). According to the findings, CEO could influence the board to act in the own interest rather than that of the investors. Moreover, Brunninge et al., (2007) argue that CEO could forego current strategic plans and innovation in order to preserve the business for future generation especially in family firms.

Therefore base on the empirical findings, CEO could have a negative significant relationship with CSR. However, looking at the Swedish model, social norms and the aspect of sustainability, CEO could have a positive relationship with CSR because it is an indistinguishable aspect of long-run sustainable business. Therefore, the study deduce the following hypothesis

Hypothesis 2a = Board with CEO has a significant negative relationship with CSR performance

Hypothesis 2b = Board with CEO has a significant positive relationship with CSR

2.6 Ownership Concentration and CSR performance

Ownership concentration usually calculated by how spread ownership is (Belkaoui & Karpik, 1989; Cormier et al., 2005). It is a major and unique characteristic of the of the Swedish board, and often board comprise of active owners often occupy seats on the nomination committee and also influence decision making at annual general meeting, unlike the Anglo-American board comprise of diverse ownership (Larsson-Olaison, 2010). Major/controlling shareholders are that which holds at least 10% of votes and or capital (Larsson-Olaison, 2010) and according to (Jonnergård & Laisson-Olaison, 2016), the Swedish model is characterized by the idea of trusting controlling shareholders to solve problems. Therefore, firm with such shareholders are characterized as having concentrated ownership.

These kinds of owners are often referred to as active owners who take direct care of his/her property and thus moderate corporate excesses and avoid scandals (Jansson, 2013 p.8). According to Jansson, (2013 p.8), a real owner or controlling owner has characteristics that define legitimate behaviour such as moral guidance of management, responsibility towards stakeholder and the firm, long-term orientation, and being motivated by the firms' best interest. Therefore, firms with concentrated ownership will likely influence the decision of the board because those principals have the power and incentives to promote long-termism and engage in mutually beneficial implicit contract with their respective stakeholders to influence long-term investment and sustainability (see also Bammens et al., 2008 : Thomsen, Poulsen, Bosting, & Kuhn, 2018).

However, there exists debate in corporate governance literature of the fact that when effecting decision making, controlling owners might pursue their own interest at the expense of the minority owners (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). This is because high spread of ownership structure indicates that there may be more conflict among the principles and the agents (Reverte, 2009). And also, according to Shleifer and Vishny, (1997), concentrated owners can influence the company's strategic decision-making process through the appointed supervisors (board) and can influence decisions according to their own interests (Hillman and Dalziel, 2003). In addition, Jensen and Meckling, (1976), when describing agency theory do not only describes the relationship of the owners and the

managers but also explains the interests of the minority shareholders, thus were emphasizing the relevance of minority protection in the firm.

Moreover, according to Jonnergård & Laisson-Olaison, (2016 p.18) , in the Swedish model of corporate governance, the minority shareholders protection have been enhanced with the supreme role of the general meeting and the appointment of the non-executive board of directors. Also, the existence of trustful relationship between stakeholders and their management has increase minority shareholder protection (Stafsudd, 2009). Furthermore, even with high concentration Swedish companies have good ratings for their CSR activities as compared to other countries around the globe (Midttun et al., 2015).

Furthermore, Maher & Andersson (1999), explains in their research that the concentrated ownership has an advantage that they can expropriate the rights on minority shareholders so it can adversely affect the governance rating by third part. Nekhili et al., (2017) suggest that different kinds of ownership structure have different impact on CSR. His study found a negative relationship between employee structure and CSR performance and a positive relationship between family structure, institutional structure and CSR performance. The findings are contrary to (Galbreath, 2017) whose study found a negative relationship between family structure and CSR performance. Nevertheless, (Nekhili et al., 2017 : Galbreath, 2017) findings didn't point out to concentrated ownership; instead the findings classify ownership in terms of percentage of families, institutional investors, and employees shareholdings shareholders.

Therefore, to the best of our knowledge the relationship between ownership concentration and CSR have not been proven empirically by (Keynonen, 2018)did research specifically for Swedish companies to explain the relationship between different ownership structure (minority, major shareholders, private property, joint ownership, and management control) and CSR and found no significant relation among concentrated owners and CSR.

However, we proceed by suggesting that it does not only depend upon the concentration structure, it also depends upon the normative behaviour of the society as per the Swedish social order. Swedish governance system developed by time and interference of the labour and other factors developed it in way it is (Revert 2009) and thus, shows the normative behave of the Swedish society. Therefore, the normative behave of the Swedish society might be one of the reasons that Swedish corporations has more CSR ratings than other countries with concentrated ownership structure and trust which is likely to influence CSR because the

owners have long term orientation and do more to promote sustainability in the firm. Therefore, we deduce the following hypothesis

Hypothesis 3 = Ownership concentration has a significant positive relationship with CSR

2.7 Employees' Representative Directors and CSR

Another unique social order of Swedish corporate governance system is the fact that employees' representative seat on the board due to the strong relationship between firm and the union (Thomsen, 2016: Larsson-Olaison, 2010). Although it is the employees' right to have their representative on the board, according to the Swedish Corporate Governance Code, such right is not mandatory in Sweden, however, employees' representative have same legal duties and responsibilities as any directory on the board (Swedish Corporate Governance Board, 2016). The presence of employees' representative to part take in board decision in order to safeguard the interest of the employees can be seen as a social democracy of the Swedish boards.

However, to the best of our knowledge, no study has actually study the relationship between employees representative on the board and CSR performance. In order to deduce hypothesis, we look at the interest of employees' representative which is ensuring matters relating to social responsibilities (see **chapter 3.9.5.1.2**) are being part of the board decision to ensure employees' welfare and providing key advice/consultancy service in the board room, (Thomsen, 2016 p.200). Therefore we deduce the following hypothesis

Hypothesis 4 = Employees' representative directors have a significant positive relationship with Social Pillars

3 Research Methodology

This chapter discuss the manner in which the research has been conducted. It is the overall plan for the piece of research, including the strategy, the conceptual framework, the question of what is to be studied and the tools to be used for collecting and analysing the data (Punch, 2014). Adler and Clark (2011, p. 89) discuss this as "the process of searching for, reading, summarizing, and synthesizing existing work on a topic or the resulting written summary of the research". Successful research depends upon proper choice of methodology (Iacobucci and Churchill, 2010).

3.1 Research Questions

The research has been defined in terms of questions rather than problems, and the questions have played a central role in the analysis, and also helps to formulate hypothesis and to pick out the method for conducting the study (see Punch, 2014 p.5-8). The study aims to answer the following research questions.

1) What is the relationship between inside board members and CSR performance?
2) What is the relationship between board with CEO and CSR performance?
3) What is the relationship between ownership concentration and CSR performance?
4) What is the relationship between board with employees' representative directors (ERD) and CSR performance?

3.2 Scientific Perspective or Philosophical position

It's an essential thing for researchers to examine their philosophical position as it gives a guide to decide about the research design (Easterby-Smith et al. 2002). Philosophy in research refers to the development of knowledge (epistemology) – the assumptions of the study and the nature of that knowledge (ontology), which helps to develop the research strategy and the methods chosen (Saunders, Lewis, & Thornhill, 2009). Basically there are two main processes for knowledge creation: positivism and interpretivism (Easterby-Smith et al. 2002). Positivism adopts the philosophical stance of the natural scientist, works with an observable social realities and the use of existing theories to develop hypothesis. Positivism is based on facts, and as such the researcher cannot change the facts (Saunders et al., 2009), for example in our case, the research cannot change the fact that a board has 10 members for a particular year. On the other hand, interpretivism is the structure of knowledge to study the feelings and attitudes of variables and such study is usually undertaken under qualitative rather than quantitative approach (Saunders et al., 2009).

In this research we are going to adopt more positivism research process as data are to be collected and results will be drawn on the base of measurements rather than feelings. Moreover, philosophical objectivism have been used to study the nature of the reality–the relationship between variables, with the posit assumptions that though board structure is similar in all the sample firms, the essence of the function of board members are very much the same in all organisations (see Saunders et al., 2009 p. 110-113). Unlike subjectivism or interpretivist philosophy that explore the subjective meanings and motivating actions of

social actions (see Saunders et al., 2009 p. 110) which can be used to understand why board can behave in certain ways.

3.3 Research Approach

There are mainly two research approaches deductive and inductive which depend upon choice of research approach being used as motive vary from each other (Saunders et al., 2009). The deductive approach start with development of theory, from theory to hypothesis and a research strategy is established to test the hypothesis. Meanwhile the Inductive approach starts with the collection of data, development of theory as a result of data analysis (Saunders et al., 2009). In order word, deductive approach starts from a general level of abstraction to a specific level of abstraction unlike inductive approach which starts from specific to general (see Punch, 2014 p.59).

Our study has been conducted with deductive approach beginning from general to specific level of abstraction (Punch, 2014). That is, the study begins from a research area which is defined as board composition and CSR performance; follows by construction of research topic which is insiders, ownership concentration and CSR performance. Furthermore, deduced general question such as "what is the relationship between inside board members and CSR?". In order to answer the general question, the research further constructs specific research questions (See **chapter 3.2**), deduced from theories to formulate hypothesis. Lastly, the collection of data and analyses while formulating data specific questions for instance "what data is to be collected as CSR performance? Also, The deductive approach has been used for the study to explain causal relationship between the independent and the dependent variables, and works with quantitative data, while controls to allow the testing of hypothesis for instance the use of covariate(Saunders et al., 2009) such as Return on asset, board size, firm leverage and more. Also, according to (Saunders et al. 2009), deductive concern more positivism, helps to operationalized concepts and the use of numerical data while induction focuses on interpretivism and the study of beliefs, behaviours and interest of participants or variables.

3.4 Research Method or Design

A research method or design gives structure for assembling and investigating data. As research method depicts priority being specified to variety of aspects of research process and

strategy which a researcher adopt to answer the research (Saunders et al. 2009 p. 136). Research design basically is an idea of operational design inside which a research is being managed (kothari, 2004). Research design can be grouped into experimental, survey, grounded theory, case study, action research, ethnography and archival research.

This study has used the experimental research design as it aim to study the casual relationship between variables i.e. if a change in one variable (independent) affect a change in another variable (dependent) (Saunders et al. 2009 p. 142). Punch, (2014) define experimental as in three classifications: classic experimental–manipulation of independent variable(s)[1] and randomly assign to treatment /independent group; quasi experimental–naturally occurring treatment groups and statistically control of covariate p. 215. Lastly the non-experimental also called the correlation survey, which stress the study of the relationships between variables whereby these relationships are often studied using conceptual frameworks and shows naturally occurring variation in independent variable(s) and statistically control of covariate p.2015-2016.

The study has been conducted using the correlation survey design or the non-experimental design. This is because after conceptualising different variables as independent, control/covariate and dependent variables, the researcher could not manually manipulate the independent or covariate variables as the study deals with a large panel data (see p.215-216). Moreover, the data type which is longitudinal study does not permit the data to be manipulated but to be randomly selected therefore the data best fit non-experimental research design (see Bryman & Bell, 2015 p.56).

Furthermore, the research perspectives indicate us which research design we are going to adopt (Kumar, 2014, p. 103). Research could be qualitative or quantitative, and quantitative research emphasis more on data collection or analysis of data process which give or use numerical data (Saunders et al., 2009, p. 151). On other hand qualitative research design interlink with same process but without more focus on numerical figure rather more detail research–by trying to study the behaviour, attitudes and feelings of why and how variables react in certain manner (Punch, 2014). As per Kumar (2014) quantitative research gives enough data for "verification and reassurance" and often gives facts and figure to prove

[1] Manipulation of independent variable is situations where influential variables can be remove manually by identifying them, extracting them and measuring their effects. However, it is difficult to do that in real world because one lacks measurement of such variable; therefore the use of ANCOVA test or similar test has been used to statistically control using VIF function during the analysis (Punch, 2014 p.215).

arguments rather to provide personal opinion. Simply put the study of the cause and effect relationship of variables (Saunders et al., 2009).

The study has been conducted using quantitative research method as it aimed to study the relationship between the inside board (for cause) and CSR (for effect) using statistical numerical data. And thus, the research questions have been designed statistically to be studied quantitatively.

Moreover, a research can be descriptive, exploratory and explanatory. Descriptive research describe the accurate profile of an event, persons while exploratory seek to focus on the new research area or kind of unexplored phenomenon (Ruane, 2005). However, explanatory research is an approach which study causal relationship between variables in order to explain the relationship between them (Saunders et al., 2009 p.140). Therefore, the research has used the explanatory research design in order to explain the relationship between inside board members, ownership concentration and CSR performance. Thus, statistically testing the relationship and explaining the findings of their relationships.

3.5 Data collection

The research used secondary source of data in order to answer the research questions. Secondary data are data which has already been collected for different purpose however, can provide useful source to answer the research questions (Saunders et al., 2009 p.256). Data have been retrieved using, the Thomson Reuters database, Holdings Database, and annual reports. Financial data like ROA, leverage, total asset and ESG scores have been obtained using Thomson Reuters database, while Holdings database provided proportion of directors and directors information for the year 2018, and the rest of directors information have been extracted using 2016, and 2017 annual reports for the sampled companies.

The study sampled Large Swedish Listed firms of (Stockholm OMX stock exchange market) for the year 2016 to 2018, thus making the data a panel data comprises of cross-sectional data and time series data. A panel data or longitudinal data allow the research to draw a 'phenomenon' at vertical and horizontal level through time or a collection data for more than one case at multiple point in time in connection with two or more variables to detect patterns of association (Bryman & Bell, 2015 p.53-57). Also, large companies have been known to intensively promote CSR concept and often are required to disclose CSR engagements in their annual reports.

3.6 Scientific Credibility

There are mainly two scientific credibility namely; reliability and validity, and Bryman & Bell, (2015) outlined that reliability and measurement validity are both related but are analytically distinguishable.

3.6.1 Reliability

Reliability is fundamentally concern with issues of consistency measures to consider reliability (Bryman & Bell, 2015 p.158). High reliability indicates that research has been done with high transparency and permit consistency (Greener 2008). However, there are there prominent factors to consider reliability in a research, namely; internal reliability, inter-observer and stability (Bryman & Bell, 2015).

3.6.1.1 Internal reliability

Internal reliability explains whether or not the indicators that make up the scale or index are consistent or whether or not respondent' score on any one indicator tend to be related to their scores on other indicators. (Bryman & Bell, 2015 p.158) In order to address internal reliability the study has used Breusch and Pagan Lagrangcan multiplier test effects for heteroskedacity. Moreover, the Thomson reuters database trustworthiness and reliability have been measured by how often researches have used it to conduct prior studies (e.g Buauer, Moers, & Viehs, 201 : Semenova & Hassel, 2019 : Semenova & Hassel, 2016 : Semenova & Hassel, 2019 : Semenova, Hassel, & Nilson, 2010)

3.6.1.2 Inter-observer consistency

This kind of reliability test ensures that where more than one observer is involve and has to make subjective judgment the results should be consistent though most at times may be differ. However, the study under consideration is philosophical objectivism rather than subjectivism (see **chapter 3.2**).

3.6.1.3 Stability

Stability can be measure as retesting the same sample on another time or occasion to see if there exist variations of results (Bryman & Bell, 2015 p.158). This is because events may intervene between time1 and time2 that influence the degree of consistency, such as change

of economy or respondents' personal behaviours–individual heterogeneity may change the results over time (Bryman & Bell, 2015 p.158). However, the data in question is a longitudinal study which takes measures to identify social changes and it correlates, thus a Hausman test have been conducted to choose which research method best fit to address time or individual effects. Also, after settling at OLSDV regression with robust standard error, another test such as GLS while controlling for heteroskedacity and autocorrelation have been used as a comparative measures to increase the reliability of the findings.

3.6.2 Validity

Validity of data is one of the key elements which researchers do consider to make sure about the trustfulness of the findings. Validity represents the accuracy of information or the scale which truthfully describe the idea (Zikmund et al. 2010). There are a few kinds of validity namely; measurement validity, internal validity, external validity and ecological validity.

3.6.2.1 Measurement Validity

It has to do with whether or not a measure of concept really measures that concept e.g. asking questions about whether or not a person's IQ score really measures or reflect that person's level of intelligence (Bryman & Bell, 2015 p.159). It can be constructive i.e. encouraged hypothesis to be deduced from theory that is relevant to the concept, or facial which apparently reflects the content of the research in question that which is handled by judges concerned with the report (Bryman & Bell, 2015 p.159). The research has deduced hypothesis from theory known as stakeholder theory, institutional theory and resource dependency theory and focus on areas relevant to the research topic.

3.6.2.2 Internal validity

Internal validity concern mainly with issue of causality and pose the question does the conclusion between two or more variables holds water (Bryman & Bell, 2015 p.42). According to Bryman & Bell, (2015 p.56), longitudinal data generally has a typical week internal validity because such data makes it difficult to establish casual direction from the resulting data but can only account for that the variables are related. In order to capture this effect and the direction of the relationship, the use of sophisticated statistical software such as STRATA has been used for the analyses. Moreover, in order to mitigate the problem of attrition (occurs when those who leave the study may differ in some important respect from

those who remain), VIF test have been used to control for variance inflation by statistically removing such. Thus this helps solve the problem of non-experimental research which stipulated that variable could not be controlled in the study (see chapter 3.4).

3.6.2.3 External validity

External validity is concern with the question as whether the results of a study can be generalized beyond the specific research context, i.e. how people or organisations are selected to participate in research is crucial (Bryman & Bell, 2015 p.43). In order to address external validity, the study took a larger sample in order to have a considerate amount of observations in total 273 observations over 3 years study. Also, when non-random methods of data are employed external validity becomes questionable (Bryman & Bell, 2015 p.43) , however, as with panel data consisting of cross-sectional and time series observations, there exist a strong external validity (Bryman & Bell, 2015 p.56). Therefore, our data has strong external validity because our data are randomly selected and it is not possible to manipulate the variables due to its nature.

3.6.2.4 Ecological Validity

Ecological validity is concern with the question with whether or not social scientific findings are applicable to people' everyday, natural social settings (Bryman & Bell, 2015 p.43). The study proposed that future study can be carried out with questionnaires and observation sampling technique i.e. using primary data rather than secondary data.

3.7 Ethical consideration

Research ethics is a branch of applied ethics focused on the specific context of planning, conducting, communicating, and following up research (Punch, 2014 p.36). Also, ethical challenges in research arise in all designs and approaches and at all stages of a project, from the choice of research topic, which raises questions about the worthwhileness of the research, through to the reporting and publication stage and beyond it to further uses and outcomes (Punch, 2014).Therefore, considering ethical behaviour in research is considering what is good, right and virtuous (Punch, 2014 p.39). In other words, is checking whether there is harm to participants, whether there is a lack of informed consent, whether there is an invasion of privacy and whether deception is involved, whether data has been managed and whether copy right has been respected (Bryman & Bell, 2015 p.122-144).

For that reason the study has been conducted bearing in mind truthfulness of data collection by not distorting the data. Also, paying respect to individual companies by not disclosing their identity to the public so as not to cause harm to participants. For matters of informed consent and invasion of privacy, this ethical consideration is mostly common with interviews and observation–primary data source (Bryman & Bell, 2015 p.132-136), however, the research focus on secondary data collection. And thus, in order to avoid deception which is representing research other than what it is (Bryman & Bell, 2015 p.136), while collecting data, data source credibility have been checked, which are annual reports and Thomson Reuters data based. Also, in order to maintain copy right the researchers ensure that references pertaining to other authors' works and ideas have been provided.

Other important ethical considerations are reciprocity and trust and the question of funding (Bryman & Bell, 2015). Reciprocity and trust encourage the view of research relationship to be mutually beneficial exchange between the researcher and the participants (Bryman & Bell, 2015 p.141). In regards to that, participants in this research are the target population, however, the research deem to provide an opinion for the study topic to aid managerial decision for the target population meanwhile the researchers seek to mutually increase their understanding of the said area of concern. As for the question of funding, (Bryman & Bell, 2015 p142), stated that researchers need to be conscious of the possibility that questions about funding have the potential to affect the credibility of the research and that researchers should be explicit and open about the resources that enabled their research in any publication. In relation to that, the research under consideration has not been funded however in order to conduct the study, topic materials and access to database and statistical software have been retrieved/used from the university' database and computers.

3.8 Database

Thomson Eikon: Thomson Reuters started Eikon in 2010 as a substituted of Reuters 3000 Xtra (Reuters introduced electronic trading platform by 1999 and assist it until 2013, basically in trading rooms it facilitate financial analysist and professional traders). Thereafter, Refinitiv gave worldwide financial market information which is establish in 2018 in collaboration with Blackstone group LP with 55% stake and Thomoson Reuters 45%. Eikon is a platform which observes and analyses financial, economic and business information regarding company data, market data, news, trading, stock indices, and fundamental data. It gives information including foreign exchange, money market, fixed income, real estate,

funds, and commodities (libraries.uc, n.d). On other hand, Thomson Eikon + Datastream gives detail associated with macro analysis, asset allocation strategy and sector research. Companies and cross asset market information (Libraryguards.mcgill, n.d),

3.9 Measurement of Variables

3.9.1 Research Theories

The main theories uses for the study are; resource dependency theory, stakeholder theory and Institutional theory (See **APPENDIX 1b** , for summary).

3.9.1.1 Resource dependency theory

The resource dependency theory can be measure in terms of board size, proportion of female, dependent and independent directors, which implies board composition of different, diversify group of people each contributing differently to CSR maters see (Hillman & Dalziel, 2003 : van Ees et al., 2009)

3.9.1.2 Stakeholder theory

The stakeholder theory is the combination of corporate social responsibility theory and sustainability theory towards firm strategic management. Wherefore, CSR theory can be measured as the combination of Environmental score plus Social Score and plus Governance score (ESG). For instance, the more CSR score a firm demonstrate the more the firm is sustainable and the more the firm is stakeholder oriented (see Freeman, 1984 : Freeman, 2010 : Freeman et al., 2010 : Freeman & Moutchnik, 2013)

3.9.1.3 Institutional theory

Institutional theory can be measure in terms of Swedish social order, for instance ownership concentration, employee representative, no such concept as CEO duality rather CEO can take board sit while being executive directors, which are part of the unique characteristics of Swedish firms unlike other firms from different continent and countries (see Midttun et al., 2015 : Thomsen, 2016 : Vallentin, 2015)

3.9.2 Dependent variables

Dependent variables has been used in this research specifically CSR which depicts action carried out by various organizations specifically in social, governance and environmental fields (see Carroll, 1979; Lee, Kim, Lee, & Li, 2012; Mio, 2009; Rupp & Mallory, 2015).

3.9.2.1 ESG Score

ESG combined (ESGC) is a comprehensive score of the company which is conducted on the bases of environmental, social, and corporate governance pillars (ESG score) and gives a rounded detailed scoring of a firm's ESG performance based on information in ESG pillars along ESG arguments represent from global media sources. Key point of score is to deduct the ESG performance score which is establish on negative media stories (Thomson Reuters, 2019). The study has regressed the hypothesis and use ESGC as a measure of dependent variables, however also carried out statistical correlation test with independent ESG scores such as environmental pillar score, social pillar scores and governance pillar scores.

In this thesis we have use ESG score to analysis the CSR while Eikon Thomson Reuters, (2019) ranked ESG concern from 0 to 100 and 100 consider as best score which a company can get. The key purpose of this rating supports investor to recognize companies which are sustainable and ESG score specify to what level company has implemented and working with sustainability feature.

3.9.5.1.1 Environmental Pillar

The environmental factor focuses on how any company deal with deforestation, carbon dioxide emissions, waste and pollution and climate change, innovation, water waste (PRI 2018). All factors do not apply to all businesses; it depends upon the type of business too. For example, a plastic manufacturing or oil company has more impact on environment than financial consultancy firm (Thomson Reuters, 2019). Environmental pillar score is defined from 0 to 100, where 100 is the best score.

3.9.5.1.2 Social pillar score

The social factor considers how company deal with community and people for example; working circumstances, regional community, employee relations, conflict management, employee diversity, labour standards, product responsibility, workforce, human rights, health and safety (PRI 2018). Social Pillar score is basically weighted average relative rating of a company establish on social information which has been reported and resulting four social

categories scores (Thomson Reuters, 2019). Social pillar score is also defined from 0 to 100 and 100 consider as the best score a company can get.

3.9.5.1.3 Governance pillar score

The governance factor includes how company set rules, regulations and guideline about company management. For example, tax policies, CSR strategies and policies, shareholders, board diversity and structure wages, bribery, corruption, political lobbying, business ethics and frauds (PRI 2018). Various studies show that companies which has poor corporate governance strategies normally has poor operational performance (Clark et al., 2015, p. 30). Governance pillar score is defined by 0 to 100

3.9.3 Independent variables

To examine insiders and composition of board of directors and how it influence the environmental, social and governance performance (CSR) by different firms we have used various independent variables, we regress three main independent variables; inside directors (Dependent Directors), CEO on board, ownership concentration and employees' representative directors.

3.9.3.1 Employee Representatives' Directors

Employee representatives' directors consider as the insiders in ours research. We define this variable as whether employee representative is present on board or not. This variable also defines from the binary numbers 0 and 1, where 0 identifies that there is no representation of employees on board for strategic decision making and 1 defines that employee representatives are present on board.

3.9.3.2 Dependent Directors (inside directors)

Dependent directors defined as the percentage of directors on board which are dependent either of major shareholding, CEO or by management. Dependent on board are a vital part of the Swedish corporate governance code

$$\textit{Dependent Director Percentage} = \textit{Employee representative Directors} + \textit{Dependent Directors of Major shareholders} + \textit{Dependent of Management/Total board Size*100}$$

3.9.3.3 CEO as a Board Member

CEO as a board member, defines that the CEO sits on the board or not. As in Swedish companies has concentrated ownership, so often owners do not want to lose control on organizations (Brunninge et al., 2007). These members work as CEO and also sit on board to contribute in strategic decision-making process. This variable has been used as independent variable to check if the relationship of CEO on board impact positively on ESG scores or not. We define it with numeric value 0 and 1, 1 indicates that CEO is the member of board and 0 indicates that CEO is not a member of board.

3.9.3.4 Controlling shareholders on Board

Controlling shareholders on board is one of the independent variable. We assume that if single shareholder has 20% or more than 20% shareholding and is himself-herself or his-her representative is present on board or not. We took this 20% by considering that Sweden has concentrated ownership structure thereby assuming 20% to identify the controlling shareholder and define it as ownership concentration. This variable identifies from the binary numbers 0 and 1. 1 shows that there is a controlling shareholder and his-her representative is on board and 0 identifies that the firm does not have controlling shareholder.

3.9.4 Control variables

To avoid the bias result various control variables has been used in this research.

3.9.4.1 Gender diversity

Gender diversity got importance in corporate governance in recent years (Carrasco & Laffarga, 2007). Prior research suggested that female directors perform an essential role to increase the board effectiveness and improve quality of financial information and encourage better corporate practices for other matters (Pucheta-Martínez & Sempere, 2016; Rogelberg & Rumery, 1996). Gender diversity has been defined as control variable and indicates the percentage of female directors on the board of each company.

3.9.4.2 Return on Assets

According to (Hargrave, 2019), Return on Assets (ROA) define how much profitable the company has as compared to its assets. This variable depicts whether investors invest in the

particular company or avoid it. As ROA effects total number of stock price bounce and instant bad performance alert investors and become the reason of negative stock price bounce. Prior research depicts that profitability affects CSR as Ismail & Chandler (2005) and Liu & Anbumozhi (2009), discussed positive relationship of ROA and CSR on other hand McWilliams & Siegel (2000) discussed negative impact.

In this thesis Thomson Reuters Eikon database has been used to get information about ROA for large cap Swedish companies from 2016-2018. ROA used as control variable in this project and defined as in ratio.

$$Return\ on\ Asset\ (ROA) = Net\ Income / Total\ Asset$$

3.9.4.3 Board Size log

Board size depicts how many board members are in the firm's board. Prior research has used same variables in their studies to get to know the relationship between board size and ESG scores (Arayssi et al, 2016; Birindelli et al., 2018: Husted & Sousa-Filto, 2019 : Manita et al., 2018). Larger board size has possibilities to include the more experienced members but on the other hand different researchers mentioned that larger board size impact negatively on the overall performance of the organization. We are going to use the board size as control variable.

Organizations monitoring, controlling and reporting influence by board size. As in some cases it's consider that small board size makes the coordination and communication among directors better and high accountability and commitment of all board members as individual (Dey, 2008). While on other hand Dalton et al (1999) and Kaymak & Bektas (2017), discussed how big board size more effective in term of experience, capability which could be supportive for various aspects like decision making, conflict management and disclosing CSR issues.

We define board size as the total number of members on board. For each year we consider the number of members on board and then took log of each board size to use in our thesis working.

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3.9.4.4 Leverage

Leverage is the amount of debt which a company use to finance assets. The idea of leverage is used by investors and companies as well. Investors use it to expand the returns that can be given on an investment and companies use leverage to finance their assets as firm utilized debt financing in order to increase shareholder value to invest in business matters (Minnema & Anderson 2018). Nekhili et al., (2017 and Cabeza-García et al., (2018) found negative association between leverage and CSR meanwhile Fernández-Gago et al., (2016) found a positive relationship.

We are going to use leverage as control variable in our statistical tests. Eikon Thomson Reuters mentioned following formula to calculate leverage of organizations:

*(Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / (Total Capital + Short Term Debt & Current Portion of Long Term Debt) * 100*

3.9.4.5 Sector of Corporation

Sector of corporation uses as control variable and identifies from 1 to 6. Identification of sectors with different number describes below

1= Construction and material

2= Financial

3= Health and Safety

4= Industrial

5= Telecommunication

6= Transport

Previously, (Galbreath, 2017 : Pulaj & Enida 2017 : Rao & Tilt, 2016), classify sector into different categories and used as a control variable before conducting their studies

3.9.4.6 Firm Size

To define the firm size, we use total assets in our thesis. First extract the total assets from Eikon Thomson Reuters data base and after took the log of each value to use in our analysis. The research use statistic software to calculate the logarithm of the asset as a measurement of

the firm size. Fernández-Gago et al., (2016) and Galbreath, (2017) found a positive significant relationship between firm size and CSR.

3.9.4.7 Independent Directors

Independent directors have been used in the study and represent the percentage of strictly independent members of total board size. Strictly independent can be describe as the members which are independent from the major shareholding, CEO and also independent from the management. This variable previously used by Sánchez & Isabel (2010) in their research.

3.10 Research Hypothesis

Hypothesis 1= Inside Directors have a positive significant relationship with ESG

Hypothesis 2a = Board with CEO has a significant negative relationship with ESG

Hypothesis 2b = Board with CEO has a significant positive relationship with ESG

Hypothesis 3 = Ownership concentration has a significant positive relationship with ESG

Hypothesis 4 = ERD has a significant positive relationship with Social Pillars

4 Analyses

The study has conducted several statistical analyses to test the relationship between inside directors, ownership concentration and CSR performance; first, a descriptive statistics, second correlation and multivariate regression. The Model formula is depicted as such;

Model1: OLSDV (see Rao & Tilt, 2016)

$$ESG\_Comb = \alpha + ß_1(Dependent\_Dir) + ß_2(CEO\_on\_board) + ß_3(Owership\_Con) + ß_4(Independnt\_Dir) + ß_5(Female\_Per) + ß_6(Board\_Size) + ß_7(Company\_Size) + ß_8(ROA) + ß_9(Sector) + ß_{10}(Leverage) + \sum_{Sector=1}^{6} ßDummies + \varepsilon$$

Model2: FGLS

$$ESG\_Comb_{it} = \alpha + \beta_1(Dependent\_Dir)_{i,t} + \beta_2(CEO\_on\_board)_{i,t} + \beta_3(Owership\_Con)_{i,t} + \beta_4(Independnt\_Dir)_{i,t} + \beta_5(Female\_Per)_{i,t} + \beta_6(Board\_Size)_{i,t} + \beta_7(Company\_Size)_{i,t} + \beta_8(ROA)_{i,t} + \beta_9(Sector)_{i,t} + \beta_{10}(Leverage)_{i,t} + \varepsilon_{i,t}$$

Where;

ESG_Com	= Average Environmental, Social and Governance pillars score
DEPENDENT_PER	= Percentage of dependent directors
CEO_on_baord	= is the board with CEO or not
Controlling_Ownership	= is the board with >20% ownership concentration or not
labU	= employee representing from the labour Union
INDEPENDENT_PER	= is the Percentage of strictly independent directors
FEMALE_PER	= is the percentage of female directors present on the total board
BOARDSIZE_LOG	= is the logarithm of the total board size
TOTAL_ASSET_LOG	= measurement of firm size is the logarithm of the Total asset
ROA	= is the ratio of the net profit is to total asset
Sector	= industrial dummies
LEVERAGE	= is the ratio of the firm short and long-term debt to it total asset
α	= alpha coefficient
ß	= Berta coefficient
ε	= error term
i	= represent the observation (firms)
t	= time (year)
Sector Dummies	= dummies for each sector number 1to 6

Mover, see (**APPENDIX 1b)**, for summary description of variables and measurements.

4.1 Descriptive results

The descriptive statistics enable the researcher to describe (and compare) variables numerically and it is commonly done using the central tendency and dispersion (Saunders et al., 2009 p.444). The measure of central tendency use is the mean which is the technical point in a distribution about which the sum of the squared deviations is at a minimum, meanwhile the measure of dispersion use in the study is the standard deviation which is the deviation of the individual measurement from the mean (Punch, 2014 p.253-254). Also the higher the standard deviation, the more spread out the score while the lower the standard deviation the less spread out the score p.254 (see **Table.1**)

Table 1. Summary of Descriptive Statistics

	Observation	Mean	St. Deviation	Min	Max
company_id	273	46.000	26.317	1	91
YEAR	273	2017	0.818	2016	2018
labU	273	0.648	0.478	0	1
DEPENDENT_PER	273	0.406	0.188	0	1
INDEPENDENT_PER	273	0.576	0.203	0	1
BOARDSIZE-_LOG	267	0.946	0.113	0.699	1.114
CEO_on_board	267	0.442	0.498	0	1
FEMALE_PER	273	0.341	0.126	0	0.714
TOTAL_ASSET_LOG	273	7.521	0.713	4.596	9.769
ROA	273	9.091	10.538	-16.250	128.420
Sector	273	3.154	1.529	1	6
LEVERAGE	273	38.988	23.549	0.02	170.40
Governance_Pillar	273	35.085	21.855	5.59	98.14
Social_Pillar	273	66.116	20.776	10.63	95.78
Env_Pillar	240	54.581	26.155	0.37	102.13
ESG_Com	273	57.094	17.577	19.580	93.570
Controlling_Owners	267	0.670	0.471	0	1

Table 2 Other summary Descriptive statistics

SECTOR	Frequency	%Percentage	Valid Percentage	ESG_Com Mean	ESG_Com St. Deviation
Contrsuction and Material	36	13.19		56.66	13.47
Financial	84	30.77		53.07	16.34
Health and Safety	33	12.09		59.96	19.58
Industrial	72	26.37		64.33	19.81
Telecommunication	18	6.59		55.26	17.98
Transport	30	10.59		55.25	12.27
BOARD					
Board with Controlling shareholders	179	65.5	67	55.83	17.57
Boards without controlling shareholders	88	32.2	33	60.31	17.54
Board with CEO	118	43.2	44.2	56.07	19.61
Board without CEO	149	54.6		58.38	15.93
Board with employees representative	177	64.84		57.92	17.15
Board without employees representative	96	35.16		55.57	18.33

4.1.1 Company classification

The result indicate that the minimum group is telecommunication and the maximum group is financial implying that on average majority of Swedish large firms are financial firms comprise of banks, insurance, pension funds and real estate and the minimum is telecommunication comprises of the media and internet or telephone services providers (see **Table. 1**). Base on the sample of large Swedish firms from Stockholm exchange, the final sample comprise of 91 companies grouped into sectors such as construction and materials with 13.19% ; financial with 30.77%, Health and Safety with 12.09 and industrial 26.37; telecommunication 6.59% and Transport 10.59%.

4.1.2 Dependent Directors (Inside Directors)

Comprise of total directors dependent of company, management, and major shareholders. The results indicate a mean of 0.406 and standard deviation of 0.188 of an average board size of 0.946 (See Table 3) implying that on average each board comprise of 40.6% of insiders and the standard deviation imply that majority of the boards have the same number of insiders or dependent directors. Moreover, the minimum percentage % is 0 while the maximum is 100. This implies that in the Swedish boards there are boards with no dependent member.

4.1.3 Employees Representative

The minimum percentage is 0 and the maximum is 100% with a mean of 0.648 and a standard deviation of 0.47 (see **Table 3**). This results implies that on average 64.8% of Swedish boards have employees representative and the boards are not widely spread from the mean, thus the boards operate similarly with the appointment of employees representative from the trade Union.

4.1.4 Independent Directors

These are directors strictly independent of company, management and major shareholders. The results indicates that the mean is 0.576 with a standard deviation of 0.203 of an average board size of 0.946 (see **Table 3**), this implies that on average Swedish boards have 57.6% of strictly independent directors and the boards behave similar for the appointment of the number of strictly independent directors. Moreover the minimum % is 0 while the maximum is 100. This implies that in Swedish board there are boards with no strictly independent member.

4.1.5 CEO on boards or not

The results indicate that the mean is 0.442 and the standard deviation is 0.49 **(**see **Table 3)** implying that on average boards Swedish boards with CEO is 44.2% as compared with board without CEO and the CEO are likely to reside on the board similarly among all boards. The findings are not similar with that of (Larsson-Olaison, 2010 p.345), after conducting a survey of the annual report Swedish listed firms on Stockholm Stock Exchange from 1998-2004 found on average board with CEO is 54%.

4.1.6 Female percentage

The results implies that on average Swedish boards comprise of 34% female (mean 0.34 of an average board size of 0.946) and there is similarity on all the boards for the appointment of average number of female with a standard deviation of 0.126(see **Table 3**). Also, majority of the board have less female directors as compared to male directors.

4.1.7 Ownership Concentration

The result indicate the mean is 0.67 while the standard deviation is 0.47, this imply that on average 67% of the boards have a controlling shareholders owning about >20% voting right of stock ownership.

4.1.8 ESG scores

On average governance score is 35.08, social is 66.11 and environmental is 54.56 with a standard deviation of 21.85, 20.77, and 26.15 respectively **(See Table 3).** These results imply that governance responsibility had the lowest scores while social had the highest score as compare to the three ESG responsibilities. Moreover, depicting from their standard deviation, the average score for social responsibilities is more consistent in all the companies as compared to governance and environmental respectively. Also, as per the ESG combined score the minimum score is 19.58 while the maximum is 93.57 with a mean of 57.09 and standard deviation of 17.57(see **Table 3**). This result implies that most companies obtained score close to the mean.

4.1.9 Other Accounting indices

According to the findings, on average each firm had ROA of about 0.09 with a standard deviation of 10.58 indicating that their level of profitability each is widely spread from the mean. The lower score risk is 0.02 while the maximum was 170.4 with average leverage ratio is 38.9 with a standard deviation of 23.54 (see **Table 3**) indicating that on average majority of the firm encounter risk between 2016 and 2018 with the same variation or ratio closer to 38.9

4.2 Correlation Results

Correlation statistics test the relationship between variables. The study has used the Pearson Product-Moment correlation (r) which tells one the direction and strength of relationship between variables–both how the variables are related and how much they are related (Punch, 2014 p.261). Also, pairwise correlation function has been use to delete variables that have missing pair values and a statistical significant coefficient P value used is 5% and 1% to determine the strength of the relationship (see **Table 3**). The multicollinearity have been checked using variance inflator function (VIF) which is a situation where two or more than two independent variables are highly correlated to each other among several independent variables and thus the VIF must be less than 3 for acceptability range (Giri & Biswas, 2019 p.155). After obtaining the VIF, the study discover DD and ID correlated together with very high VIF of 28 each, and in order to correct the issue ID was eliminated from the control variables when testing the hypothesis. The mean of VIF for all the variables after removing ID are 1.51 (see **APPENDIX 2b**)

According to the findings, employee representative director is positively significant with the number of Dependent Director (DD) and negatively significant to the number of Independent Director (ID) at (r = 0.251, $P<0.01$) and (r = –0.255, $P<0.01$) respectively.

CEO was positively related to the board size at (r = 0.15, $P<0.05$) and total asset at (r = 0.166, $P<0.01$), implying that the larger the board size and firm size the more CEO occupy board position. Also, the larger the company in terms of total asset the bigger the board size at (r = 0.370, $P<0.01$), the more the female occupy board position (r = 0.204, $P<0.01$) and the less the ROA at ($r = –0.313, P<0.01$).

Ownership concentration is positively significant with DD at (r = 0.283, P<0.01) and CEO at(r = 0.209, P<0.01) and negatively significant with ID at (r = –0.278, P<0.01). The findings suggest that the more board have concentrated ownership, the less such board are likely to have strictly independent directors sited on the board. Also, ownership concentration is negatively significant to board size at (r = –0.278, P<0.01). This suggests that bigger board size have less concentrated ownership.

Also, the findings reveal that the sector has positive significant relationship with the percentage of employee representative director and ROA and a negative significant

relationship with company size, percentage of female directors, ownership concentration and leverage (See **Table.3**).

Moreover, leverage has a negative significant relationship with dependent DD at ($r = –0.197$, $P <0.01$) and controlling ownership at ($r = –0.147$, $P<0.05$), a positive significant relationship with ID at ($r = 0.167$, $P<0.05$) and with female at ($r = 0.155$, $P<0.05$).

From the correlation **table3**, the environmental social and governance score are positively statistically significant to each other. Moreover, employees' representative has a positive significant result with social pillars at 99% level of confidence ($r = 0.191$, $P<0.01$). This result is not of surprise since employees directors sit on the board to promote the interest of the employees. Moreover, the bigger the firm size and the board size the more the concern for social responsibility (See **Table3**).

In regards to the governance pillars responsibility, it is statistically negatively significant with DD at ($r = –0.155$, $P<0.05$) and CEO on the board at ($r = –0.197$, $P<0.01$) and controlling shareholders at ($r = –0.176$, $P<0.01$), and positively significant with ID at($r = 0.148$, $P<0.05$). This result implies that DD and CEO are less focus with governance aspect meanwhile ID adds more to governance aspect of the firm. Meanwhile firm with concentrated ownership focus less on governance responsibilities.

Also, in order to cater for governance responsibility the findings indicate that leverage; board size and firm size plays significant positive relationship with governance pillar (see **Table3**). In addition, environmental concern has fewer variables that correlate with it other than ESG scores. The findings suggest that board size and firm size has a positive significant relationship with environmental pillars, thus larger firms in terms of board and total asset demonstrate more environmental concern.

Table 3 Correlation Results

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	VIF
1	LabU	1															1.4
2	DEPENTDENT_PER	0.251** 0.000	1														28.9
3	INDEPENDENT_PER	–0.255** 0.000	–0.979** 0.000	1													28.7
4	BOARDSIZE	0.498** 0.000	0.258** 0.000	–0.270** 0.000	1												1.67
5	CEO_on_board				0.150* 0.022	1											1.3
6	FEMALE_PER						1										1.15
7	TOTAL_ASSET_LOG				0.370** 0.000	0.166* 0.011	0.204** 0.002	1									1.63
8	ROA							–0.313** 0.000	1								1.15
9	Sector	0.164* 0.012					–0.208** 0.001	–0.225** 0.001	0.186** 0.004	1							1.16
10	LEVERAGE		–0.197** 0.003	0.167* 0.011			0.155* 0.018	0.390** 0.000		–0.166* 0.011	1						1.22
11	Governance_Pillars		–0.150* 0.022	0.148* 0.023	0.214* 0.001	–0.197** 0.003		0.147* 0.025			0.183** 0.005	1					
12	Social_Pillars	0.191** 0.003			0.417** 0.000			0.229** 0.000				0.309** 0.000	1				
13	Environtal_Pillars				0.276** 0.000			0.232** 0.000				0.156* 0.017	0.526** 0.000	1			
14	ESG_Com	0.147* 0.025			0.396** 0.000			0.269** 0.000				0.156* 0.017	0.805** 0.000	0.790** 0.000	1		
15	Controlling_Owner		0.283 0.000	–0.278** 0.001		0.209 0.001		0.209** 0.000		–0.135* 0.039	–0.147* 0.025	–0.176** 0.007				1	1.17

* Correlation is significant at P<0.05 (2-tailed)

** Correlation is significant at P<0.01 (2-tailed)

Moreover, employee representatives have a significant positive relationship with total ESG combine scores at 95%level of confidence (r = 0.147, P<0.05), and board size and total asset play a positive significant role to implement ESG in the firm at (r = 396, P<0.01) and (r = –0.155, P<0.01) respectively. It shows that the larger the board size the more opportunity to include the experienced directors.

4.3 Regression Statistics

Regression is the next step after correlation and it is use to predict the value of a variable base on the value of another variable where the predicted value is the dependent variable and the and the predictor is the independent variable (Giri & Biswas, 2019 p.128). With simple regression where $y=a+\beta x$ the relationship is easier to predict as compared to multivariate regression where the data is across panels. This is as a result of the endogenous problems where some explanatory variables might correlate with the error term (Chmelarova, 2007 p.1). This effect is also known as autocorrelation (see Huitema & Laraway, 2006). Also, due to the fact that most of the time the panel data could be experiencing heteroskedacity which is refer to a situation where the size of the error term differs across the values of independent variables (Ahmed et al., 2017 p.73) in other word, the size of the error term are not statistically independent over time (Economic Theory Blog, 2016). Nevertheless, panel data has some advantage because it allows the researcher to control for variables one cannot observe or measure like cultural factors or difference in business practice across companies or variables that change over time (Torres-Reyna, 2007 p.3). This is also referred to as individual heterogeneity p.3.

4.3.1 Regressing the relationship between Inside directors, Ownership Concentration, CEO on board and CSR Performance

It is important to note that in order to regress each of the first three hypothesis, the other main independent variables become control variables. Therefore, one table has been used to present the results for each three hypothesis.

Firstly, the study performs a Hausman test to choose between fixed effects and random effect model (Chmelarova, 2007). The findings prove that both model were insignificant for the

data at (r=0.52, P<0.876) and (r^2=15.8, P<0.393) respectively (**APPENDIX 2a**) when using company and time as panel but could work best when using just time panel with a Hausman test of (r =18.6, P<0.045). Without finding any justifiable findings for using just time as panel to conduct the fixed effect and random effect model, as well as craving to control for individual fixed effect both across company and time with a statistical significant model another regression method was chosen.

We proceeded by testing of heteroskedacity with the modified wald test for GroupWise heteroskedacity (chi2=1.3e+08, P<0.000) and the Breusch and Pagan Lagrangian multiplier (chi2=110, P<0.000). The P-values are both significant which imply, the data has some heteroskedacity problems and thus making the simple OLS less efficient to interpret the findings (see Torres-Reyna, 2007).

Furthermore, we calculate the mean of the ESG of each year and obtain a line graph against each year and each firm and found out that the ESG score per firm did not vary over time (see **Picture2**) implying there was no heterogeneity in firm performance across time. However, individual heterogeneity existed among firms or groups of individuals when implementing ESG (see **Picture1**) (see Torres-Reyna, 2007). Having constant ESG per firm over could be one of the reasons why the data rejected both the random effect model and the fixed effect model. This is because if fixed effect is used as suggested by the Hausman test it would be hard for such model to identify any form of exogenous variable because the constant term will pick up most or all variation of between the individual firms.

Also, depicting from **Picture 2**, one can assume that there is effect of autocorrelation. This is because according to (Huitema & Laraway, 2006), autocorrelation are likely to occur when the time between observations is very short, **2)** when the outcome behaviour changes slowly, **3)** three important predicted variables are left out and **4)** the linear relationship between predictors and the outcome variables are not well specify. Evidently the data meet the first three assumptions as for the 4^{th} a VIF function has been used before conducting the analyses. Autocorrelation when positive can lead to underestimated P-values and confidence intervals that are too narrow on the other hand the knowledge of it presence can guide the research to select more appropriate analyses (Huitema & Laraway, 2006).

In order to proceed with the search for best model that fit the data, first we decided to use Ordinary Least Square regression with robust standard error. Also, we try to mimic the fixed effect model by creating dummy variables for each year and each sector in order to obtain

Least Square Dummy Variable (OLSDV) model with robust standard error. This method is proposed by (Torres-Reyna, 2007) who did analyses using OLSDV and fixed effect using dummies and obtain similar results with the intention to use the former to control for heteroskedacity, (also see Economic Theory Blog, 2016). Also, "robust" standard error obtains unbiased standard errors of OLS coefficient under heteroskedacity (Economic Theory Blog, 2016).

Figure 1. ESG Score mean accross companies

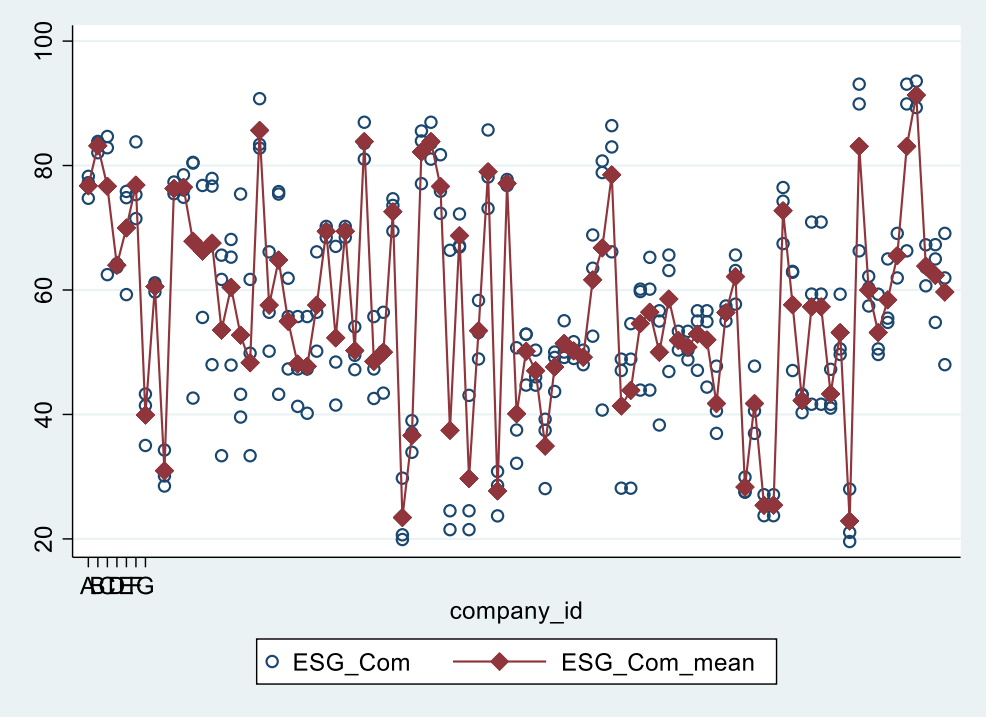
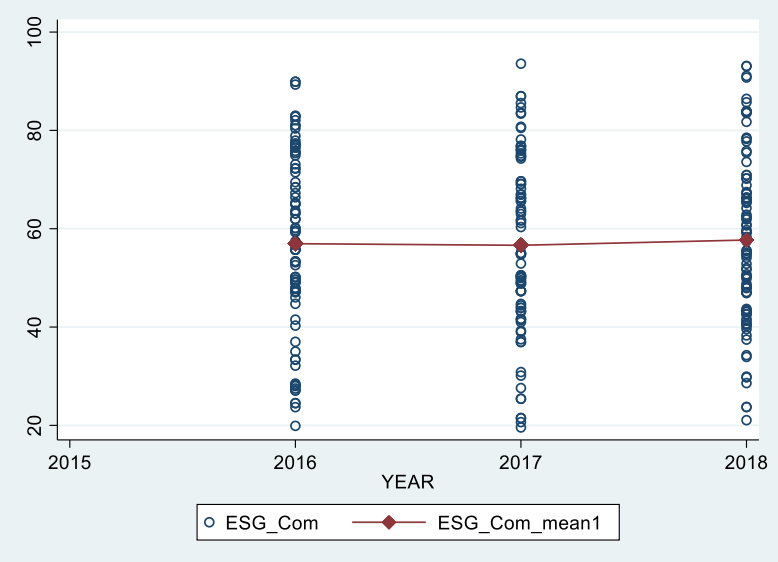


Figure 2. ESC score mean accross Years (2016-2018)



Moreover, we decided to do another test call the Feasible Generalized least square (GLS) using both year and company id as panels with robust to correct both for heteroskedacity and autocorrelation by single lag OLS of residuals with panel specific auto regress process. This is because we assume that, though the OLSDV correct for heteroskedacity, some autocorrelation problems could still exist. The FGLS examines the residual autocorrelations from a preliminary OLS regression and suggests a reasonable form of the error generating process (Economic Theory Blog, 2016). However, the findings were better as compared to OLSDV. This could imply the method better adjusted the autocorrelation and heteroskedacity problems in order to give a good estimate. The results for both models are presented side by side for comparison (See **Table4**).

Table 4. ***Regression Table for H1, H2 and H3***

Variables	LSDV with robust standard error (Model 1)			FGLS with robust to correct for heteroskedacity and autocorrelation (Model 2)		
	R square Berta	t-value	P-Values	R square Berta	z-value	P-Values
Dependent_Per	**–13.28**	**–2.10**	**0.037****	**–8.43**	**–7.17**	**0.000***
BoardSize_Log	**43.2**	**3.44**	**0.001***	**41.96**	**13.2**	**0.000***
Female_Per	–1.95	–0.20	0.839	**4.21**	**2.04**	**0.041****
Total_asset_log	3.27	1.53	0.128	**2.1**	**4.06**	**0.000***
ROA	0.032	0.5	0.621	–0.024	–1.36	0.177
Sector	0.374	0.05	0.96	**0.88**	**2.81**	**0.015****
Leverage	–0.00	–0.08	0.933	**0.04**	**3.29**	**0.001***
Controlling_Own	**–4.35**	**–1.89**	**0.060*****	**–2.59**	**–5.2**	**0.000***
CEO_on_board	–2.939	–1.29	0.199	**–1.01**	**–2.12**	**0.034****
Constant term	1.53	0.12	0.908	1.09	0.24	0.808
Year dummies			YES			NO
Sector dummies			YES			NO
Model Prob>F			**0.0000**			**0.0000**
R^2 LSDV			0.16			
wald chi^2 GLS						492.79
Wald test						**0.000**
Breusch test						**0.000**
t-test of covariate						**0.000**
t-test for main independent variables						**0.000**

* Significant at P<0.01

** Significant at P<0.05

*** Significant at P<0.1

Significant levels are in **bold**

4.3.1.1 Results

The findings suggest that both models are significant to explain variation between the main independent variables and CSR performance excluding employees' directors, over 3years period while controlling for company size, ROA, board size, leverage, percentage of female directors and various sectors (**See Table4**).

That is each result indicates significant level after holding all other variables constant to explain each main independent variable. The Beta (ß) coefficients explain the weight attaching to each independent variable and tell one how important each independent variable is in predicting the dependent variable (Punch, 2014 p.264). Meanwhile the squared multiple correlation coefficients (r^2) gives direct estimate of the amount of variation in the dependent variable which is explained or accounted by the independent variable, p.264. According to **Model1**, the r^2 is 0.16(16%) meanwhile that for **Model2** r^2 is 492.79 suggesting that **Model2** account for more variation in the dependent variable than **Model1** explained by the independent variables (see **Table4**).

Depicting from **Model1** DD has a negative significant relationship with CSR with (ß = –13.28, at P<0.037) while for **Model2**, (ß = –8.43, at P<0.000) suggesting that a change in the DD by one unit will result to a change in the ESG combine score of minus 13.28 and minus 8.43 for both models respectively. Therefore the alternate **hypothesis 1** is rejected and the null hypothesis is accepted and thus, inside directors do not have a significant positive relationship with CSR.

Controlling shareholders has a negative significant relationship with CSR at 90% level of confidence where (ß = –4.353, at P<0.06) for Model1 and at 99% significant level (ß = –2.59, at P<0.000) for Model2, suggesting when firms leave from non-concentrated ownership to a concentrated ownership structure, the ESG combine score reduces by minus 4.35 score or minus 2.59 score for both model. Thus, suggesting that ownership concentration reduce the performance of ESG by firms. Therefore the alternate **hypothesis3** is rejected and the null hypothesis is accepted and thus, ownership concentration does not have a significant positive relationship with CSR.

CEO on board has a negative significant relationship with ESG combine score at 95% level of confidence (ß = –1.01, P<0.034) for **Model2**, and no significant relationship with ESG at

(ß = –2.93, P<0.19) for **Model1**. Nevertheless, their t-value for **model1** indicate that CEO on board add variation to ESG where t = –1.29. The findings suggest that board having CEO will perform negatively to CSR responsibilities while board without CEO will perform positive to CSR matters in Swedish large board. Therefore, **hypothesis2a**, is accepted meanwhile **hypothesis2b** is rejected, suggesting CEO on board has a significant negative relationship with CSR

Moreover, board size has a strong positive significant relationship with CSR where (ß = 43.205, at P<0.001) for **Model1** and (ß = 41.96, at P<0.000) for **Model2**, suggesting that a change in board size by the appointment of an additional director will lead to an increase of 43.2 score and 41.96 score of ESG for both models at the end of that fiscal accounting year. Both models suggest strong positive relationship between board size and ESG performance.

Also, depicting from **Model2**, we can deduce the following result which **Model1** couldn't deduced. Firstly, the female proportion add significantly positive to CSR performance in the Swedish boards at 95% level of confidence (ß=4.2, P<0.041). Also, firm size is positively related to CSR performance (ß = 2.10, at P<0.000), meanwhile ROA has no significant relationship with CSR (ß = –0.024, at P<0.177). Looking at the t-value, t= –1.36, one can infer that the ROA add little variation in CSR performance though not statistically significant at 95% and 99%. Leverage has a week positive significant relationship on ESG at (ß = 0.040, at P<0.001) meanwhile the sector has a positive significant relationship with CSR at (ß = 0.88, at P<0.005)

Moreover, a separate test was performed with same variables excluding DD and adding independent directors ID and the study found a positive relationship between ID and CSR at (ß = 13.818, at P<0.024) for **Model1** and (ß = 8.95, at P<0.000) for **Model2**, suggesting that the appointment of one independent director will lead to a positive change in CSR performance (See **Appendix2c**).

4.3.1.1.1 Robustness test for CEO, ownership concentration and CSR

Also, regressing using ANCOVA as a robustness test for testing CEO on board, ownership concentration on CSR due to their categorical nature, coded as 0 and 1. The results suggest similar findings as reported above (see **APPENDIX 4**). The test controls for ROA, company size, board size, leverage, and frim sector.

According to the findings board with CEO has a negative significant relationship with CSR at 90% level of confidence (ß= –3.915, at P<0.06), meanwhile controlling shareholder has a negative significant relationship at 99% level of confidence (ß = –5.59, at P<0.009). The findings are very much similar to that of **Model2** above.

4.3.2 Regressing the Employees' Representative Director (ERD) and Social Pillars

In order to test the degree at which employee representative Director (ERD) add to Social Pillars, and ANCOVA was used and a robust test using GLS using panel specific autoregressive process after controlling for heteroskedacity and autocorrelation. Both model regress and control for female proportion, ROA, Leverage and firm size. When other variables where added the model proof less significant and the results reversed.

The findings are reported side by side by comparison. Both findings have similar results (also see **APPENDIX 3 and Table5** below).

Table 5. Regressing Employee Representative Director and Social Pillars

Variables	ANCOVA (Model1)			FGLS (Model2)		
	R square Berta	t-value	P-Values	R square Berta	z-value	P-Values
Lab U(Employee Dir)	**6.23**	**2.4**	**0.017****	**6.99**	**14.05**	**0.000***
Female_Per	1.168	0.12	0.9	2.07	1.42	0.154
Total_asset_log	**6.13**	**3.14**	**0.002***	**5.91**	**9.71**	**0.000***
ROA	–0.02	–0.19	0.84	–0.024	–0.93	0.35
Leverage	–0.03	–0.64	0.52	**–0.03**	**–3.68**	**0.000***
Constant term	17.12	1.2	0.23	**17.7**	**3.9**	**0.000***
Year dummies			NO			NO
Sector dummies			NO			NO
Model Prob>F			0.0005			0.0000
R^2 ANCOVA			0.06			
wald $chi^2(r^2)$ GLS						326.99

* Regression is Significant at P<0.01

** Regression is Significant at P<0.05

*** Regression is Significant at P<0.1

Significant levels are in **bold**

From the findings ERD has a significant positive relationship with Social pillars at 95% confidence level (ß= 6.23, at P<0.017) for **Model1**, and (ß= 6.99, at P<0.000) for **Model2** at 99% confidence level. The result suggests that the more employees representative directors occupy board the more the social welfare of the organisation increased. Therefore, **hypothesis 4** is accepted, suggesting that there is a positive significant relationship between ERD and Social Pillars.

5 Discussion

Our findings suggest negative relationship between inside directors and CSR which is similar to the findings of (Galbreath, 2017). The result suggests that though insiders make on average of 40.0% of Swedish large board they are less concern with CSR concern. Till date, corporate governance debates have discuss board performance to CSR in relationship to long-termism and short-termism and posit that the more board members focus on the long-term growth (CSR), the less these members are short-term oriented–financial performance (Thomsen, et al., 2018). Therefore, one can infer that in the Swedish corporate governance system, inside board members give less attention to sustainability and focus more on short-termism which is financial growth. This argument is in support to the agency theory assumptions; where inside boards members both executive and CEO performance in the managerial labour market is tie with the firm's financial returns (Fama, 1980) see also (Broch et al., 2012: Beasley, 1996: Dechow et al, 1996: Lazonick & O'Sullivan, 2000).

Therefore, as CSR is negatively related with financial returns (Jo & Na, 2012: Lopez et al., 2007) inside board members might aim to ensure less cash outflow and promote more cash inflow to boost return on asset. However, according to Friedman's ideology companies' sole aim is to make profit and CSR concept could mean corporate directors act in ways that could favour a society at the detriment of the company (i.e. investing in CSR is stealing), and term the CSR concept as *"harm to the foundation of a free society"* (Friedman, 1970). Therefore, one can also infer that in the Swedish context, board insiders act in favour of Friedman's ideology.

Our findings also suggest that, the bigger the board size the more CSR concern. Our result support the resource dependency theory which implies that with bigger board size, the more human capital, labour diversity and social interactions and thus, stakeholders' needs are

identified and catered for (Hillman & Dalziel, 2003), and also, the more the board conform to local standards (van Ees, Grabrielsson, & Huse, 2009) such as economic, environmental and social norms. Our findings are similar to that of (Ahmed et al., 2017; Husted & Sousa-Filto, 2019; Chang et al., 2017: Kaymak & Bektas 2017 : Pucheta-Martínez et al., 2019) who found positive relatonship between board size and CSR. However, (Dienes & Velte, 2016; Kiliç, et al., 2015; Nekhili et al., 2017) found no significant relationship between board size and CSR.

Ownership concentration was found to be negatively significant related with ESG combined and also negatively significant with strictly independent directors in the Swedish large firms. Our results support the institutional theory assumptions that different institutional norms influence firms' performance differently to CSR concern (Filatotchev et al., 2013). Also as part of Swedish social identify, where the society at large trust on their controlling shareholders in relation to strategic decisions (Jonnergård & Laisson-Olaison, 2016) could imply these controlling shareholders are good at increasing financial performance which everyone in turn benefit from the returns rather than focussing on long-termism of the firm.

Also, according to Fama (1980), these shareholders form part of the capital market and often discipline firms with poor financial performance, as result, their presence in the firms can promote short-termism rather than long-termism. Therefore, the findings support the fact that concentrated ownership have the power to influence strategic decision to their own interest (Shleifer & Vishny1997: Maher & Andersson, 1999) and also the more concentrated they are the less likely directors are independent of the firm. Nevertheless, despite their presence, Sweden remains one of the leaders of CSR policy around the globe (Midttun et al., 2015 : Thomsen, 2016). Our findings are contrary with that of (Keynomen, 2018), who found out that ownership concentration has no significant relationship with CSR in the Swedish boards.

Moreover, our findings suggest that CEO presence on board has a negative effect on CSR on Swedish large firms. Our result could imply that the CEO is more conscious about labour market demand and earnings rather than in CSR performance and long-term sustainability. Because some portion of the CEO compensation relates to financial performance (Clarke, 2012). Though prior research has study CEO presence on board and paid more attention to CEO duality, however, our findings are similar with those researches, suggesting a negative association between CEO duality and CSR, (see Dienes & Velte, 2016 : Galbreath, 2017 : Husted, 2005 : Husted & Sousa-Filto, 2019 : McGuinness et al., 2017 : Nekhili et al., 2017 Rao & Tilt, 2016).

We also, found that the proportion of strictly independent directors is positively significant associated with CSR performance in Swedish large firms. Positive relation of the independent directors with CSR is more like related to the Anglo-American model, wherefore as a result of diversified ownership, owners are less involve in managerial decisions and independent directors are hire to monitor the works of the managers ensuring the firm abide to legitimate practice and sustainability (Husted & Sousa-Filto, 2019). In addition, our findings are in support with the notion that independent directors' image and reputation is determined by their ethical and responsible behaviour to promote social behaviour, compliance with regulations (Zahra and Stanton, 1988 in Cabeza-García et al., 2018 p.565), and with environmental concern. Thence, the findings support with Hillman and Dalziel, (2003) assumption that independent directors are good at monitoring, good at identifying bad behaviours and good at discipline, and also because they lack social ties with management and major shareholders, they can pay more attention to the need of everyone in and out of the organisation.

Therefore, firms wanting to increase their ESG score may be well advised to promote strictly independent directors on their board. Our findings are similar to that of (Ahmed et al., 2017 Cabeza-García et al., 2018: Chang et al., 2017 : Fernández-Gago et al., 2016: Kaymak & Bektas, 2017 : Kiliç, et al., 2015 : Nekhili et al., 2017 : Pucheta-Martínez et al., 2019) and contrary to that of (Chang et al., 2017 : McGuinness et al., 2017 : Rao & Tilt, 2016) who found no significant relationship.

Employees' representative directors have a significant positive relationship with Social concern but not significant to governance and environmental concern. Our findings are in support of the institutional logics of Swedish Corporate governance model, where employees elect their representative among them who sit on the board of directors to promote employees welfare (Larsson-Olaison, 2010 : Thomsen, 2016). Protection of employees' rights falls in the social service. It means representation of the ERD impacts on the protection of the rights of employees that directly influence the social ratings by the third party. Also, Thomsen, (2016) defines that the ERD raise the voice of employees in board room. So, the positive relation of ERD and social pillar in our findings proves this statement.

ROA has no statistical significant relationship with CSR though it is negatively related in the Swedish context. Our findings are similar to (Fernández-Gago et al., 2016) and contrary with

that of (Pucheta-Martínez et al., 2019), who found negative relationship meanwhile (Ahmed et al., 2017 : Galbreath, 2017 : Ismail & Chandler 2005) found positive relationship.

Moreover, leverage is negatively associated with CSR in Swedish large firms. Our result suggests that, when firms use more of debt capital to finance operations, their concern for CSR drop. Also, the findings are in support with the notion that firms with low systemic risk are economically stable and response more to CSR (Roberts 1992 in Nekhili, et al., 2017 p.86). Our findings are same with that of (Nekhili et al., 2017 : Cabeza-García et al., 2018) but contrary with that of (Fernández-Gago et al., 2016) whose results suggest a positive relationship. However, Harjoto, & Laksmana (2018) results provide evidence that CSR performance positively interlinked with company value because CSR lower the extreme risk avoidance and risk taking.

Also, leverage is negatively significant to inside directors meanwhile positively significant with independent directors. Our findings are in support of the incentive base contracts propounded by Fama, (1980), and also supported by Eisenhardt, (1989). The incentive-based contracts' ideology posit that independent directors are motivated with incentives to monitor best and as such with incentives, risk taken is transferred from the principal to the agent(independent directors) and the agent align his interest with that of the owners. Therefore, independent directors are good at taken risk than inside directors because they are motivated[2] to do so (see also, Collin et al., 2017), and thus can effect strategic changes (Brunninge et al., 2007) that benefit all stakeholders.

Also, board with ownership concentration have lesser leverage ratio than board with no ownership concentration. Our findings suggest that board with ownership concentration are less finance through debt and are rather finance through equity, and thus the more the concentration the lesser the leverage. Findings are same with that of Hubert & Latrous (2012). Moreover, the bigger the company in terms of total asset the more the risk taken at ($r = 0.39$, $P<0.01$). Therefore, these risk seekers directors can take more risk in larger companies than in smaller companies although such companies are associated with low ROA.

We also, found out that female proportion on board has a positive significant relationship with CSR and positive significant relationship with risk(leverage), suggesting that female directors promote social, economic and governance concern in the Swedish boards. Our

[2] According to (Collin et al., 2017) , boards with more independent directors have high compensation

findings contribute to resource dependency theory which implies diversify boards takes more risk, and provide different kinds of human capital that contribute to the overall firms' sustainability, and thus female diversity is one of the measures of diversified board (Hillman & Dalziel, 2003 : van Ees, Grabrielsson, & Huse, 2009). Our findings are in support with (Kiliç, et al., 2015, Pucheta-Martínez et al., 2019) who found out female director increase CSR, and contrary with that of (Dienes & Velte, 2016 : Nekhili et al., 2017) who found negative relationship.

Also, sector plays a significant positive relationship with CSR implying that company sectors matter in order for different board composition to influence CSR. Our findings are same with that of (Ahmed et al., 2017 : Fernández-Gago et al., 2016) whose study suggest that different sectors perform differently to matters of ESG.

Also, Firm size plays a significant positive relationship with CSR. Also, the findings are in support of resource dependency theory which implies larger companies have more resources, assets, work forces, people form diversify backgrounds and can increase ESG concern in the organisation (Hillman & Dalziel, 2003). Also, though our findings suggest that larger firms have larger boards and more female directors, one can infer that their participation to CSR could be as a result of the more resources larger firms have. In addition, larger firms are may be more subject to greater public scrutiny and greater public pressure especially concerning economic, governance and environmental concern (Husted & Sousa-Filto, 2019) and thus, are likely to increase their CSR score. Our findings are similar with that of Fernández-Gago et al., 2016 : Galbreath, 2017).

Furthermore, the findings suggest that CEO is positively related with board size and firm size, meanwhile both board size and firm size is positively related with CSR. Therefore, one can infer that the negative association between CEO and CSR can be less felt in bigger board and bigger firms in terms of asset, and can be much felt with smaller boards and small firm size in the Swedish context.

Also, in regards to the correlation statistics (see **Table.3**) environmental social and governance score are positively statistically significant to each other. Our findings are in support of Freeman's assumptions that it is difficult to distinguish between social, governance and environmental concern because they are interrelated to each other, (Freeman, 1984).

However, the result for female proportion, leverage, firm size, and Sector should be interpreted with care because only **Model2** provide such empirical evidence, meanwhile **model1** fail to provide significant relationship. Notwithstanding, **Model2** have a lot of similarities with the Pearson correlation results presented above. However, we proposed that more research can further be carried out to explore such areas of concern.

6 Conclusion

The research aim to explain the relationship between inside directors, ownership concentration and CSR performance and sampled large Swedish firms registered at Nasdaq Stockholm exchange market. Prior empirical studies have explain the relationship between board composition and CSR paid more attention to board independence and CSR (Chang, Oh, Park, & Jang, 2017 : Dienes & Velte, 2016 : Husted & Sousa-Filto, 2019 : Kiliç, Kuzey, & Uyar, 2015 : Pucheta-Martínez & Gallego-Álvarez, 2019: Rao & Tilt, 2016). Meanwhile, some paid more attention to board diversity and CSR (Al-Shaer & Zaman, 2016 : Fernández-Gago, Cabeza-García: Nekhili, Nagati, Chtioui, & Nekhili, 2017 : McGuinness et al, 2017 : & Nieto, 2018). However, this paper deviated from prior studies and focus on the inside board members while looking at the institutional norms of the Swedish corporate governance system. Again deviating from prior studies, we classify boards into: insiders which comprise of boards having social ties with management (e.g. CEO), elected by major shareholders, and/or elected by employees; and also classify board into strictly independent directors comprises of board having no social ties with management, major shareholders and company.

Data was obtained using Thomson reuters database, Holding database and annual reports for the period 2016 to 2018. We explore the stakeholder theory, resource dependency theory and institutional theory in order to deduce the four main hypotheses. However, the paper has answered the four questions raised. The study found out that inside directors which comprise of CEO on boards, directors elected by major shareholders have negative significant relationship with CSR meanwhile strictly independent directors have a positive relationship with CSR. Moreover, our findings also suggest a native significant relationship between ownership concentration and CSR while the correlation result indicate that the more ownership concentration, the less strictly independent directors in the Swedish board. Meanwhile there is a positive significant relationship between employees' representative

directors and Social responsibility; also a positively relationship between female proportion on board and CSR performance.

Though the most of our findings didn't match with our expectations, one can deduce from our findings that firms wanting to increase their ESC score, may be well advised to increase strictly independent directors (of management, CEO, and major shareholders), female proportion and/or expand their board size. However, one can also infer that dependent directors are more of short-termism than long-termism i.e. prefer to concentrate to increase financial performance (see also Broch et al., 2012: Beasley, 1996: Dechow et al, 1996 : Galbreath, 2017). Nevertheless, the study propose that more research can be done to explore this area, if inside board members really increase financial performance or not, as a means to forgo concern for CSR (long-termism).

Also, depicting from Institutional theory, the social orders of the Swedish firms, having high CSR policies as compared to other countries around the globe (Midttun et al., 2015 : Thomsen, 2016) , could be as a result of individual people forming the "group", which can be term "*the behaviour of the people*". Therefore, the "*the behaviour of the people*" promote CSR and not the administrative group. We propose that future research can try to study the interest of each administrative persons or the interest of each persons in the firm towards CSR performance, which can be done with the use of questionnaires rather than secondary data to investigate the relationship between company persons and CSR performance.

Moreover, the paper contribute to prior theoretical and empirical literature by looking at board composition and CSR and extend literature towards ownership concentration around the board, CEO presence on board, and employees' representative directors on board. Also, using OLSDV and FGLS, the paper contributes to methodological strength of the existing literature in the field of corporate governance.

The paper has also contributed to the following practical implications; **1)** the text-rich approach might be of interest to multinational enterprise (MNEs) that strive for local adoption with respect to CSR. **2)** International investors and fund managers might find the findings of interest to understand local markets or who seek the best portfolio in terms of social investments. **3)** Local (home) firms can benefit from the findings when implementing strategic decisions towards CSR.

Though the study adds to theoretical and practical implications, however the study has the following limitations: **1)** the research didn't control for CEO on board as per newly appointed

CEO or old CEO, this is because according to (Nekhili et al., 2017), newly appointed CEO has positive significant relationship with CSR than old CEO. **2)** The study focus only on large Swedish firms, therefore, generalization of the result to small and medium firms or non-Swedish firms is limited. **3)** Also, the variables were limited; the study did not take into consideration demographic characteristics such as directors' age, and or firm age. **4)** The study suggests future research should control for demographic characteristics, and also use qualitative analyses to study the relationship between board composition and CSR performance. 5) Moreover, the study did not differentiate for ownership structure as in the case of (Keynonen, 2018) , however, classify ownership in terms of concentration by defining concentrated ownership as boards having a controlling shareholder having 20% or more of voting right. Therefore, we suggest future study can structure the study and control for different types of ownership structures in order to have more comparative results.

Also, the time period for the research is limited, whereby the research began April 8th, 2020 and ended June 5th, thus making approximately two months period, we suggest further research to last for at least 3months period or more.

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APPENDIX 1a. Data

company_id	YEAR	LabU	Dep Director	Independ Director	BOARDSIZE_LOG	CEOonboad	FEMALE_PER	TOTAL_ASSET_LOG	ROA	Sector	LEVER	Governance_Pillar	Social_Pillars	Env_pillar score	ESG_Com	Controlling_Owners
1	2016	1	0.55	0.45	1.04	1	0.27	8.06	11.6	4	31.74	58.55	91.98	81.22	77.25	1
1	2017	1	0.50	0.50	1.08	1	0.25	8.09	14.4	4	29.29	49.97	90.1	84.15	74.74	1
1	2018	1	0.67	0.33	1.08	1	0.25	7.98	15	4	32.41	62.21	91.92	80.65	78.26	1
2	2016	1	0.50	0.50	1.08	0	0.33	8.43	0.87	5	15.96	75.9	88.3	81.98	82.06	0
2	2017	1	0.46	0.54	1.11	0	0.38	8.38	-13.45	5	24.8	79.33	87.86	83.55	83.58	1
2	2018	1	0.62	0.38	1.11	1	0.23	8.39	-2.09	5	27.4	85.6	81.97	84.04	83.87	1
3	2016	1	0.27	0.73	1.04	1	0.36	8.58	3.87	6	58.97	57.79	76.4	92	82.86	1
3	2017	1	0.27	0.73	1.04	1	0.36	8.60	5.71	6	53.92	61.68	92.92	94	84.67	1
3	2018	1	0.38	0.62	1.11	1	0.31	8.66	6.04	6	51.7	70.36	92.51	95	62.47	1
4	2016	1	0.55	0.45	1.04	1	0.27	7.97	8.06	1	30.61	45.9	76.55	68.53	63.66	1
4	2017	1	0.55	0.45	1.04	1	0.36	7.99	9.55	1	31.24	45.06	77.05	70.25	64.12	1
4	2018	1	0.77	0.23	1.00	0	0.34	8.02	3.12	1	34.29	47.59	75.55	69.46	64.2	1
5	2016	1	0.45	0.55	1.04	1	0.64	9.42	0.76	2	85.48	63.57	82.38	81.57	75.84	1
5	2017	1	0.38	0.62	1.11	1	0.31	9.41	1	2	83.74	60.11	82.76	81.65	74.84	1
5	2018	1	0.31	0.69	1.11	1	0.31	9.41	1.35	2	85.17	55.22	78.65	43.91	59.26	1
6	2016	1	0.33	0.67	1.08	0	0.58	7.98	20.81	6	14	58.08	75.98	80.35	71.47	1
6	2017	1	0.57	0.43	0.85	0	0.43	8.02	16.27	6	14.61	58.3	84.43	83.26	75.33	1
6	2018	1	0.42	0.58	0.95	0	0.39	8.06	11.68	6	25.25	75.91	83.89	91.64	83.81	1
7	2016	0	0.27	0.73	1.04	1	0.36	8.57	9.97	2	15.33	66.46	43.69		35.02	1
7	2017	0	0.18	0.82	1.04	1	0.36	8.61	11.8	2	14.45	61.88	65.07		41.44	1
7	2018	0	0.30	0.70	1.04	0	0.40	8.62	-0.1	2	17.02	65.2	70.95		43.28	1
8	2016	0	0.60	0.40	1.00	0	0.50	9.42	1.22	2	91.53	58.79	57.21	63.01	59.67	1
8	2017	0	0.55	0.45	1.04	0	0.45	9.44	1.08	2	91.29	48.06	67.59	67.8	61.15	0
8	2018	1	0.34	0.66	1.11	1	0.38	9.47	1.15	2	92.02	43.97	70.28	68.3	60.85	0
9	2016	0	0.50	0.50	0.78	0	0.50	7.88	7.77	5	27.24	19.09	52.18	14.23	28.5	1
9	2017	0	0.38	0.63	0.90	1	0.50	7.92	8.26	5	32.9	7.47	54.92	27.97	30.12	1
9	2018	0	0.50	0.50	0.90	1	0.50	7.99	8.43	5	30.7	6.74	62.41	33.69	34.28	1
10	2016	1	0.36	0.64	1.04	0	0.55	8.40	2.38	5	33.09	87.72	84.09	60.25	77.35	1
10	2017	1	0.82	0.18	1.04	0	0.45	8.38	5.15	5	45.83	90.6	83.07	54.67	76.11	1
10	2018	1	0.45	0.55	1.04	0	0.36	8.39	2.17	5	47.93	91.14	80.64	54.68	75.48	1
11	2016	1	0.40	0.60	1.00	1	0.20	7.99	6.99	4	44.48	73.17	77.46	74.1	74.91	0
11	2017	1	0.30	0.70	1.00	1	0.30	8.01	14.25	4	32.86	79.33	79.14	69.83	76.1	0

11	2018	1	0.30	0.70	1.00	1	0.30	8.06	12.41	4	29.05	80.72	80.2	74.61	78.51	0
12	2016	1	0.30	0.70	1.00	1	0.20	9.33	1.44	2	88.01	87.46	74.57	79.17	80.4	1
12	2017	1	0.27	0.73	1.04	0	0.45	9.34	1.37	2	87.63	89.12	73.5	78.91	80.51	0
12	2018	1	0.26	0.74	1.08	0	0.37	9.35	1.44	2	86.69	90.81	67.85		42.63	0
13	2016	1	0.40	0.60	1.00	1	0.50	7.16	38.79	4	115.42	72.35	64.57	62.22	66.38	0
13	2017	1	0.50	0.50	1.00	0	0.40	7.12	26.25	4	156.83	71.09	80.44	78.87	76.8	0
13	2018	1	0.39	0.61	1.00	0	0.26	7.13	28.65	4	170.4	73.76	79.95	13.06	55.59	0
14	2016	1	0.42	0.58	1.08	1	0.33	7.90	6.04	1	34.94	66.1	86.14	81.55	77.93	1
14	2017	1	0.31	0.69	1.11	1	0.31	7.92	7.39	1	30.59	55.76	85.92	88.42	76.7	1
14	2018	1	0.57	0.43	1.11	1	0.26	7.96	4.56	1	31.46	74.41	87.54		48	1
15	2016	1	0.73	0.27	1.04	1	0.27	8.02	5.75	1	27	24.96	85.63		33.37	1
15	2017	1	0.45	0.55	1.04	1	0.36	8.03	3.86	1	29.4	36.82	86.18	62.1	61.7	1
15	2018	1	0.50	0.50	1.00	0	0.30	8.06	4.12	1	27.57	61.14	74.68	60.98	65.6	1
16	2016	1	0.36	0.64	1.04	1	0.55	7.59	-4.47	5	36.8	73.97	72.77	49.1	65.28	1
16	2017	1	0.25	0.75	0.90	0	0.50	7.57	1.87	5	38.56	71.75	74.58	58.03	68.12	1
16	2018	1	0.29	0.71	0.85	0	0.43	7.92	1.68	5	43.59	61.31	73.92	8.56	47.93	1
17	2016	1	0.71	0.29	0.85	1	0.71	7.23	7.26	6	28.87	24.96	88.33		75.42	1
17	2017	1	0.50	0.50	1.00	0	0.50	7.23	7.55	6	27.86	36.82	87.42	5.48	43.24	1
17	2018	1	0.63	0.38	0.90	0	0.38	7.25	8.12	6	26.35	32.47	45.75	40.52	39.58	1
18	2016	1	0.40	0.60	1.00	0	0.30	7.02	8.09	1	34.41	85.59	86.51		33.37	1
18	2017	1	0.40	0.60	1.00	0	0.30	7.06	7.31	1	35.6	90.26	82.71	12.13	61.7	1
18	2018	1	0.29	0.71	1.00	0	0.27	7.12	7.38	1	39.4	98.14	65.46		49.84	1
19	2016	1	0.50	0.50	1.08	0	0.42	7.71	4.84	4	39.95	85.59	88.33	74.48	82.8	1
19	2017	1	0.55	0.45	1.04	0	0.45	7.71	6.11	4	38.27	90.26	87.42	72.52	83.4	1
19	2018	1	0.48	0.53	1.00	0	0.18	7.75	8.71	4	33.82	98.14	87.85	86.26	90.75	1
20	2016	1	0.33	0.67	0.78	0	0.33	7.57	8.65	2	48.27	62.59	64.13	23.79	50.17	1
20	2017	1	0.17	0.83	0.78	0	0.33	7.63	7.19	2	50.03	48.99	66.66	53.61	56.42	1
20	2018	1	0.33	0.67	0.78	0	0.33	7.65	8.49	2	47.21	58.56	64.92	74.91	66.13	1
21	2016	1	0.36	0.64	1.04	1	0.36	7.73	8.95	4	25.58	62.59	86.51	77.16	75.42	0
21	2017	1	0.36	0.64	1.04	1	0.36	7.75	12.75	4	13.22	48.99	82.71		43.24	0
21	2018	1	0.40	0.60	1.00	0	0.30	7.77	12.76	4	7.94	58.56	86.66	82.21	75.81	0
22	2016	1	-	-			-	7.47	11.88	4	33.22	44.33	49.75	73.11	55.73	1
22	2017	1	-	-			-	7.43	16.08	4	36.83	5.59	69.55	66.79	47.31	
22	2018	1	0.43	0.57	1.00	0	0.34	7.55	17.72	4	23.48	34.05	85.08	66.54	61.89	
23	2016	1	0.50	0.50	0.78	0	0.17	5.99	39.72	6	11.83	47.11	49.75	70.33	55.73	0
23	2017	1	0.50	0.50	0.78	0	0.17	6.22	45.77	6	6.5	44.28	52.74	44.91	47.31	0
23	2018	1	0.50	0.50	0.78	0	0.17	6.39	42.1	6	3.89	61.3	42.5	20.1	41.3	0
24	2016	1	0.58	0.42	1.08	0	0.33	7.73	3.1	3	50.92	44.33	64.13	58.73	55.73	1
24	2017	1	0.42	0.58	1.08	1	0.33	7.61	3.86	3	36.2	44.28	66.66	30.99	47.31	1
24	2018	1	0.30	0.70	1.00	0	0.40	7.62	-1.34	3	35.52	59.12	64.92		40.19	1

25	2016	1	0.67	0.33	1.08	0	0.25	7.88	4.96	3	26.06	47.11	49.75	53.65	50.17	0
25	2017	1	0.60	0.40	1.00	0	0.40	7.89	5.77	3	19.77	61.68	52.74	54.84	56.42	1
25	2018	1	0.58	0.42	1.08	0	0.33	7.90	4.91	3	14.98	87.84	59.58	50.97	66.13	1
26	2016	0	0.38	0.63	0.90	1	0.25	7.38	16.46	2	12.41	92.03	75.54	37.75	68.44	1
26	2017	0	0.25	0.75	0.90	1	0.25	7.44	11.08	2	18.66	95.15	78.27	35.53	69.65	1
26	2018	0	0.38	0.63	0.90	1	0.25	7.48	8.31	2	20.1	97.03	77.22	36.41	70.22	1
27	2016	0	0.50	0.50	0.90	1	0.38	7.67	-3.46	4	109.53	92.03	58.24		41.51	1
27	2017	0	0.38	0.63	0.90	1	0.38	7.66	8.96	4	109.94	95.15	70.52	35.36	67.01	1
27	2018	0	0.33	0.67	0.95	1	0.33	7.71	4.34	4	113.34	97.03	70.09		48.42	1
28	2016	0	0.17	0.83	0.78	1	0.33	7.41	6.64	1	40.15	33.85	75.54	95.93	68.44	1
28	2017	0	0.33	0.67	0.78	1	0.33	7.44	6.75	1	40.03	33.13	78.27	97.55	69.65	1
28	2018	0	0.17	0.83	0.78	1	0.33	7.51	7.35	1	36.4	32.55	77.22	100.89	70.22	0
29	2016	1	0.75	0.25	0.90	1	0.50	7.67	6.79	4	52.93	51.83	69.79	19.98	47.2	1
29	2017	1	0.50	0.50	1.08	1	0.42	7.68	6.33	4	52.03	61.96	67.01	19.56	49.51	1
29	2018	1	0.55	0.45	1.04	0	0.27	7.74	6.33	4	50.79	67.84	73.55	20.85	54.08	1
30	2016	0	0.57	0.43	0.85	0	0.29	6.58	51.32	4	33.48	44.76	79.88		81.03	0
30	2017	0	0.43	0.57	0.85	1	0.29	6.65	10.78	4	35.99	53.23	78.86		86.96	0
30	2018	0	0.43	0.57	0.85	0	0.29	6.74	10.53	4	39.11	54.84	77.96		83.58	0
31	2016	0	0.75	0.25	0.90	0	0.25	7.16	4.06	3	13.76	85.6	48.12	33.47	55.73	1
31	2017	1	0.75	0.25	0.90	0	0.63	7.08	1.43	3	50.71	80.37	43.8	17.76	47.31	1
31	2018	1	0.57	0.43	0.90	1	0.21	7.11	3.03	3	51.33	36.31	42.57	48.83	42.57	1
32	2016	0	0.29	0.71	0.85	0	0.43	8.00	0.51	2	7.04	90.85	81.22		50.17	0
32	2017	0	0.86	0.14	0.85	0	0.43	8.06	0.44	2	6.49	91.35	80.46		56.42	0
32	2018	0	0.89	0.11	0.90	0	0.22	8.09	0.41	2	5.72	59.01	39.12	32.16	43.43	0
33	2016	1	0.78	0.22	0.95	0	0.44	7.02	14.06	3	1.91	44.76	79.88	83.74	69.46	1
33	2017	1	0.70	0.30	1.00	0	0.40	7.05	13.43	3	2.4	53.23	78.86	91.89	74.66	1
33	2018	1	0.64	0.36	1.04	0	0.27	7.08	13.26	3	2.43	54.84	77.96	87.97	73.59	1
34	2016	1	1.00	-	0.85	0	0.43	6.83	6.52	4	40.65	34.49	24.84	0.37	19.9	1
34	2017	1	0.57	0.43	0.85	0	0.29	6.87	7.59	4	38.83	40.61	21.83		20.66	1
34	2018	1	0.57	0.43	0.85	0	0.29	6.99	9.43	4	46.71	52.04	25.11	12.13	29.76	1
35	2016	1	0.17	0.83	0.78	0	0.17	6.79	14.91	6	27.45	59.01	15.1	36.89	37	0
35	2017	1	0.17	0.83	0.78	1	0.17	6.83	12.7	6	31.13	67.54	17.05	32.41	39	1
35	2018	1	0.29	0.71	0.85	0	0.29	6.87	15.78	6	19.2	22.54	39.23	39.99	33.92	0
36	2016	1	0.40	0.60	1.00	0	0.40	7.41	6.36	4	22.72	85.6	78.11	67.56	77.09	1
36	2017	1	0.44	0.56	0.95	0	0.44	7.45	6.3	4	27.11	80.37	82.08	94.2	85.55	0
36	2018	1	0.40	0.60	1.00	0	0.30	7.53	3.48	4	38.6	85.25	75.74	90.86	83.95	1
37	2016	0	0.29	0.71	0.85	0	0.57	7.89	9.42	2	56.82	90.85	73.64	78.6	81.03	0
37	2017	1	0.29	1.00	0.85	0	0.57	7.92	8.14	2	53.12	91.35	83.26	86.27	86.96	0
37	2018	0	0.25	0.75	0.85	0	0.50	7.96	9.35	2	50.38	88.6	78.84	83.3	83.58	0

38	2016	1	0.22	0.78	0.95	1	0.33	7.28	1.6	3	43.57	59.01	89.94	68.01	72.32	1
38	2017	0	0.22	0.78	0.95	0	0.33	7.31	1.02	3	43.77	67.54	90.88	69.19	75.87	1
38	2018	0	0.25	0.75	0.95	0	0.38	7.35	5.75	3	40.12	79.54	89.66	76.02	81.74	0
39	2016	1	0.56	0.44	0.95	0	0.56	8.05	3.77	3	47.9	59.01	77.56		24.52	1
39	2017	1	0.38	0.62	1.11	1	0.46	8.16	7.07	3	52.07	67.54	69.04		21.49	1
39	2018	1	0.33	0.67	1.08	1	0.42	8.18	6.03	3	49.31	76.24	69.81	53.09	66.38	1
40	2016	0	0.25	0.75	0.90	0	0.50	7.70	16.48	2	48.86	60.55	77.56	78.55	72.22	0
40	2017	0	0.13	0.88	0.90	0	0.50	7.77	11.05	2	47	56.52	69.04	75.14	66.9	0
40	2018	0	0.17	0.83	0.90	0	0.50	7.84	12.66	2	42.91	54.56	73.14	73.63	67.11	0
41	2016	0	0.40	0.60	0.70	1	0.20	7.97	7.57	2	59.69	40.56	15.1	17.9	24.52	0
41	2017	0	0.40	0.60	0.70	1	0.20	8.03	7.87	2	60.75	24.99	17.05	22.43	21.49	1
41	2018	0	0.40	0.60	0.70	1	0.20	8.11	8.67	2	58.64	41.7	39.88	47.63	43.07	1
42	2016	0	0.56	0.44	0.95	1	0.44	7.58	11.91	2	22.39	36.07	48.12	75.32	53.17	1
42	2017	0	0.44	0.56	0.95	0	0.33	7.61	7.92	2	19.62	28.93	43.8	74.03	48.92	1
42	2018	0	0.44	0.56	0.95	0	0.33	7.66	10.29	2	20.22	34.12	59.14	81.7	58.32	1
43	2016	1	0.75	0.25	1.08	1	0.42	7.50	7.95	1	30.98	58.8	81.22	79.31	73.11	0
43	2017	1	0.60	0.40	1.00	1	0.50	7.53	8.46	1	32.66	74.45	80.46	79.54	78.15	1
43	2018	1	0.66	0.34	1.00	0	0.34	7.57	3.76	1	37.88	75.85	88.05	93.26	85.72	1
44	2016	1	0.75	0.25	0.90	1	0.38	7.98	18.72	2	13.38	33.53	14.58	22.99	23.7	0
44	2017	0	0.25	0.75	0.90	1	0.38	8.03	15.34	2	10.87	30.72	32.32	29.48	30.84	1
44	2018	0	0.50	0.50	0.90	1	0.38	7.97	-8.24	2	8.05	33.61	49.44	2.75	28.6	1
45	2016	1	0.18	0.82	1.04	0	0.27	7.10	12.32	2	12.7	85.4	65.88	79.09	76.79	0
45	2017	1	0.20	1.00	1.00	0	0.30	7.23	15.57	2	24.22	85.25	65.87	79.52	76.88	0
45	2018	1	0.32	0.68	0.95	0	0.39	7.31	7.34	2	43.49	94.41	63.8	75.07	77.76	1
46	2016	0	0.14	0.86	0.85	0	0.14	5.65	20.3	6	18.32	65	10.63	20.82	32.15	0
46	2017	0	0.43	0.57	0.85	0	0.14	5.85	20.87	6	39.61	75	18.53	18.97	37.5	0
46	2018	0	0.14	0.86	0.85	0	0.29	5.87	18.68	6	39.95	87.5	35.75	28.91	50.72	0
47	2016	1	0.40	0.60	0.70	1	0.40	7.87	-4.28	2	30.79	54.74	77.21	2.21	44.72	1
47	2017	0	0.27	0.73	1.04	0	0.27	7.97	24.31	2	30.56	74.29	76.52	7.95	52.92	1
47	2018	1	0.29	0.71	0.85	0	0.50	7.87	-16.25	2	32.06	78.19	72.42	8	52.87	0
48	2016	0	0.14	0.86	0.85	0	0.57	7.47	7.75	2	60.37	53.63	43.8	40.69	46.04	0
48	2017	0	0.14	0.86	0.85	0	0.71	7.50	6.83	2	51.64	52.57	44.07	37.49	44.71	0
48	2018	0	-	1.00	0.78	0	0.67	7.55	6.71	2	51.71	47.75	51.55	51.69	50.33	0
49	2016	1	0.50	0.50	0.78	1	0.33	7.16	9.43	4	36.6	13.44	44.23	26.6	28.09	1
49	2017	1	0.63	0.38	0.90	1	0.50	7.17	10.35	4	35.91	15.41	62.32	39.96	39.23	1
49	2018	1	0.29	0.71	0.85	0	0.29	7.26	9.88	4	38.62	29.84	54.56	27.95	37.45	0
50	2016	1	0.38	0.63	0.90	0	0.25	6.43	23.99	4	42.42	35.24	10.63		49.16	1
50	2017	1	0.40	0.60	0.70	0	0.40	6.50	21.58	4	36.95	32.85	18.53	98.71	50.03	1
50	2018	1	0.38	0.62	0.90	0	0.38	6.61	21.9	4	31.3	58.99	47.78	24.3	43.69	1
51	2016	1	0.50	0.50	1.00	0	0.40	7.40	25.09	1	35.11	35.24	49.33	62.91	49.16	1
51	2017	1	0.42	0.58	1.08	0	0.33	7.43	4.23	1	31.89	32.85	50.11	67.13	50.03	1

51	2018	1	0.69	0.31	1.04	0	0.31	7.42	-2.44	1	44.8	48.46	46.89	69.83	55.06	1
52	2016	0	0.57	0.43	0.85	0	0.29	7.58	7.51	2	55.25	45.52	44.23	57.25	49	1
52	2017	0	0.50	0.50	0.90	0	0.38	7.71	8.04	2	58.18	52.97	62.32	34.71	50	1
52	2018	0	0.50	0.50	0.85	0	0.33	7.74	6.49	2	56.45	21.72	59.61	73.74	51.69	1
53	2016	1	0.45	0.55	1.04	1	0.27	7.50	6.28	1	34.87	76.61	78.74		48	1
53	2017	1	0.64	0.36	1.04	0	0.27	7.51	6.76	1	26.53	68.82	79.51		49.28	1
53	2018	1	0.60	0.40	1.04	0	0.24	7.57	6.25	1	38.19	32.66	61.79	56.54	50.33	1
54	2016	1	0.54	0.46	1.11	1	0.23	7.61	3.41	6	30.79	56.78	78.74	22.22	52.58	1
54	2017	1	0.46	0.54	1.11	0	0.31	7.65	3.54	6	30.56	55.58	79.51	55.41	63.5	1
54	2018	1	0.44	0.56	1.11	1	0.28	7.75	2.85	6	32.06	64.99	83.28	58.25	68.84	1
55	2016	1	0.31	0.69	1.11	1	0.23	7.90	5.44	4	42.42	45.52	91.19	99.9	78.87	1
55	2017	1	0.33	0.67	1.08	1	0.25	7.89	7.5	4	36.95	52.97	89.78	99.44	80.73	0
55	2018	1	0.36	0.64	1.04	1	0.27	7.92	9.59	4	31.3	43.85	84.88		40.71	1
56	2016	1	0.42	0.58	1.08	1	0.42	8.22	3.84	4	31.37	76.61	94.82	77.54	82.99	1
56	2017	1	0.25	0.75	1.08	1	0.42	7.75	128.42	4	16.32	68.82	86.05	43.52	66.13	1
56	2018	1	0.48	0.52	1.04	1	0.42	7.78	6.24	4	16.66	79.44	86.87	92.92	86.41	1
57	2016	1	0.64	0.36	1.04	1	0.45	7.14	7.32	1	31.08	27.84	22.78	33.83	28.15	1
57	2017	1	0.64	0.36	1.04	1	0.45	7.15	8.99	1	27.53	50.04	57.43	39.2	48.89	1
57	2018	1	0.48	0.52	1.04	1	0.42	7.16	8.97	1	30.11	50.71	54.38	36.12	47.07	1
58	2016	1	0.45	0.55	1.04	0	0.36	6.99	9.63	3	8.58	27.84	22.78	33.83	28.15	1
58	2017	1	0.44	0.56	0.95	0	0.33	7.03	11.61	3	0.08	50.04	57.43	39.2	48.89	1
58	2018	1	0.40	0.60	1.00	0	0.30	7.23	17.76	3	0.03	67.7	57.74	38.33	54.59	1
59	2016	0	-	1.00	0.90	0	0.25	6.87	10.28	6	39.05	22.16	86.26	72	60.14	0
59	2017	0	-	1.00	0.90	0	0.38	6.84	10.33	6	39.65	28.72	81.37	21.67	43.92	0
59	2018	0	0.33	0.67	0.78	0	0.50	6.87	12.21	6	34.9	54.54	70.97	53.74	59.75	0
60	2016	1	0.58	0.42	1.08	1	0.17	7.68	16.7	4	37.22	22.16	86.26	72	60.14	0
60	2017	1	0.55	0.45	1.04	1	0.27	7.68	6.28	4	31.14	28.72	81.37	21.67	43.92	1
60	2018	1	0.48	0.52	1.04	1	0.31	7.71	6.75	4	28.91	36.44	79.79	79.52	65.25	1
61	2016	0	0.33	0.67	0.78	0	0.33	6.09	16.92	3	3.58	36.48	86.26	47.24	56.66	1
61	2017	0	0.33	1.00	0.78	0	0.50	6.15	20	3	0.04	36.61	81.37	47.05	55.01	1
61	2018	0	0.33	1.00	0.78	0	0.25	6.23	19.96	3	4.58	33.77	47.57	33.56	38.3	1
62	2016	0	0.33	0.67	0.78	1	0.50	7.60	9.59	2	48.08	36.48	86.26	66.65	63.13	1
62	2017	0	0.40	0.60	0.70	0	0.60	7.64	6.33	2	49.07	36.61	81.37	78.88	65.62	1
62	2018	0	0.40	0.60	0.70	0	0.40	7.68	6.97	2	49.57	40.17	60.12	40.41	46.9	1
63	2016	0	0.29	0.71	0.85	1	0.43	7.52	10.87	2	60.49	36.48	53.65	69.98	53.37	0
63	2017	0	0.38	0.63	0.90	0	0.38	7.59	8.15	2	60.31	36.61	53.72	60.72	50.35	0
63	2018	0	0.14	0.86	0.85	0	0.43	7.63	6.89	2	59.5	36.85	61.52	57.63	52	0
64	2016	1	0.50	0.50	1.08	1	0.33	7.00	7.34	3	41.08	49.57	61.43	49.11	53.37	0
64	2017	1	0.40	0.60	1.00	1	0.40	7.11	6.48	3	49.37	55.35	52.65	43.05	50.35	0
64	2018	0	0.50	0.50	0.78	0	0.33	7.14	8.53	3	46.27	69.58	44.53	32.23	48.78	0
65	2016	1	0.58	0.42	1.08	0	0.17	7.08	6.2	1	39.86	49.57	83.35	37.06	56.66	1

65	2017	1	0.44	0.56	0.95	0	0.56	7.12	6.79	1	36.86	55.35	84.85	24.83	55.01	0
65	2018	1	0.60	0.40	1.00	0	0.30	7.15	7.08	1	28.78	50.2	52.59	38.51	47.1	0
66	2016	1	-	1.00	0.85	0	0.14	7.32	7.4	6	25.49	69.52	61.43	39.03	56.66	0
66	2017	1	0.43	0.57	0.85	0	0.29	7.48	6.19	6	42.08	65.74	52.65	14.81	44.4	0
66	2018	1	-	1.00	0.85	0	0.29	7.52	5.94	6	42.01	75.8	46.31	42.65	54.92	0
67	2016	1	-	-			-	7.27	10.35	2	61.12	20.75	83.35	39.18	47.76	
67	2017	1	-	-			-	7.32	8.26	2	59.54	17.17	84.85	8.86	36.96	
67	2018	1	0.40	0.60	0.78	0	0.60	7.37	8.98	2	57.15	18.83	70.25	32.6	40.56	1
68	2016	1	0.63	0.38	0.90	1	0.38	6.99	15.26	4	0.38	28.86	61.43	79.69	56.66	1
68	2017	1	0.57	0.43	0.85	0	0.57	7.01	15.34	4	10.7	18.49	61.73	84.81	55.01	1
68	2018	1	0.57	0.43	0.85	0	0.57	7.16	13.44	4	21.35	31.05	62.19	79.05	57.43	1
69	2016	1	0.13	0.88	0.90	0	0.13	7.54	4.18	4	15.63	20.75	83.35	85.29	63.13	1
69	2017	1	0.58	0.42	1.08	1	0.17	7.54	4.9	4	12.89	17.17	77.56	102.13	65.62	1
69	2018	1	0.50	0.50	1.00	1	0.30	7.57	6.42	4	12.9	18.83	73.81	80.55	57.73	1
70	2016	1	0.44	0.56	0.95	1	0.22	7.04	9.78	4	45.54	24.43	42.72	15.35	27.5	1
70	2017	1	0.13	0.88	0.90	1	0.25	7.10	9.17	4	43.69	43.09	33.4	6.28	27.59	1
70	2018	1	0.38	0.63	0.90	1	0.25	7.14	10.74	4	41	51.63	32.94	5.19	29.92	1
71	2016	0	-	1.00	0.85	0	0.43	7.16	11.9	2	64.44	72.42	42.72	28.14	47.76	0
71	2017	0	0.38	0.63	0.90	0	0.25	7.83	4.93	2	62.89	43.28	41.75	25.85	36.96	1
71	2018	0	0.44	0.56	0.95	0	0.33	7.88	4.15	2	62.73	46.18	45.73	29.77	40.56	1
72	2016	1	0.54	0.46	1.11	1	0.23	7.00	10.43	4	40.76	30.59	42.72	7.99	27.1	1
72	2017	1	0.58	0.42	1.08	1	0.33	7.08	10.11	4	40.69	28.32	33.4	14.51	25.41	1
72	2018	1	0.48	0.52	1.08	1	0.21	7.14	11.04	4	34.4	32.14	32.94	6.11	23.73	1
73	2016	0	0.50	0.50	0.90	1	0.38	8.09	10.85	2	16.89	30.59	20.76	29.95	27.1	1
73	2017	0	0.50	0.50	0.90	1	0.38	8.11	5.52	2	13.95	28.32	13.85	34.06	25.41	1
73	2018	0	0.50	0.50	0.90	1	0.38	8.13	2.88	2	14.59	32.14	12.52	26.53	23.73	1
74	2016	0	0.13	0.88	0.90	0	0.13	7.24	-1.16	5	37.81	69.52	84.49	75.4	76.47	1
74	2017	0	0.14	0.86	0.85	0	0.29	7.28	6.91	5	32.9	65.74	83.14	73.93	74.27	1
74	2018	1	0.14	0.86	0.85	0	0.34	7.30	5.35	5	34.46	46.86	84.62	70.87	67.45	0
75	2016	1	0.44	0.56	0.95	0	0.22	6.59	9.62	4	25.01	24.43	56.16	60.59	47.06	0
75	2017	1	0.50	0.50	1.00	0	0.30	6.67	13.54	4	22.81	43.09	72.63	73.25	62.99	1
75	2018	1	0.60	0.40	1.00	0	0.30	6.70	14.95	4	19.1	57.72	65.21	65.62	62.85	0
76	2016	1	-	-			-	7.06	11.1	2	64.41	58.78	39.41	22.68	40.29	
76	2017	1	-	-			-	7.13	10.47	2	65.42	58.53	49.67	21.25	43.15	
76	2018	1	0.14	0.86	0.85	1	0.43	7.24	11.13	2	49.54	70.55	40.33	18.87	43.25	0
77	2016	1	0.43	0.57	0.85	1	0.43	4.60	6.22	2	30.51	58.55	62.86	56.61	59.34	1
77	2017	1	0.43	0.57	0.85	1	0.43	7.37	23.44	2	65.46	49.97	79.9		41.64	1
77	2018	1	0.29	0.71	0.90	1	0.29	7.44	8.31	2	60.65	62.21	76.59	73.96	70.92	1
78	2016	1	0.42	0.58	1.08	1	0.25	7.95	1.93	4	30.51	21.85	62.86	93.31	59.34	0
78	2017	1	0.42	0.58	1.08	1	0.25	7.94	3.53	4	25.31	25.29	79.9	19.73	41.64	0

78	2018	1	0.45	0.55	1.04	1	0.36	7.96	4.59	4	18.17	44.81	76.59	91.36	70.92	0
79	2016	1	0.33	0.67	0.95	0	0.33	7.22	7.2	1	44.22	60.57	59.65	21.53	47.25	1
79	2017	1	0.29	0.71	0.85	0	0.29	7.29	8.19	1	44.69	53.93	56.25	12.88	41.02	1
79	2018	1	0.14	0.86	0.85	0	0.43	7.32	6.55	1	44.78	44.72	55.93	24.24	41.63	1
80	2016	0	0.33	0.67	0.78	1	0.33	6.47	16.97	6	21.62	60.57	39.41	48.94	49.64	1
80	2017	0	0.33	0.67	0.78	1	0.33	6.55	18.62	6	18.53	53.93	49.67	47.99	50.53	1
80	2018	0	1.00	-	0.78	1	0.14	6.60	18.91	6	8.02	52.84	69.04	56.08	59.32	1
81	2016	0	0.60	0.40	0.70	1	0.60	7.61	7.09	2	64.74	25.97	59.65		28	0
81	2017	0	0.40	0.60	0.70	1	0.60	7.65	7.29	2	63.77	13.85	56.25		19.58	0
81	2018	0	0.40	0.60	0.70	1	0.60	7.75	7.83	2	64.99	10.61	22.52	30.05	21.06	1
82	2016	0	0.44	0.56	0.95	1	0.22	6.60	2.48	3	68.08	65.33	87.19		89.9	1
82	2017	0	0.44	0.56	0.95	1	0.22	6.69	4.83	3	15.84	51.31	88.67	58.89	66.29	1
82	2018	0	0.38	0.63	0.95	1	0.25	6.79	5.13	3	28.92	80.84	85.25		93.08	1
83	2016	1	0.64	0.36	1.04	1	0.36	6.89	6.07	1	18.98	25.31	87.19	59.79	57.43	1
83	2017	1	0.58	0.42	1.08	1	0.42	6.85	13.73	1	0.02	34.54	88.67	57.81	60.34	1
83	2018	1	0.32	0.68	1.04	0	0.41	6.88	10.37	1	19.03	40.34	89.57	56.69	62.2	1
84	2016	0	0.29	0.71	0.85	0	0.43	7.47	-0.41	2	38.11	60.57	39.41	48.94	49.64	1
84	2017	0	0.29	0.71	0.85	1	0.43	7.40	1.82	2	37.2	53.93	49.67	47.99	50.53	1
84	2018	0	0.33	0.67	0.78	1	0.33	7.39	-0.59	2	38.05	52.84	69.04	56.08	59.32	0
85	2016	0	0.33	0.67	0.95	0	0.22	7.47	3.95	2	35.52	65.33	14.58		64.99	1
85	2017	0	0.56	0.44	0.95	1	0.22	7.50	4.17	2	48.96	51.31	32.32	80.74	54.79	1
85	2018	0	0.13	0.88	0.95	0	0.38	7.57	4.05	2	56.6	63.8	36.67	65.94	55.47	1
86	2016	0	0.33	0.67	0.78	1	0.17	7.36	13.74	2	58.93	37.78	93.5	54.54	61.94	1
86	2017	0	0.33	0.67	0.78	1	0.17	7.44	13.26	2	54.53	39.78	95.22	72.3	69.1	1
86	2018	0	0.33	0.67	0.85	1	0.17	7.53	11.7	2	50.43	40.98	95.13	60.51	65.54	1
87	2016	0	-	1.00	1.04	0	0.18	7.60	5.04	4	32.86	75.41	93.5		89.9	0
87	2017	0	0.20	0.80	1.00	0	0.10	7.61	5.96	4	32.67	82.12	95.22	21.53	66.29	0
87	2018	0	1.00	-	1.04	0	0.18	7.63	5.59	4	37.22	84.37	95.13	99.74	93.08	0
88	2016	1	0.33	0.67	1.08	0	0.25	7.70	6.79	3	50.21	93.12	86.18	88.66	89.32	0
88	2017	0	0.25	0.75	1.08	1	0.42	7.66	5.92	3	51.69	89.54	95.75	95.42	93.57	0
88	2018	0	0.25	0.75	1.08	1	0.33	7.66	4.79	3	57.64	92.69	95.78	84.77	91.08	0
89	2016	1	0.36	0.64	1.04	0	0.36	9.77	1.05	2	88.29	65.33	67.52	68.93	67.26	1
89	2017	1	0.31	0.69	1.11	0	0.46	9.76	0.87	2	87.87	51.31	70.38	69.14	63.61	1
89	2018	1	0.31	0.69	1.11	0	0.38	9.75	0.97	2	88.5	80.84	68.65	32.52	60.67	0
90	2016	1	0.33	0.67	1.08	0	0.33	6.02	10.52	5	26.1	40.97	90.53	63.47	64.99	0
90	2017	1	0.33	0.67	1.08	0	0.33	6.05	10.21	5	33.27	27.98	80.71	55.68	54.79	0
90	2018	1	0.53	0.47	0.95	0	0.08	6.07	11.02	5	38.66	57.25	90.67	53.95	67.29	0
91	2016	0	0.29	0.71	0.85	0	0.14	6.06	4.44	4	41.89	84.89	52.41	48.52	61.94	0
91	2017	0	0.13	0.88	0.90	0	0.38	6.38	4.49	4	37.44	88.73	69.93	48.64	69.1	0
91	2018	0	0.78	0.22	0.90	0	0.33	6.51	2.09	4	50.08	76.55	69.24		48	0

APPENDIX 1b. Variable Summary description

Variable name	Identification	Previous Research
Governance_Pillar	can be identify from 0 to 100 where 100 is the best score	Eikon Database
Social_Pillars	can be identify from 0 to 100 where 100 is the best score	Eikon Database
Env_pillar score	can be identify from 0 to 100 where 100 is the best score	Eikon Database
ESG_Com	can be identify from 0 to 100 where 100 is the best score, This variable is the average of Env pillar, social pillar and governance pillar of each company	Eikon Database
Lab U	Identifies from binary numbers 0 and 1. where o defines that there is no representation of employees in board and 1 defines that there is representation of employees in board	(Blanpain et al, 2011)
DEPENDENT_PER	Percentage of dependent directors. Dependent directors= dependent director/board size*100	Fernández & Nieto, 2016)
CEO_on_board Yes=0, No=1	Identifies from binary numbers 0 and 1. where o defines that CEO is not on board and 1 defines that CEO is the board	Beji et al (2020)
Controlling_Owners Yes=0, NO= 1	Identifies from binary numbers 0 and 1. where 1 defines firms with ownership concentration of >20% and have elect board member and 0 otherwise	Bhadhuri et al (2016)
INDEPENDENT_PER	Independent director's percentage identifies as the strictly independent directors. Independent percentage= strictly independent/board size*100	Sánchez & Isabel (2010)
BOARDSIZE _LOG	Board size define as the total number of board members and after take the log of each value in excel.	(Arayssi et al, 2016; Birindelli et al., 2018; Husted & de Sousa-Filho, 2018; Manita et al., 2018)
FEMALE_PER	Female_per directors percentage identifies as the percentage of female directors. Female _per= Total female on Board /board size*100	(Martínez & Sempere, 2016; Rogelberg & Rumery, 1996)
TOTAL_ASSET_LOG	Total assets log defines the firm size. Total assets log= log value of Total assets.	Dang (2013)
ROA	Return on Asset (ROA) = Net Income/Total Asset*100	Ismail & Chandler (2005);Liu & Anbumozhi (2009):McWilliams & Siegel (2000)
Sector	Sector identifies from 1 to 6. each number identifies the different sector.1(Material and construction), 2(financial), 3(Health&Safety), 4(Industrial), 5(Telecommunication), and	(Galbreath, 2017 : Pulaj & Enida 2017 : Rao &

	6(Transportation)	Tilt, 2016)
LEVERAGE %	*(Long Term Debt + Short Term Debt & Current Portion of Long Term Debt) / (Total Capital + Short Term Debt & Current Portion of Long Term Debt) * 100*	Minnema & Anderson (2018)
Resource dependency theory	*Measure of how baord is diverse and compose of different force groups that can impact CSR differently.*	(Hillman & Dalziel, 2003 : van Ees et al., 2009)
Stakeholder theory	*Combination of CSR theory and sustainability theory. For instance the more a firm high CSR score the more the firm is stakeholder oriented and sustainable.*	(see Freeman, 1984 : Freeman, 2010 : Freeman et al., 2010 : Freeman & Moutchnik, 2013)
Institutional theory	*Measure as Swedish social order e.g. no CEO duality, existence of ownership concentration and employees representative on the board of directors.*	(see Midttun et al., 2015 : Thomsen, 2016 : Vallentin, 2015)

APPENDIX 2a: Hausman test, fixed effect and random effect model

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                                                  User: Hypothesis 2a Hausman test, fixed and random effect
                                                        Project: Board composition and ESG performance

1 . xtset company_id YEAR
        panel variable:  company_id (strongly balanced)
         time variable:  YEAR, 2016 to 2018
                 delta:  1 unit

2 . xtreg ESG_Com DEPENDENT_PER BOARDSIZE_LOG CEO_on_boardYes1No0 FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE C
  > trolling_OwnersYes1NO0 y1_2 y1_3 dum_2 dum_3 dum_4 dum_5 dum_6, fe
  note: Sector omitted because of collinearity
  note: dum_2 omitted because of collinearity
  note: dum_3 omitted because of collinearity
  note: dum_4 omitted because of collinearity
  note: dum_5 omitted because of collinearity
  note: dum_6 omitted because of collinearity

  Fixed-effects (within) regression               Number of obs      =       266
  Group variable: company_id                      Number of groups   =        90

  R-sq:                                           Obs per group:
       within  = 0.0302                                         min =         1
       between = 0.0453                                         avg =       3.0
       overall = 0.0070                                         max =         3

                                                  F(10,166)          =      0.52
  corr(u_i, Xb)  = -0.2076                        Prob > F           =    0.8768

------------------------------------------------------------------------------
                     ESG_Com |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------------------+------------------------------------------------
                DEPENDENT_PER |  -5.011685   5.045556    -0.99   0.322    -14.97342    4.950048
                BOARDSIZE_LOG |  -1.277229   14.80503    -0.09   0.931    -30.50765    27.95319
          CEO_on_boardYes1No0 |    .827159   2.024948     0.41   0.683    -3.170813    4.825131
                   FEMALE_PER |    8.34936   8.856287     0.94   0.347    -9.136118    25.83484
              TOTAL_ASSET_LOG |  -1.318839   3.935161    -0.34   0.738    -9.088254    6.450577
                          ROA |  -.1170267    .078614    -1.49   0.138    -.2722389    .0381854
                       Sector |          0  (omitted)
                    LEVERAGE |    .0184339   .1013688     0.18   0.856    -.1817045    .2185722
  Controlling_OwnersYes1NO0 |    .7593918   2.375693     0.32   0.750    -3.931076    5.449859
                         y1_2 |  -.1933687   1.433072    -0.13   0.893    -3.022766    2.636028
                         y1_3 |   .9560355    1.47508     0.65   0.518    -1.956301    3.868372
                        dum_2 |          0  (omitted)
                        dum_3 |          0  (omitted)
                        dum_4 |          0  (omitted)
                        dum_5 |          0  (omitted)
                        dum_6 |          0  (omitted)
                        _cons |   66.85694   31.50125     2.12   0.035     4.662192    129.0517
-----------------------------+------------------------------------------------
                      sigma_u |  16.544526
                      sigma_e |  9.1037294
                          rho |  .76758815   (fraction of variance due to u_i)
------------------------------------------------------------------------------
  F test that all u_i=0: F(89, 166) = 7.68                     Prob > F = 0.0000

3 . estimate store fe
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```
4 . xttest3

  Modified Wald test for groupwise heteroskedasticity
  in fixed effect regression model

  H0: sigma(i)^2 = sigma^2 for all i

  chi2 (90)  =    1.3e+08
  Prob>chi2 =     0.0000


5 . xtreg ESG_Com DEPENDENT_PER BOARDSIZE_LOG CEO_on_boardYes1No0 FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE C
  > trolling_OwnersYes1NO0 y1_2 y1_3 dum_2 dum_3 dum_4 dum_5 dum_6, re
  note: dum_6 omitted because of collinearity

  Random-effects GLS regression                   Number of obs     =       266
  Group variable: company_id                      Number of groups  =        90

  R-sq:                                           Obs per group:
       within  = 0.0111                                         min =         1
       between = 0.1670                                         avg =       3.0
       overall = 0.1301                                         max =         3

                                                  Wald chi2(15)     =     15.83
  corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.3937
```

ESG_Com	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
DEPENDENT_PER	-6.88389	4.7517	-1.45	0.147	-16.19705	2.429271
BOARDSIZE_LOG	19.92241	12.08074	1.65	0.099	-3.755403	43.60021
CEO_on_boardYes1No0	-.4651093	1.840788	-0.25	0.801	-4.072987	3.142769
FEMALE_PER	5.931971	7.992133	0.74	0.458	-9.732322	21.59626
TOTAL_ASSET_LOG	2.472269	2.372983	1.04	0.297	-2.178691	7.123229
ROA	-.1042469	.0753205	-1.38	0.166	-.2518723	.0433786
Sector	.2282215	1.344588	0.17	0.865	-2.407122	2.863565
LEVERAGE	.0087136	.0618872	0.14	0.888	-.1125831	.1300102
Controlling_OwnersYes1NO0	-1.198782	2.097353	-0.57	0.568	-5.30952	2.911955
y1_2	-.4941767	1.426729	-0.35	0.729	-3.290513	2.30216
y1_3	.3072934	1.446612	0.21	0.832	-2.528013	3.1426
dum_2	-4.332495	5.121703	-0.85	0.398	-14.37085	5.705858
dum_3	3.336191	5.659063	0.59	0.556	-7.755369	14.42775
dum_4	3.317896	4.714097	0.70	0.482	-5.921565	12.55736
dum_5	5.331657	7.491253	0.71	0.477	-9.350929	20.01424
dum_6	0	(omitted)				
_cons	21.20393	18.26666	1.16	0.246	-14.59806	57.00592
sigma_u	14.068089					
sigma_e	9.1037294					
rho	.70483927	(fraction of variance due to u_i)				

```
. hausman fe re

                 ---- Coefficients ----
                |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                |       fe           re         Difference          S.E.
----------------+----------------------------------------------------------------
DEPENDENT_~R    |   -5.011685     -6.88389        1.872205        1.696756
BOARDSIZE_~G    |   -1.277229     19.92241       -21.19963        8.558305
CEO_on_boa~0    |    .827159    -.4651093        1.292268        .8437498
  FEMALE_PER    |    8.34936     5.931971        2.417389        3.815707
TOTAL_ASSE~G    |   -1.318839     2.472269       -3.791108        3.139179
         ROA    |   -.1170267    -.1042469       -.0127799        .0225163
    LEVERAGE    |    .0184339     .0087136        .0097203        .0802846
Controllin~0    |    .7593918    -1.198782        1.958174        1.115807
        y1_2    |   -.1933687    -.4941767        .3008079        .1346883
        y1_3    |    .9560355     .3072934        .6487421        .2884029
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                 chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       18.60
                Prob>chi2 =      0.0456
                (V_b-V_B is not positive definite)

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        ESG_Com[company_id,t] = Xb + u[company_id] + e[company_id,t]

        Estimated results:
                        |       Var     sd = sqrt(Var)
                --------+------------------------------
                ESG_Com |    312.9485       17.69035
                      e |    82.87789       9.103729
                      u |    197.9111       14.06809

        Test:   Var(u) = 0
                                chibar2(01) =   110.87
                            Prob > chibar2 =   0.0000
```

APPENDIX 2b Testing of hypothesis 1, 2 & 3

Project: Board composition and ESG performance

```
1 . regress ESG_Com DEPENDENT_PER BOARDSIZE_LOG FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE Controlling_OwnersY
  > 1NO0 CEO_on_boardYes1No0 yr_12 yr_13 dum_2 dum_3 dum_4 dum_5 dum_6, robust
  note: dum_6 omitted because of collinearity

  Linear regression                               Number of obs     =        266
                                                  F(15, 250)        =       3.63
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.1691
                                                  Root MSE          =     16.602
```

ESG_Com	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
DEPENDENT_PER	-13.28375	6.33565	-2.10	0.037	-25.7618	-.8056952
BOARDSIZE_LOG	43.20515	12.55135	3.44	0.001	18.48528	67.92502
FEMALE_PER	-1.952218	9.596448	-0.20	0.839	-20.85241	16.94797
TOTAL_ASSET_LOG	3.275253	2.143284	1.53	0.128	-.9459408	7.496446
ROA	.0327329	.0661165	0.50	0.621	-.0974834	.1629493
Sector	.0374595	.8167234	0.05	0.963	-1.571076	1.645995
LEVERAGE	-.0033357	.0425234	-0.08	0.938	-.0870855	.080414
Controlling_OwnersYes1NO0	-4.353775	2.300455	-1.89	0.060	-8.884517	.1769679
CEO_on_boardYes1No0	-2.929017	2.27683	-1.29	0.199	-7.41323	1.555196
yr_12	-.6805073	2.548061	-0.27	0.790	-5.698908	4.337894
yr_13	-.0932876	2.500131	-0.04	0.970	-5.017291	4.830716
dum_2	-2.821091	3.510691	-0.80	0.422	-9.735391	4.093209
dum_3	3.473058	3.857531	0.90	0.369	-4.124343	11.07046
dum_4	2.771725	2.97369	0.93	0.352	-3.084953	8.628403
dum_5	5.636395	4.390636	1.28	0.200	-3.010956	14.28375
dum_6	0	(omitted)				
_cons	1.539435	13.34949	0.12	0.908	-24.75236	27.83123

```
2 . vif
```

Variable	VIF	1/VIF
dum_2	2.60	0.384252
TOTAL_ASSE~G	2.12	0.471221
BOARDSIZE_~G	1.81	0.552390
Sector	1.77	0.564689
dum_4	1.69	0.591207
dum_5	1.41	0.707946
yr_13	1.38	0.725677
yr_12	1.36	0.733109
dum_3	1.35	0.740620
LEVERAGE	1.25	0.798407
ROA	1.21	0.825569
DEPENDENT_~R	1.19	0.837429
Controllin~0	1.19	0.841420
FEMALE_PER	1.19	0.842086
CEO_on_boa~0	1.14	0.875129
Mean VIF	1.51	

```
3 . test DEPENDENT_PER CEO_on_boardYes1No0 Controlling_OwnersYes1NO0

   ( 1)  DEPENDENT_PER = 0
   ( 2)  CEO_on_boardYes1No0 = 0
   ( 3)  Controlling_OwnersYes1NO0 = 0

         F(  3,    250) =    4.37
              Prob > F =    0.0051

4 . test BOARDSIZE_LOG FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE

   ( 1)  BOARDSIZE_LOG = 0
   ( 2)  FEMALE_PER = 0
   ( 3)  TOTAL_ASSET_LOG = 0
   ( 4)  ROA = 0
   ( 5)  Sector = 0
   ( 6)  LEVERAGE = 0

         F(  6,    250) =    5.93
              Prob > F =    0.0000

5 . xtgls ESG_Com DEPENDENT_PER BOARDSIZE_LOG FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE Controlling_OwnersYes1N
  > O0 CEO_on_boardYes1No0, panels(heteroskedastic) corr(psar1)
  (note: 2 observations dropped because only 1 obs in group)

  Cross-sectional time-series FGLS regression

  Coefficients:  generalized least squares
  Panels:        heteroskedastic
  Correlation:   panel-specific AR(1)

  Estimated covariances      =        88          Number of obs      =       264
  Estimated autocorrelations =        88          Number of groups   =        88
  Estimated coefficients     =        10          Time periods       =         3
                                                  Wald chi2(9)       =    492.79
                                                  Prob > chi2        =    0.0000
```

ESG_Com	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
DEPENDENT_PER	-8.437771	1.176031	-7.17	0.000	-10.74275	-6.132793
BOARDSIZE_LOG	41.96031	3.179208	13.20	0.000	35.72917	48.19144
FEMALE_PER	4.21632	2.062215	2.04	0.041	.174452	8.258188
TOTAL_ASSET_LOG	2.10515	.5183919	4.06	0.000	1.089121	3.121179
ROA	-.0241949	.017923	-1.35	0.177	-.0593233	.0109335
Sector	.884418	.3147166	2.81	0.005	.2675849	1.501251
LEVERAGE	.0402161	.0122071	3.29	0.001	.0162906	.0641415
Controlling_OwnersYes1NO0	-2.598065	.4994614	-5.20	0.000	-3.576991	-1.619138
CEO_on_boardYes1No0	-1.017449	.4798596	-2.12	0.034	-1.957956	-.0769413
_cons	1.098001	4.526406	0.24	0.808	-7.773592	9.969594

APPENDIX 2c: Regressing Independent Director and CSR

```
1 . regress ESG_Com INDEPENDENT_PER BOARDSIZE_LOG FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE Controlling_OwnersY
  > es1NO0 CEO_on_boardYes1No0 yr_12 yr_13 dum_2 dum_3 dum_4 dum_5 dum_6, robust
  note: dum_6 omitted because of collinearity

  Linear regression                               Number of obs     =        266
                                                  F(15, 250)        =       3.67
                                                  Prob > F          =     0.0000
                                                  R-squared         =     0.1716
                                                  Root MSE          =     16.577
```

ESG_Com	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
INDEPENDENT_PER	13.81849	6.082122	2.27	0.024	1.839762	25.79722
BOARDSIZE_LOG	43.60908	12.55213	3.47	0.001	18.88768	68.33048
FEMALE_PER	-2.081216	9.56919	-0.22	0.828	-20.92772	16.76529
TOTAL_ASSET_LOG	3.319176	2.145529	1.55	0.123	-.9064401	7.544793
ROA	.0292185	.0663158	0.44	0.660	-.1013904	.1598274
Sector	.0466655	.8149385	0.06	0.954	-1.558355	1.651685
LEVERAGE	-.0021421	.0425056	-0.05	0.960	-.0858567	.0815726
Controlling_OwnersYes1NO0	-4.29909	2.282948	-1.88	0.061	-8.795351	.197172
CEO_on_boardYes1No0	-2.855207	2.276216	-1.25	0.211	-7.33821	1.627797
yr_12	-.8149809	2.534179	-0.32	0.748	-5.806042	4.17608
yr_13	-.1438264	2.500853	-0.06	0.954	-5.069252	4.781599
dum_2	-2.958011	3.504866	-0.84	0.399	-9.860839	3.944817
dum_3	3.198385	3.856427	0.83	0.408	-4.396841	10.79361
dum_4	2.757771	2.971633	0.93	0.354	-3.094856	8.610398
dum_5	5.573274	4.384803	1.27	0.205	-3.062588	14.20914
dum_6	0	(omitted)				
_cons	-12.75276	14.40334	-0.89	0.377	-41.12012	15.61461

```
2 . vif
```

Variable	VIF	1/VIF
dum_2	2.61	0.383541
TOTAL_ASSE~G	2.12	0.471039
BOARDSIZE_~G	1.81	0.551665
Sector	1.77	0.566331
dum_4	1.69	0.592620
dum_5	1.41	0.707811
yr_13	1.38	0.725698
yr_12	1.37	0.731315
dum_3	1.35	0.740928
LEVERAGE	1.25	0.803061
ROA	1.21	0.824870
INDEPENDEN~R	1.19	0.840967
Controllin~0	1.19	0.842531
FEMALE_PER	1.19	0.843649
CEO_on_boa~0	1.14	0.874630
Mean VIF	1.51	

```
5 . xtgls ESG_Com INDEPENDENT_PER BOARDSIZE_LOG FEMALE_PER TOTAL_ASSET_LOG ROA Sector LEVERAGE Controlling_OwnersYes
  > 1NO0 CEO_on_boardYes1No0, panels(heteroskedastic) corr(psar1)
  (note: 2 observations dropped because only 1 obs in group)

  Cross-sectional time-series FGLS regression

  Coefficients:  generalized least squares
  Panels:        heteroskedastic
  Correlation:   panel-specific AR(1)

  Estimated covariances      =        88          Number of obs      =       264
  Estimated autocorrelations =        88          Number of groups   =        88
  Estimated coefficients     =        10          Time periods       =         3
                                                  Wald chi2(9)       =    486.95
                                                  Prob > chi2        =    0.0000
```

ESG_Com	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
INDEPENDENT_PER	8.953046	1.087108	8.24	0.000	6.822354	11.08374
BOARDSIZE_LOG	41.64216	3.175479	13.11	0.000	35.41834	47.86599
FEMALE_PER	4.16281	2.079991	2.00	0.045	.086103	8.239517
TOTAL_ASSET_LOG	2.182935	.5176853	4.22	0.000	1.16829	3.197579
ROA	-.0299816	.0193917	-1.55	0.122	-.0679886	.0080253
Sector	.9419463	.3087234	3.05	0.002	.3368596	1.547033
LEVERAGE	.036529	.0120484	3.03	0.002	.0129146	.0601433
Controlling_OwnersYes1NO0	-2.558897	.4961004	-5.16	0.000	-3.531236	-1.586558
CEO_on_boardYes1No0	-1.000645	.4756016	-2.10	0.035	-1.932807	-.0684825
_cons	-7.908741	4.816081	-1.64	0.101	-17.34809	1.530605

APPENDIX 3: Testing Hypothesis 4; Employees' Representative Director and Social Pillars

```
1 . anova Social_Pillars LabU c.FEMALE_PER c.ROA c.LEVERAGE c.TOTAL_ASSET_LOG

                          Number of obs =        273    R-squared     =  0.0680
                          Root MSE      =    20.2443    Adj R-squared =  0.0505

              Source | Partial SS         df         MS           F    Prob>F
          -----------+----------------------------------------------------
               Model |  7983.9425          5   1596.7885        3.90  0.0020
                     |
                LabU |  2362.7525          1   2362.7525        5.77  0.0170
          FEMALE_PER |  5.5991609          1   5.5991609        0.01  0.9070
                 ROA |  15.545305          1   15.545305        0.04  0.8457
            LEVERAGE |  169.16821          1   169.16821        0.41  0.5211
         TOTAL_ASS~G |  4035.3513          1   4035.3513        9.85  0.0019
                     |
            Residual |  109424.94        267   409.83122
          -----------+----------------------------------------------------
               Total |  117408.88        272   431.65029

2 . regress, baselevels

      Source |       SS           df       MS      Number of obs   =       273
-------------+----------------------------------   F(5, 267)       =      3.90
       Model |  7983.94247         5  1596.78849   Prob > F        =    0.0020
    Residual |  109424.936       267  409.831222   R-squared       =    0.0680
-------------+----------------------------------   Adj R-squared   =    0.0505
       Total |  117408.879       272   431.65029   Root MSE        =    20.244

------------------------------------------------------------------------------
Social_Pillars |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------+----------------------------------------------------------------
          LabU |
            0  |          0  (base)
            1  |   6.234632   2.596595     2.40   0.017     1.122225    11.34704
               |
    FEMALE_PER |   1.168225   9.994647     0.12   0.907    -18.51012    20.84657
           ROA |  -.0239907   .1231814    -0.19   0.846    -.2665212    .2185399
      LEVERAGE |  -.0355586   .0553463    -0.64   0.521    -.1445292     .073412
TOTAL_ASSET_LOG|   6.136096   1.955483     3.14   0.002     2.285968    9.986223
         _cons |    17.1286   14.30958     1.20   0.232    -11.04537    45.30257
------------------------------------------------------------------------------
```

```
. xtgls Social_Pillars LabU FEMALE_PER TOTAL_ASSET_LOG ROA LEVERAGE, panels(heteroskedastic) corr(psar1)

Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   panel-specific AR(1)

Estimated covariances      =        91          Number of obs     =       273
Estimated autocorrelations =        91          Number of groups  =        91
Estimated coefficients     =         6          Time periods      =         3
                                                Wald chi2(5)      =    326.99
                                                Prob > chi2       =    0.0000
```

Social_Pillars	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
LabU	6.995178	.4980032	14.05	0.000	6.01911	7.971247
FEMALE_PER	2.076015	1.456959	1.42	0.154	-.779571	4.931602
TOTAL_ASSET_LOG	5.911796	.6087451	9.71	0.000	4.718677	7.104914
ROA	-.0244502	.026157	-0.93	0.350	-.075717	.0268166
LEVERAGE	-.0349901	.0095188	-3.68	0.000	-.0536465	-.0163337
_cons	17.72694	4.545932	3.90	0.000	8.817079	26.6368

```
.
```

APPENDIX 4a Robutness test for categorical variables (ANCOVA)

```
. anova ESG_Com CEO_on_boardYes1No0 c.BOARDSIZE_LOG c.TOTAL_ASSET_LOG c.ROA c.LEVERAGE Sector

                   Number of obs =        267    R-squared     =  0.1358
                   Root MSE      =    16.7342    Adj R-squared =  0.1020

      Source | Partial SS         df         MS        F    Prob>F
-------------+----------------------------------------------------
       Model |  11262.956         10   1126.2956      4.02  0.0000
             |
CEO_on_bo~0 |  943.79319          1   943.79319      3.37  0.0675
BOARDSIZE~G |  3702.9066          1   3702.9066     13.22  0.0003
TOTAL_ASS~G |  407.64513          1   407.64513      1.46  0.2287
         ROA |  49.882727          1   49.882727      0.18  0.6733
   LEVERAGE |  86.980292          1   86.980292      0.31  0.5778
      Sector |  1302.1977          5   260.43953      0.93  0.4620
             |
    Residual |  71688.965        256   280.03502
-------------+----------------------------------------------------
       Total |   82951.92        266   311.84933

. regress, baselevels

      Source |       SS           df       MS      Number of obs   =       267
-------------+----------------------------------   F(10, 256)      =      4.02
       Model |  11262.9558         10  1126.29558   Prob > F        =    0.0000
    Residual |  71688.9646        256  280.035018   R-squared       =    0.1358
-------------+----------------------------------   Adj R-squared   =    0.1020
       Total |  82951.9205        266  311.849325   Root MSE        =    16.734

------------------------------------------------------------------------------
     ESG_Com |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
CEO_on_boardYes1No0 |
           0 |          0  (base)
           1 |   -3.91525   2.132687    -1.84   0.068    -8.115095     .284596
             |
BOARDSIZE_LOG |   43.63896   12.00077     3.64   0.000     20.00615    67.27177
TOTAL_ASSET_LOG |   2.427614   2.012077     1.21   0.229    -1.534717    6.389945
             ROA |   .0444886   .1054095     0.42   0.673    -.1630916    .2520687
        LEVERAGE |   .0264406   .0474424     0.56   0.578    -.0669865    .1198677
             |
          Sector |
           1 |          0  (base)
           2 |   .0223053   3.927845     0.01   0.995    -7.712697    7.757307
           3 |   4.291627   4.052123     1.06   0.291    -3.688112    12.27137
           4 |   4.265959   3.504192     1.22   0.225    -2.634755    11.16667
           5 |   7.595064   4.917871     1.54   0.124    -2.089571     17.2797
           6 |   3.151123   4.324931     0.73   0.467     -5.36585     11.6681
             |
       _cons |  -4.396833   13.38866    -0.33   0.743    -30.76277    21.96911
------------------------------------------------------------------------------
```

```
. anova ESG_Com Controlling_OwnersYes1NO0 c.BOARDSIZE_LOG c.TOTAL_ASSET_LOG c.ROA c.LEVERAGE Sector

                          Number of obs =        266    R-squared     =  0.1472
                          Root MSE      =    16.6541    Adj R-squared =  0.1137

                   Source | Partial SS         df         MS        F    Prob>F
--------------------------+----------------------------------------------------
                    Model |  12204.591         10   1220.4591      4.40  0.0000
                          |
              Controlli~0 |  1905.1482          1   1905.1482      6.87  0.0093
              BOARDSIZE~G |  3369.1691          1   3369.1691     12.15  0.0006
              TOTAL_ASS~G |  519.88147          1   519.88147      1.87  0.1722
                      ROA |  26.981075          1   26.981075      0.10  0.7554
                LEVERAGE |    13.6388          1     13.6388      0.05  0.8247
                   Sector |  1418.3602          5   283.67205      1.02  0.4047
                          |
                 Residual |  70726.748        255    277.3598
--------------------------+----------------------------------------------------
                    Total |  82931.339        265   312.94845

. regress, baselevels

      Source |       SS           df       MS      Number of obs   =       266
-------------+----------------------------------   F(10, 255)      =      4.40
       Model |  12204.5915         10  1220.45915   Prob > F        =    0.0000
    Residual |   70726.748        255  277.359796   R-squared       =    0.1472
-------------+----------------------------------   Adj R-squared   =    0.1137
       Total |  82931.3394        265  312.948451   Root MSE        =    16.654

------------------------------------------------------------------------------
             ESG_Com |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
---------------------+--------------------------------------------------------
Controlling_OwnersYes1NO0 |
                   0 |          0  (base)
                   1 |  -5.959647   2.273934    -2.62   0.009    -10.43773   -1.481564
                     |
          BOARDSIZE_LOG |  41.62497   11.94302     3.49   0.001     18.10545    65.14449
        TOTAL_ASSET_LOG |   2.75252   2.010482     1.37   0.172    -1.206743    6.711784
                    ROA |  .0327541   .1050167     0.31   0.755    -.1740563    .2395646
               LEVERAGE |  .0105933   .0477712     0.22   0.825     -.083483    .1046696
                     |
                 Sector |
                   1 |          0  (base)
                   2 |  -1.500787   3.966643    -0.38   0.705    -9.312339    6.310764
                   3 |   4.023828   4.034747     1.00   0.320    -3.921841     11.9695
                   4 |   2.569915   3.537698     0.73   0.468    -4.396911    9.536741
                   5 |    7.54308   4.876752     1.55   0.123    -2.060759    17.14692
                   6 |   1.598706   4.364533     0.37   0.714    -6.996415    10.19383
                     |
                _cons |  -.8525563   13.28559    -0.06   0.949      -27.016    25.31089
------------------------------------------------------------------------------
```