



SCHOOL OF  
ECONOMICS AND  
MANAGEMENT

# GREEN AND ETHICAL – DO B2B CLIENTS ALSO CARE?

A Quantitative Research on CSR and Corporate Financial Performance in Swedish  
B2B Market

By

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Master's Programme in International Marketing and Brand Management

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## Abstract

<b>Title</b>	Green and Ethical – Do B2B Clients Also Care? A Quantitative Research on CSR and Corporate Financial Performance in Swedish B2B Market
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<b>Keywords</b>	Corporate Social Responsibility, Sustainability Disclosure, Financial Performance, B2B, Swedish Market, CSR Strategy
<b>Thesis Purpose</b>	The purpose of this study is to examine the relationship between CSR initiatives and corporate financial performance among B2B companies in the Swedish market, in an attempt to provide insights into the CSR strategy of B2B companies.
<b>Methodology</b>	This thesis adopted a deductive research approach where hypotheses are proposed based on a broad review of previous theories, then a quantitative analysis is conducted to test the hypotheses. Empirical data of 38 Swedish B2B companies was collected to calculate return on assets and to calculate social and environmental CSR index separately through content analysis. The correlation among the variables is analysed through Pearson Correlation Analysis.
<b>Theoretical Perspective</b>	Han and Lee's (2021) theory on how CSR leads to better financial results for B2B companies is adapted to propose a new framework that both social-related and environmental-related CSR initiatives can help B2B companies improve financial performance.
<b>Empirical Data</b>	Data was collected from financial reports and sustainability reports from a sample of 38 Swedish B2B companies that were selected using a non-probability sampling method.

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**Findings**

Despite the fact that many previous studies show that CSR positively affects financial results of B2B firms, our research, however, fail to observe a significant correlation between corporate financial performance and CSR performance –in terms of neither social nor environmental perspective. Various possible factors and interpretations are presented to explain our findings.

**Practical  
Implications**

The findings contribute to more knowledge on the influence of CSR to B2B business, can thus be of value for B2B companies to establish a long-term CSR vision and, accordingly, appropriate CSR strategies that lead to better performance not only financially but also for a holistic view of overall well-being.

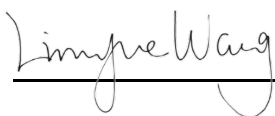
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Lund & Copenhagen, May 30<sup>th</sup>, 2021



Linyue Wang



Lydia von Lode

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# 1. Introduction

## 1.1 Background

An interesting phenomenon in today's increasingly competitive global market is that enterprises tend to look beyond their core business and daily operations and take a step further, devoting time and resources to what was once not considered to be directly related to financial prosperity. Initiatives such as IBM's long-running energy conservation and climate protection programmes to, more recently, luxury companies like LVMH Group spontaneously producing and donating medical supplies as COVID-19 pandemic spread all over the world are examples that demonstrate contributions that companies have been making for the common good.

The implementation of behaviours and initiatives such as these into the business operations of companies are linked to the concept of *Corporate Social Responsibility* (CSR). The social responsibility of business encompasses the economic, legal, ethical expectations that society has of organisations at a given point in time (Schwartz & Carroll, 2003). In recent years, more and more for-profit companies have incorporated CSR commitments into their corporate vision. To actively engage with diverse social issues through various activities to showcase their high level of social responsibility awareness has become mainstream for firms in a rapidly growing range of markets.

However, there has been much debate over whether CSR can bring substantive value and advantage to companies. Some insist that investment in CSR can benefit firms from a long-term vision (Carroll, 1979; Chandler, 2020; Schwartz & Carroll, 2003), while others argue that there is no explicit causal relationship between CSR activities and corporate financial performance considering the complexity of corporate operation and the social context (Arli et al., 2019; Grassmann, 2021). Some of the CSR efforts made are even perceived as "greenwashing" by the public and get widely criticised. Yet one thing is for sure that the CSR activities conducted by companies generally require investment of money and time, which is



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usually continuous rather than one-time. Therefore, more in-depth studies are needed to find out whether CSR is able to create value for the business or is just a pointless expense.

Though a large number of studies have shown links between CSR and company performance, the majority of the studies conducted have focused on the consumer market, while research on the impact of supplier's CSR initiatives on corporate customer's purchasing decisions is relatively rare (Han & Lee, 2021; Homburg, Stierl & Bornemann, 2013; Sarkar, Chatterjee & Bhattacharjee, 2021). Thus, the correlation between CSR initiatives and the financial performance of business-to-business (B2B) companies is not as clear. Moreover, research on the Swedish B2B market is even more sparse. As a highly liberal and highly promising market with a cultural context that emphasises sustainable development, the impact of CSR on B2B companies in Swedish marketplace is all the more relevant.

Given the chaotic situation caused by COVID-19 pandemic, many companies are now facing serious operational difficulties and capital shortages. The sudden challenges especially affect the B2B corporations that have relatively more international engagement, smaller number of transactions but larger single transaction amounts. These business characteristics lead to greater challenges on cash flow and corporate operation for B2B companies, which raises even more questions to them about whether CSR can genuinely create value for companies and whether it would be worthwhile to continue CSR investment.

## **1.2 Problem Formulation**

Many who believe that CSR activities can significantly create value for companies argue that CSR can positively improve corporate image and enhance customers' favourability, which in turn influences consumption decisions and ultimately leads to economic success of the firms (Chandler, 2020; Weber, 2008). Whereas the customers of B2B corporations are companies that generally can be considered rational and professional, individual consumers are relatively emotional and generally not as informed. Moreover, B2B transactions are usually of larger size

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and higher value which implies that the decision making is more complex and elaborate. This means that the purchase decision would be based on more functional factors rather than subjective (Han & Lee, 2021). In this sense, the essential difference between B2B and B2C companies has made the question whether CSR engagement can actually increase corporate profitability more debatable.

Moreover, CSR contains many facets including social, environmental and economic aspects, yet it has mostly been studied as a whole in previous research (Han & Lee, 2021; Karagiorgos, 2010; Sarkar, Chatterjee & Bhattacharjee, 2021). Another essential difference resulted from the heterogeneity of the B2B market besides the financial performance is that environmental-related CSR initiatives can possibly weigh higher in company-clients' decision-making considerations, comparing to individual customers in consumers market, given that the relatively greater value of B2B transactions can bring more attention to the stability and reliability of the supply chain (Blenkhorn & MacKenzie, 2017). In other words, the environmental sustainability of a product or service is usually only an ethical consideration for the individual consumer; while for the B2B company's client, whether the B2B company has sufficient awareness on environmental issues can directly impact the safety and stability of the supply chain, which would seriously influence clients' business economically. In this sense, it can give us a clearer picture of the mechanisms of how CSR influences corporate financial performance if we look at the social and environmental perspectives separately.

On the other hand, from a geographical point of view, previous studies can be heterogeneous in terms of both impact mechanism and results, even on the same research objects. Research has shown that individual consumers in Sweden place a high value on CSR, and that a company's CSR performance and the sustainability consciousness of its products largely influence consumer purchasing decisions (Statista, 2020). Yet, there is no available information about the extent to which CSR of Swedish B2B companies can possibly affect customers' purchasing decisions. Therefore, a complete theoretical model and an empirical investigation of CSR's influence on corporate financial performance in a B2B context can help to not only

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fill the gaps in current academic research, but also provide insights into the decisions with regard to CSR of Swedish B2B companies, which is of particular importance given the current market situation that that severely struck by the COVID-19 pandemic.

### **1.3 Research Purpose and Aim**

As presented, companies today invest a lot of time and money into CSR activities and initiatives. While it has been shown that CSR has a positive effect on the performance of B2C brands, it remains relatively unclear whether these investments pay off for B2B brands. The purpose of the research is therefore to explore the relationship between CSR and corporate financial performance of companies in the context of a B2B market. By investigating the possible correlation between CSR efforts and financial performance this study can provide theoretical contributions within the areas of brand management and strategic Corporate Social Responsibility. In addition, while most previous research has measured CSR performance of all aspects as a whole, this study will look at environmental and socially relevant CSR separately to explore more specifically the mechanisms by which CSR affects B2B company's financial performance. In this way, our research aims to provide insights valuable for decision-makers with purchasing responsibilities within a B2B market as well as marketing practitioners and brand managers in B2B industries.

For the classification of socially and environmentally relevant CSR, we mainly refer to Joyce and Paquin's (2016) Triple Layered Business Model Canvas (TLBMC), the tables of CSR indicators summarised by Karagiorgos (2010) as well as the CSR dictionary developed by Nadra Pencle and Irina Mălăescu (2016), which will be further explained in the literature review and methodology chapters. Since environmental and social CSR initiatives can be independently implemented by corporations and it is suggested that environment-related CSR behaviours can be of even more value for B2B transactions (Blenkhorn & MacKenzie, 2017), this study will therefore look at the two separately. As the relationship between financial performance and environmental/social CSR activities for B2B firms is unclear, this study seeks

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to analyse how the three correlate with each other, which leads to our two research questions:

**RQ1: Is there a significant correlation between the environment-related CSR activities and financial performance for Swedish B2B companies?**

**RQ2: Is there a significant correlation between the social CSR activities and the financial performance for Swedish B2B companies?**

By answering these questions, this thesis will contribute with potential new insights and knowledge that can be of value for B2B companies since it can help them to better understand how and to what extent their clients' value CSR. The insights will likely particularly be of value for decision-makers within for example supply-chain but can also be of use for branding and marketing. Corporate Social Responsibility is an area within business that is more relevant and important than ever and receives increasing attention from stakeholders, meanwhile, it is also in the companies' interests to incorporate CSR into the operations in a way that will likely result in greater return of the investments made.

## **1.4 Outline of the Thesis**

**Chapter 1:** The first part of this thesis introduces the research topic and provides an overview and background of the topic in the context of today's market, which in turn leads to the problematisation. Moreover, the research question together with the purpose and aim of the thesis is presented and the theoretical and practical relevance of this thesis is explained.

**Chapter 2:** A literature review consisting of relevant existing research on Corporate Social Responsibility, corporate financial performance, and business-to-business markets. Theory and concepts related to the research question are also examined. This chapter will provide a theoretical overview of the subject that will be used as the base for the study conducted in this thesis.

**Chapter 3:** This section presents the methodological framework and choices used in the

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research. The reasoning behind the research approach, research design, data collection method as well as method for analysis is examined and explained. All aspects of the methodology of the study will be explained and discussed in detail.

**Chapter 4:** The empirical material and its findings are presented, and analysed. and the findings will then be thoroughly discussed using different perspectives. The observations will be reflected upon based on the previous research and theory presented in Chapter 2. By connecting the findings to the previous research, potential reasons as to why the results from the empirical study turned out the way they did and how they might be interesting or useful for actors within B2B markets.

**Chapter 5:** The final chapter summarises the main findings and draws conclusions from these in relation to the thesis' research purpose and aim and presents an answer to the research question based on the findings. Moreover, practical implications of the findings are presented to contribute to management insights. Lastly, limitations of the study as well as recommendations for further research are suggested.

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## **2. Literature Review**

### **2.1 Understanding of CSR**

#### **2.1.1 Development of the CSR Concept**

While the social engagement for public good of for-profit companies can be traced back to ancient times, the concept of CSR in modern academia began to take shape in the 1950s, when CSR was considered as philanthropy with companies making donations to the charities (Murphy, 1978). In the following decade, scholars made various efforts to provide a more precise and formal definition of CSR, with the most influential definition coming from Keith Davis (1960), who states that CSR refers to “businessmen's decisions and actions taken for reasons at least partially beyond the firm's direct economic or technical interest”. In the 1970s, the importance of the company's management approach regarding CSR was realised and began to be explored (Carroll, 1977). During the 1980s and 1990s, research on CSR focused more on its alternative or complementary concepts, such as public policy, business ethics, stakeholders, sustainability and corporate citizenship (Carroll, 2008). In the 21st century, the emphasis of CSR research has shifted from theoretical concepts to empirical evidence and practice, and has made great contributions to CSR-related legal and ethical compliance and managerial practices (Carroll, 2008).

The understanding of CSR varies, and is sometimes also referred to as corporate responsibility, sustainable development, corporate accountability, etc. in different contexts. Numerous attempts that have been made to deliver a clear definition of CSR can mostly be categorised into five dimensions: environmental, social, economic, stakeholder and voluntariness (Dahlsrud, 2008), among which the environmental, social and economic aspects are particularly valued and widely used as the criteria to determine a company's CSR performance (Karagiorgos, 2010). The following table summarises some of the dominated CSR concepts.

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*Table 2.1 Dominated CSR concepts*

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<b>Source</b>	<b>Concept</b>
Carroll (1979)	The social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organisations at a given point in time.
Khoury et al. (1999)	The overall relationship of the corporation with all of its stakeholders. These include customers, employees, communities, owners/investors, government, suppliers and competitors.
Hopkins (2003a)	Corporate social responsibility is concerned with treating the stakeholders of the firm ethically or in a socially responsible manner. Stakeholders exist both within a firm and outside. The wider aim of social responsibility is to create higher and higher standards of living, while preserving the profitability of the corporation, for people both within and outside the corporation
Teach (2005)	A major secular development, driven by a long - term reevaluation of the role of corporations in society
Chandler (2020)	A responsibility among firms to meet the needs of their stakeholders and a responsibility among stakeholders to hold firms to account for their actions.

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### **2.1.2 Key Areas of CSR**

As the above-mentioned multiple definitions of CSR have revealed, the concerns of social corporate responsibility encompass all aspects of the well-being of society as a whole, which, in spite of various connotations and interpretations, are often broadly divided into three key areas: economic, societal and environmental (Galant & Cadez, 2017; Joyce & Paquin, 2016; Karagiorgos, 2010).

In the economic sphere, the monetary value created by companies is not only in line with their

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core interest as profit-making organisations, but can also serve as a constant stimulus for them to provide more valuable products or services to the society, which can enhance people's lives and thereby contributing to the advancement of society and civilisation (Chandler, 2020). In other words, a company's ability to create economic value is partly a reflection of its contribution to society.

From a societal perspective, the actions of companies go beyond economic interests and have different impacts on stakeholders at all levels. From the welfare of employees to the protection of customer privacy, from the protection of human rights in the supply chain to the respect for the political stance of the marketplaces, all these efforts by companies are far-reaching in promoting a freer, more equal and more desirable world (Carroll, 2008; Joyce & Paquin, 2016).

In the case of the environment, despite the possibility of some financial conflicts of interest in the short term, the adoption of environmentally friendly approaches of production and operations by companies can not only benefit people's lives and health, but also ensure the long-term sustainability of society, thus can serve as a primary strategy for the long-term development of corporations (Blenkhorn & MacKenzie, 2017).

Whether in terms of economic, social or environmental, the relating actions of companies in these areas have a profound impact on the functioning and development of society as a whole, and therefore the companies' performance in these three areas is widely used as important basis for evaluating their CSR performance, as in numerous influential guidance or ranking like Global Reporting Initiative (GRI), Fortune Magazine and Dow Jones Sustainability Index (Galant & Cadez, 2017; Karagiorgos, 2010). It is therefore of great importance to examine the interlinkages among these three areas of CSR performance.

### **2.1.3 Perspectives on CSR**

In spite of the global trend that more and more enterprises are embracing CSR, different views and attitudes are held towards corporate social responsibility. On the one hand, some argue that



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since CSR takes into account the interests of multiple stakeholders including shareholders, employees, consumers, partners, media and communities, it can optimise the value provided by the companies and therefore bring benefits to the society (Carroll, 2008; Chandler, 2020; Galant & Cadez, 2017). On the other hand, the motivation for corporations to be engaged in CSR activities is also, to a large extent, likely to influence the results. It is argued that CSR is not absolutely beneficial but can actually have negative impact on a company when its CSR initiative is perceived as disingenuous (Arli et al., 2019); whereas corporations can peel away the suspicion of hypocrisy and strengthen their brands by developing strategic CSR rather than simply doing philanthropy (Kuokkanen & Sun, 2020).

Generally speaking, CSR consists of both ethical and commercial considerations; given the increasing global competition, CSR can be sustainable only when it succeeds to create value for the corporations (Carroll, 2008). As David Chandler (2020) has revealed, the existence of economic profit indicates that the company is able to provide wanted values of the society, it is therefore reasonable to consider social value as a subset of economic value, which can ultimately create long-term competitive advantage for the firm. In this sense, focusing on the economic dimension of CSR can help to establish a long-term healthy and mutually beneficial relationship not only for business but also for the society.

## **2.2 CSR and Corporate Financial Performance**

Profit is the primary driver for all for-profit companies to continuously create value for the society, hence it is sensible to evaluate the effectiveness of a company's CSR activities by financial indicators. Yet previous literature has identified the multi-faceted connotations of CSR and the many possibilities for the impact of CSR practices on corporate financial performance. There has been an ongoing debate about whether CSR can actually help achieve an improvement of corporate financial performance (Barauskaite & Streimikiene, 2021), given that the lack of a unified definition of CSR has led to different perspectives and opinions in theoretical studies, while at the same time, empirical studies have also shown different results

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due to different standards and methods of measurement and inadequate data disclosure (Galant & Cadez, 2017).

### **2.2.1 Theoretical Studies**

Most of the theoretical constructs suggest that CSR engagement has a positive impact on a company's financial performance. The stakeholder theory states that CSR enables companies to create optimal value by responding to the needs and interests of a wide range of stakeholders which gives full consideration of the economic, organisational and social aspects (Chandler, 2020). In this way, conducting CSR can possibly help companies reduce the risk of being engaged in ethical issues, reduce production and operational costs by considering sustainable factors, build a better corporate image and reputation, create incentives for employees and, ultimately, achieve higher performance (Weber, 2008). Similarly, Barnett and Salomon (2006) point out that CSR initiatives can help companies to attract resources in a more effective manner, to obtain more excellent and loyal employees, to be more popular among customers when marketing their products and services, and to create unforeseen opportunities, which enables the firms to gain competitive advantages.

While there are conventional views arguing that CSR involves investment in pollution reduction, employee welfare programmes, donations and sponsorships to the community, which are often large and ongoing and can to some extent affect the corporations' revenue (Alexander & Buchholz, 1978). Accordingly, cost-concerned perspective suggests that CSR can have a negative influence on company performance, considering the significant expenditure on resources consumed but the high uncertainty on benefit (Grassmann, 2021).

### **2.2.2 Empirical Evidence**

From a practical perspective, data from a large number of empirical studies on the relationship between CSR and corporate financial performance reveal different possibilities. showing positive, negative, U-shaped, inverted U-shaped and non-significant correlations (Galant &

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Cadez, 2017). The variability in these findings can possibly be attributed to a complex set of variables such as measurement methods, the industry, culture and social context of the sample companies, as well as the macroeconomic conditions.

A large number of studies have shown a positive relationship between a company's financial performance and its CSR performance (Burnett & Hansen, 2008; Hopkins, 2003b; Karagiorgos, 2010; Weber, 2008), which to some extent support the mainstream point of view that CSR investment in CSR can help companies to create economic value and to achieve sustainable development. However, the opposite result is also presented by some research (Peng & Yang, 2014), which is in line with the result of the view that the high consumption of CSR in terms of costs is detrimental to the profitability of the firms.

Moreover, there are also many empirical studies that have failed to find a necessary statistical correlation between CSR behaviour and the financial outcome of the companies (McWilliams & Siegel, 2000; Sun et al., 2010). One possible explanation can be that the positive and negative effects of CSR on a company's finances cancel each other out (Galant & Cadez, 2017). In addition to this, there are also non-linear statistical results that show a U-shaped relationship between a company's financial performance and its CSR performance (Barnett & Salomon, 2006), implying that companies that perform very poorly or very well in CSR have better financial results, while companies that perform moderately in CSR have poor financial performance. Inverted U-shaped findings also exist (Bowman & Haire, 1975), which indicate the opposite mechanism.

## **2.3 CSR in B2B Context**

### **2.3.1 Heterogeneity of the B2B Market**

Among the many existing studies on the relationship between CSR and corporate financial performance, Business-to-Customer (B2C) companies predominate in the sample selection of empirical research, and arguments in theoretical research also tend to stand for the B2C

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perspective, which means that research findings on the impact of CSR behaviour on the performance of B2B companies are relatively limited.

However, there are significant differentiations in the characteristics of B2B and B2C markets regarding the mechanism of CSR's economic effect, where cognitive and affective factors serve as key components in customers' buying decision while economic factors such as price, quality and on-time delivery are the more valued criteria in B2B transactions (Han & Lee, 2021). This indicates the essential difference between B2B and B2C business that the customers of B2B business are companies who are more rational, careful and professional while less emotional when it comes to the choices of who to collaborate with. Hence, there is a necessity to fill the research gap in the context of B2B markets by investigating how CSR involvement could possibly affect the financial outcome of B2B companies.

### **2.3.2 Motivation for CSR in B2B Companies**

The heterogeneous nature of the B2B market results in a fundamentally different way for companies whose primary business is B2B to perceive, plan and practise corporate social responsibility. The triple layered business model canvas (TLBMC) developed by Joyce and Paquin (2016) can be applied to analyse how B2B firms create multidimensional value through CSR practices on three levels: social, environmental and, ultimately, economic. This canvas tool visually represents the business model and helps to develop and communicate a more comprehensive and integrated mindset, revealing the inner motivations of B2B companies to adopt CSR strategies (Joyce & Paquin, 2016).

Environment can be seen as the most important dimension of a B2B company's CSR strategy, which is closely linked to its business. The growing environmental concerns and inadequate legal constraints make it a wise choice for B2B companies to embrace CSR on their way to pursue sustainable development. As a key subset of CSR, the concept of environmental sustainability is considerably relevant to every link of a company's product lifecycle. B2B

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marketers particularly have the skill set to influence the purchase behaviour in all of the businesses alongside the supply chain, including raw materials producers, manufacturers, channel intermediaries and end-users (Blenkhorn & MacKenzie, 2017). The TLBMC Environmental Layer reveals how B2B companies should give their client companies a better understanding of the environmental impact, offer an intriguing value proposition of generating more environmental benefits, and innovate in an environmentally oriented way, across all sections of B2B business from functional value to production, supplies and outsourcing to distribution, use phase to end-of-life (Joyce & Paquin, 2016).

From a social perspective, CSR can help B2B companies capture the interactions between themselves and different stakeholder, as well as the key social impacts that arise from these relationships, thereby enabling B2B corporations to understand their key social influence and providing insights for organisations to explore innovative actions and business models that enhance their potential of creating more appreciated social value (Joyce & Paquin, 2016). The environmental and social dimensions of CSR consideration and initiatives can ultimately enable B2B companies to create more economic value, which is in line with their intrinsic interests and is therefore the main motivation for their CSR movements.

### **2.3.3 Existing Research on the Correlation in B2B Markets**

As previously mentioned, there is limited existing research on the mechanisms and extent of CSR's influence in B2B markets. Table 2.3 summarises some of the studies on the correlation between CSR and corporate financial performance, among which two are highly informative. A study conducted by Han and Lee (2021) demonstrates the mechanisms through which CSR influences the financial performance of B2B companies base on an extensive literature review and a quantitative research of 300 purchasing managers from different industries: CSR can help shape a favourable corporate image and reputation, increase the social connectedness and further consolidate the ties and trust between companies and customers; moreover, it can play a positive role in the development of economic relationships with customers by reducing

perceived supply risks.

Another study on the impact of CSR on corporate performance was successfully conducted by quantifying and analysing the association between CSR disclosures and corporate equity of 131 Indian B2B companies, revealing that CSR practices do have positive influence on the performance of B2B companies (Sarkar, Chatterjee & Bhattacharjee, 2021).

Such results are enlightening and encouraging, but given the subjective nature of the choosing of indicators for the measurement of CSR behaviour and corporate financial performance, as well as the numerous different characteristics of different economies, there is no guarantee that the same results can be anticipated for the Swedish B2B market. A systematic study is therefore warranted.

*Table 2.3 A review of the correlation of CSR and corporate financial performance*

<b>Author(s)</b>	<b>Source</b>	<b>Domain</b>	<b>Description</b>	<b>Research Design</b>	<b>Findings</b>
<b>Hopkins (2003b)</b>	International Journal of Business Performance Management	General	A case study communicating the business case for corporate social responsibility in an accessible and practical fashion.	Qualitative analysis on two sets of companies over time, one a control group that does not practice CSR policies and the other a group of companies which do.	There is a positive link between social and financial performance especially when looking at the increased relevance of intangible assets such as reputation and knowledge networks. These turn into a source of market value and competitive advantage.
<b>Weber (2008)</b>	European Management Journal	B2C	A multi-step measurement model based on a theoretical approach that allows managers to evaluate their company-specific business case for CSR.	Theoretical model based on literature review followed by a qualitative example of a real-life case.	Five main areas of CSR business benefits can be identified including company image and reputation, employee motivation, retention, and recruitment, cost savings, revenue increases, CSR-related risk reduction.

<b>Karagiorgos (2010)</b>	European Research Studies Journal	General	An empirical analysis testing whether there is an impact of CSR performance on stock returns, using voluntary disclosures, based on a sample of Greek listed companies.	Quantitative approach based on corporate stock returns and content analysis of sustainability reports.	There is a positive correlation among stock returns and CSR performance in Greek companies.
<b>Homburg, Stierl &amp; Borneman (2013)</b>	Journal of Marketing	B2B	A research on the influence of a supplier's CSR engagement on organisational customer outcomes based on instrumental stakeholder theory.	Quantitative analysis from an examination of 200 cross-industry supplier–customer dyads.	There are positive effects of two facets of a supplier's CSR efforts on customer loyalty through distinct mechanisms. Business practice CSR fosters customers' trust, whereas philanthropic CSR strengthens customer–company identification.
<b>Galant &amp; Cadez (2017)</b>	Economic Research-Ekonomska Istraživanja	General	A review on alternative operationalisations and measurement approaches for the CSR and CFP concepts that have been deployed in empirical literature concerned with the CSR–CFP relationship.	Literature review of empirical data of the CSR–CFP relationship and approaches for measuring CSR and CFP	Researcher subjectivity and selection bias exist in most of research, which may result in very different outcomes of the nature of CSR–CFP relationship detected in empirical literature.
<b>Arli et al. (2019)</b>	Marketing Intelligence & Planning	B2C	A research on the effect of perceived CSR in mediating the relationship between corporate hypocrisy and consumer scepticism toward perceived corporate reputation.	Experimental design testing the effects of corporate hypocrisy and consumer scepticism on consumers' perception of a firm's corporate reputation.	Perceived CSR acts as a causal mechanism, mediating the relationship between corporate hypocrisy and scepticism on corporate reputation.
<b>Vesal, Siahtiri &amp; O'Cass (2020)</b>	Industrial Marketing Management	B2B	A research on whether B2B manufacturers obtain a positive brand image and superior market performance through	Quantitative analysis based on data collected from B2B manufacturers and their customers.	Environmental sustainability practices provide positive benefits to B2B manufacturers' brand image, which, in turn, impacts market performance.

			environmental sustainability.		
<b>Grassman n (2021)</b>	Journal of Cleaner Production	General	Evidence on environmental relationship with firm value based on global observations between 2012 and 2017 using the Ohlson model.	Quantitative analysis based on a global and listed sample of 8,992 firm-year observations between 2012 and 2017.	Environmental expenditures follow a U-shaped relationship while social expenditures follow an inverted U-shaped relationship with firm value.
<b>Han &amp; Lee (2021)</b>	Industrial Marketing Management	B2B	A proposal of the mechanism of how CSR positively influences the quality of business relationship in the business-to-business market followed by a test using empirical data.	Theoretical model based on literature review followed by a quantitative analysis based on sample from 300 purchasing managers.	CSR has a positive effect on developing business relationships. Business practice CSR activity has a positive effect on perceived supply risk, corporate image, corporate reputation, social connectedness.
<b>Sarkar, Chatterjee &amp; Bhattacharjee (2021)</b>	Journal of Indian Business Research	B2B	A study on the influence of corporate social responsibility on the corporate brand performance of Indian B2B companies by analysing CSR disclosure index and brand equity.	Quantitative analysis, generated by surveying annual reports/CSR reports/websites of 131 Indian B2B firms.	There is a positive influence of CSR practices in shoring up corporate brand performance.

## 2.4 Measurement Approach

### 2.4.1 Measurement Approach of CSR

CSR can be measured by many kinds of means, including the use of common reputation indices, content analysis, questionnaire-based surveys and one-dimensional measurement, each with its own advantages and disadvantages (Galant & Cadez, 2017).

The reputation indices are rated by specialised agencies, which usually take into account the multidimensional nature of CSR through indicators covering a wide range of aspects, including



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natural environment, social well-being, employees, supply chain, community, financial health, etc (Galant & Cadez, 2017). Commonly used indices include Fortune Magazine Reputation Index (Houston & Johnson, 2000), Dow Jones Sustainability Index (Skare & Golja, 2012), MSC KLD 400 Social index (Coombs & Gilley, 2005), Vigeo Index (Girerd-Potin, Jimenez-Garcès & Louvet, 2014) and so on. The indices are most common method to measure a company's CSR performance due to their ease of use and cross-company comparability, however, these indices are usually focused on large, listed global companies, which makes it not a widely-covered or well-suited method to studying some of the B2B companies in Sweden with smaller corporate size or lack of international visibility.

Another common approach is the content analysis of corporate communications, which means to select specific elements of corporate disclosures and then translate qualitative content into quantifiable scale through coding, for instance, binary counts of mentions of relevant terms, or using Likert scales to evaluate specific CSR dimensions (Galant & Cadez, 2017). The advantage of content analysis is that it gives flexibility and a more objective evaluation of the CSR dimensions of interest to the research; while the drawback is that it is embedded in a more subjective judgement of the researcher in terms of perspective and data selection, and is subject to company reporting bias (Turker, 2009).

Noteworthy, Karagiorgos' (2010) content analysis method is a feasible and comprehensive means of measuring CSR which provides a good example for our study. This research uses 26 indicators from the GRI report, which are divided into two groups namely social performance indicators and environmental performance indicators. These two sets of indicators also correspond exactly to the research questions of this thesis: whether there is a significant correlation between the environmental/social CSR activities and the company's financial performance. The components of the indicators are listed in the tables below, each of which is rated on a scale of 0-3 with 0 being an indicator not considered and 3 being a fully considered indicator.

Table 2.4.1(a) List of social performance indicators (Karagiorgos, 2010)

Labour practices and decent work	Employment information	Human rights	Strategy and management	Society	Community	Product responsibility	Respect for privacy
	Labour/management relations		Non-discrimination		Bribery and corruption		Products and services
	Health and safety		Child labour		Political contributions		Customer health and safety
	Training and education		Freedom of association and collective bargaining				
	Diversity and opportunity		Forced and compulsory				

Table 2.4.1(b) List of environmental performance indicators (Karagiorgos, 2010)

Energy use efficiency	Toxics release inventory	Green house gas emissions	Environmental impacts of products and services	Compliance performance
Water use efficiency	Other discharges	Other air emissions	Land and resources use-biodiversity-conservation	Waste generation and management

Two other commonly used measurement methods are questionnaire-based surveys, which is to collect key information by sending questionnaires or conducting interviews with knowledgeable respondents, and one-dimensional measures, which is to focus on only one relevant aspect of CSR such as global environmental standards, growth in charitable contributions and public health policies; with the former having a higher level of research flexibility yet limitations of general survey research and response bias, and the latter having a very high level of data availability and ease of operation but is more biased in terms of theory

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considering the diverse nature of CSR (Galant & Cadez, 2017).

#### **2.4.2 Measurement Approach of Corporate Financial Performance**

Widely used measures of corporations financial performance usually include accounting-based indicators like ROA (return on assets), ROE (return on equity) and Net income, etc.; market-based indicators like Stock returns and Market value of a company; and a combination of the two like Tobin's Q and MVA (market value–book value of equity and debt) (Galant & Cadez, 2017).

Each of these metrics has its own strengths and limitations: accounting-based measures are applicable to all companies, but can be highly biased when comparing companies of different sizes or in different industries (Al-Tuwajri, Christensen & Hughes, 2004); market-based measures have a higher degree of simultaneity and can more quickly capture the impact of CSR activities on company performance, nevertheless, are only applicable to listed companies but not most SMEs, and are largely influenced by non-company specific market and social factors (Galant & Cadez, 2017). On the other hand, the approaches that combine both accounting and market-based measures are also broadly applied as CSR indicators, which absorb the merits of both and make it not only company-wide comparable but also timely reflected. Among the multidimensional methods, ROA and Tobin's Q are especially commonly used, which are respectively measured as the ratio of net income divided by total assets and the ratio of total debt plus market value of equity divided by total assets (Lioui & Sharma, 2012).

#### **2.5 Model of How CSR Affects Financial Performance of B2B Companies**

Han and Lee (2021) have developed a complete and comprehensive theory of the mechanisms through which CSR influences the financial performance of B2B companies, where CSR indirectly affect corporate business by modifying the perceived supply risk, corporate image, corporate reputation, corporate social connectedness as well as the relationship and trust with customers.

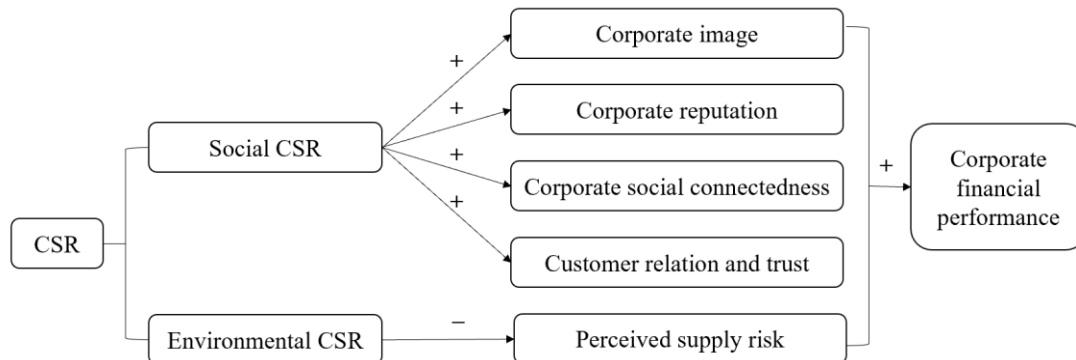
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Specifically, it is pointed out that ethical business management of B2B companies, for instance customer privacy protection and fair-trade policy, can help shape a better corporate image, which can make the B2B company a priority option for the client companies when they consider who to work with. Moreover, social CSR activities can build a favourable reputation for the B2B company, which is very beneficial in terms of its perceptions by different groups of stakeholders – not only the shareholders and target customers who are very essential for the market performance of the B2B company, but also its employees and future potential employees who will ultimately create great economic values for the company. In addition, social-related CSR initiatives can effectively raise the connectedness between the B2B firms with the whole society where they communicate their business. As a result, the ties between B2B companies and their customers can be consolidated through a more efficient communication environment. Furthermore, social CSR activities manifest the vision of a B2B company to establish a relation with their clients in a long-term manner, thus increasing the trust of the clients, which is a key factor to not only retaining current collaboration but also facilitating future business.

On the other hand, the full consideration of environmental factors throughout the whole supply chain can play a positive role in the development of economic relationships between a B2B company and its customers by reducing perceived supply risks. Supply risks, due to the bulky nature of B2B transactions, can be an even more important indicator for clients to evaluate the safety, reliability and economic efficiency of the products or services provided by the B2B corporation.

Altogether, the influential flow is summarised as figure 1. It is therefore sensible to consider that corporate image, reputation, social connectedness as well as customer relationship and trust correspond to the social dimension of CSR, while the perceived supply risk corresponds to the environmental dimension, which we will separately study in later research.

Figure 1 Model of how CSR affects corporate financial performance



## 2.6 Chapter Summary

In this chapter, we have presented an overview of existing literature on CSR and corporate financial performance that includes previous research and theoretical frameworks that are considered relevant for our area of research. To provide the reader with a better understanding of CSR, we first present the background and the development of the concept of CSR and how companies' management approach regarding CSR has shifted throughout the past fifty years. The five dimensions that CSR is usually categorised into, which are environmental, social, economic, stakeholder and voluntariness, are explained in order to provide a clearer description of what CSR can be defined as. Of these dimensions, the environmental, social, and economic aspects are considered to be the key areas of CSR which is the reason why these will also be the focus area of this thesis. Moreover, the environmental, social and economic aspects of CSR are explained in more detail to illustrate how they are connected and what impact they have on society and businesses.

This chapter also presents the various motivations for companies to engage in CSR and different perspectives on the concept. Furthermore, we explain the significance of the economic dimension and value creation for companies when engaging in CSR. In order for CSR to be sustainable for a company it has to create value for the company, and to concretise this notion

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we decided to focus on the relationship between corporate financial performance and CSR performance. We therefore go on to present existing literature on this theme to get an overview of the research that has been conducted within this area and what they have found.

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## **3. Methodology**

### **3.1 Research Approach**

The purpose of our study is to explore the correlation between CSR initiatives and the financial performance of Swedish B2B companies. The philosophical basis of this study is scientific realism, in which theories are proposed to explain phenomena in the external world, while evidence of reality in the external world can determine the veracity of the application of the theory (Hunt & Hansen, 2008).

Based on an extensive literature review of previous relevant studies, we have presented a possible theoretical model of how CSR affects financial performance. To continue with this deductive research, the next step is then to provide empirical evidence to prove our hypothesis, which will be accomplished through a quantitative study based on relevant data from a list of Swedish B2B companies. To conduct sound quantitative research, it is therefore important to provide reliable methodologies for qualifying CSR performance as well as the corporate financial performance, which can lead to a reasonable and valid interpretation from our research questions into statistical hypotheses.

Following the logic of deductive research, if our hypotheses are verified by the results of the empirical analysis, this would largely indicate that the theory (Han & Lee, 2021) on which our research is based is true and applicable; conversely, it would indicate that the model adapted from Han & Lee's (2021) research may not be equally applicable to the Swedish B2B market.

### **3.2 Research Design**

#### **3.2.1 Content Analysis as the Measurement Approach of CSR**

As mentioned in the literature review section, there are many approaches to quantifying CSR performance, ranging from reputation indices to content analysis, from questionnaire-based

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surveys to one-dimensional measurement. Even though the reputation indices are the most commonly used method and have considerable simplicity of implementation, they usually only include those well-known multinational listed enterprises, where some of our target population – relatively smaller Swedish B2B companies – might not be included in the index lists. On the other hand, questionnaire-based surveys as another common approach can be designed specifically to our research questions with great flexibility. Whereas, we are concerned about the response rate given our limited research time and available platforms, especially in the current pandemic situation. Additionally, the one-dimensional measurement seems to be a rather one-sided and biased approach considering that the nature of our study is to look at the multidimensional facets of CSR. Therefore, we decide to adopt content analysis as the measurement of CSR performance, considering its relative objectivity and its fit with our study.

Content analysis, defined by Bell et al. (2019) as “an approach to the analysis of documents and texts that seeks to quantify content in terms of predetermined categories and in a systematic and replicable manner”, is an objective quantitative procedure which is applicable to many different kinds of unstructured information. There are usually three modes of analysis for text: entity extraction, which is to search for or to count the time of existence of specific entities like person, location, emotion or attribute in the given text; topic modelling, which is to identify the general topics of the body of content; relation extraction, which is to further explore the textual relationships between entities (Berger et al., 2020).

Our strategy using content analysis is to search for the predetermined indicators of social/environmental CSR initiatives in texts about each sample company's CSR disclosure that are collected in advance. Our objective is in line with the first content analysis mode, for which there are a number of tools that can be used including Python, R's tm tool kits, LIWC and Hedonometer (Berger et al., 2020). According to Berger et al. (2020), most of the analytical tools require a certain level of programming knowledge or a complex coding process, yet there is a software called WordStat that makes it much easier to extract wanted elements without programming or coding. This software includes multiple functions such as extracting specified



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entities, displaying information based on frequency of occurrence and generating topics, is versatile and easy to use and is therefore chosen as the content analysis tool for our study.

Hence, the process of content analysis for this study includes: 1) obtaining information related to CSR disclosures from the sample companies; 2) performing a series of pre-processing on the data, including removing images and website tags, correcting formatting and spelling, and removing commonly used conjunctions, prepositions, and other irrelevant words; 3) determining the database of social and environmental CSR specifically related entities in WordStat according to the predetermined CSR indicators; and 4) using WordStat to analyse the text of each sample company to see the frequency of occurrence and proportion of each aspect (the literal name of the CSR indicators as well as related words or phrases which can be identified by the software), which will later be calculated respectively based on standardised criteria to give each company a separate CSR index for both social and environmental performance.

### **3.2.2 ROA as the Measurement Approach of Corporate Financial Performance**

Likewise, as mentioned above, the measuring approach of corporate financial performance is mainly concerned with accounting-based and market-based statistics, or both. When choosing which measurement approach that would be used in this study, various financial performance measures were explored and considered. One of the considered measurements that would be used as an indicator for corporate financial performance was Tobin's Q, which expresses the relationship between the company's market valuation and intrinsic value, which in other words means that it estimates if the company is over- or undervalued (Hayes, 2021).

To further illustrate, Tobin's Q, also known as Q ratio or Kaldor's  $v$ , was first introduced by Kaldor (1966) and later popularised by Tobin (1976) who described it as the "nexus between financial markets and markets for goods and services". Tobin's Q has been used to represent the financial competence of corporations in a lot of research (Lioui & Sharma, 2012; Luo &

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Bhattacharya, 2006; Okafor, Adeleye & Adusei, 2021). It is widely used because of the consideration that the impact of CSR is likely to occur not necessarily contemporarily but also in the medium to long term, it is therefore necessary to use an indicator that measures the expected long-term growth opportunities of a business (Lioui & Sharma, 2012).

However, looking at the market value poses two problems for this study. Firstly, as we are looking at the companies' financial performance in 2019 we need their market values in 2019 which is information that was rather difficult to obtain if the figures were not stated in their financial reports from 2019, which was the case with a large share of the companies included in the study. Secondly, some of the companies operate in markets other than Sweden which would then be included and reflected in their market value as it is stated in their financial statement for the corporation as a whole. Since this study is only looking at the financial performance of companies in the Swedish market it requires a measurement of corporate financial performance that ensures that only the performance in Swedish markets is reflected.

Due to the problems posed by market-based measurements when studying multinational corporations and a lack of access to the financial information and figures needed, it was instead judged more appropriate to consider accounting-based approaches. The accounting-based measurements that were considered included return on assets (ROA), return on equity (ROE), return on capital employed (ROCE), return on sales (ROS), net operating income, net income, etc., and an advantage that these measurements offer are for example that the figures needed are found in a standard financial report which can be accessed regardless the type or size of sample companies (Galant & Cadez, 2017). Therefore, the figures required can be obtained through the financial reports the companies have to submit to Bolagsverket (Swedish Companies Registration Office) each year and these reports do only include the financial figures from the companies' Swedish branches. Consequently, by using the information from the exclusively Swedish financial reports it is ensured that the measuring of corporate financial performance only reflects the performance in the Swedish markets.

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Among the accounting-based measurements, ROA has been used frequently by plenty of academic research to represent the financial competence of corporations (Boakye et al., 2021; Giraldez-Puig & Berenguer, 2018; Gupta & Raman, 2021; Karim, Manab & Ismail, 2020). ROA as a measurement of financial performance “represents the profitability of the firm with respect to the total set of resources, or assets, under its control” (Hull & Rothenberg, 2008). As previously mentioned, it is an accounting-based indicator of corporate financial performance which is applicable to all the companies regardless of the size or whether being listed or not, therefore serves as the most reasonable approach to detect the corporate financial performance of Swedish B2B companies considering the possibly big differences among them. Therefore, upon comprehensive consideration, it was judged that ROA is among the accounting-based indicators that most likely can reflect the company's profitability as accurately as possible for this particular study and hence it was selected as the measurement of corporate financial performance.

Return on Assets is calculated as:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

### **3.2.3 Variables**

According to the theoretical framework (Figure 1), it is likely that the CSR initiatives relating to the environment and the society can lead to better corporate performance. Therefore, in this research, the dependent variable should be ROA, the selected indicator of corporate financial performance; while the independent variables are the Environmental CSR Index and Social CSR Index, the comprehensive indicators of CSR performance.

Moreover, it is sensible to take other factors into consideration as well so as to avoid their interference with the study results. According to previous studies, company size, which depends on its revenue, total assets and number of employees, can be a prior intervening variable to the

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research, considering that the ability to implement CSR varies among companies of different sizes, with larger companies having a greater resource advantage (Galant & Cadez, 2017; Karagiorgos, 2010). A lot of previous studies have been using the number of employees (NOE) as the indicator of company size (Cherian et al., 2019; Spallini et al., 2021), which is an effective way of measuring the size and can be obtained through accounting reports. Hence, in this research, NOE is taken as a control variable to eliminate the interference of company size to the correlation.

### **3.2.4 Statistical Hypotheses**

This study seeks to explore the relationship between CSR performance and corporate financial results. Considering that the connotation of CSR mainly concerns about society, environment and economics, and that environmental and social related CSR activities seem to be mutually exclusive and occur non-interdependently, it is therefore reasonable to look at their relationship with corporate financial performance separately, which thereupon leads to our two research questions:

**RQ1: Is there a significant correlation between the environment-related CSR activities and the financial performance for Swedish B2B companies?**

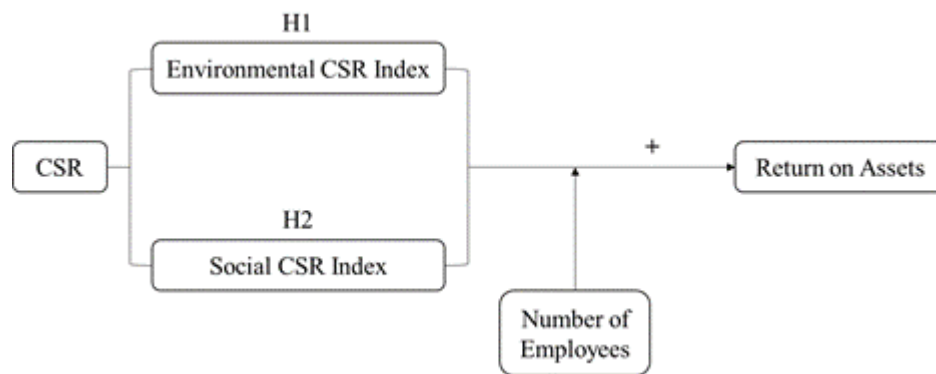
**RQ2: Is there a significant correlation between the social CSR activities and the financial performance for Swedish B2B companies?**

We will therefore consider environmental CSR activities and social CSR activities as two independent variables, which will be quantified by content analysis and then evaluated on a scale into a comparable set of indices. Measures of corporate financial performance will be represented by ROA, an accounting-result based profitability indicator. The likely relationship between CSR performance and corporate financial result is proposed to be positive as shown in the theoretical framework, the research is then designed to seek how numerically the three variables correlate with each other, showing whether the nature of the correlation is positive, neutral or negative by analysing the empirical evidence from a sample of sufficient size.

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To establish a complete statistical model, the independent variables – environmental and social CSR activities – will be referred to as environmental CSR index (EI) and social CSR index (SI); while corporate financial performance will be referred to as ROA. After rating each factor according to the established criteria, the index values will be used in relation with the company’s ROA for correlation analysis. Considering the above-mentioned control variable – company size, which is referred to as number of employees (NOE), and combining the theoretical framework, the following statistical hypotheses are formulated:

*Figure 2 Statistical Hypotheses*



**For environmental factors (RQ1):**

H0: no significant correlation between the environmental CSR index and ROA

H1: significant correlation between the environmental CSR index and ROA

**For social factors (RQ2):**

H0: no significant correlation between the social CSR index and ROA

H2: significant correlation between the social CSR index and ROA

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### **3.3 Sampling Process**

#### **3.3.1 Target Population**

The research population for our study is all B2B companies operating in Sweden. The focus on the business-to-business area is based partly on the lack of previous studies within the area, and partly on the increasing interest for CSR within the B2B context (Han & Lee, 2021; Statista, 2020). Similarly, the focus on Swedish market is based both on the aim of filling a gap in the previous study and the fact that the environment and institution that researchers are in has provided sufficient facilities for the study of Sweden. However, it is more than difficult to include all the population in our data analysis due to the limited time and resources available for the study. Therefore, we have to carefully choose the sampling method to ensure both the generalisability and feasibility of the research.

In order to be able to validly generalise the sample to the population it was drawn from, which in this case is companies in Swedish B2B markets, the sample needs to be representative (Burns & Burns, 2008). A representative sample reflects the population characteristics in miniature which means that this study aims to identify a sample of companies that will reflect and thereby be able to represent Swedish B2B markets. Since there are many different industries that operate in a B2B setting it is important that this study takes this into account when defining the sample as the target population can be considered broad. Therefore, it is necessary that the sample will contain companies from different industries in order for different industries within B2B markets to be represented properly.

#### **3.3.2 Sampling Process**

For this study, considering that we are unable to obtain a whole population frame which identifies all the B2B corporations in Sweden, we then decide to adopt a non-probability sampling method – judgement sampling. It is described by Burns and Burns (2008) as a sampling method where the researchers are exercising judgment and expertise when choosing

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the elements or characteristics of the sample. This means that the sample is not randomly selected, but instead, we can select reasonable samples using a variety of characteristics to establish the criteria, thus enhancing the efficiency of the study and proactively eliminating possible confounding factors in advance. The reason for choosing this non-probability method is that we want to ensure that the B2B brands included in the sample can reflect Swedish B2B market to the greatest extent possible. Although this would be a non-probability approach where the sampling units are not selected by chance, the advantage of this kind of sample is its quickness and simplicity when it comes to design and implementation, as well as its cost efficiency (Burns & Burns, 2008).

The selected samples are mainly based on the company list in the Sustainable Brand Index (2019) which consists of Sweden's most noted B2B brands selected by experts based on market share on the respective market, turnover, and brand awareness in the target group. The target group of the Sustainable Brand Index study is decision-makers with purchasing and procurement responsibilities at SMEs (Small and Medium-Sized Companies) within the selected target industries presented in the report (Sustainable Brand Index, 2019). The study on B2B brands for 2019 consisted of 6000 in-depth interviews with respondents from the target group, looking at 75 companies of different sizes operating in 10 different industries (Sustainable Brand Index, 2019). This list presents not only the overall ranking of B2B brands but also the ranking within each industry, which means that the company listed as number one is considered to have the highest CSR performance and the one listed last is considered to have the lowest.

For this study, a sampling process using judgemental methods is conducted, aiming to achieve an as unbiased, representative, and generalisable sample as possible by ensuring that a broad range of companies are included and thereby reflecting the target population as accurately as possible. Specifically, the company industry and ranking in the Sustainable Brand Index (2019) will function as the basis for our judgemental sampling. For a holistic perspective, companies across 10 categories will be analysed, including Waste Management, Banking, Pension &

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Insurance, Fuel, Energy, Real Estate, FMCG, IT & Technology, Telecommunications, and Transport & Logistics, which are mentioned in the Sustainable Brand Index (2019). Having companies from various industries can bring a more generalisable picture of the case in question. At the same time, in order to avoid subjective bias, we will select companies evenly across the Sustainable Brand Index (2019) ranking order, i.e. avoid a concentration of selected companies at the top or bottom of the list. This sampling process is decisive as the study aims to achieve as high generalisability as possible which demands a high level of representativeness of the target population.

### **3.3.3 Sample Size**

For this study, 38 companies are selected as the sample that will be considered representative of companies in Swedish B2B markets. According to Bell et al. (2019), deciding the size of the sample is usually affected by considerations of time and cost. Therefore, the decision will in most cases be a compromise between time and cost and the need for precision. Considering the timeframe we have for this study, it was judged that a sample of 38 companies would be an adequate sample size as the collection of the secondary data can be expected to be rather time consuming. Furthermore, the sample was considered adequate given the number of possible independent variables as well as the number of industries we are looking at. Finally, the selected samples are shown as the “List of Sample Companies” in Appendix A, which displays the sample information including names, industries they belong to, as well as the available data source for CSR and financial investigation.

## **3.4 Data collection**

### **3.4.1 Data Type**

For the purpose of this research, information regarding CSR activities and financial performance of companies within Swedish B2B market is gathered and analysed. In order to control extraneous factors, we look at companies from various industries in an attempt to



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capture a broad and holistic view while minimising possible intervention effects. The selected sample companies are involved in different levels of environment-related and social-related CSR initiatives. On this basis, relevant disclosive information will be collected, quantified and analysed. Given our research questions and hypotheses, the information we have to specify mainly focuses on CSR-related performance and financial performance of each company.

Generally, data is divided into either primary or secondary subsets depending on whether the investigator himself has collected the data, or if the material has been collected by others (Wiedersheim-Paul & Eriksson, 1991). Primary data is described by Lundahl & Skärvad (2016) as data collected by the researchers themselves, for instance, with the help of surveys or own experiments; while secondary data is the information that is already available, they can be about literature or previous research, but also about knowledge and various previous experiences that people possess (Wiedersheim-Paul & Eriksson, 1991). In this study, we decide to look at relevant disclosive materials such as sustainability reports or annual reports, which, according to the definitions, are classified as secondary data. This is due to, firstly, the high credibility and reliability of certified secondary data and, secondly, the fact that secondary data collection avoids the possible bias and hassle of interview or questionnaire design thus is highly cost efficient – both in terms of time and monetary expenditures.

Moreover, from the perspective of analytical methods, we adopt a quantitative approach, which is considered as the best alternative considering objectivity as the main aim. Quantitative data can ensure the objectivity in a way that personal differences will not affect the result in any direction, and at the same time fits best with the nature of our study – correlation analysis: we look try to seek a connection between CSR performance and financial figures by testifying the statistical hypotheses proposed based on our literature review. Yet it should be noted that, as Lundahl and Skärvad (2016) have emphasised, there is a differentiation between statistical relationships and causal relationships. That is to say, a statistical connection does not necessarily guarantee a causal relation. Hence, follow-up discussion that comprehensively takes into account all possible link factors would be very necessary.

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### 3.4.2 Source of Data

As presented, this study will use secondary data that indicates sample companies' CSR performance as well as financial figures. To determine the source of the data to be used, we have looked at different types of information platforms. The development of the Internet and social media has provided an increasing variety of ways for companies to communicate developments like their CSR initiatives and financial performance, including but not limited to: a) texts, images and video posts on social media accounts (Twitter, Facebook, Instagram, LinkedIn, YouTube), b) content posted on corporate websites (newsletters, reports) and c) press releases by other media. However, as each sample company has different channels and strengths of disclosure on CSR initiatives, in an attempt to make the sample data sources fair and comparable, we decided to uniformly use the company's sustainability report (for companies without a separate sustainability report, use the annual report) as the material for CSR content analysis. The unified data source also makes the collection procedure much more efficient. At the same time, considering the feasibility and the macroeconomic environmental factor, we decide to only use data from the financial year 2019 instead of 2020 or multiple years.

On the other hand, for information regarding the company's financial health, we will also look at the sustainability reports or annual reports posted on the websites or provided on online databases. The ROA for each company will be calculated based on the financial indicators extracted for the year 2019, which is in accordance with the CSR-related information. We will manually retrieve needed financial figures – net income and total assets – from the sources stated above, which is open and available through companies' websites, so that we can independently accomplish the data collection without having to contact any of the corporations in our sample list.

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### 3.5 Calculation of CSR Index

Since ROA and NOE, the indicators of corporate financial performance and company size, are numerical and therefore comparable in nature, they can hence be directly analysed as statistical data. However, due to the complexity of quantifying CSR initiatives by analysing textual information, a clear and appropriate scaling system is needed to rate CSR performance as a directly comparable index. Many different attempts to standardise and scale CSR performance have been made in previous research, examples range from binary coding where 0 means non-existence of a specific indicator and 1 means reference of the indicator in texts, to assigning interval scores like 1-5 scale or 0-3 scale based on predetermined indicators, where each score indicate a different degree of the sample company's involvement in different field of CSR (Galant & Cadez, 2017).

As Table 2.4.1(a) and Table 2.4.1(b) shows, the Social CSR Index involves considerations including employment information, labour/management relations, health and safety, training and education, diversity and opportunity, strategy and management, non-discrimination, child labour, freedom of association and collective bargaining, forced and compulsory, community, bribery and corruption, political contributions, respect for privacy, products and services as well as customer health and safety, etc.; while the Environmental CSR Index covers a variety of factors like energy use efficiency, toxics release inventory, greenhouse gas emissions, environmental impacts of products and services, compliance performance, water use efficiency other discharges, other air emissions, biodiversity conservation of land and resources use, as well as waste generation and management and so on (Karagiorgos, 2010).

Not only are there so many indicators involved, but in the process of content analysis, one cannot simply count the frequency of the literal names of these indicators. There are also many verbs, nouns, adjectives etc. associated with these indicators that also describe the awareness and implementation of CSR initiatives in the sample companies. In order to accurately capture all descriptions and references to these CSR indicators in such huge sample data, we need to

create an effective database of all associated words and phrases. Although we would love to build a thesaurus corresponding to Karagiorgos's(2010) 26 CSR indicators, the sheer volume of work is just far too large which can involve dozens or even hundreds of words for each indicator. Moreover, given our limited expertise in the areas of each CSR indicator, we eventually decided to look for a ready-to-use dictionary for our content analysis.

After a comprehensive search and comparison, we found that the dictionary developed by Nadra Pencle and Irina Mălăescu (2016) not only covers a wide range of social and environmental CSR-related indicators, the main subject of our study, in terms of content, but also has good compatibility with the tool we use for content analysis (the dictionary is included in the text database that comes with the WordStat software). This dictionary consists of 1,002 vocabularies covering four dimensions: society and community, employees, environment and human rights, where the vocabularies under “environment” category corresponds to Environmental CSR Index while the other three can be considered as subcategories of Social CSR Index (Provalis Research, 2021). The chart below shows the specific categories of the dictionary.

*Table 3.5 Explanation of the Dictionary's Construction (Provalis Research, 2021)*

<b>Dimensions</b>	<b>Example of words</b>	<b>Number of words</b>
<b>Employee</b>	Adopted Child, Health Benefits, Educate, Employed, Discriminatory, etc...	319
<b>Human Rights</b>	Aboriginals, Fairness, Oppressive Regime, Same Sex, Religious Diversities, etc...	297
<b>Environment</b>	Acid Rain, Conservation, Fossils, Green Engineering, Renewable Energy, etc..	451
<b>Social and Community</b>	Transparent, Foodbank, Indigenous People, Social Issue, etc...	174

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However, in order to make the content analysis of the full sample more efficient and accurate, we cannot simply use the dictionary directly, but need to edit the dictionary to correspond to the two objects of our study – SI and EI. As mentioned above, we have mapped the “Environment” category directly to the Environmental CSR Index, while combining the “Social and Community”, “Employee” and “Human Rights” categories to create a glossary for Social CSR index. It is worth noting that there are some duplicate words and phrases in the original four classifications. We removed the duplicated entities that were merged into the Social CSR Index lexicon to avoid repetitive counts leading to higher-than-actual SI scores.

The result of the content analysis contains several different types of indicators that reveal the occurrence of SI and EI-related mentions in the text, including the number of occurrences of the keyword, percentage based on the total number of keywords displayed in the table, percentage based on the total number of words that have not been excluded, rate of occurrence per 10,000 words, etc. It is therefore important to establish a fair and efficient method when it comes to the calculation of SI and EI.

The number of occurrences of the CSR-related keyword to some extent reflects a company's focus and commitment to a specific area of CSR, and is widely used in many studies as a criterion for rating or scaling a company's CSR performance. However, using frequency as the only criterion may raise issues of fairness, as some of the data in the sample comes from the company's sustainability report and some from the integrated annual report, which obviously has a higher word count and therefore a higher frequency of keywords. On the other hand, percentage based on the total number of words or rate of occurrence per 10,000 words can also be an efficient measuring way, yet they have the similar problem with number of occurrences regarding the fairness that the large number of words in annual reports may significantly dilute the rate of mention of specific CSR. However, in this sense, if we use the product of the number of occurrences and the percentage based on the total number of words, the impact of text word count on fairness can then offset each other, thus providing scores that are not only valid in indicating the CSR performance but also has values in the same dimension.

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Thereupon, we have decided on the calculation of the Social CSR Index and the Environmental CSR Index:

$$SI = \text{Frequency} \times \text{Total percentage (social CSR keywords)}$$

$$EI = \text{Frequency} \times \text{Total percentage (environmental CSR keywords)}$$

The scores calculated in this way are ratio data, therefore are able to provide a more accurate measure than the scores derived from the 0-3 or 1-5 scaling approach adopted in many studies, which are ordinal data. It therefore provides more comparable and reliable results in the correlation analysis with the corporate financial performance indicators – ROA, which is also ratio data.

### **3.6 Plan of Data Analysis**

A quantitative study will be conducted to explore the possible correlation of corporate financial performance with environmentally and socially relevant CSR initiatives. In order to make the study more comprehensive and accurate, certain variables are clearly defined and transformed into a series of quantitative data, then various analyses including descriptive statistics, Pearson correlation analysis, regression analysis and follow-up t-tests will be run through the classic statistics analysing tool – IBM SPSS.

#### **3.6.1 Data Preparation**

The information about corporate financial performance and company size will be extracted from each company's annual report or accounting report and manually entered into an Excel document, where NOE can be kept directly and the ROA value can be calculated by defining the arithmetic formula.

On the other hand, the results of content analysis can be saved directly from WordStat as an Excel file. The product formula in Excel allows the two sets of content analysis result – numbers

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of occurrence frequency and the percentage based on the total number of words – to be multiplied to generate the Social CSR Index and the Environmental CSR Index.

With all the variables – ROA, SI, EI and NOE – well prepared as Excel files, we can then open them with the analytical programme SPSS for the next-step exploration. It is noteworthy that the column “Industry” as nominal data should be re-coded as numeric information with values from 1 to 10, corresponding to the ten industries we look at. Only in this way can we perform variance analysis in later steps.

### **3.6.2 Descriptive Statistics**

Descriptive statistics for all the variables (ROA, Environmental CSR Index, Social CSR Index, NOE) should be conducted to display their basic attributes like the mean, range, standard deviation, distribution etc. This step, simple as it may seem to be, is performed to grasp some basic information about each set of variables, and at the same time to further make sure that no data has been omitted or incorrectly recorded during the previous processing.

### **3.6.3 ANOVA**

Since our study is aiming to explore the correlation between the dependent variable ROA and the independent variables SI and EI, controlling for NOE, it is therefore necessary to exclude the effect of the random variable – Industry – on the distribution of the dependent variable ROA, so as to ensure that the procedure of our judgemental sampling is unbiased.

In order to rule out that the industry to which the selected samples belong directly affects the ROA distribution, we use One-way ANOVA to check whether there is significant deviation of ROA value among different groups of industries. If the ANOVA table shows an associated probability that is larger than 0.05, we can be confident to say that in our selected samples, industry has little to do with the value of ROA. In other words, our sampling procedure is not biased.

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On the other hand, we can also perform One-way ANOVA on SI and EI to see if there are significant differences among different groups of industry. This might not be directly related to our investigation of the correlation between ROA and SI/EI, but still can be useful in later discussion regarding the mechanism of how SI/EI affects ROA.

### **3.6.4 Pearson Correlation Analysis**

Given that our research attempts to provide empirical evidence of the possible correlation between CSR engagement and corporate performance, it is sensible to use correlation analysis for exploring their relationship. Since the indicators used (ROA, Environmental CSR Index, Social CSR Index, NOE) are ratio data in nature, the parametric test of correlation – Pearson Correlation Analysis should therefore be the most suitable tool.

By looking at the Pearson Correlation Matrix for both the dependent and the independent variables, the coefficients between each pair of variables can be decided. The associated probability of each pair reveals the significance of the correlation, if the value is less than the significance level (0.05 or 0.01), it can be inferred that the correlation is a significant one. Moreover, the absolute correlation values can indicate the strength of the coefficient, with 0.00 ~ 0.20 shows small or random correlation, 0.20 ~ 0.40 shows weak correlation, 0.40 ~ 0.70 shows moderate correlation, 0.70 ~ 0.90 shows substantial correlation and 0.90 ~ 1.00 shows very strong correlation (Burns & Burns, 2008).

It is expected to see from the matrix that both Environmental CSR Index and Social CSR Index have significant positive correlation with ROA according to our theoretical framework and hypotheses. What should be noted is whether there is a significant correlation between the control and dependent variables. If the matrix shows such a situation, another correlation analysis – partial correlation – has to be carried out using SPSS, where we should place ROA, EI and SI in the variable column while controlling for NOE.

Before proceeding to the next step of the regression analysis, it is also important to observe the



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correlation between the two independent variables – EI and SI – in the matrix. High correlation between independent variables should be avoided as it indicates that the two variables are measuring the same variance and will thus over-inflate the multiple coefficient value R (Burns & Burns, 2008). If there is a very significant correlation between social and environmental CSR index, only one of them should be kept for the following regression analysis.

### 3.6.5 Regression Analysis

To confirm the multivariate relationship between CSR initiatives and corporate performance, a regression analysis should be conducted so that a quantitative model of the variables can be constructed. The multiple linear regression model is likely to be:

$$ROA = b_0 + b_1EI + b_2SI + \varepsilon$$

Where,

ROA is Return on Assets

EI is the Environmental CSR Index

SI is the Social CSR Index

$b_1$  stands for the correlation strength between ROA and EI

$b_2$  stands for the correlation strength between ROA and SI

$\varepsilon$  is the error term assumed to have a normal distribution with mean 0 and constant variance  $\sigma^2$  (Burns & Burns, 2008)

The model summary table will show the multiple coefficient value R and thus can reveal the percentage of ROA that can be explained by the above model ( $R^2$ ). Moreover, the ANOVA table shows an associated probability, from which it can be inferred whether to reject the null

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hypothesis of non-correlation, or to say, whether the independent variables can predict the dependent variable.

The Regression Results table indicates how the model is constructed. The standardised coefficient beta shows the strength and direction of the influence of each independent variable, while the associated probability reveals whether the beta value is a significant one (reject the null hypothesis of noncorrelation when the associated probability is less than the significance level). Thereupon, coefficients of each predictor can be confirmed and the multiple linear regression model can thus be completed. Furthermore, multicollinearity problems can be detected through collinearity statistics in the same table, namely Tolerance and VIF. A reliable model with no significant multicollinearity is of concern, i.e., as long as the Tolerance is less than 0.1 or the VIF is no greater than 10.

### **3.7 Research Quality**

#### **3.7.1 Validity**

As this study is deductive, its validity is based on whether it measures what it is supposed to be measured (Crowther & Lancaster, 2012). Validity is defined by Burns and Burns (2008) as the extent of which a variable measures what it intends to measure. In other words, it refers to the accuracy and stability of a measure and it indicates how valid the variables are and whether it is actually measuring a given characteristic or not. According to Bell et al.(2019), a study should have both external and internal validity in order to attain optimal results.

A study's external validity is the extent of which the results can be applied to other contexts (Burns & Burns, 2008). Thus, the external validity indicates how generalisable the results are and how transferable they are to the population. Our sample consisted of thirty-eight of the largest B2B brands in Sweden which were chosen using judgement sampling, which is a non-probability sampling method. It is suggested by Burns & Burns (2008) that at least 15 samples per independent variable is needed in order to provide a sufficient size. In this sense, since we

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have two independent variables (SI and EI), 38 sample companies, which is much larger than the minimum request 30, should be adequate for this type of research. The samples were chosen from Sustainable Brand Index's (2019) list of Swedish B2B brands which consisted of seventy-five brands from ten different industries. The companies selected are roughly evenly distributed throughout the list, in terms of both their rankings and the industries they operate in. The intention of this strategy was to include a wider range of companies and potentially identify differences between the higher ranked ones and the lower ranked.

According to Bell et al.(2019), using a non-probability sampling method can have a negative effect on external validity and therefore the results presented in this thesis cannot be considered generalisable. However, judgement sampling was judged to be the most appropriate sampling method as it despite the limited sample size allowed us to ensure that a wider range of companies were included in the sample and reflected in the study. Since the data was gathered from sustainability and financial reports, the data collection process was rather time-consuming. Therefore, the option of using probability sampling methods was dismissed as it would require a much larger sample size which was not considered realistic due to the limited time frame and budget. Deciding to use a non-probability sampling method allowed us to attain a sufficiently large sample size to fulfil statistical standards for a quantitative study.

The internal validity of the study refers to whether the different variables that have been examined actually measure what they intend to measure. More specifically, the internal validity looks at the extent of which the relationships or correlations depend on the independent variables that have been examined, rather than alternative factors (Burns & Burns, 2008). Furthermore, it also refers to what degree the variables of the study remain controlled. For this study, secondary data has been used to measure financial performance which can be considered to increase the validity as it ensures equal conditions for each of the sample companies included. In addition, the number of employees of each company has been used as a control variable to increase internal validity further. Ensuring validity for the measurement of CSR performance was a bit more complex, however since an already established dictionary of CSR words/phrases

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was used for the content analysis it can be classified as having validity.

In order to improve and increase the validity of the study, a larger sample size could have been used. Moreover, the B2B brands included in the SBI list are among the largest in Sweden, therefore, the generalisability of the study could be increased by also including small- and medium sized brands to reflect Swedish B2B markets to a larger extent.

### **3.7.2 Reliability**

As claimed by Crowther and Lancaster (2012), reliability refers to the understanding that a study and its findings can be replicated on different occasions with very similar results. More specifically, it refers to the accuracy, consistency, and stability of the measurements (Burns & Burns, 2008). The external reliability can be evaluated by testing for reproducibility over time, however for this study it is not an option as the time frame is limited. Furthermore, since secondary data was used that consisted of financial and sustainability reports from 2019, replicating this study using the same sample would give identical results. Therefore, it would require either a new sample of B2B companies or to use data from previous or future years to test the reproducibility. It would, however, not be complicated to replicate this study, though it is hard to predict whether the results are entirely reproducible. Therefore, it is difficult to state whether this study has external reliability as it has not been tested and there might be factors that would affect the results depending on which year the sample and data is being collected.

### **3.8 Chapter Summary**

In the methodology chapter, we begin with presenting our research approach in which we state that the purpose of the study is to explore the relationship between CSR performance and financial performance of Swedish B2B companies by looking at the correlation between the studied variables. We conduct deductive research by formulating hypotheses that will be tested using empirical data. A quantitative study will be carried out by collecting data from a sample of Swedish B2B companies. The data will then be analysed to determine if the hypotheses are

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accepted or rejected and then interpreted in order to answer our research questions.

In the next part of the chapter, we describe the research design and the chosen measurement approaches for CSR performance and financial performance are presented. CSR is measured using content analysis as a way of quantifying CSR performance and *Return of Assets* (ROA) was chosen as the measurement approach for financial performance. The methods are thoroughly explained and we present our reasoning and motivation behind the choices. Next, the variables that will be studied are stated. The dependent variable is ROA while *environmental CSR index* and *social CSR index* are independent variables. Moreover, *number of employees* (NOE) is used as a control variable. Based on these variables, we then present our statistical hypotheses.

Thereafter, the sampling process is thoroughly presented wherein the target population is defined and the sampling method is explained. The sample, which consists of 38 companies, is selected using judgement sampling and the samples are sourced from Sustainable Brand Index's list of Swedish B2B brands for the year 2019. The next part of the chapter describes the data collection method, the source of data as well as the method for calculating CSR index. The source of the data is the companies' financial reports from the year 2019 and their sustainability reports for the year 2019. From the financial reports we collect the figures needed to calculate ROA and we run a content analysis on the sustainability reports that provide an environmental- as well as social CSR index for each of the sample companies.

Then, the plan for data analysis is presented and all the statistical measurements that are used are explained. When analysing the data, descriptive statistics, ANOVA, Pearson Correlation Analysis and regression analysis are used in order to test our hypotheses. Lastly, the validity and reliability of the study is discussed. It is concluded that the study can be classified as having validity, though it could be increased by having a larger sample and by including small- and medium sized companies as well. Judging the reliability of the study is more complex as it uses secondary data.

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## 4. Analysis and Discussion

By reviewing the annual reports of the sample companies, we calculated the ROA values for all companies; and by running content analysis of the texts from the Sustainability Reports/Annual Reports of the sample companies, we obtain the Social and Environmental CSR index.

It is worth noting that due to the availability of independent financial data, all ROAs represent the company's financial performance in the Swedish market for the year 2019; and since most multinational companies do not have sustainability reports specific to the Swedish market, the SI and EI represent the company's overall CSR performance. However, as what we have read in the sustainability reports suggest, multinational companies usually have a similar CSR strategy for all markets, the above-mentioned SI and EI scores can also well reflect the company's CSR performance in the Swedish market.

All relevant data is calculated and combined in an Excel sheet, as shown in Appendix B, to be imported into SPSS for analysis. In this chapter, we will first analyse the empirical data through SPSS in order to obtain the correlation results; then discuss the SPSS results: possible reasons and influencing factors for such results; and finally compare them with the previous literature review to illustrate the correspondence and uniqueness of this study with previous studies.

### 4.1 Analysis of Empirical Data

#### 4.1.1 Descriptive Statistics

First, we perform a frequency analysis on all the variables to double check whether all the statistics are valid to avoid manual errors in the process of data entry and conversion. As per [Appendix \(C-a\)](#) reveals, all the columns have valid and functional data from the 38 sample companies.

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Furthermore, we can observe the distribution of the sample companies by industry in the table as in [Appendix \(C-b\)](#). From the descriptive data, we can initially perceive by the frequency and percent that the 38 companies selected for the sample are generally distributed in an acceptable manner across the 10 industries in terms of evenness.

Continuing to look at the descriptive statistics for all variables (ratio data) in [Appendix \(C-c\)](#), we can see some common statistical indicators, including maximum and minimum values, mean, standard deviation, etc., which give us a grasp of some important characteristics of different sets of data such as the value range. The value range of SI is from 3.81 to 425.89 while the value range of EI is from 0.50 to 265.12, from which we can tell that SI and EI scores span a wide range of values, with the overall score of SI appears to be higher than that of EI. Moreover, there are some ROA values appear to be zero in our data, which is not a calculating error but because the companies failed to achieve any profits in the Swedish market in Financial Year 2019.

The chart as in [Appendix \(D-a\)](#) shows the distribution of ROA for companies in different sectors. The chart shows that the ROA values of companies in the Banking, Energy, Fuel and Transport & Logistics industries are more concentrated, while the ROA values of companies in the Pension & Insurance, IT & Technology and Telecommunications sectors are more dispersed. Overall, the Telecommunications sector has the highest median ROA, while the Transport & Logistics sector has the lowest. It will be further verified by ANOVA whether the differences of ROA values among different industries are significant or random, which would be an important indicator to show that the selection of samples is not unbiased.

[Appendix \(D-b\)](#) shows the distribution of Social CSR Index scores by industry. It is clear that the values of SI scores in the Energy, Fuel and Telecommunications industries are more concentrated, while the values SI scores in FMCG, IT & Technology and Pension & Insurance sectors are more dispersed. Generally speaking, energy companies have the highest median SI scores, while the Telecommunications industry accounts for the lowest SI scores median. Yet

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whether the differences among industries are significant has to be checked through ANOVA.

Likewise, [Appendix \(D-c\)](#) reveals the distribution of Environmental CSR Index scores by industry. We can tell that the values of EI scores in the Energy, Fuel and Telecommunications industries are more concentrated, while the values of EI scores in Energy and FMCG sectors are more dispersed. To look at the medians, energy companies account for the highest EI scores, while the median of EI scores of the Telecommunications industry, once again, appears to be the lowest. Though the significance of the differences among industries is not yet clear until an ANOVA is performed, the descriptive statistic still seems to suggest the similarity of SI and EI to some extent.

#### **4.1.2 ANOVA**

##### **(1) ROA**

As shown in [Appendix \(E-a\)](#), the associated probability of between groups is 0.351, which is far larger than the significance level of 0.05, we therefore do not reject the null hypothesis of non-significant difference. That is to say, ROA does not show a significantly different distribution between the different industry groups. This excludes the concern that our selecting of samples in terms of industries would possibly account for the corporate financial results, which allows us to go on exploring the relationship between ROA and CSR Index without considering the effect of industry.

##### **(2) Social CSR Index**

Similarly, according to [Appendix \(E-b\)](#), we can infer from the associated probability 0.256 that the null hypothesis of non-significant difference should be accepted since it's much higher than the significance level 0.05. In other words, there is no significant deviation of the value of SI scores between different groups of industries, even though the box plots in the descriptive data seem to show some kind of variance visually.



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### **(3) Environmental CSR Index**

Unlike ROA and SI, EI scores show significant differences in terms of value across industry groupings, which can be determined by the ANOVA result as in [Appendix \(E-c\)](#): the associated probability appears to be 0.003, which is way below the significance level 0.05, thus indicates that the null hypothesis of non-significant difference should be rejected. While it is possible that this difference can occur by chance, it is also very likely to indicate that industry has a fundamental influence on the performance of a company's environmental CSR.

Given that the variance among different groups of industries is distinct, we therefore take a further step to look at the homogeneity of variance and subsets of homogeneous industry groups for EI. Looking at [Appendix \(E-d\)](#), we can infer from the associated probability of Levene statistic (based on means) – 0.062, which is above the significant line of 0.05 – that we can accept the null hypothesis of homogeneity of variances. This leads us to proceed with the Post Hoc Tests of EI using Tukey HSD approach as in [Appendix \(E-e\)](#), in an attempt to look into details of the specific degree of difference among all the 10 industries. Pairs of industries with associated probability less than 0.05 are suggested to have significant differences. According to the Post Hoc Tests, EI of Energy industry has significant differences with all the other industries except for Banking and Fuel industry, while the remaining groups of industries show no significant differences from each other.

Furthermore, the homogeneous subsets as in [Appendix \(E-f\)](#) reveals which groups are and are not significantly different from the other ones. We can infer from the table that the EI means of Fuel industry and Energy industry are at the same level; while all the industry groups, except for Energy industry, have the homogeneous EI means, which are significantly different from the subset consisting of Fuel industry and Energy industry. A direct and possible way to interpret this result would be that companies from the Energy industry and Fuel industry perform conspicuous environmental CSR initiatives compared to the other industries.

### 4.1.3 Pearson Correlation Analysis

After excluding the possible influence of industry as a random variable on the dependent variable ROA, here comes the most core part of the data analysis - Pearson correlation analysis. We choose the Bivariate Correlations function in SPSS and put the four variables – ROA, SI, EI and ROA – into the “variables” column, thereby generate the Correlations table, the associated probability value should be used to determine whether a correlation is significant, while the Pearson Correlation value are able to indicate the strength and direction of a correlation.

Table 4.1.3 Correlation Matrix

		<b>Correlations</b>			
		ROA	SI	EI	NOE
<b>ROA</b>	Pearson Correlation	1	-0.189	-0.145	0.013
	Sig. (2-tailed)		0.256	0.386	0.937
	N	38	38	38	38
<b>SI</b>	Pearson Correlation	-0.189	1	.655**	0.020
	Sig. (2-tailed)	0.256		0.000	0.903
	N	38	38	38	38
<b>EI</b>	Pearson Correlation	-0.145	.655**	1	-0.018
	Sig. (2-tailed)	0.386	0.000		0.914
	N	38	38	38	38
<b>NOE</b>	Pearson Correlation	0.013	0.020	-0.018	1

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Sig. (2-tailed)	0.937	0.903	0.914	
N	38	38	38	38

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

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As can be seen from the above table, there is no significant correlation between NOE and ROA since the significance, 0.937, is far higher than 0.05. We can therefore safely refer to the data in this very table without proceeding with a partial correlation analysis controlling for NOE.

Unexpectedly, however, the correlation analysis showed that there is no valid correlation between ROA and either SI or EI (with associated probability of 0.256 and 0.386), which fails to testify our statistic hypotheses H1 and H2, but confirms the null hypothesis of non-significant correlation instead. Such results are completely at odds with what we expect based on our previous theoretical model, for which there can be many possibilities. We will have an extensive discussion regarding this in the next part.

Notably, the two independent variables - SI and EI - show a significant correlation (with an associated probability near 0). The two variables have a correlation value of 0.655, which lies in the range from 0.50~0.70, and according to Burns & Burns (2008), is a moderate correlation. That is to say, the value of EI score is positively related to the value of SI score, which might suggest that there can be a potential relationship between a company's CSR performance in terms of social and environmental aspects. This can later be discussed from the perspective of the B2B industry's characteristics as well as the aspect of corporate strategic vision and CSR motivation.

#### **4.1.4 Regression Analysis**

As shown in the results of the above Pearson Correlation Analysis, there is no significant relationship between the dependent variable and the two independent variables in our

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hypotheses, hence, it is of no meaning to continue with Regression analysis on the three of them. Nevertheless, it appears to be an unexpected correlation between the two independent variables, namely Social CSR Index and Environmental CSR Index. We then decide to establish a linear model of the two variables in an attempt to contribute to deciphering the reasons that lead to the significant association between SI and EI.

We carry on the regression analysis with a new simple linear model:

$$SI = b_0 + b_1EI$$

Upon performing the simple linear regression function, we get several tables which help us identify the model. First of all, from [Appendix \(F-a\)](#), we can see that the associated probability of the F statistic is near 0, which is under the 0.05 significance level and we therefore reject the null hypothesis of random relationship. In other words, we can be confident to say that the linear regression equation above is significant.

To seek the strength of the model, we can refer to the adjusted square in the Model Summary table as in [Appendix \(F-b\)](#). The statistic 0.413 means that 41.3% of the variability in SI can be accounted for by EI, which reveals a moderate relationship between social and environmental CSR performance.

The statistics in the coefficient table as in [Appendix \(F-c\)](#) can contribute to finally establishing the model equation. The B value of Constant (65.594) corresponds to the  $b_0$  in our model, while the B value of EI stands for  $b_1$  in the equation. We observe that both of the associated probabilities of  $b_0$  and  $b_1$  are way below the significance level of 0.05, thereupon, we reject the  $H_0$  hypotheses that the B values are not significantly different from 0. That is to say, the value of  $b_0$  and  $b_1$  shown in the tables are valid, and we can confirm that the model should be expressed as:

$$SI = 65.594 + 1.28EI$$

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Additionally, in order to explore the acceptability of this model and avoid systematic errors, we also have to check whether the residual statistics follow a normal distribution. The following two charts provide us with diverse information for reference. We can generally say that the histogram in [Appendix \(G-a\)](#) basically obeys the normal curve, in spite of the subtle deviations, while the normal probability plot as in [Appendix \(G-b\)](#) reveals that all the probabilities hover around the linear line, which, altogether indicates that the normality assumption can be based on.

Lastly, the scatterplot in [Appendix \(G-c\)](#) reveals whether the homoscedasticity assumption (variance consistency), another important aspect to notice for guaranteeing the accuracy of the estimation of the relationship, can be accepted. As we can observe in the table below, the points don't show an obvious pattern and appear to spread randomly. This means that the error (residual statistics have constant variances and is therefore acceptable for the linear model to be widely applied.

## **4.2 Discussion of Findings**

Based on the analysis of the results from the empirical study, this chapter will engage in a more thorough discussion of the findings. The findings will be discussed in the context of the theoretical framework and we will relate it to the previous studies conducted within this area that were presented in the literature review. The purpose of this study was to explore the relationship between CSR efforts and corporate financial performance for B2B companies within the Swedish markets and whether there is any potential correlation between the two. Using Han and Lee's (2021) theory of the mechanisms through which CSR influences the financial performance of B2B companies as our theoretical framework, it was decided that this study will look at environmental CSR efforts and social CSR efforts separately as two independent variables. This led to our two research questions:

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- *Is there a significant correlation between the environment-related CSR activities and the financial performance for Swedish B2B companies?*
  - *Is there a significant correlation between the social CSR activities and the financial performance for Swedish B2B companies?*

As presented, this was investigated by conducting a correlation analysis between the sample companies' financial performance and their Environmental and Social CSR index.

#### **4.2.1 Key Findings**

In the previous section, *Analysis of Empirical Data*, we presented and analysed the results found when the empirical data was processed. In this section we will summarise and discuss the key findings of the study. As presented in the methodology chapter, in order to answer our research questions, we formulated the following statistical hypotheses:

##### **For environmental factors:**

H0: no significant correlation between the environmental CSR index and ROA

H1: significant correlation between the environmental CSR index and ROA

##### **For social factors:**

H0: no significant correlation between the social CSR index and ROA

H2: significant correlation between the social CSR index and ROA

The correlation analyses of the empirical data, namely the Pearson Correlation Analysis, showed that there is no significant correlation between financial performance (ROA) and either environmental- (EI) or social CSR index (SI). In other words, the findings from this study indicates that there is no demonstrated relationship between corporate financial performance

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and CSR efforts, neither when it comes to environmental nor social engagements. According to the correlation analysis, we therefore reject the hypotheses H1 and H2 since it failed to test any valid correlation. Instead, the null hypotheses of non-significant correlation were instead confirmed for both of the CSR indicators.

These results were quite unexpected as we based on the applied theoretical framework predicted that the relationship between CSR performance and corporate financial performance was likely to be positive. The theoretical framework, which is derived from a study by Han and Lee (2021), suggests that social and environmental CSR have a positive influence on financial performance, which was based on the results from an extensive study. In fact, according to the existing literature on CSR that we have looked into, most theoretical constructs suggest that CSR engagements have a positive impact on a company's financial performance. For example, the stakeholder theory claims that engaging in CSR allows companies to create optimal value by fully considering the economical, organisation and social factors since they thereby respond to demands of a wide range of stakeholders (Chandler, 2020). A study by Weber (2008), suggested that CSR can help companies perform better by for example building a better corporate image and reputation and by reducing production and operational costs. Likewise, according to Barnett and Salomon (2006), CSR engagement enables companies to gain competitive advantage which then would be reflected in the financial performance.

Evidently, these theoretical constructs are not in line with the findings from our study since we did not find any indications for correlation between CSR performance and corporate financial performance. Potential explanations for these disparities between our study and the mentioned theoretical constructs is for example that these constructs talk about CSR from a general perspective and not specifically about B2B markets, which of course can have an effect on the outcome as some of the aspects included in the theories might not apply to B2B business. For example, Barnett and Salomon (2006) mentions that CSR initiatives can increase popularity among consumers when marketing their products and services, however this is contradictory to Han and Lee's (2021) claim that B2B purchase decision are generally very rational and the

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process is more complex and protracted whereas a B2C consumer can be base their decisions on emotion and be spontaneous, and therefore the consumer behaviour is quite different from a B2B to a B2C setting. Thus, a possible explanation as to why these theoretical constructs might not reflect the buying process of a decision maker in a B2B industry is that a person in this position might prioritise differently and value other aspects compared to a regular B2C consumer and due to this there will be different outcomes.

At the same time, the reasons for the difference between our findings and the positive correlation conclusions obtained from the two previously mentioned B2B market studies (Han & Lee, 2021; Sarkar, Chatterjee & Bhattacharjee, 2021) may be due to underlying geographical and cultural factors. Furthermore, as stated earlier on in the thesis, due to the limited research on this subject that focuses on B2B companies, the potential effects of CSR on financial performance remains relatively unclear. There are numerous factors that most likely have affected the outcome of the study and as presented in the literature review there is a rather high degree of inconsistency in terms of results when looking into and comparing previous studies. In the next section we will have a closer look at these studies and literature and identify similarities and variances between theirs and our findings in order to further our discussion.

#### **4.2.2 Comparison with the Results of Previous Studies**

Among the previous studies on the relationship between CSR performance and corporate financial performance, the results have been varying. However, a large number of the studies suggest that the relationship is positive which we then based our prediction of the outcome of our study on (Burnett & Hansen, 2008; Hopkins, 2003b; Karagiorgos, 2010; Weber, 2008). There are, on the other hand, studies that show opposite results, such as Peng and Yang's study (2014), which then suggest that CSR engagements potentially can have a negative impact on financial performance as it can amount to higher costs for the company (Grassmann, 2021). Some of the research reviewed has examined the relationship between CSR performance and financial performance in general, but when it comes to studies on specifically B2B markets the



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majority of the results indicate that there's positive correlation between the variables. Therefore, we did expect a different outcome from our study and will now discuss the variances between our findings and previous literature on the subject. As we did not find any differences between environmental- and social CSR index and their correlation with corporate financial performance, since both hypotheses were rejected, we will not discuss the results for EI and SI separately. Moreover, the reviewed literature that most of the discussion is based on does not separate the two indexes which consequently complicates a deeper analysis.

Galant and Cadez (2017) reviewed a large number of empirical studies that looked into the relationship between CSR and financial performance and they found that the results from these showed positive, negative, U-shaped, inverted U-shaped and non-significant correlations which explains why our findings are not in line with the established theoretical frameworks reviewed. Due to these varying results presented in the reviewed literature, it is very reasonable that our study showed neither a positive or negative correlation between financial performance and environmental CSR index or social CSR index, even though we did not expect our hypotheses to be rejected. A finding that was not taken into account prior to the study but could be observed in the results is that there appears to be a correlation between environmental CSR index and social CSR index. This finding does not help us to answer our research questions since it does not involve financial performance. However, it does suggest that companies that engage in environmental CSR also engage in social CSR and vice versa. Therefore, it seems like the companies do not focus their efforts on a certain area within CSR but engage rather equally in other areas simultaneously.

#### **4.2.3 Possible Interpretations for Our Findings**

##### **(1) Influencing Factors**

The first factor that likely affected the results of our study is the size of the sample of companies included. Even though our sample size was considered adequate, looking at data from 38 B2B

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companies is not a huge sample and if it instead would have been data from 380 B2B companies the results would most likely look very different and a bigger sample would make the study more generalisable. However, as previously explained the limited time and resources did not allow us to conduct such an extensive study. Another important factor is of course the fact that the reviewed literatures are all looking at geographically different markets and none of them are looking at the Swedish as our study does.

In the review by Galant and Cadez (2017), a large number of studies were examined in order to compare the operationalisation and measurements approaches of CSR performance and corporate financial performance. They found that the discrepancies in terms of results among the examined studies could be explained by factors such as the measurement methods used, type of industry, and culture and social context of the sample companies. Moreover, they also identified cases of selection bias and subjectivity in the majority of the reviewed studies which likely will have affected the outcomes. Galant and Cadez's (2017) findings help to understand why the results from our study turned out the way they did as there are obvious differences between the studies in the reviewed literature and ours, such as sample size and geographical market. Furthermore, Galant and Cadez (2017) also suggest that the positive and the negative effects of CSR on a company's finances sometimes tend to cancel each other out, which is yet another possible explanation of the differences between our study and the reviewed studies on B2B companies. If this phenomenon is present among our sample companies, we would not accurately be able to measure the effect of CSR performance on financial performance since despite the company having a high CSR index it might not be reflected in their financial performance.

## **(2) Selection Bias**

In terms of selection bias, though using a list from an external source might pose a risk of selection bias depending on their method of selection, we have made sure to use the most reliable source available – Sustainable Brand Index (2019). More importantly, we have strived

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to avoid it to the greatest extent possible by using an existing list of B2B companies from an external source and then narrowing the sample by judgement selecting to guarantee a roughly even distribution of companies in terms of both ranking and industry. Therefore, the selection method was consistent and should be accepted as an unbiased way. Also, as mentioned in the ANOVA results above, the financial performance of our selected companies did not differ significantly by industry group, which is further evidence that judgement-based sampling does not appear to influence the results of the study. Thus, we don't believe that selection bias or subjectivity had any significant impact on our findings.

### **(3) Strategic Corporate Social Responsibility**

According to Chandler (2020), there is a difference between simply engaging in CSR and implementing strategic CSR into the business model. Strategic CSR is more than philanthropy, such as donating to charity or climate compensation, as it basically requires that CSR is integrated throughout the organisation. Profit generation is central to strategic CSR, however, in strategic CSR the firm should focus on profit optimisation rather than maximisation (Chandler, 2020). To explain this notion, the firm should not aim to achieve the highest possible profit today, instead they should have a long-term perspective on growth and performance.

The concept of strategic CSR as presented by Chandler (2020) is another possible reason as to why there was no correlation observed in our study since it in terms of optimising financial viability stresses the medium- to long term perspective. Hence, the time frame in which the sample companies have been engaging in CSR will have considerable impact on the effects on financial performance, according to Chandler's arguments (2020). It is likely that there are large differences between the companies included in the study depending on how long the company has engaged in CSR since if the time perspective is too short the effects on economic value creation might not yet be noticeable. Instead, there might be other factors that have more impact on the companies' ROA than CSR index which then could have caused the lack of correlation between CSR- and corporate financial performance.

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#### **(4) Triple Layered Business Model Canvas**

Another view on economic value creation by CSR is presented by Joyce and Paquin (2016) in their triple layered business model canvas (TLBMC). The canvas can be used to analyse how businesses can create social, environmental, and economic value through CSR and it describes the inner motivations of B2B companies to implement CSR strategies in their business (Joyce & Paquin, 2016). According to the TLBMC, the main motivation for B2B companies to engage in CSR is to create more economic value, which aims to ultimately be achieved by environmental and social CSR initiatives. We do not know the sample companies' underlying motives for engaging in CSR, however based on the theory behind the TLBMC it is likely to create economic value, however our findings do not suggest that their CSR performance has any noticeable impact on the economic value in terms of their financial performance. Though relating back to the concept of strategic CSR, the effects of social and environmental CSR on a company's economic value may take a long time before it can be observed (Chandler, 2020).

#### **(5) Methodology and Research Design**

Speaking of measuring economic value leads us to another factor that likely has affected the results of the study, namely the methodology and research design. Our measurement of financial performance was carefully chosen as we wanted a financial measurement that on one hand was accounting based as that would ensure that only the performance on the Swedish market was reflected despite that some of the companies are multinational. On the other hand, the measurement approach would have to be suitable for companies of various sizes, since even though all of the brands included were the largest B2B brands on the Swedish market within their respective industry there were still differences in terms of size and we did not want to use a measurement approach that would be affected by the differences. However, our choice of measurement approach for financial performance likely affected the outcome of the study since if another measurement approach would have been used, we might see different results, perhaps results more similar to the previous studies included in our literature review.

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As for the measurement approach for environmental CSR and social CSR, the same possibility applies. Our chosen measurement approach for the sample companies' environmental- and social CSR index was to conduct a content analysis of their sustainability reports that summarised their CSR efforts in order to make it quantifiable. There are of course other options for measuring CSR performance, such as conducting surveys, and depending on the choice of measurement approach it can affect the results of the study. As mentioned, measuring CSR in an objective manner can be considered quite challenging since there's no unified definition of the concept and therefore theoretical studies have resulted in numerous perspectives and opinions on the subject (Galant & Cadez, 2017). As our evaluation of CSR performance is derived from companies' self-disclosed reports, there is also a possibility that companies may have exaggerated their CSR efforts to satisfy the stakeholders, resulting in a higher calculated CSR score than they actually perform. Due to different standards and methods of measurements when measuring CSR performance, it should perhaps not have been unexpected that the results might not be as predicted.

#### **(6) Lack of Adequate Research**

As stated, there are several other studies that have failed to observe any correlation between CSR performance and the financial outcome of companies, for example the ones conducted by McWilliams and Siegel (2000) and Sun et al. (2010). Apart from having similar results, three major differences between our study and McWilliams and Siegel's (2000) are that they are looking at companies in general and do not focus specifically on B2B companies, they are not studying the Swedish market, and the study is twenty years old. Hence, their study can more or less be considered outdated since a lot has happened since then in terms of consumer awareness of environmental and social sustainability. Of course, this study is not looking at B2C consumers but B2B, and perhaps consumer awareness has not developed as much in the B2B market. In order to properly examine the relationship between CSR performance and corporate financial performance, a unified way of measuring CSR will likely be required since as long as there are countless ways of measuring there will be variances in the results. However, the

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variances in results will of course also be explained by factors such as geographical reasons, type of industry or company, etc.

### **(7) Prioritisation within B2B and Effectiveness of CSR Communication**

After analysing the findings from our study, we have questioned the priority level of CSR for decision makers with buying responsibility in the Swedish B2B markets and how effective sustainability reports are as a way of communicating the company's CSR engagements and initiatives. Since our measurement of environmental CSR index and social CSR index is based on a content analysis of the companies' sustainability reports it reflects how thoroughly, extensively, and detailed they disclose and communicate their CSR efforts. However, as there is no indication in our results that a higher environmental- or social CSR index is linked to a higher financial performance in terms of ROA it raises the question how valuable the sustainability reports are from a financial perspective. As discussed, the measurement approach of CSR is one of the study's limitations, for instance since there might be other sources of information on CSR that decision makers with buying responsibility on Swedish B2B markets take part of and they are not taken into account. Furthermore, the decision makers might prioritise other factors, such as price or quality, over potential CSR efforts made by the B2B supplier company.

Whether or not decision makers prioritise price or CSR performance, the notion raised the question whether an important purpose for the sustainability reports is that they can have significant value in terms of employer branding. In fact, statistics show that during 2019 employee concerns regarding environmental impact grew by 52 % globally and among the youngest generation in the workforce, gen Z, the concern increased by 128 % (Peakon, 2020). Consequently, a thorough sustainability report might be necessary today for companies to attract talent with the purpose of eventually leading to improved financial performance. That is however a different discussion and as we have not focused on employer branding, we will not look into it further at this point. As we can tell by this discussion, there are many possibilities

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as to why our results turned out the way they did and explanations to our hypotheses being rejected. While the results are reasonable considering the previous literature, it was still quite unexpected that there would not be any correlation between CSR performance and financial performance for Swedish B2B companies since Sweden is generally viewed as an environmentally and socially conscious country and therefore it would not have been surprising if questionings would be reflected to the study.

### **4.3 Chapter Summary**

In this chapter, the empirical data is first analysed and the results are presented and then the findings are discussed and related back to the research on CSR and corporate financial performance that was presented in the literature review. First, the ROA values for each of the companies are calculated and environmental- (EI) and social (SI) CSR indexes are obtained through content analysis of the companies' sustainability reports. Then, descriptive statistics are performed to ensure that the data is valid and functional and to observe the distribution of the companies across the different industries as well as the distribution of EI and SI scores within the industries. The descriptive statistics also provide common statistical indicators for the variables such as mean, median, standard deviation, etc.

The descriptive statistics suggest some differences between the industries in terms of distribution of SI and EI scores, however, to verify the significance of these findings ANOVA is performed. The ANOVA result for ROA does not show a significantly different distribution between the different industry groups which means that there is no indication from the data that type of industry would have an effect on corporate financial results. The main part of the data analysis is the Pearson Correlation analysis which can be used to determine the strength and direction of a correlation. The results from the correlation analysis are quite unexpected as they showed that there is no valid correlation between ROA and either SI or EI. Therefore, our H1 and H2 hypotheses are rejected as no significant correlation could be observed, while the null hypotheses are instead accepted.

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In the discussion part, the findings are further analysed by relating it to previous research and the theoretical framework. Based on the theoretical framework, which suggests that social and environmental CSR have a positive influence on financial performance, it was predicted that the study would show similar results. Hence, it was relatively surprising that there was no indication of significant correlation between the variables. Influencing factors and potential interpretations as to why the outcome of the study turned out the way that it did are discussed, such as sample size, measurement approach, target population, selection bias, etc. Moreover, the results were analysed by applying them to the concept of strategic corporate social responsibility which stresses the importance of long-term perspective when establishing CSR as part of the business strategy.



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## **5. Conclusion**

### **5.1 Research Purpose and Findings**

As presented in the beginning of the thesis, the purpose of this study is to investigate the relationship between corporate social responsibility performance and corporate financial performance among Swedish business-to-business companies in order to gain potential new insights into an area of business that has become increasingly important. When looking into studies on CSR and financial performance, it quickly becomes evident that there is plenty of previous research that examines this relationship among companies in the business-to-consumer market. However, since there are such significant differences in the consumer behaviour between B2C consumers and B2B consumers, these studies do not reflect the relationship between the two variables in the B2B market. The existing research on CSR and financial performance in the B2B market is much scarcer even though this relationship has been investigated in some markets. The majority of research on CSR involves the consumer behaviour in B2C markets, or the market in general which means it does not differentiate between B2C and B2B companies.

Based on the currently available research on the subject, we have found that there is a gap in insights and knowledge on how a B2B company's CSR performance and corporate financial performance affect and relate to each other. Therefore, the purpose of this study is to gain more knowledge and deeper insight into the area of CSR within the B2B markets by looking at its relationship with the companies' financial performance, examining how B2B companies communicate their CSR engagements in their sustainability reports, and by comparing and connecting previous research to our findings as well as to each other to identify similarities and differences. In order to narrow down the range of the study, it is decided that the market to focus on would be Swedish B2B market since statistics have suggested that Swedish consumers are conscious of sustainability related aspects of consumption which affects their consumer behaviour (Statista, 2020), However, the statistics only reflect the consumer behaviour within

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B2C market, which therefore makes it interesting to further examine whether this phenomenon also can be observed within B2B market.

The aim of the study is to identify potential correlation between CSR performance and corporate financial performance among the sample companies, from which providing both theoretical and practical contributions to those within B2B industries working with for example brand management, communication, sustainability management, or marketing as well as those with buying responsibility within for example supply chain. Based on the previous literature, our hypotheses H1 and H2 are presented, assuming that there would be significant correlations between corporate financial performance and both environmental CSR index (EI) and social CSR index (SI). Our null hypotheses for both CSR indexes, conversely, state that there would not be significant correlations between corporate financial performance and EI or SI.

The results from our statistical analysis indicates that there is no significant correlation between dependent variable and independent variables, and therefore the H1 and H2 hypotheses are rejected. Instead, the H0 hypotheses are accepted as there is no correlation observed. Based on these findings, the answers to our research questions would be that there is no significant correlation between neither a B2B company's social CSR activities nor environment-related CSR activities and its financial performance.

The result is quite unexpected since the similar previous studies on B2B market, especially Han and Lee's (2021) which we base our hypothetical framework on, did show a positive correlation even though there are also variances in results among the studies in general. As presented in the discussion chapter, there are many potential explanations to why the results turn out the way they do. Due to the lack of correlation between the variables, there is not a clear conclusion drawn from this study, except for that this area of business for B2B companies has not been thoroughly studied and there is opportunity for future studies to research the relationship between CSR performance and corporate financial performance on B2B markets in Sweden as well as other markets. CSR is not going to get less important and even though it might currently

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not be the highest priority for B2B companies its importance will grow along with the increased consciousness related to consumption.

## **5.2 Practical implications**

The heterogeneity of B2B business and the uniqueness of the Swedish market have led our study to conclusions about correlation that differ from the initial hypotheses. In this section, we will utilise the findings of our study to provide practical insights into the strategies of B2B companies with regard to CSR initiatives.

### **5.2.1 Establishing Appropriate CSR Strategies**

As we have previously concluded, the results of our study suggest that there is no significant correlation between the CSR performance of Swedish B2B companies and their financial performance regardless of whether the CSR initiatives are socially or environmentally relevant. Yet this does not mean that CSR investment is meaningless, as sustainability is argued by many scholars to be essential for the medium to long-term health of a company (Chandler, 2020; Homburg, Stierl & Bornemann, 2013; Hopkins, 2003a; Schwartz & Carroll, 2003). However, our findings would indicate that companies should strike a reasonable balance between operational expenditure and CSR investment in their operations. This means that in order to achieve satisfactory financial performance, companies could have reasonable priorities in deploying their funds: spending on business areas such as R&D and marketing can apparently be expected for a higher rate of return than investments on CSR activities. It is therefore possible to prioritise business spending and reduce the amount spent on CSR within reasonable bounds, while ensuring that the company is developing in a financially and reputationally healthy manner. This is particularly relevant for companies that are experiencing temporary budgetary difficulties due to the global marketing chaos affected by Covid-19 pandemic, which contributes to a faster cash flow for the B2B companies to tide over this very difficult time.

A modest reduction in CSR spending places greater demands on a company's CSR strategy.

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Rather than simply doing philanthropy or riding the wave of current social events, companies should consider the choice of CSR activities more in depth: is the specific CSR initiative relevant to their business and will it have a more effective impact on the company's image and reputation? According to Chandler (2020), CSR strategies should be in line with the company's mission, vision and operations – only in this way can all the CSR initiatives be integrated with corporate's goals and principles, so that CSR will no longer be an expense that is a drag on financial performance, but will deliver a productive return on its investment. In other words, B2B companies should develop a CSR strategy that is more in line with their identity, so that they can not only build a good corporate image and reputation, but also increase the return on CSR spending from a financial perspective.

### **5.2.2 Developing a Long-term Vision**

As suggested in the previous chapter, one of the factors which leads to the result that CSR performance shows no significant relationship with corporate financial performance could be that it can take a longer period of time for the CSR initiatives to show their impact on financial figures. This is because sustainable development is, in general, a strategy whose importance and usefulness can only be seen in the medium to long term. From a short-term and timely perspective, a shift towards sustainability in a B2B company's objectives or business approach may initially yield insignificant or even, possibly, negative financial returns for the company.

This requires B2B companies not to be eager for quick success and instant benefits, expecting that a large investment in CSR will show its magic in short-term financial statements. Instead, they need to take a longer-term view and develop a sound plan for a gradual and step-by-step approach: not only monitoring and guaranteeing that the CSR strategies are leading the company to a sustainable future, but also ensuring that the implementation of CSR strategies at each stage does not have an undue negative impact on the company's financial performance in the short term, so that CSR can ultimately be fully integrated with the company's mission and achieve financial rewards. That is to say, smaller investment at once but more continuous efforts

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on CSR initiatives.

### **5.2.3 Tracking CSR Returns**

In addition to a sound CSR strategy and long-term step-by-step implementation, timely tracking of the financial return on CSR initiatives as well as an objective evaluation of the progress of CSR strategies are also important approaches to make CSR deliver better economic results for the B2B corporations. This is because timely evaluation can provide useful feedback to help B2B companies review the appropriateness and effectiveness of their CSR strategies and thus contribute to further development and improvement.

For instance, after every launch of a CSR activity, follow-up analysis should be regularly done in order to track its economic influence for the company. This process is similar to the mechanism by which marketing managers track and analyse the impact of a particular marketing campaign on financial performance – both have potential causal links and are influenced by a variety of complex market factors, yet the process by which the impact of a CSR strategy becomes apparent can be much longer than a typical marketing campaign and therefore requires more patience with tracking and more thorough consideration for analysis.

In addition to tracking how CSR activities are reflected in the company's financial performance, it is equally important to investigate their influence on the company's image and reputation, which can provide a lot of insight for B2B companies to assess their CSR strategies. In order to accomplish that, interviews can be conducted with a B2B company's target group – the client companies – whether through questionnaires, telephone, focus groups or in-depth interviews. Direct input from target audiences is more than valuable to B2B companies, both in terms of reflecting the effectiveness of their previous CSR initiatives and in revealing client potential needs, thusly helping B2B companies to adjust the content or pace of their CSR strategy accordingly, either way around will contribute to the financial figures ultimately.

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### **5.3 Limitation of the Study and Future Direction of Research**

Although our study has undergone an extensive literature review before a complete theoretical model is developed and the most appropriate measurement methods are selected to quantify the financial performance and CSR performance of companies, there are still some limitations. We will then list the areas where the study could be improved and provide suggestions accordingly for future directions of research.

The first thing is about the selection of samples. As mentioned in the discussion section, 38 B2B companies is a sufficient sample size for the investigation into two independent variables, yet an analysis based on a larger sample size is likely to provide more accurate and comprehensive results when it comes to draw a more generalised pattern for all B2B companies in the Swedish market. In addition, the 38 companies in the sample selected for this study are all listed companies that are relatively well known in the Swedish market, and are therefore likely to be obligated to disclose more about their CSR initiatives under the scrutiny of the market and society. In order to obtain more comprehensive information, more small and medium-sized B2B companies should also be included in future studies. However, before that could be settled, obtaining the list of small and medium-sized B2B companies in Sweden can be yet another big challenge. Those firms most likely do not have independent sustainability reports or corporate annual reports, hence it can be even more difficult to gather the CSR-related information needed for measurement – this is the challenge that the future research should bravely face.

Secondly, regarding our selected measurement approaches of corporate financial results and CSR performance, while they can be thought of as the most appropriate methods in the context of this study, also have limitations to some extent. On the one hand, regarding the way in which financial performance is quantified, some of the companies in our selected sample are involved in both B2B and B2C business, and while we are able to extract a company's financial performance specifically on the Swedish market in its financial or annual reports, it is however

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difficult to separate the expenses and revenues of B2B and B2C operations respectively based on the information available, which may result in the ROA values presented in the SPSS analysis not be able to fully reflect the financial performance of the company in the B2B field. At the same time, we have only looked at the accounting indicator ROA to represent the company's financial performance in this study, which might not be comprehensive enough. Therefore, we recommend that future studies obtain more detailed financial information to separate the net income of B2B business from the irrelevant, thus providing more accurate correlation results; and adopt more financial indicators that can also provide market insight such as market value or Tobin's Q.

On the other hand, with regard to the measurement method of CSR performance, we have adopted a content analysis of secondary sources, which is an objective and highly efficient quantitative method. Whereas as these data are derived from B2B companies' self-disclosure, there is a possibility of discrepancies with their actual CSR implementation. In other words, there are possibilities that a company gains a high CSR Index score merely by greenwash rather than meaningful CSR initiatives, or that some relatively small companies may have scored lower than their actual performance due to inadequate CSR disclosures given their limited human resource. Moreover, the multinational companies tend to provide an overall CSR strategy in their sustainability or annual reports, while there can be minor differentiations in their actual implementation in the Swedish market. Hence, we would suggest that different CSR measuring methods can be adopted for a result that more accurately reflects reality. For example, interviews with B2B clients can be conducted to obtain the external perception on the CSR performance of each B2B company, results from which can be further analysed against the self-disclosure scores of B2B companies.

Another perspective is that our analysis selects the corresponding data for only one financial year – 2019 – to exclude the dramatic impact of the Covid-19 outbreak on the overall economic environment starting in 2020. However, in order to track the financial impact of CSR initiatives over a given period of time (for our research: FY 2019), it is possible that a longer time horizon

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needs to be looked at. And accordingly, the macroeconomic environmental factors should be taken into consideration as it may interfere with the financial performance.

Finally, our research only focuses on the Swedish market. In order to validate our findings and develop a more generalised theory on the impact of CSR initiatives on corporate financial performance, future research on similar topics could be conducted in more Nordic markets, considering the economic and socio-cultural similarities among these markets. If studies conducted in other Scandinavian markets also reveal results of non-significant correlation, our findings will seem to have a higher degree of credibility, otherwise it would be indicated that the limitations of our study have resulted in less than accurate results, therefore further revision and improvement would be necessary.



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## 7. Appendix

### A. List of Sample Companies and Text Source

	<b>Company Name</b>	<b>Industry</b>	<b>Source Available</b>
1	Handelsbanken	Banking	Annual Report 2019
2	Danske Bank	Banking	Sustainability Report 2019
3	E.ON	Energy	Sustainability Report 2019
4	Fortum	Energy	Sustainability Report 2019
5	Lantmännen	FMCG	Annual Report 2019
6	Arla	FMCG	CSR Report 2019
7	Orkla	FMCG	Annual Report 2019
8	Carlsberg	FMCG	Sustainability Report 2019
9	Åbro	FMCG	Sustainability Report 2019
10	Kopparbergs	FMCG	Sustainability Report 2019
11	Preem	Fuel	Sustainability Report 2019
12	ST1	Fuel	Annual Report 2019
13	Ericsson	IT & Technology	Sustainability Report 2019
14	CGI	IT & Technology	Sustainability Report 2019
15	HP	IT & Technology	Sustainability Report 2019
16	HiQ	IT & Technology	Annual Report 2019
17	IFS	IT & Technology	Annual Report 2019

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18	Tieto	IT & Technology	Sustainability Report 2019
19	AMF Pension	Pension & Insurance	Sustainability Report 2019
20	Länsförsäkringar	Pension & Insurance	Annual Report 2019
21	Skandia	Pension & Insurance	Annual Report 2019
22	Alecta	Pension & Insurance	Annual Report 2019
23	Riksbyggen	Real Estate	Annual Report 2019
24	Wallenstam	Real Estate	Annual Report 2019
25	Klövern	Real Estate	Annual Report 2019
26	Wihlborgs	Real Estate	Sustainability Report 2019
27	AMF Fastigheter	Real Estate	Sustainability Report 2019
28	Balder	Real Estate	Annual Report 2019
29	Telenor	Telecommunication	Sustainability Report 2019
30	Tre (3)	Telecommunication	Sustainability Report 2019
31	DHL	Transport & Logistics	Sustainability Report 2019
32	Green Cargo	Transport & Logistics	Annual Report 2019
33	Kuehne	Transport & Logistics	Sustainability Report 2019
34	Agility	Transport & Logistics	Sustainability Report 2019
35	Stena Recycling	Waste Management	Annual Report 2019
36	Sortera	Waste Management	Sustainability Report 2019
37	Veolia	Waste Management	Annual Report 2019





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**B. Table of Initial Data for SPSS Analysis**

<b>Industry</b>	<b>Company</b>	<b>SI</b>	<b>EI</b>	<b>ROA</b>	<b>NOE</b>
Banking	Handelsbanken	322.3116	77.993	0.008	3841
Banking	Danske Bank	141.512	41.0184	0.007	6
Energy	E.ON	246.1184	130.1504	0.073	239
Energy	Fortum	230.508	265.1195	0.07	648
FMCG	Lantmännen	257.785	142.398	0	802
FMCG	Arla	139.4716	79.5522	0.016	2925
FMCG	Orkla	245.9656	95.0616	0.112	1516
FMCG	Carlsberg	111.252	58.7794	0.114	304
FMCG	Åbro	16.3548	4.1385	0.065	378
FMCG	Kopparbergs	26.629	5.829	0.124	451
Fuel	Preem	93.0879	126.5552	0.015	1021
Fuel	St1	73.0604	70.3824	0.036	126
IT & Technology	Ericsson	107.855	58.1854	0.087	13626
IT & Technology	CGI	105.3708	35.7884	0.093	3494
IT & Technology	HP	425.8904	181.3648	0.012	112
IT & Technology	HiQ	90.5862	26.8019	0.14	1431
IT & Technology	IFS	44.7984	58.3736	0.123	272
IT & Technology	Tieto	265.3775	53.572	0	2352

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Pension & Insurance	AMF Pension	119.2744	30.3993	0.287	143
Pension & Insurance	Länsförsäkringar	137.1591	43.3403	0.005	2125
Pension & Insurance	Skandia	5.1856	0.5005	0	264
Pension & Insurance	Alecta	348.3599	59.675	0.094	343
Real Estate	Riksbyggen	43.6976	14.8257	0.015	3070
Real Estate	Wallenstam	166.474	55.3632	0.05	254
Real Estate	Klövern	95.9096	29.7675	0.052	278
Real Estate	Wihlborgs	102.6711	44.4312	0.063	204
Real Estate	AMF Fastigheter	17.08	5.1246	0	117
Real Estate	Balder	146.1824	51.7868	0.073	725
Telecommunications	Telenor	60.8039	19.7904	0.19	1714
Telecommunications	Tre (HI3G Holdings)	60.3585	8.73	0.067	1828
Transport & Logistics	DHL	289.478	76.4148	0.042	2420
Transport & Logistics	Green Cargo	179.0456	67.8805	0	1171
Transport & Logistics	Kuehne Nagel	125.9955	48.7064	0	297
Transport & Logistics	Agility	255.97	55.2391	0	194

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Waste Management	Stena Recycling	100.4632	44.6975	0	1457
Waste Management	Sortera	14.8176	11.0408	0.098	194
Waste Management	Veolia	120.4693	39.725	0	429
Waste Management	Renova	3.8068	2.9975	0.037	767

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## C. Descriptive Statistics of Initial Data

### a. Frequency of All Columns

		Statistics					
		Industry	Company	SI	EI	ROA	NOE
N	Valid	38	38	38	38	38	38
	Missing	0	0	0	0	0	0

### b. Frequency of Industry

		Industry			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Banking	2	5.3	5.3	5.3
	Energy	2	5.3	5.3	10.5
	FMCG	6	15.8	15.8	26.3
	Fuel	2	5.3	5.3	31.6
	IT & Technology	6	15.8	15.8	47.4
	Pension & Insurance	4	10.5	10.5	57.9
	Real Estate	6	15.8	15.8	73.7
	Telecommunications	2	5.3	5.3	78.9
	Transport & Logistics	4	10.5	10.5	89.5
	Waste Management	4	10.5	10.5	100.0

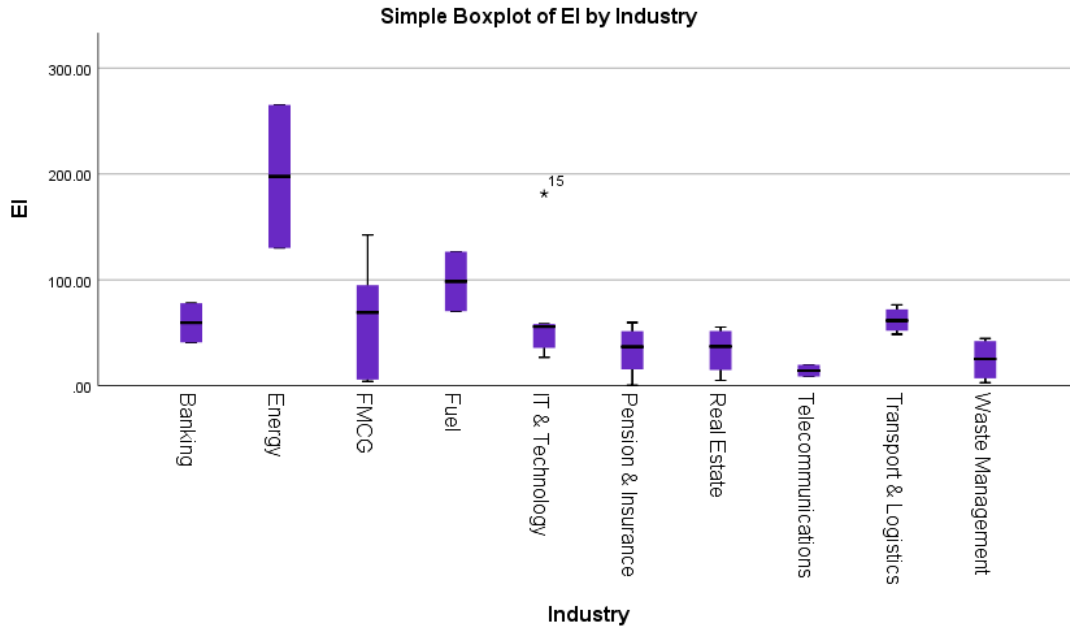
Total	38	100.0	100.0
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**c. Descriptive Data of SI/EI/ROA/NOE**

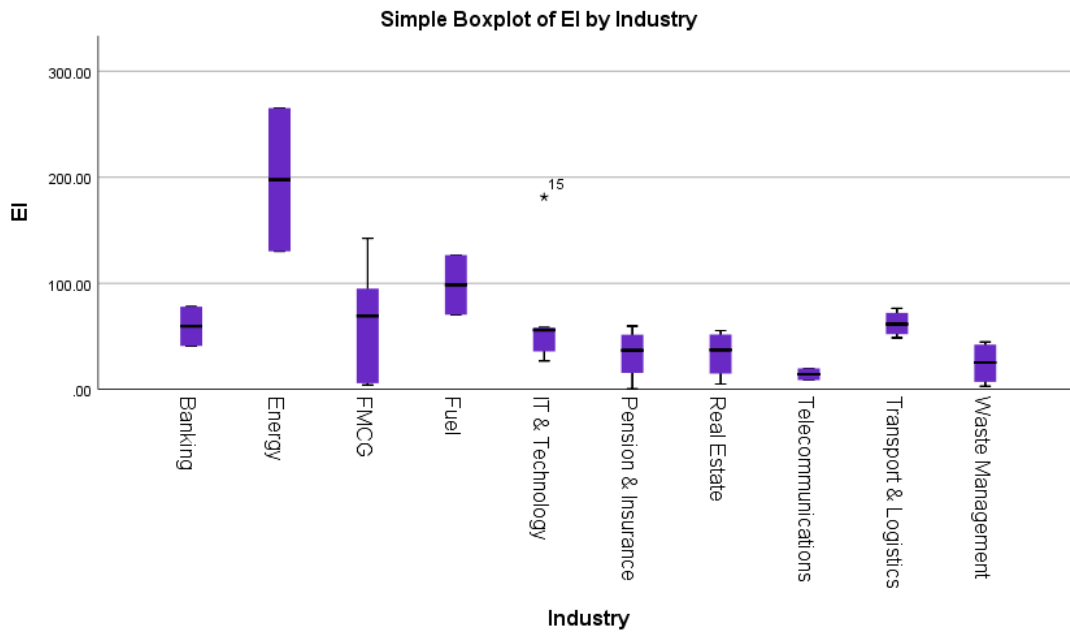
<b>Descriptive Statistics</b>					
	N	Minimum	Maximum	Mean	Std. Deviation
<b>SI</b>	38	3.81	425.89	140.4510	104.15752
<b>EI</b>	38	0.50	265.12	58.4605	53.28635
<b>ROA</b>	38	0.000	0.287	0.05705	0.062373
<b>NOE</b>	38	6	13626	1356.26	2297.497
<b>Valid N (listwise)</b>	38				

## D. Box Plots

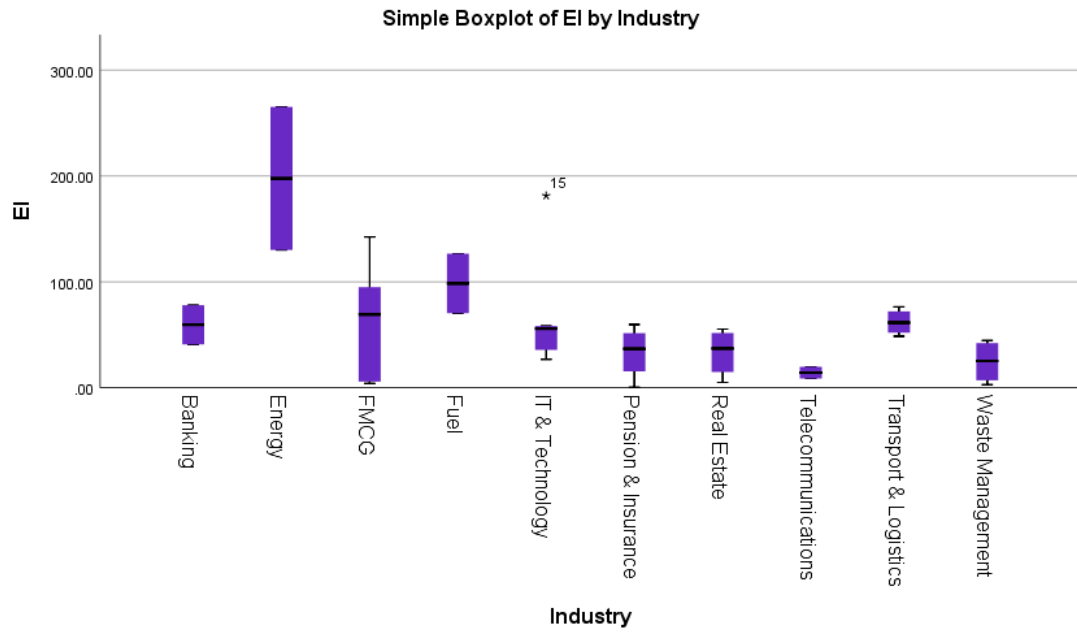
### a. ROA by Industry



### b. SI by Industry



### c. EI by Industry





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## E. ANOVA Results

### a. ROA ANOVA

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ANOVA					
ROA					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	0.039	9	0.004	1.170	0.351
<b>Within Groups</b>	0.105	28	0.004		
<b>Total</b>	0.144	37			

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### b. SI ANOVA

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ANOVA					
SI					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	121635.543	9	13515.060	1.353	0.256
<b>Within Groups</b>	279769.645	28	9991.773		
<b>Total</b>	401405.187	37			

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**c. EI ANOVA**

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<b>ANOVA</b>					
<b>EI</b>					
	Sum of Squares	df	Mean Square	F	Sig.
<b>Between Groups</b>	57575.763	9	6397.307	3.772	0.003
<b>Within Groups</b>	47483.352	28	1695.834		
<b>Total</b>	105059.115	37			

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**d. Homogeneity of Variances - EI**

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<b>Test of Homogeneity of Variances</b>					
		Levene Statistic	df1	df2	Sig.
<b>EI</b>	Based on Mean	2.119	9	28	0.062
	Based on Median	1.461	9	28	0.211
	Based on Median and with adjusted df	1.461	9	9.456	0.286
	Based on trimmed mean	1.862	9	28	0.101

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**e. Post Hoc Tests of EI**

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<b>Multiple Comparisons</b>	
Dependent Variable:	

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Tukey HSD						
(I) Industry		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<b>1 Banking</b>	2 Energy	-138.129	41.181	0.059	-279.357	3.099
	3 FMCG	-4.787	33.624	1.000	-120.099	110.525
	4 Fuel	-38.963	41.181	0.993	-180.191	102.265
	5 IT & Technology	-9.509	33.624	1.000	-124.821	105.803
	6 Pension & Insurance	26.027	35.663	0.999	-96.280	148.334
	7 Real Estate	25.956	33.624	0.998	-89.356	141.268
	8 Telecommunications	45.246	41.181	0.981	-95.982	186.473
	9 Transport & Logistics	-2.555	35.663	1.000	-124.861	119.752
	10 Waste Management	34.891	35.663	0.991	-87.416	157.197
	<b>2 Energy</b>	1 Banking	138.129	41.181	0.059	-3.099
3 FMCG		133.34183*	33.624	0.014	18.030	248.654
4 Fuel		99.166	41.181	0.358	-42.062	240.394
5 IT & Technology		128.62060*	33.624	0.020	13.309	243.933

	6 Pension & Insurance	164.15618*	35.663	0.003	41.849	286.463
	7 Real Estate	164.08512*	33.624	0.001	48.773	279.397
	8 Telecommunications	183.37475*	41.181	0.004	42.147	324.603
	9 Transport & Logistics	135.57475*	35.663	0.021	13.268	257.882
	10 Waste Management	173.01975*	35.663	0.001	50.713	295.327
<b>3 FMCG</b>	1 Banking	4.787	33.624	1.000	-110.525	120.099
	2 Energy	-133.34183*	33.624	0.014	-248.654	-18.030
	4 Fuel	-34.176	33.624	0.989	-149.488	81.136
	5 IT & Technology	-4.721	23.776	1.000	-86.259	76.817
	6 Pension & Insurance	30.814	26.582	0.973	-60.348	121.976
	7 Real Estate	30.743	23.776	0.947	-50.795	112.281
	8 Telecommunications	50.033	33.624	0.886	-65.279	165.345
	9 Transport & Logistics	2.233	26.582	1.000	-88.929	93.395
	10 Waste Management	39.678	26.582	0.884	-51.484	130.840
<b>4 Fuel</b>	1 Banking	38.963	41.181	0.993	-102.265	180.191

	2 Energy	-99.166	41.181	0.358	-240.394	42.062
	3 FMCG	34.176	33.624	0.989	-81.136	149.488
	5 IT & Technology	29.454	33.624	0.996	-85.858	144.766
	6 Pension & Insurance	64.990	35.663	0.717	-57.317	187.297
	7 Real Estate	64.919	33.624	0.650	-50.393	180.231
	8 Telecommunic ations	84.209	41.181	0.577	-57.019	225.436
	9 Transport & Logistics	36.409	35.663	0.988	-85.898	158.715
	10 Waste Management	73.854	35.663	0.561	-48.453	196.160
<b>5 IT &amp; Technology</b>	1 Banking	9.509	33.624	1.000	-105.803	124.821
	2 Energy	-128.62060*	33.624	0.020	-243.933	-13.309
	3 FMCG	4.721	23.776	1.000	-76.817	86.259
	4 Fuel	-29.454	33.624	0.996	-144.766	85.858
	6 Pension & Insurance	35.536	26.582	0.936	-55.627	126.698
	7 Real Estate	35.465	23.776	0.884	-46.073	117.002
	8 Telecommunic ations	54.754	33.624	0.823	-60.558	170.066
	9 Transport & Logistics	6.954	26.582	1.000	-84.208	98.116

	10 Waste Management	44.399	26.582	0.802	-46.763	135.561
<b>6 Pension &amp; Insurance</b>	1 Banking	-26.027	35.663	0.999	-148.334	96.280
	2 Energy	-164.15618*	35.663	0.003	-286.463	-41.849
	3 FMCG	-30.814	26.582	0.973	-121.976	60.348
	4 Fuel	-64.990	35.663	0.717	-187.297	57.317
	5 IT & Technology	-35.536	26.582	0.936	-126.698	55.627
	7 Real Estate	-0.071	26.582	1.000	-91.233	91.091
	8 Telecommunications	19.219	35.663	1.000	-103.088	141.525
	9 Transport & Logistics	-28.581	29.119	0.991	-128.445	71.282
	10 Waste Management	8.864	29.119	1.000	-91.000	108.727
<b>7 Real Estate</b>	1 Banking	-25.956	33.624	0.998	-141.268	89.356
	2 Energy	-164.08512*	33.624	0.001	-279.397	-48.773
	3 FMCG	-30.743	23.776	0.947	-112.281	50.795
	4 Fuel	-64.919	33.624	0.650	-180.231	50.393
	5 IT & Technology	-35.465	23.776	0.884	-117.002	46.073
	6 Pension & Insurance	0.071	26.582	1.000	-91.091	91.233
	8 Telecommunications	19.290	33.624	1.000	-96.022	134.602

	ations					
	9 Transport & Logistics	-28.510	26.582	0.984	-119.673	62.652
	10 Waste Management	8.935	26.582	1.000	-82.228	100.097
<b>8 Telecommunications</b>	1 Banking	-45.246	41.181	0.981	-186.473	95.982
	2 Energy	-183.37475*	41.181	0.004	-324.603	-42.147
	3 FMCG	-50.033	33.624	0.886	-165.345	65.279
	4 Fuel	-84.209	41.181	0.577	-225.436	57.019
	5 IT & Technology	-54.754	33.624	0.823	-170.066	60.558
	6 Pension & Insurance	-19.219	35.663	1.000	-141.525	103.088
	7 Real Estate	-19.290	33.624	1.000	-134.602	96.022
	9 Transport & Logistics	-47.800	35.663	0.935	-170.107	74.507
	10 Waste Management	-10.355	35.663	1.000	-132.662	111.952
<b>9 Transport &amp; Logistics</b>	1 Banking	2.555	35.663	1.000	-119.752	124.861
	2 Energy	-135.57475*	35.663	0.021	-257.882	-13.268
	3 FMCG	-2.233	26.582	1.000	-93.395	88.929
	4 Fuel	-36.409	35.663	0.988	-158.715	85.898
	5 IT & Technology	-6.954	26.582	1.000	-98.116	84.208

	6 Pension & Insurance	28.581	29.119	0.991	-71.282	128.445
	7 Real Estate	28.510	26.582	0.984	-62.652	119.673
	8 Telecommunications	47.800	35.663	0.935	-74.507	170.107
	10 Waste Management	37.445	29.119	0.949	-62.418	137.308
<b>10 Waste Management</b>	1 Banking	-34.891	35.663	0.991	-157.197	87.416
	2 Energy	-173.01975*	35.663	0.001	-295.327	-50.713
	3 FMCG	-39.678	26.582	0.884	-130.840	51.484
	4 Fuel	-73.854	35.663	0.561	-196.160	48.453
	5 IT & Technology	-44.399	26.582	0.802	-135.561	46.763
	6 Pension & Insurance	-8.864	29.119	1.000	-108.727	91.000
	7 Real Estate	-8.935	26.582	1.000	-100.097	82.228
	8 Telecommunications	10.355	35.663	1.000	-111.952	132.662
	9 Transport & Logistics	-37.445	29.119	0.949	-137.308	62.418

\*. The mean difference is significant at the 0.05 level.



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**f. Homogeneous Subsets-EI**

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<b>EI</b>				
<b>Industry</b>	N	Subset for alpha = 0.05		
		1	2	
<b>Tukey HSD<sup>a,b</sup></b>	8 Telecommunications	2	14.2602	
	10 Waste Management	4	24.6152	
	6 Pension & Insurance	4	33.4788	
	7 Real Estate	6	33.5498	
	1 Banking	2	59.5057	
	9 Transport & Logistics	4	62.0602	
	3 FMCG	6	64.2931	
	5 IT & Technology	6	69.0144	
	4 Fuel	2	98.4688	98.4688
	2 Energy	2	197.6350	
	Sig.		0.293	0.129

---

**Means for groups in homogeneous subsets are displayed.**

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**a. Uses Harmonic Mean Sample Size = 3.077.**

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**b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.**

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## F. Results of Regression Analysis

### a. Regression ANOVA

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ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	172257.427	1	172257.427	27.062	.000 <sup>b</sup>
	Residual	229147.760	36	6365.216		
	Total	401405.187	37			

---

a. Dependent Variable: SI

b. Predictors: (Constant), EI

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### b. Model Summary

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Model Summary <sup>b</sup>							
Model	R	R Square	Adjusted R Square	R	Std. Error of the Estimate		
1	.655 <sup>a</sup>	0.429	0.413		79.78230		

---

a. Predictors: (Constant), EI

b. Dependent Variable: SI

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### c. Coefficients

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Coefficients <sup>a</sup>		
	Unstandardized	Standardized

---

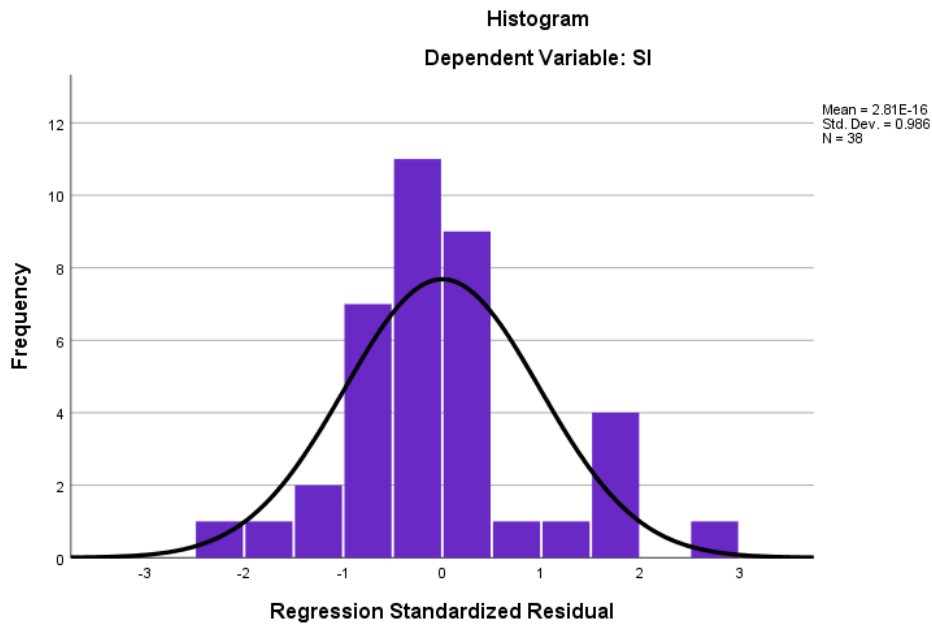
Model	Coefficients		Coefficients	t	Sig.
	B	Std. Error			
1 (Constant)	65.594	19.354		3.389	0.002
EI	1.280	0.246	0.655	5.202	0.000

**a. Dependent Variable: SI**

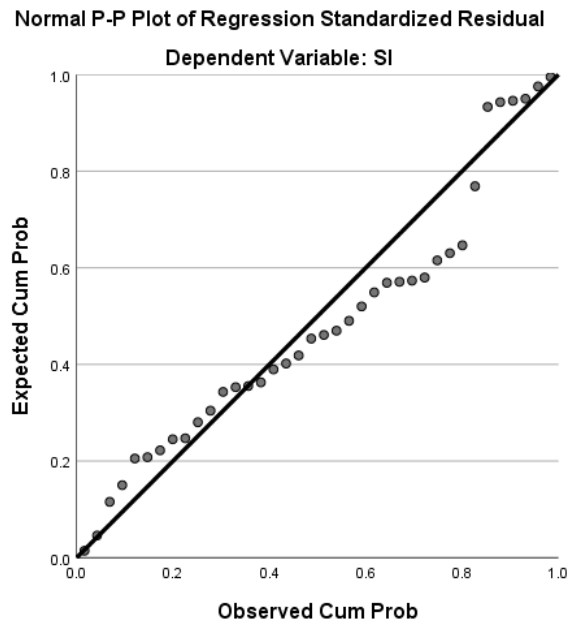
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## G. Results of Residual Statistics

### a. Histogram of Residual Statistics



### b. Normal Probability Plot of Residual Statistics



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**c. Scatterplot of Residual Statistics**

