TALLINN UNIVERISTY OF TEHCNOLOGY

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DOES CORPORATE SOCIAL RESPONSIBILITY INFLUENCE FINANCIAL PERFORMANCE: EVIDENCE FROM NORDIC COUNTRIES

Master's thesis

International Business Administration

Supervisor: Anup Kumar Saha, PhD

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I hereby declare that I have compiled the thesis independently
and all works, important standpoints and data by other authors
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has not been previously presented for grading.

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ABSTRACT

The thesis studies the relationship between the financial performance of companies and corporate social responsibility in the Nordic countries. The present paper aims to determine the impact of corporate social responsibility on the financial performance of the business in the Nordics. The sample of data used in the research includes 308 public companies, listed in one of the Nordic stock exchange markets, with headquarters in the same region. For these companies at least for one year over the past 10 years, corporate social responsibility data is available in the Thomson Reuters EIKON database. Companies without ESG Score during one of the years were excluded from observations. All financial figures are taken from the same database and were used as a base to calculate financial ratios for financial performance evaluation. Correlation coefficients and regression analysis are used to study the relationship between defined financial ratios and ESG Score as the main indicator of companies' sustainability level.

The findings of the thesis show that relationship between financial performance and corporate social sustainability is absent in studied companies from Nordic region.

Keywords: Corporate Social Responsibility, Financial Performance, Correlation, Regression

INTRODUCTION

The relation between corporate social responsibility and financial performance is still a topic to discuss among researchers. Some studies show a positive correlation and, at the same time, other studies show a minor or mixed relationship. The lack of concentrated data sources of CSR results and governance are not helping the researchers to prove or refute the existence of the aforementioned connection. Taking into account the above-named challenges, we should focus on the market with a similar background. Financial and non-financial reporting standards and business ethics might provide additional insights into this area of the research.

Corporate socials responsibility has gained rapt attention in the academic as well as the business world. Previously organizations were focused only on maximizing profits and improving efficiency. At the same time, the demand for sustainability increased in society from customers, government, investors. Nowadays, profit is not the only concern for the business. The social and environmental effects of operational activities are getting more and more attention. There are many examples when the company implements efficient corporate social responsibility practices and builds a strong relationship with customers by increasing sustainability awareness in the world.

Corporate sustainability is a predominant conception that includes ethical, social, environmental, cultural, and economic aspects of running a business. Corporate sustainability helps the company to be accountable to stakeholders, the government, the public, and itself. Nowadays, it is being debated more than ever. Some aspects of corporate sustainably have become more prominent during the last years. For instance, the negative impact of climate change is one of the main concerns for the society which leads to many discussions of this issue, highlights current challenges, and puts companies under pressure to operate more sustainably, consume fewer resources, be more effective, and think about the environment. According to such changes in society, many firms changed their models to improve sustainability development around them. Reputation, as an intangible asset, has increased importance in the company's evaluation. Today, the total value of a company does not consist of 85% of tangible assets anymore, as it was 40 years ago, intangible assets cover up to 85% of the company's values. (Ocean Tomo, 2015).

In different industries, along with fast-spreading environment management, the influence of corporate sustainability is increasing. However, previously companies used to improve their environment and social influence on their own will. Nowadays, this topic has received a lot of attention from the government and has become a hot topic in society, particularly in the

European Union. Expectations of society are higher than just the production of services and goods by companies; they are no longer limited by the traditional role of a firm.

The ratio, which is mostly used to estimate the firm's sustainability level, is ESG. ESG is environmental, social, and governance dimensions, these three performance measures are used to evaluate the sustainability and ethics of a company's business model.

Is there a relationship between CSR and financial performance? It is still an open question and topic for debate within organizational researchers (Lu et al., 2014). Some studies indicated a positive relation between CSR and the financial performance of the company. At the same time, another part of the studies shows insignificant or mixed relationships (Endrikat et al., 2014; Javed et al., 2016). Different data sources for CSR indicators and CSR outcomes may be a reason for the mixed results of these studies. Keeping in mind these concerns, investigating the relationship deeper may provide additional insights in analyzing the relationship between CSR and financial performance. The purpose of this study is to examine the relationship between ESG Score, as the main CSR indicator, and financial performance. For financial performance evaluation, 4 variables were selected: ROE, ROA, NIPE, NPM.

RESEARCH CONTRIBUTION

It is clear that for the Nordic countries environmental, social and governance impact is a high priority with focus in the future on large companies, which are the main reason for climate change. Progress in sustainability practices and a clear move towards green technologies make achieving the environmental, social, and governance-related goals much easier for companies. The study aims to prove the correlation between corporate social responsibility and financial performance in the Nordic countries. There is a gap in the area of research presenting the relationship between ESG Score and financial results in this group of countries, with a focus on not only all listed companies but also analysis within different industries. The thesis investigates not only the correlation itself but also possible limitations and further research options. The evidence of any kind of such relationship is only the first step in the understanding of the possible impact of sustainability on financial performance. Is the implementation of CSR practices only a pure cost for a firm? Might it bring additional profits by increasing the values of the products on the market?

1. SUSTAINABILITY IN NORDIC COUNTRIES

The Nordic countries, or the Nordics, are generally referred to as Sweden, Norway, Denmark, Finland, and Iceland. Moreover, autonomous countries of the Faroe Islands and Greenland are also included, both are part of Denmark; The Åland Islands, as an autonomous region of Finland; Åland Islands and Svalbard archipelago, as unincorporated areas of Norway. These countries have quite a lot in common when it comes to the way of life, history, social culture, religion, and, of course, corporate social responsibility.

The Nordic countries are in the top list of global sustainability ranking (see Appendix 1). Thus, attention from all over the world to sustainability activities in this group of countries is slightly increasing. The Nordic companies perform very well in different types of sustainability measurements, such as the Dow Jones Sustainability Index and Global 100 Index (SolAbility., 2019). According to the Global Sustainability Competitiveness Index, which combines a couple of measures related to sustainability, the Nordic countries are ranked noticeably high:

Sweden, Finland, Iceland, Denmark, Norway are in first places of the ranking.

During the last years, public awareness of sustainability has increased, and now the conventional wisdom is that economic growth should go together with development in environmental sustainability (Gore, 2006). Governments, especially in the Nordic countries, as a response to this trend, promote the practices of sustainability.

1.1 How does sustainability differ in the countries of research? What are the main regulations?

Sweden, Finland, Denmark are part of the European Union (EU), Norway and Iceland are heavily integrated into the EU via the European Economic Area (EEA). Thus, most CSR regulations are coming from the EU as a political union. CSR is an optional commitment by companies, to include social and environmental concerns within their business activities and in communication with different stakeholders (COM, 2020). In 2008, the EU published a Competitiveness Report, which stated that CSR is a competitive need for enterprises. At the same time, this year mandatory incorporation of CSR into the business strategy and business model took place.

The European Commission (EC) established such steps into the agenda for activities on CSR from the year 2011:

1. Improve the awareness about CSR and share good practices

2. Increase the level of trust in business
3. Magnify regulation process
4. Publish more information regarding the company's social and environmental actions
5. Implement CSR into research, training, and education
6. Highlight the influence of national and EU CSR policies
7. Align global and European approach to corporate social reporting

The European Commission highlighted three main areas that can be improved to increase awareness and encourage sustainable behavior in society (COM, 2020): consumption, an opportunity to encourage sustainable practices through key performance indicators; public procurement should be integrated with social and environmental perspectives; investors are demanded to inform customers about new norms implemented.

Based on the results of a study conducted by the Commission of the European Communities, most companies in Europe integrate CSR into their strategy and report on it annually because it improves their reputation. However, it might also increase costs. The study also shows that readers of non-financial annual reporting require an honest and realistic outlook on processes, business models, and sustainability. Of course, readers have expectations regarding the integration of financial reports, a certain level of regulations, active involvement of stakeholders (Commission of the European Communities, 2015).

Small and Medium Enterprises (SME) are the dominant form of enterprise in the EU. They might not use the term CSR. Their cooperation with employees, local communities, and partners show that they have a naturally responsible approach to running a business. SMEs mostly have informal and intuitive social responsibility; this type of firm is excluded from the obligation to conduct annual non-financial reporting. For bigger companies, the Directive 2014/95/EU of the European Parliament and the Council stated that non-financial annual reporting should be arranged for all organizations with more than 500 employees (EUR-Lex, 2014).

In the Nordic countries, there are several international standards and guidelines used:

1. Global Reporting Initiative (GRI) – The international organization founded in 1997, which helps public and private companies understand and report in the best way environmental, social, and economic impacts. More than 9,000 organizations worldwide use reporting layouts created by GRI (KPMG, 2017). The GRI standards can help to share and assess sustainability improvements done by a company.

2. United Nations Global Compact (UNGC) – The initiative with the main objective of creating the sustainability principles and supporting Sustainable Development Goals. The UNGC created a reporting framework of ten principles, grouped in four main categories: human rights, labor, environment, and anti-bribery.
3. United Nations Principles of Responsible Investment (UNPRI) aims to put six principles of environmental, social, and governance reporting of sustainable investments into practice. The main goal of UNPRI is to get to know the influence of investment on the environment, society, and governance. The aforementioned challenges should be integrated into decisions made by investors and owners.
4. OECF Requirements for Multinational Companies has published recommendations and principles for business on how to behave in compliance with different laws.
5. ILO Tripartite Declaration on Multinational Enterprises and Social policy (MNE) – Instructions on social policies and guidance on how to create an ethical workspace.
6. ISO standards are very developed to support companies to address socially responsible practices most efficiently.

An open society with a competitive economy and free media resources are the core of a strong CSR tradition. Main CSR activities are delegated to the business. All Nordic countries are using CSR as a valuable addition to classic welfare policy. Most of the standards and regulations are coming from the EU; however, local governments have a different focus in the sustainability topics. In Sweden and Norway, governments pay more attention to foreign humanitarian issues in developing countries. Denmark and Finland use CSR to improve the international completeness of their companies (Midttun, 2015). Norway actively supports international CSR via communication with businesses and implements multilinear initiatives. Sweden handed over CSR to the international partnership, as a lot of Swedish companies operate globally. Denmark supports sustainable innovation, especially within small and medium enterprises. Finnish Ministry of Economics cooperates with business organizations to increase CSR implementation in all business operations.

1.2 General overview of the countries and their sustainability measures

Sweden, by the implementation of the EU directive on disclosure of non-financial data, has covered 67% of net turnover in the corporate sector and the same percentage of carbon dioxide emissions in the sector of business. Sustainability reports provided by Swedish listed companies are generally more transparent and standardized than in other Nordic countries. Of course, there is still some room for improvement in the current process.

The Swedish government has approved the EU directive that requires legal entities with more than 500 employees to arrange non-financial paper annually, with information regarding environmental challenges, social matters, and risks related to employees. Human rights respect, bribery, and corruption matters should also be present in this report. All these requirements were applied in January 2017 with a new financial year. This step increased the transparency and comparability of sustainability reports published by companies.

Sweden's new regulations were carried out on December 1, 2016 by adding changes to Annual Reports Act (1995:1554). All companies in Sweden match two criteria from the following:

1. The average number of employees more than 250
2. Net annual turnover of more than SEK 350 million
3. Total balance sheet more than SEK 175 million

The Swedish government has put stricter requirements on business, and more companies started with new non-financial reporting than in the EU. The directive requires the average number of employees 500, compared to 250, which is a legal requirement in Sweden.

With Swedish requirements, around 1500 companies are required to follow new sustainability reporting. It is almost 3% of all private firms registered in this Nordic country. From industry to industry, this number differs a lot. For instance, in agriculture, only 1% of business active legal entities report regularly provide it. However, almost every company in the mining and quarrying sectors are involved in sustainability reporting, and 21% of firms from other activities sector. (Tillväxtanalys, 2018)

Finland approved the An Accounting Act in December 2016, which included the requirement for a certain type of company to provide annual CSR reporting. Big listed firms, credit institutions, and insurance companies with an average of more than 500 employees should provide non-financial reporting annually. Additionally, the company should have an annual turnover higher than EUR 40 million or a total balance sheet of more than EUR 20 million.

According to this legislation, based on the EU directive, companies should report on policies connected to the environment, social issues, their employees, human rights, corruption, and bribery. At the same time, the report must include a short introduction to the company’s business model, an explanation of the main risks, and the way in which they can be handled (Olkkonen, 2019).

One of the most prominent differences of CSR in Norway compared to neighboring countries is the number of small and medium enterprises. According to the latest statistical report published in Norway, less than 1% of enterprises have 250 or more employees. (Statistisk sentralbyrå., 2020). Traditionally, close cooperation between the public and private sectors helped to set the values of Norwegian society. State welfare, equal rights, and democracy motivate Norwegian society to feel responsible for the environment and act in a sustainable way (Aarhus, 2010).

All companies operating in Norway are expected to create value from environmental, social, and economic perspectives. From June 1, 2013, all large companies are obligated to report on their environmental and social impact. According to accounting legislation, annual non-financial reporting should be routine. In 2013 Ministry of Trade, Industry, and Fisheries published a statement that sustainability and focus on social challenges might be a rational strategy for business. Companies are inspired to join EN Global Compact and integrate GRI standards. Current regulations cover human rights and responsible supply chain, social and employment policies, consumer awareness, and responsible business promotion.

To increase transparency and make business accountable for the social and environmental influence, Denmark, as one of the first countries all over the world, implemented mandatory non-financial reporting for all listed and state-owned companies in the year 2008 (Steen, 2015). Businesses that exceed at least two of the following criteria should also implement CSR reporting (class C companies):

1. The total balance sum of DKK 143 million
2. Net annual revenue of DKK 286 million
3. The average number of employees more than 250

In 2015, Denmark, as a leader, first adopted EU Directive 2014/95/EU in Europe. According to the new regulation on non-financial reporting, requirements to the business were updated to higher standards. New requirements force companies to show deeper commitment and sustainability integration into the business model and corporate structure. Listed companies with an annual average number of full-time employees of more than 500 were required to start from 2016 with new reporting. From the year 2018, a larger scope of companies was obligated to implement new CSR reporting: state-owned public limited and listed in EU/EEA companies, firms that meet two of three requirements (a balance of DKK 156 million or more, annual revenue of DKK 133 million or higher, 250 or more employees) (Collet, 2019). New updates increased the number of areas in which non-financial reporting should include general CSR

policy, impact on the environment, anti-corruption and bribery, social and personnel matters, climate impact, human rights impact (KPMG, 2017).

According to the study conducted in Iceland in 2006, an experienced manager in this country associated CSR with charity. Such a result comes from a lack of information and knowledge. Also, increase interest in sustainability-related challenges worldwide (Steingrimsdottir, 2006). Research published in 2013 shows that a slight improvement was observed in entrepreneurs' minds. Despite the progress in CSR overall on a country level, some companies still saw CSR as philanthropy. However, more and more firms started to recognize the real value of CSR for society and the country.

In 2013, the research showed that within the 50 largest companies in Iceland, 66% of companies in Iceland had a strategy for improving CSR. At the same time, having CSR as an objective in strategy or business model does not mean that non-financial annual reporting became for these companies a regular procedure (Leifsdottir, 2013).

In October 2011, Festa was established in Iceland (Icelandic Center for Corporate and Social Responsibility). It is a non-profit organization run by six Icelandic companies (FESTA, 2013). FESTA's mission, as an organization, is to act as a CSR center knowledge in Iceland, promote CSR related topics, support companies in CSR strategy implementation, create a channel for communication between companies interested in CSR implementation, and cooperate with different universities and other CSR international institutions to improve teaching and research of CSR.

Iceland, as a European Economic Area member, has European regulations in place. EU Directive 2014/95/EU requires disclosure of non-financial and diversity information by all legal entities with an average number of employees 500 or more. The following information should be included: description of business model, description of policies used concerning all matters covered by corporate social responsibility, outcome and implementation process of these policies, the main risks connected to business from sustainability perspective, non-financial performance indicators relevant to the appropriate business (EUR-Lex, 2014).

1.3 Environmental, social and governance score as a sustainability indicator

The concept of corporate sustainability includes the ethical, social, and environmental aspects of the business. Climate change has become more visible. Nowadays, it is part of the discussion in society. These facts create a demand for companies to implement sustainability in their operations. Many firms took some actions and changed their business operation or models to

contribute more to the development of sustainability in the world. The measure, which is mostly used, to evaluate the company's sustainability activities is ESG. It includes three non-financial performance indicators: environmental, social, and governance. These criteria are used to measure the firm's business model of ethical influence (RobecoSAM, 2020). In 2000, the Global Reporting Initiative was introduced, and since then, more and more companies are implementing this sustainability measure in their business. Of course, ESG has changed a lot in finance and business scope and proved its reliability within the last 20 years.

Environmental, social, and governance (ESG) score is widely used to measure the sustainability performance of the company. ESG Score used in the paper is from the Thomson Reuters database, it was created to present the company's ESG progress covering such topics as emissions, human rights, product innovation from an environmental perspective, bribery and anti-corruption, climate impact. This ration is based on different kinds of reports provided by the company, available for more than 6000 companies from all over the world, can be used in form of percentage and in form of a letter grade from D- to A+. Overall logic in how ESG Score is calculated eliminates subjective factors, such as company size and operation market. The latest improvements into ESG scoring include benchmarking of country and industry. Category ranking is reflected in ESG Score based on each category contribution. Thomson Reuters ensures that ESG data is processed and published in the best way. In a transparent process of collecting data from 6000 different publicly available resources, data standardization is implemented within different 400 ESG figures (Thomson Reuters, 2017).

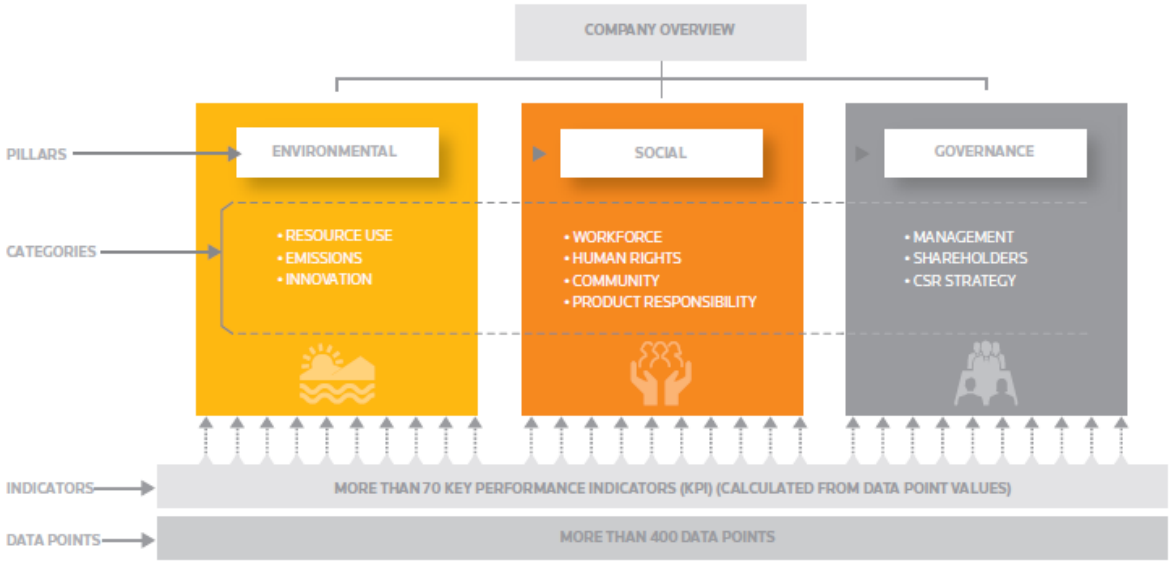

Figure 1. Company's ESG Score overview by Thomson Reuters
Source: Thomson Reuters (2017, 3)

ESG Score provided by Thomson Reuters is a reliable measure and is used in academic research, where authors studied different aspects of corporate social responsibility. Data used to generate ESG Scores is taken only from publicly available sources. All steps, taken by the company to generate the report, are described in an article, which is available for everybody. Moreover, it has sustainability data for more than 6,000 public companies from the year 2002 (Thomson Reuters, 2017).

1.4 Financial performance dependence on ESG Score

The business operates in society and is accountable for operations, environment, and other sustainability challenges. Obligations are not limited to generating profits for shareholders. The company should create revenues, and it is one of the main cores of business. However, currently, CSR changes the focus and leads it to another aspect. Sustainability changes the way we work in terms of the ecological environment, considering such risks as global warming, air pollution, ethical problems within the company. Sustainability risk is one of the recently highlighted issues, which has the same level of influence as supply chain risk or financial bankruptcy risk. For companies, it is crucial to implement a sustainability strategy that is aligned with long-term goals and helps to protect the ecosystem and minimize the possible effects of operational activities.

For some industries, an efficient indicator of the company's sustainability is the capability to reduce carbon footprint and minimize the business influence on the environment. It might be

done by implementing the annual monitoring of natural resources consumed, generated carbon emissions, the wellbeing of employees. Here, mental and physical aspects should be included. There are more and more questions which companies are being asked from a corporate sustainability perspective. The gender issue is one of the latest that is effectively tracked in Western Europe where the progress is already seen. This part is included in social sustainability as well as employment stability and safety.

With the relies on the release of the Report of the Global Compact in the year 2004, ESG Scores and ratios received more attention and were widely implemented. The next year global financial institutions positively viewed ESG Score as a part of strategical goals. The scientific world started to pay attention to ESG Scores and financial performance.

Networking and collaboration between the business and its stakeholders is the aspect that recently got more attention in recent studies. A transparent process of innovation implementation, intending to reduce waste, improve social and environmental performance is a key to building a sustainable business in the long run (Niesten E, 2017).

ESG Scores include environmental, governance, and social dimensions. These numbers are provided by several certified agencies worldwide, data sources are open, and analysis is carried out transparently. The ratio might be used to evaluate the company's performance compared to the industry, review the market, and search for possible improvements in the business operations, strategy, and business model.

The active position of stakeholders is essential for the company to enter a new level in environmental policy, sustainability approach, and long-term eco-friendly innovations. Some studies criticize the current ESG Score, but, from my point of view, it is the best solution available. Some harmonization in reporting might be done, especially when we think globally. Collaboration is a key factor to increase the sustainability of a company, collaboration with other industries, or even, in some cases, with competitors. The last one should be aligned with rules and regulations applicable to countries where the company operates (Niesten E, 2017).

One of the latest studies conducted by the analytical company Refinitiv shows that overall it is beneficial for a company to invest in sustainability, especially from a broader perspective. The paper claims that the ESG Score is higher for big companies that are ready to make considerable investments in corporate social responsibility. For regions where sustainability is not on the social and political agenda, some firms have an irreverent attitude to stock returns (REFINITIV, 2020). Refinitiv is a large consulting company, which provides financial data about more than

40,000 legal entities in 190 countries. It is owned by Blackstone Group LP and Thomson Reuters. In 2018, Thomson Reuters transferred the whole risk and financial portfolio to Refinitiv. Thomson Reuters is a minority shareholder, and it eliminates a possible influence on research conducted by Refinitiv (REFINITIV, 2019).

The topic of corporate social responsibility and financial performance relationship was studied in some academic papers. More research is focused on CSR and shareholders' value and dividends. Changing the way companies work might lead to additional costs. Occasionally, extra costs occur with sustainability implementation. However, the business must care about not only revenues but also focus on corporate social responsibility.

1.5 Analyze of previous research

Does CSR have any relation to the financial performance of the business is it an open question within organizational researchers and a topic for discussion (Lu et al., 2014)? There are a lot of different studies, searching for a relationship between corporate performance and environmental, social, and governance score (ESG). Some of them analyze thousands of empirical studies, another part of the studies is focused only on the specific market, countries.

The research published in 2015, includes evidence from more than 2000 empirical studies (Friede, 2015). Of course, the number of studies which authors analyzed is impressive, some of them might be were published at the beginning of the 1970s. This is one of the biggest research on the topic, combines data for 2200 individual studies, this allows to generalize their outcomes. Nearly 90% of studies find ESG and financial performance relation which is not negative. The more important fact is that majority of studies highlight the positive impact of ESG on financial performance. Authors took the various type of research, even though ESG Scores were calculated very differently in most cases and 40 years ago ESG principals and standards had another level of development. However, an interesting conclusion was done based on the geographical location of companies. In Europe, 26,1% of all studies (including portfolio) claim positive relation and only 8% - negative. Unfortunately, in this study Nordic countries were not discussed as a separate region and were included in Europe. A significant part of studies with mixed results indicates that the question should be studied further. Another interesting conclusion of the research is high results for emerging markets and North America. According to the Global Sustainable Competitiveness Index, (see Appendix 1) countries from these regions are not so often represented in the top 50 sustainability leading rating. The high result from these regions should be researched closer and might be caused by the low presence of small- and mid-

sized companies in the research. Overall, analyzing such research gives some understanding of trends in this field, but its design and methodology show that it's not close to the current study.

Around 80 German companies were studied in a paper published in 2017. Financial performance was evaluated using 2 ratios: ROA and Tobin's Q (Velte, 2017). Data for 5 years was collected from Thompson Reuters Database, for 85 companies during the year 2010, 81 for 2011, 80 for 2012, 83 for 2013, and 83 for 2014. The author included the following variable in the research: Return on Assets; Tobin's Q; Environmental, social, and governance score; Environmental performance; Social performance; Governance performance. Regression used by the author shows that the ESG Score is positively and significantly related to ROA. Tobin's Q as the market-based measure of financial performance shows a minor positive link. This empirical study is one of the first with a focus on the German market, includes only about listed companies, which is less than 15% of the total number of listed companies in Germany during 2010-2014. According to The World Bank in 2010 in Germany were 690 domestic listed companies, 670 in the year 2011, 665 in the year 2012, 639 in the year 2013, and 595 in the year 2014. The study covered 12.3% of domestic companies listed in this European country in the year 2010, 12.2% in 2011, 12% in 2012, 12.9% in 2013, and 13.9% in 2014. Design, methodology, and approach indicate that only the biggest companies from Germany were included. These firms were forced to implement CSR in management strategy and reporting process. Moreover, listed companies in this country are actively implementing the latest sustainability initiatives together with the German Sustainability Code and Guidelines of the Global Reporting Initiative (GRI). This research is more interesting from the design point of view for my study and some parts of it might be used. At the same time data included in the correlation and regression analysis is significantly different, compared to my research. And I might not get the same result for Nordic countries.

The study on the Italian market was published in February 2019, includes data for 40 major companies from 2008 to 2015 (Landi, 2019). This research evaluates the impact of ESG rating on financial performance. Paned data analysis was used to identify the impact of ESG Score on Italian companies' returns. The purpose of the study is to identify whether social responsibility creates an additional return for a firm's operation on the Italian Stock Exchange. The growing interest in corporate social responsibility by managers, companies, and government stimulates improvements in the quality of non-profit annual reporting together with transparent corporate disclosure. Investors apply ESG standards in the stock, however statistically significant evidence of ESG rating on returns of Italian companies was not found. It turned out that investors prefer to

assess more traditional factors such as EBITDA and financial leverage, other variables are not under priority. The study supports that CSR doesn't have systematic and prominent effects, neither negative nor positive, on abnormal returns. So, investors don't pay attention to sustainability while making an investment decision. Based on the selected companies during the years 2008-2015 Italian stock market was not giving any rewards based on ESG rating to socially responsible companies, abnormal return value is not related to ESG. Corporate social responsibility factors were studied closely, as a possible base for highly profitable investment decisions, and the conclusion is that other factors are playing a vital role and ESG rating might be disregarded, ESG corporate strategy doesn't make the company more attractive for investors who are aiming for high profits. Even the opposite point was proved, profitable and successful companies on the Italian stock exchange market are not willing to spend money on CSR related issues, top managers don't consider ethical aspect such as sustainability, even when the company can financially afford it.

The shift from short-term financial goals to long-term focused on sustainable environmental, social, and governance goals for listed Chinese companies was researched in 2018 (Zhao, 2018). Different stakeholders realized that the ESG Score became an important indicator of financial risk and might affect the financial performance of the firm. This article is one of the first with a deep focus on the Chinese market, trying to answer the question: "How does ESG affect the financial performance of the firm?", only one industry is considered, listed power generation companies. The object of the study is Chinese listed power generation companies and the relationship between ESG Score and financial performance for this industry, panel regression model is used as a main tool for the analysis. As China's carbon dioxide emissions are expected to increase in the next ten years, of course, the pressure to reduce it will increase. Moreover, the need for ESG research in the power energy industry is high and urgent. China continues to invest in coal energy, fortunately, the Chinese government started some actions towards sustainable business operations. The clear need for eco-friendly development in this area forced the government to create some regulations, and sustainability data became mandatory to release by listed companies. In the study, it's concluded that ESG has an impact on financial performance for big listed companies from the power generating industry. Investment in sustainability has a long-term contribution to the firm's financial results. The financial performance used in the study is the return on capital employed. Data for 20 companies are included in the study, ESG Score for the year 2016 was calculated by the authors, as well as RECA ratio. China is behind Europe when it comes to sustainability measurements and reporting, thus the ESG Score was

calculated manually by the index system proposed by the authors. China hasn't established a successful system of sustainability evaluation, compared to Europe and the Chinese disclosure system is missing standards. A lot of companies release reports including environmental, social, and governance scores. The quality of these reports is different and it's almost impossible to analyze within the industry. Such competence is missing in China, knowledge might be gained from international companies who make sustainability audits for different domestic firms.

The research conducted in 2017 is an empirical study using a broad database to investigate the effects of CSR outcomes and CSR governance on financial performance. The organization tries to adopt the most suitable CSR governance mechanisms to achieve social and environmental results and improve reputation in the business society. Building a sustainable reputation might be done via two approaches: symbolic or strict. An efficient sustainability level for the company comes from business structural changes and uses some resources. High CSR results help companies to achieve and maintain CSR and sustainability on a high level and contribute to business model efficiency and bigger financial returns. However, symbolic governance of CSR might create gap invalidity of CSR reporting, resulting in worse financial returns. In this research, the authors conclude that CSR level is not connected directly to a company's financial results. High financial results are related to adequate CSR outcomes. Companies gain from CSR implementation only in case of serious scenarios, aiming to gain high CSR outcomes (Wang, 2017).

The authors used the four-stage Baron and Kenny mediation evaluation approach to evaluate the hypothesis. The result shows that the relationship between CSR governance and corporate financial results depends on the corporate decision on which scenario for CSR implementation to choose. Scenario with the implementation of CSR without a global change in the corporate business model, policies, etc. will not generally increase in financial performance. Only a transparent process with clear and achievable goals will be more rewarding for a company (Wang, 2017).

The study was focused on the top 500 companies in the United States. Thus, the result might not be the same for smaller companies and companies from other countries. The main conclusion of the study is that companies should aim to obtain CSR more effectively and establish a full CSR governance model, however, good financial results are not always guaranteed for business. An effective communication system within management should be created to monitor CSR results, with a clear target to improve financials as well (Wang, 2017).

One of the studies connected to the topic of CSR and financial results are focused on one specific area, Latin America. Of course, the results of previous studies on the relationship between ESG Score and financial performance, can't be implemented in this part of the world, as countries in this region have a different level of CSR reporting maturity. The study has huge implications for managers and policymakers. From the managerial point of view, the conclusion is that managers and CEOs should pay attention to financial results as a tool that should design an integrated part of the company's strategy and solve targeted challenges in society and the environment, where operations are done. Geographical international diversification creates benefits for companies, presence in different markets allows them to improve awareness and visibility of their brand. Of course, some additional requirements are coming from global operations as well. For instance, different social and environmental needs should be reflected in CSR, business model, and strategy. Such commitment will create a good reputation for the company in society, improve ESG Score, and in long-term company's financial results. So ESG should be considered as a long-term investment rather than a cost. The empirical results show that ROA, as a variable chosen for financial performance evaluation, has a negative relation to ESG Score. Data used in the study includes 147 listed companies from Brazil, Columbia, Chile, Mexico, and Peru from the year 2011 to the year 2015 (Duque-Grisales E., 2019).

Additionally, public awareness should be used as a power at national and international levels, subsidies for companies that apply best ESG practices. In this case, businesses from the region will follow trends and apply advanced and sustainable environmental, social, and governance initiatives (Duque-Grisales E., 2019).

The decline of the banking system's reputation was caused by the heavy mortgage crisis and increased attention from different stakeholders to the sustainability of banking business models. The risk of losing the bank's reputation has increased expectations from society in terms of social responsibility. The connection between the strategic approach to CSR and financial performance are relevant topics, however not so often researched (Gangi, 2018).

This study includes data of 72 banks from 20 different European countries during 2009-2015. Following financial performance indicators were used: net interest divided by total assets, intermediate margin divided by total assets, non-performing loans divided by total loans, an average of the last five years of non-performing loans divided by equity. The conclusion of the paper is connected to the reputation risks of the banks, which was a hot topic after the financial crisis (Gangi, 2018).

From a CSR strategy point of view, time is the relevant question. Thus, internal CSR is a good starting point for the company and might lead to an effective external CSR strategy. The knowledge-based approach explains this thorough learning curve and knowledge accumulation indicates the need for participants to admit values of the actions taken from their side. Cumulated knowledge plays a crucial role in organizations and external partners. During the financial crisis, banks are facing reputation risks, CSR initiatives became an opportunity for the bank to improve brand perception. The study also concludes that managers can use these phenomena as an asset to boost margin and advance loan quality. All actions taken by the organization to develop internal CSR strategy and policies might be confirmed from shareholders' point of view as a positive connection with financial results. The investment into CSR is a solid base for the development of internal and external communication regarding sustainability, trustworthy relationships support knowledge sharing within and outside of the organization (Gangi, 2018).

Another study on Australian construction companies includes data for 44 listed local companies during 2008-2010. During this period 9% of the workforce was employed in this industry. The annual number of fatal cases recorded in 2009-2010 was 41, which made the construction industry the field with the highest number of annual fatalities in Australia. Energy used in the building sector made 23% of the country's total greenhouse gas emission in 2007. Main contributors to these emissions are cement, chemicals, iron, steel, and other metals. From the sustainability point of view, the construction industry had a lot of aspects to improve, education level within employees is low, poor employer-employee relationship, low level of used technologies (Siew, 2013).

Analysis conducted to evaluate financial performance used the following variables: return on assets, return on equity, return on invested capital, net operating profit, and earnings before amortization, depreciation, and interest tax. The study concluded that most construction companies had poor reporting and investors' expectations were not met. One of the most popular ratios for profitability ROE had higher values for companies with implemented annual non-financial reporting compare to firms without CSR. ROA values are higher for compared groups in the year 2008 and 2009, however, in 2010 it was not the case. ROIC, as a ratio that shows the company's performance in money allocation and investing in operations. ROIC showed a similar trend as RIA and ROE in 2008 and 2009, but not in 2010. EBITDA is usually used to evaluate the company's performance from a cash point of view and in this research and this study correlation was not strong. Overall, the correlation between financial performance for Australian companies in the construction industry that had CSR implemented was not always higher

compared to the companies without sustainability reporting. So, corporate social responsibility didn't affect financials significantly (Siew, 2013).

I investigated the study by Makni et al. published in 2008 with a focus on the Canadian market. ROE, ROA, and stock market returns were used as financial performance ratios. Data was taken from the Canadian Social Investment Database for the years 2004 and 2005, the sample included 179 public Canadian companies. The Pearson correlation and Granger causality were used to checking the relationship. The authors found no statistically significant relationship between CSR measures and FP ratios chosen in the paper. In short-term companies, socially responsible companies faced lower profits and reduced shareholder profits. Authors' concluded that in theory efficient resource management and pollution control should create a social reputation, that will improve financial performance in the future.

Generally, within research on the relationship between CSR and financial performance, there are two main groups: first that claims that positive correlation exists, the second opposite. Some studies conclude that additional revenue streams generated by improvement in the company's sustainability, but the latest papers are having a different point of view, concluding that additional costs generated by a new type of non-financial annual reporting don't generate additional revenues and the company faces a decrease in profits (McWilliams, 2001).

The latest research on the topic proves a positive relationship between CSR and financial performance, more often not significant. In most cases, such a relationship is proved using CSR data from a reliable database, and the number of companies is limited. Usually, companies from similar markets and industries are selected. At the same time number of research with mixed results is also quite significant.

1.6 Research question

The thesis aims to answer to following research question:

Is there a relationship between corporate sustainability and financial performance in the Nordic countries?

2. METHODOLOGY

This chapter is devoted to the explanation and argumentation of methodology and philosophy of the research. Social and ethical points of view will be reflected in this chapter together with the criticism of data sources used.

2.1 Philosophy of the research

Positivism as a philosophy of research is not so easy to explain, mainly because scientists use it differently. According to this approach, science is the only method to learn about reality. Only knowledge gained by measures or observations can be trustworthy, mainly a quantitative approach is used. Based on measurable observations it's followed by analysis with active use of statistics (Saunders, 2015).

Five characteristics of positivism as a philosophy of the research can be highlighted (Saunders, 2015):

1. Inquiry's logic across different research in the same
2. The main goal of the research is to find the reason and forecast possible future
3. Induction must be used to test and develop the hypothesis
4. Common sense is not a part of science. The only scientific approach should be used
5. Only logic might be used to measure science

According to positivism, credible data can be gained only through observations, with a focus on causality and generalization. It's the philosophy based on quantitative observations; statistical analysis is always conducted after data is collected. As data selected for the thesis is highly specific and precise positivism is a valuable option for such research.

2.2 Epistemology and ontology

Epistemology and ontology are two contrasting ways to check a research philosophy. the idea of ontology is to deal with the nature of reality. Subjectivism is used in this study, also known as interpretivism or in some cases called constructionism. This approach claims that all social activities are tightly connected to individuals, depended on perception, and actions taken by individuals. The increase in popularity of constructivism as an option in epistemology has several reasons: a reality in this approach is viewed as a result of the cooperation of people with the real world, as a real experience, the reality was constructed by a human being, it's subjective (Saunders, 2015).

An interpretivism is an approach to the science which argues the positivism of natural science. The main idea is to understand the world as a set of subjective individual experiences. The development of this philosophy is based on understanding the meaning that humans attach to their actions.

3. RESEARCH METHODS

This chapter has information regarding data sources, variables used in the research, and relevant hypotheses. Regression analysis and other statistical models will be listed.

Deductive reasoning is used in the research, the idea of it to move from general facts and approach to one which is more specific. It might also appear in some cases as a top-down method (Trochim, 2020).

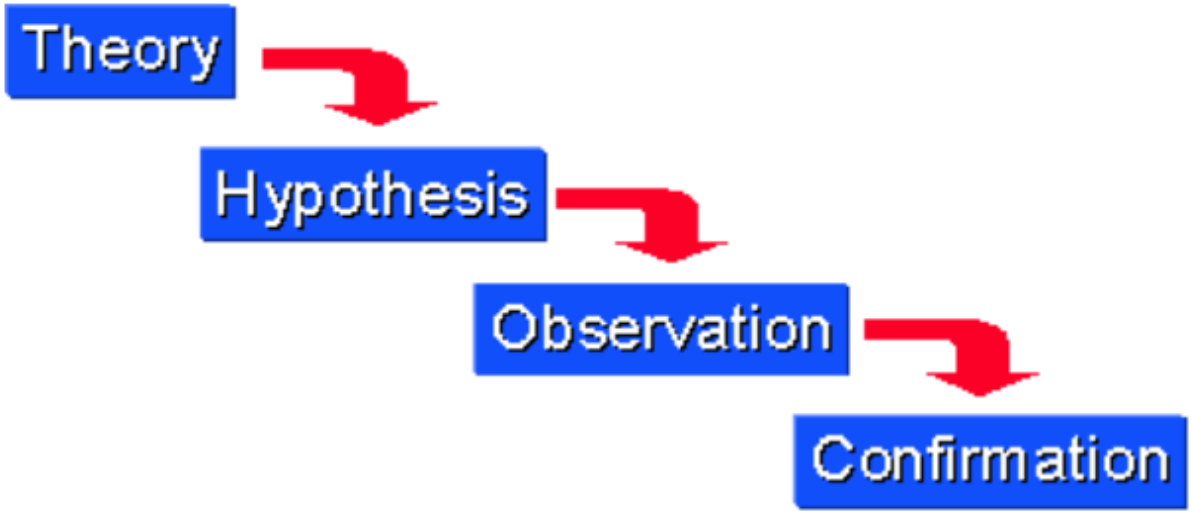

Figure 2. Didactive reasoning scheme
Source: Trochim, W. (2020)

While conducting deductive research you always start with a hypothesis or theory. The main advantages of such approach are the following: opportunity to explain relationship between variables and concepts, concepts are possible to measure quantitatively, research findings can be generalized to a certain extent. Of course, this research method has some limitations. The conclusion of deductive study can be true only when all the conditions, included into study, are true and the terms are completely clear.

3.1 Sample

During the time of working on this paper, there are 378 companies listed in Sweden on the NASDAQ OMX Stockholm Stock Exchange (Nasdaq, 2020), 141 companies are listed in Finland on the NASDAQ OMX Helsinki Stock Exchange (Nasdaq, 2020), 134 companies are listed in Denmark on the NASDAQ OMX Copenhagen Stock Exchange (Nasdaq, 2020), 19 companies are listed in Iceland on NASDAQ OMX Iceland Stock Exchange (Nasdaq, 2020) and 227 companies are listed in Norway on the Oslo Børs Stock Exchange (Oslo Børs, 2020). So, it makes a total of 899 companies listed in Nordic countries. At the same time in the data taken out from the Thomson Reuters EIKON database, 308 firms have ESG Score at least in one year during the last 10 years. Unfortunately, for companies listed in Iceland, the ESG Score is missing. Companies with headquarters only in Nordic countries are included in the research. Thus, 289 with main offices in Nordic counties and listed in one of the Nordic Stock Exchange markets are being studied. Such secondary data as net income after tax, average employees' number, shareholders equity, total assets, total revenue was taken from the Thomson Reuters EIKON database and was used to calculate different financial ratios. Of course, some limitations might occur from the data perspective, as a limited number of companies are represented in EIKON. The data source is considered trustworthy, financial data for more than 100 000 companies are presented. Numerical data is used to test the hypothesis, mainly because the deductive research method was selected, and it's aligned with the study's purpose.

According to the Industry Classification Benchmark, there are 11 industries in the sample of data. The following industries are present in the study: Basic Materials, Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Real Estate, Technology, Telecommunications, Utilities. The relationship between ESG Score and financial performance by industry is studied by industry in the next chapter.

3.2 Financial performance variables

Financial ratios are used to compare results using data from the financial statements. In the standard cases following financial statements are used:

1. Balance sheet. Includes company's liabilities, assets, and stockholders' equity for a certain date, when the report was provided. It doesn't include the number for a time period.

2. Income statement. Shows the results of the company's financial and operations activities for the reporting period. Expenses, revenues, gains, and losses are included in the income statement.
3. Statement of cash flow. Presents changes in the company's cash flow during the reporting period.
4. Statement of shareholders' equity. Shows the changes in shareholder's equity during a certain period. Six segments of change are included: preferred stock, common stock, treasury stock, retained earnings, contributed capital, and unrealized gains and losses.

The analysis of financial ratios is done to assess the company's financial performance, liquidity, leverage, and efficiency of assets used by the business. The result of the analysis is used for an investment decision or a decision regarding credit for the company. The financial statements are publicly available, and the information can be easily obtained. Thus, ratio analysis is widely used in the academic world and the business world. For the analysis following categories of financial ratios are used: performance, liquidity, leverage and coverage, activity ratios (Bragg, 2020).

To cover the different categories of the financial ratios the author selected such ratios as return on equity (ROE), return on assets (ROA), net profit margin (NPM), net income per employee (NIPE). Return on equity is a financial performance measure, to calculate you need to divide net income after taxes by average shareholders' equity (Wild J., 2006). ROE is a two-part measurement that creates a linkage between the income statement and balance sheet. Shows the company's ability to generate a return on top of equity. ROE can be also viewed as a return on assets minus liabilities. ROE is very useful in comparing the performance of different businesses within the same industry. ROE affects stock value and is generally associated with other financial ratios.

Return on assets shows how profitable the company is compared to the value of its total assets. Gives an indication of how efficient assets are used. Business is always about efficiency, how to get out the most from the limited amount of resources. It makes more sense to compare profits to the resources used by the company than to compare profits to revenues. Higher ROA is evidence of effective operational management (Wild J., 2006).

Net profit margin is a percentage of net income after taxes from revenue. More is often represented as a percentage, however, might be shown sometimes in a decimal form. The ratio illustrates how much of revenues are transformed into profit. Net profit margin is one of the indexes which shows the company's financial health. The NPM is affected by the following

business activities: total revenue, cash flows, additional income flows, incomes from investments, income from secondary operations, interest paid and other debt payments, costs of goods sold (Wild J., 2006).

Net income per employee, or profit per employee, is a ratio calculated by dividing net income by the total average number per employee. One of the main ratios which might help to understand the productivity of employees in the company. Of course, you need to have a deep understanding of the context, while you use this figure. In some cases, it might stimulate businesses to invest in new technologies and employees, improve their skills.

ROA and ROE are traditional measuring ratios widely used to measure financial performance; however, the cost of capital is ignored, the question regarding additional value created by the company is still open. In this case, the net profit margin should help to understand the overall revenues and profits of the business. ROA and ROE showed effectiveness in a couple of research searching for relationships between CSR and Financial performance. For instance, in the study on the Canadian market on the relationship between CSR and CSR following ratios were used: ROA, ROE, and stock market returns (Makni R, 2008).

4. DESCRIPTIVE STATISTICS

In this chapter descriptive statistics of the data is presented: summary statistics, correlation and regression analysis. Author tested the assumption of the thesis and tried to answer the research questions with regression analysis. In the conclusion of this chapter author specified the final regression model, used in the next chapter as well.

4.1 Summary Statistics

In this section, summary statistics of all used variables is presented,

Figure 3. Summary statistics of all variables included
Source: own calculations

Variables	*ESG Score*	*ROE*	*ROA*	*NPM*	*NIPE*
Mean	59,22	-0,35	12,39	0,15	658 988,49
Standard Error	0,47	0,24	4,68	0,02	230 846,22
Median	61,29	0,14	0,06	0,07	19 994,88
Mode	77,98	0,17	0,01	0,03	141 644,92
Standard Deviation	17,13	8,81	171,62	0,69	8 437 737,15
Sample Variance	293,53	77,60	29 451,82	0,48	71 195 408 272 277,80
Kurtosis	-0,07	319,57	364,34	83,29	227,71
Skewness	-0,58	-17,87	18,71	3,71	13,31
Range	85,83	174,65	3 666,27	16,25	203 481 838,00
Minimum	5,57	-163,21	-11,48	-7,24	-41 023 302,16
Maximum	91,40	11,44	3 654,79	9,01	162 458 535,84
Sum	79 590,06	-449,46	16 623,46	192,04	880 408 616,32
Observations	1 344,00	1 298,00	1 342,00	1 258,00	1 336,00

Due to some missing values in dataset number of observations between variables is different. For instance, number of observations for ROE is 1298, for NPM 1258, for ROA 1342, for NIPE 1335 and 1344 for ESG Score. 86 missing values for NPM are coming from empty cells for revenues, 46 missing ROE figures are caused by null values in shareholders equity, missing 8

average number of employees is a reason for current number of NIPE. I have decided not to drop these observation as I strongly believe that this action would make dataset irrelevant.

From figure 3 it's clear that ESG Score and ROA have similar number of observations. Means for these indicators are not so close, average ESG Score is 59,22 and average ROA is 12,39. Standard deviation for ROA is 10 times higher than for ESG Score, 171,62 compare to 17,13. Maximum value of ESG Score is 91,40, minimum of 5,57.

ROE has 1298 number of observations, with mean value of -0,35, or -35%. Maximum ROE level in the dataset is 11,44 and minimum one is -163,21. NPM is a variable with 0,15 as an average value, maximum of 9,01, minimum of -7,25 and standard deviation of 0,69. Net income per employee is a most controversial ration, with mean of 658 988,49 and standard deviation of 8 437 737,15. There are couple of Swedish companies in financial industry generating very high incomes but having only 20 employees. This profs that this indicator should be used very carefully.

4.2 Correlation

In statistics, any type of relationship between 2 variables is called correlation, or dependence. It is usually used as a first step in proving the relationship between dependent and independent variables. Correlations are useful, they can indicate a possible relationship. Future investigation is needed after this statistical operation is done. It might be followed by a simple linear correlation or regression analysis (Hogg R., 2005).

Figure 4. Correlation between variables
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,02	1,00								
ROA	0,01	0,00	1,00							
NPM	-0,03	0,13	0,01	1,00						
NIPE	-0,09	0,01	0,00	0,41	1,00					
Net income after taxes (EUR)	0,16	0,05	0,15	0,27	0,17	1,00				
Employees, Avg	0,17	0,02	0,04	-0,05	-0,03	0,07	1,00			
Shareholders equity (EUR)	0,27	0,03	0,18	0,07	0,05	0,53	0,12	1,00		
Total assets (TEUR)	0,10	0,01	-0,02	-0,02	-0,01	0,36	0,02	0,56	1,00	
Total revenue (EUR)	0,38	0,04	0,10	-0,07	-0,03	0,31	0,35	0,79	0,28	1,00

Correlation is a relationship of one variable to another one, in our case we look at relation between ESG Score and 4 financial ratios. Correlation coefficient shows the direction of a linear association and strength of relationship. Perfect negative linear association between two

variables happens in case correlation coefficient is exactly -1, in case of +1 positive linear relationship exists. From -1 until -0,7 strong negative correlation, from -0,7 until -0,5 moderate downhill relationship, less than -0,4 is considered as a weak or non-existing correlation. The same with positive numbers, but for positive linear relationship (Hogg R., 2005). In our case correlation between ESG Score and ROE is low, only 0,02. For ROA and ESG Score correlation is even lower 0,01, which is extremely low. For NPM -0,03 and -0,09 for NIPE. Just to have an overview on data overall other data from dataset was added into correlation matrix. According to the correlation matrix correlation occur between Shareholders equity and Net income after taxes, Total assets and Shareholders equity, Total revenue and Shareholders equity. Last relation has correlation coefficient 0,79 which indicates strong positive association. Examples of these correlations are not objective of this study, however, might be used for the future research. ESG Score seems not to have any association with selected for analysis variables.

Figure 5. Correlation between variables, Telecommunications industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	-0,70	1,00								
ROA	0,19	-0,01	1,00							
NPM	-0,63	0,92	-0,04	1,00						
NIPE	-0,72	0,91	-0,12	0,96	1,00					
Net income after taxes (EUR)	-0,17	0,74	0,23	0,75	0,64	1,00				
Employees, Avg	0,76	-0,69	0,33	-0,78	-0,85	-0,41	1,00			
Shareholders equity (EUR)	0,86	-0,61	0,28	-0,61	-0,72	-0,19	0,82	1,00		
Total assets (TEUR)	0,63	-0,49	-0,24	-0,56	-0,55	-0,30	0,61	0,72	1,00	
Total revenue (EUR)	0,78	-0,61	0,33	-0,74	-0,80	-0,28	0,96	0,87	0,68	1,00

For the telecommunications industry in Nordic countries, ESG Score has a negative strong correlation with ROE and NIPE. Between ESG Score and NPM, a moderate downhill relationship exists. The strong positive correlation between ESG Score and average Number of employees, Shareholders equity. Total revenue might indicate the relationship between company size and CSR. Future research is needed on a bigger number of companies from this industry. Possible companies from Western Europe might be included in the scope. The number of observations, in this case, is only 60, this is not enough to run sufficient regression analysis.

Figure 6. Correlation between variables, Utilities industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	-0,66	1,00								
ROA	-0,75	0,56	1,00							
NPM	0,21	0,64	-0,40	1,00						
NIPE	-0,03	0,94	-0,31	0,75	1,00					
Net income after taxes (EUR)	0,06	0,89	-0,35	0,86	0,98	1,00				
Employees, Avg	0,63	-0,85	-0,26	-0,12	-0,64	-0,50	1,00			
Shareholders equity (EUR)	0,84	-0,89	-0,41	-0,33	-0,71	-0,62	0,89	1,00		
Total assets (TEUR)	0,42	0,38	-0,65	0,81	0,56	0,66	0,01	-0,23	1,00	
Total revenue (EUR)	-0,55	0,80	0,33	0,22	0,66	0,57	-0,88	-0,76	0,12	1,00

For the Utilities industry strong negative correlation is observed between ESG Score and ROA, moderate negative correlation is between ESG Score and ROE. Strong correlation between Shareholders equity and ESG Score might be used for future research in the relationship between CSR and financial performance. Data for companies from similar region and the same industry should be added.

Figure 7. Correlation between variables, Technology industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	-0,20	1,00								
ROA	-0,13	0,01	1,00							
NPM	-0,30	0,77	0,14	1,00						
NIPE	-0,51	0,75	0,01	0,64	1,00					
Net income after taxes (EUR)	-0,47	-0,03	0,21	0,46	0,09	1,00				
Employees, Avg	0,07	-0,31	0,24	0,15	-0,25	0,71	1,00			
Shareholders equity (EUR)	-0,41	-0,22	0,21	0,30	-0,08	0,97	0,77	1,00		
Total assets (TEUR)	-0,49	-0,02	-0,22	0,37	0,15	0,79	0,57	0,80	1,00	
Total revenue (EUR)	-0,27	-0,20	0,26	0,31	-0,09	0,94	0,90	0,96	0,74	1,00

For the technology industry there is only moderate negative correlation between ESG Score and NIPE which might be linked to the company size and future studies should focus on big companies in the Technology industry. Moderate correlation between ESG Score and Total assets, ESG Score and average number of employees might be an indicator of some relationship. Unfortunately, number of observations for this industry in only 49, which indicates a need for a future research with higher number of the companies.

Figure 8. Correlation between variables, Real Estate industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,09	1,00								
ROA	-0,11	0,03	1,00							
NPM	0,13	0,01	-0,06	1,00						
NIPE	0,26	-0,14	-0,05	0,94	1,00					
Net income after taxes (EUR)	-0,41	0,22	0,00	0,20	-0,02	1,00				
Employees, Avg	-0,30	0,60	0,16	-0,60	-0,69	0,39	1,00			
Shareholders equity (EUR)	-0,02	-0,19	-0,09	0,57	0,43	0,88	-0,48	1,00		
Total assets (TEUR)	-0,28	-0,02	-0,30	0,10	-0,05	0,82	0,23	0,86	1,00	
Total revenue (EUR)	-0,27	0,56	0,15	-0,61	-0,71	0,43	0,99	-0,34	0,30	1,00

For the Real Estate industry only one variable has negative moderate correlation to ESG Score, it is Net income after taxes. For 10 years we have 80 observations in the data, which does not allow us to make any certain conclusions. However, for further research data for more companies is needed. Real estate companies from other European countries might be used in the future research. However, background check for the similarities between Nordic real estate market and other EU countries should be done.

Figure 9. Correlation between variables, Industrials
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,09	1,00								
ROA	0,07	0,04	1,00							
NPM	0,08	0,75	-0,01	1,00						
NIPE	0,02	0,62	-0,03	0,77	1,00					
Net income after taxes (EUR)	0,46	0,44	0,03	0,39	0,33	1,00				
Employees, Avg	0,19	0,14	0,35	-0,08	-0,08	0,18	1,00			
Shareholders equity (EUR)	0,27	-0,09	0,00	-0,04	0,03	0,32	0,15	1,00		
Total assets (TEUR)	0,02	0,01	-0,02	-0,06	-0,01	0,08	0,02	0,14	1,00	
Total revenue (EUR)	0,37	0,10	0,06	-0,05	0,07	0,65	0,34	0,82	0,20	1,00

For the Industrials companies in the Nordic countries' statistical correlation between ESG Score and financial performance indicators does not exist with the data used in the research. In this correlation 370 observations are presented, which is more than for other industries. However, for the future investigation additional data is needed.

Figure 10. Correlation between variables, Health Care industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,28	1,00								
ROA	0,06	0,24	1,00							
NPM	0,22	0,60	0,09	1,00						
NIPE	0,01	0,12	-0,01	0,82	1,00					
Net income after taxes (EUR)	0,35	0,72	0,35	0,37	0,07	1,00				
Employees, Avg	0,28	0,61	0,39	0,16	-0,13	0,93	1,00			
Shareholders equity (EUR)	0,38	0,54	0,34	0,28	0,06	0,94	0,93	1,00		
Total assets (TEUR)	0,35	0,49	-0,14	0,20	-0,01	0,81	0,78	0,84	1,00	
Total revenue (EUR)	0,33	0,61	0,37	0,22	-0,04	0,98	0,96	0,96	0,82	1,00

For the Health Care companies 138 observations are included and no statistical correlation is presented between ESG Score and financial performance ratios.

Figure 11. Correlation between variables, Financial industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	-0,11	1,00								
ROA	0,09	-0,02	1,00							
NPM	-0,02	0,44	0,02	1,00						
NIPE	-0,18	0,33	-0,03	0,44	1,00					
Net income after taxes (EUR)	0,36	0,14	0,17	0,37	0,21	1,00				
Employees, Avg	0,56	-0,23	0,25	-0,04	-0,19	0,60	1,00			
Shareholders equity (EUR)	0,54	-0,17	0,22	0,16	0,00	0,84	0,84	1,00		
Total assets (TEUR)	0,60	-0,19	-0,10	0,00	-0,10	0,42	0,71	0,69	1,00	
Total revenue (EUR)	0,00	-0,14	-0,20	-0,09	-0,08	0,34	0,35	0,40	0,76	1,00

For the Financial industry within 180 observations no statistical correlation is presented between ESG Score and selected financial performance ratios. For his industry more companies from different markets might be included in the future research. Financial sector should be taken separately as a topic for a research as this industry became more and more important.

Figure 12. Correlation between variables, Energy industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	-0,07	1,00								
ROA	0,02	0,02	1,00							
NPM	-0,03	0,43	0,07	1,00						
NIPE	0,02	0,40	0,02	0,78	1,00					
Net income after taxes (EUR)	0,17	0,06	0,06	0,23	0,33	1,00				
Employees, Avg	0,47	0,12	0,22	0,19	0,05	0,18	1,00			
Shareholders equity (EUR)	0,41	0,07	-0,02	0,11	0,05	0,21	0,58	1,00		
Total assets (TEUR)	-0,09	0,05	-0,05	-0,19	-0,04	0,20	0,22	0,47	1,00	
Total revenue (EUR)	0,48	0,07	0,00	0,14	0,10	0,33	0,64	0,98	0,45	1,00

For the Energy industry 100 observations are included into the statistical correlation. There is no significant correlation between ESG Score and financial performance ratios. And this industry should be researched closer because sustainability issue is a hot topic for the energy sector. From my point of view, all industries which affect environment should be studied closer not only from financial perspective.

Figure 13. Correlation between variables, Consumer Staples industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,06	1,00								
ROA	0,03	0,90	1,00							
NPM	0,31	-0,03	0,25	1,00						
NIPE	0,18	0,04	0,36	0,95	1,00					
Net income after taxes (EUR)	-0,07	-0,07	0,11	0,43	0,36	1,00				
Employees, Avg	-0,28	-0,12	-0,32	-0,51	-0,59	0,14	1,00			
Shareholders equity (EUR)	-0,17	-0,10	-0,28	-0,43	-0,52	0,30	0,90	1,00		
Total assets (TEUR)	-0,17	-0,11	-0,17	-0,16	-0,26	0,63	0,71	0,75	1,00	
Total revenue (EUR)	-0,64	-0,11	-0,23	-0,71	-0,66	-0,03	0,70	0,52	0,47	1,00

For the Consumer Staples industry 71 observations are included into the statistical correlation. No significant positive or negative correlation is observed between the ESG Score and financial performance ratios selected in the paper.

Figure 14. Correlation between variables, Consumer Discretionary industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,14	1,00								
ROA	0,13	0,13	1,00							

NPM	0,16	0,90	0,09	1,00						
NIPE	0,10	0,78	0,07	0,92	1,00					
Net income after taxes (EUR)	0,35	0,48	0,55	0,37	0,32	1,00				
Employees, Avg	0,47	0,24	0,32	0,14	0,06	0,86	1,00			
Shareholders equity (EUR)	0,46	0,23	0,41	0,22	0,18	0,90	0,93	1,00		
Total assets (TEUR)	0,61	0,16	-0,12	0,14	0,08	0,50	0,74	0,65	1,00	
Total revenue (EUR)	0,55	0,23	0,34	0,16	0,07	0,83	0,98	0,92	0,76	1,00

For the Consumer Discretionary industry, no statistical correlation between ESG Score and financial ratios, within 70 observations.

Figure 15. Correlation between variables, Basic Materials industry
Source: own calculations

	ESG Score	*ROE*	*ROA*	*NPM*	*NIPE*	*Net income after taxes (EUR)*	*Employees, Avg*	*Shareholders equity (EUR)*	*Total assets (TEUR)*	*Total revenue (EUR)*
ESG Score	1,00									
ROE	0,23	1,00								
ROA	0,02	0,02	1,00							
NPM	0,44	0,34	0,04	1,00						
NIPE	0,43	0,31	0,07	0,99	1,00					
Net income after taxes (EUR)	0,45	0,16	0,06	0,52	0,57	1,00				
Employees, Avg	0,35	0,13	-0,09	0,17	0,09	0,34	1,00			
Shareholders equity (EUR)	0,58	0,18	0,00	0,32	0,32	0,67	0,49	1,00		
Total assets (TEUR)	0,17	0,04	-0,05	0,06	0,03	0,10	0,39	0,07	1,00	
Total revenue (EUR)	0,53	0,17	0,04	0,21	0,20	0,52	0,66	0,82	0,19	1,00

For the Basic Materials industry only moderate positive correlation between ESG Score and NPM and NIPE. Such correlation might be a good start for further relationship study as only 140

observations are included. Possible solution to increase number of observations is to include companies from other EU countries.

According to aggregated study correlation between ESG Score and financial performance is positive in long-run, companies committed to sustainable long-term development have higher financial results (Friede G., 2015). As an idea for future research might be focus on companies who progressed significantly in CSR implementation, improved ESG Score during last couple of years more than for 10% annually. At the same time looks like from one industry to another corporate social responsibility differs a lot. My future research I would focus on one industry in countries with similar economic and political situation, for instance financial sector in Western Europe. This would give big number of observations with similar approaches to CSR.

4.3 Normality test

To choose suitable regression model couple of tests should be run, to understand the format of the dataset. In this chapter Shapiro-Wilk test is included as well as skewness and kurtosis test, main goal of these tests is to understand the data distribution.

Figure 16. Skewness / Kurtosis test for Normality
Source: own calculations

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	Prob>chi2
ESG Score	1 422	0,00	0,81	68,68	0,00
ROE	1 376	0,00	0,00	.	.
ROA	1 420	0,00	0,00	.	.
NPM	1 338	0,00	0,00	.	0,00
NIPE	1 412	0,00	0,00	.	.

Distribution for ESG Score is not normally distributed from Skewness point of view, however, as Pr value in higher than 0,05 it means that from Kurtosis perspective ESG Score is normally distributed. The results for other variables such as ROE, ROA, NPM, NIPE distribution doesn't show signs of normality from Skewness nor Kurtosis side. Distributions are very far from traditional Gaussian distribution. This is not enough for taking any decisions regarding the research questions, so we need to run couple of more tests.

Figure 17. Shapiro-Wilk test for all variables
Source: own calculations

Variable	Obs	W	V	z	Prob>z
ESG Score	1 424	0,96	30,88	8,61	0,00
ROE	1 376	0,04	810,84	16,80	0,00
ROA	1 420	0,05	827,84	16,87	0,00
NPM	1 338	0,39	498,06	15,56	0,00
NIPE	1 412	0,09	785,87	16,74	0,00

Low values of W show that variables are not normally distributed according to general rules of Shapiro-Wilk test. P-value which is lower than 0,05 proves that data is not normally distributed, in dataset which is used in research in this paper all variables are not normally distributed. According to W value for ESG Score, we can say that this variable is quite close to be normally distributed. At the same time W indicates that ROE, ROA, NIPE and NPM are very far from traditional distribution.

4.4 Simple linear regression

In this chapter simple linear regression is done with a scatterplot for all pair of variables that should be tested during the research. Simple linear regression is a two-dimensional statistical model, one independent and one dependent. Function predicts dependent variable values based on independent variable. In this study ESG Score is independent variable and dependent variables are return on assets, return on investments, net profit margin and net income per employee.

Figure 18. Scatterplot showing ROE and ESG Score values
Source: own calculations

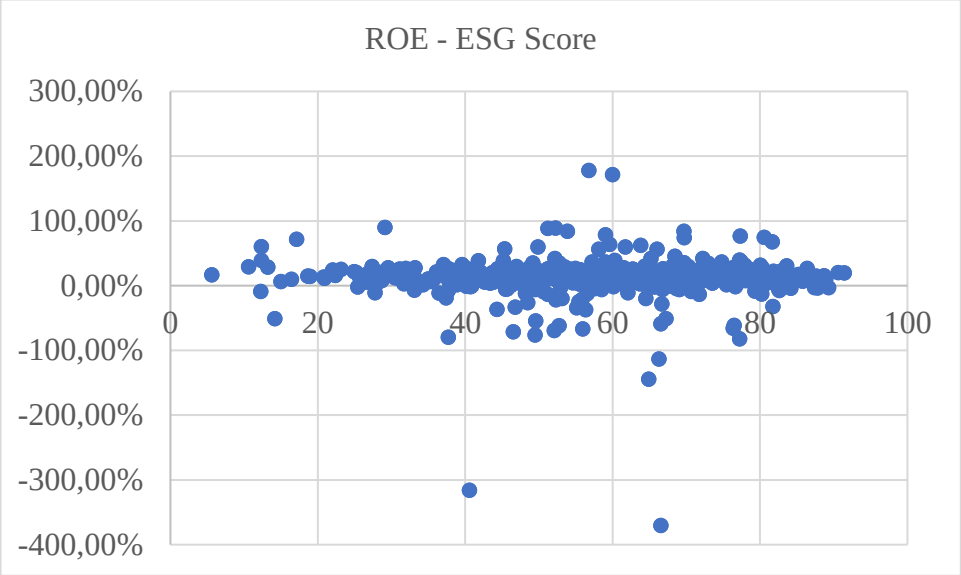

Figure 19. Linear regression analysis result from Stata for ROE and ESG Score
Source: own calculations

Source	SS		df	MS			
Model		20,953	1,000	20,953			
Residual		100 642,506	1,374	73,248			
Total		100 663,459	1,375	73,210			
Number of obs	=		1,376				
F(1; 1374)	=		0,290				
Prob > F	=		0,593				
R-squared	=		0,000				
Adj R-squared	=		-0,001				
Root MSE	=		8,559				
ROE	**Coef.**		**Std. Err**	**t**	**P>|t|**	**[95% Conf.**	**Interval]**
ESG Score		0,007	0,013	0,530	0,593	-0,019	0,032
_cons		-0,736	0,799	-0,920	0,357	-2,302	0,831

From the figure 18 and figure 19 it's clearly seen that linear regression is not the case for these 2 variables. (Please note that extremely high and low values were excluded from the distribution due to the graph limitations).

Figure 20. Scatterplot showing ROA and ESG Score values
Source: own calculations

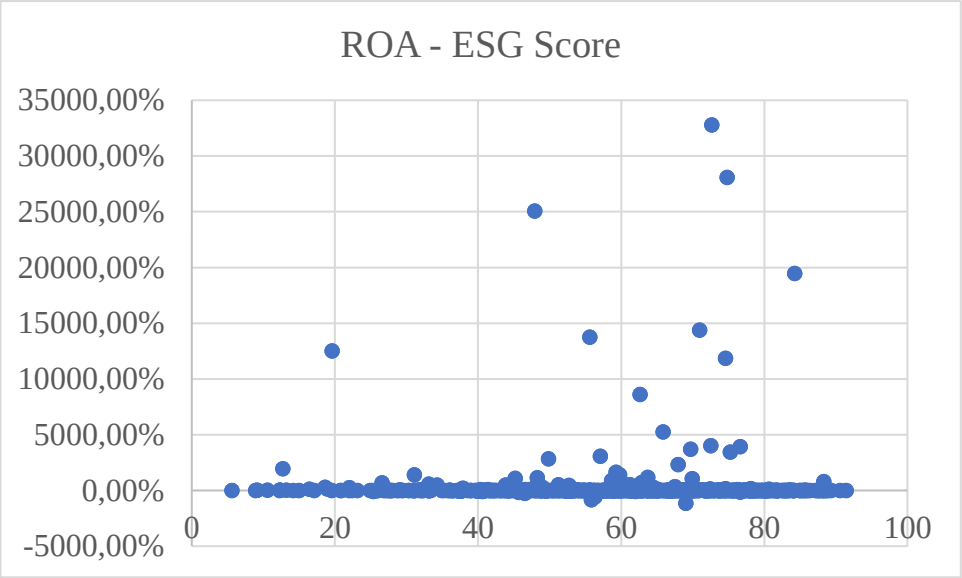

Figure 21. Linear regression analysis result from Stata for ROA and ESG Score
Source: own calculations

Source	SS	df	MS
Model	14 417,678	1,000	14 417,688
Residual	39 793 065,600	1,418	28 062,811
Total	39 807 483,300	1,419	28 053,195
Number of obs =		1 420,000	
F(1; 1418) =		0,510	
Prob > F =		0,474	
R-squared =		0,000	
Adj R-squared =		0,000	
Root MSE =		167,520	

ROA	Coef.	Std. Err	t	P>|t|	[95% Conf.	Interval]
ESG Score	0,174	0,244	0,720	0,474	-0,304	0,653
_cons	0,977	14,839	0,070	0,948	-28,133	30,086

In the distribution of ROA and ESG Score there is no linearity, however further analysis is needed to answer research question and make conclusions regarding relationship between ROA and ESG Score.

Figure 22. Scatterplot showing NPM and ESG Score values
Source: own calculations

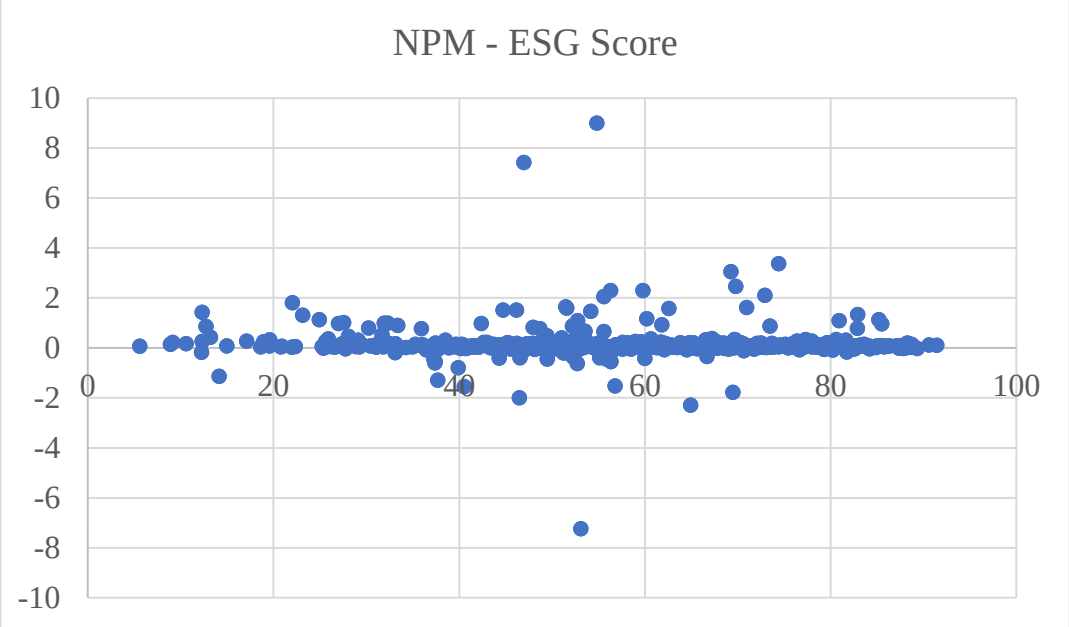

Figure 23. Linear regression analysis result from Stata for NPM and ESG Score
Source: own calculations

Source	SS	df	MS
Model	0,057	1,000	0,057
Residual	642,611	1 410,000	0,481
Total	642,669	1 411,000	0,481
Number of obs	=	1 338,000	
F(1; 1336)	=	0,120	

Prob > F	=	0,730
R-squared	=	0,000
Adj R-squared	=	-0,001
Root MSE	=	0,694

NPM	Coef.	Std. Err	t	P>|t|	[95% Conf.	Interval]
ESG Score	0,000	0,001	0,340	0,730	-0,002	0,002
_cons	0,117	0,324	1,870	0,061	-0,006	0,241

In the distribution of NPM and ESG Score there is no linearity, however further analysis is needed to answer research question and make conclusions regarding relationship between NPM and ESG Score.

Figure 24. Scatterplot showing NIPE and ESG Score values
Source: own calculations

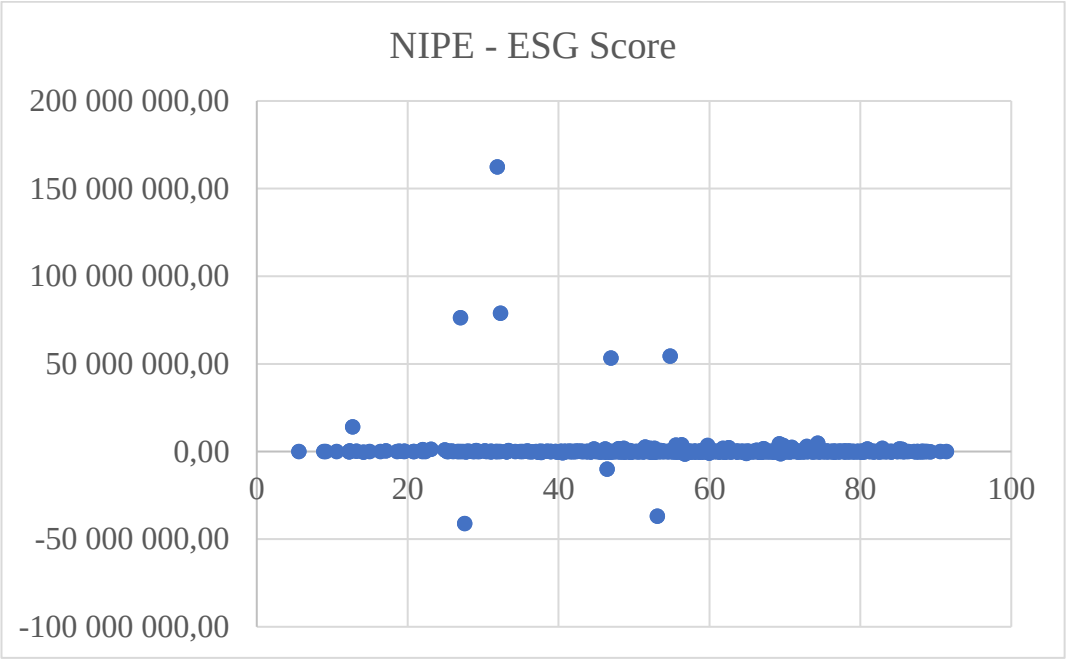

Figure 25. Linear regression analysis result from Stata for NIPE and ESG Score
Source: own calculations

Source	SS	df	MS
Model	582 460 000 000 000,000	1,000	0,057
Residual	94 520 000 000 000 000,000	1 410,000	0,481
Total	95 102 000 000 000 000,000	1 411,000	0,481
Number of obs	=	1 412,000	
F(1; 1410)	=	8,690	
Prob > F	=	0,003	
R-squared	=	0,006	
Adj R-squared	=	0,005	
Root MSE	=	8 200 000,000	

NIPE	Coef.	Std. Err	t	P>|t|	[95% Conf.	Interval]
ESG Score	-35229,670	11951,600	-2,950	0,003	-58674,510	-11784,830
_cons	2667933,000	727502,200	3,670	0,000	1240830,000	4095037,000

In the distribution of NIPE and ESG Score there is no linearity, however further analysis is needed to answer research question and make conclusions regarding relationship between NIPE and ESG Score.

Overall, linear regression attempts to test relation between two variables by implementing to researched data linear equation. One of the variables is dependent, another one independent. For more than one explanatory variable multiple linear regression is used. In the case of this study linear regression model was selected to explain variety in the distribution of independent variables applied to variety in distribution of dependent variable. Practically, with this type of analysis relationship between these variables might be evaluated numerically. It's the easiest way to check relationship between variables, complicated calculations are not needed while applying this method. Linear regression model is quite simple and is not capable of capturing complex example from cases existing in the real world. Main assumption of linear regression is that independent and dependent variables are linearly correlated between each other, which might not

be the case. This approach checks relationship between the mean of dependent and the independent variables and assumes that values of all variables are distributed around the means, which happens rarely in real life examples.

4.5 Hypotheses

h0: There is no relationship between the ESG score and ROE, ROA, NPM, and NIPE of companies in the Nordic countries.

h1: There is a relationship between the ESG score and ROE, ROA, NPM, and NIPE of companies in the Nordic countries.

The main purpose is to explore how each of the four financial ratios affects the ESG score separately. In this case, one dependent variable ESG score will or will not show the relationship to independent variables.

4.6 Regression equation

Keeping in mind regression model in mind, regression equation was constructed. Formula of the regression equation is presented below.

$$\text{ESG Score} = \beta 0 + \beta 1 \text{ROA} + \beta 2 \text{ROE} + \beta 3 \text{NPM} + \beta 4 \text{NIPE} + \varepsilon$$

Relationship between ESG Score and the financial variables selected for the study. For different industries the ESG Score and the financial variables will be used separately and the result will be presented in the total table. The financial variables selected are: ROE, ROA, NPM and NIPE.

4.7 Regression Analysis

Regression analysis is a set of statistical operations aimed to assess of relationship between dependent variable and more than one independent variables. It results in an equation where ratios represent the relationship between dependent variable and independent variable. Regression analysis shows how the change in distribution of independent variables affects the changes in distribution of dependent variable (Sykes, 1993).

Figure 26. Regression statistics
Source: own calculations

Regression Statistics	*Values*
Multiple R	0,09
R Square	0,01
Adjusted R Square	0,01
Standard Error	17,08
Observations	1344,00

One of the most important ratios in regression analysis is R Square, it explains which percent of dependent variable is coming from collective influence from all independent variables. The first important task while running the regression analysis is to understand where high or low R Square number is coming from. In this case only 1% of change in variation of dependent variable is coming from all independent variables together. However, such a complex task as regression analysis needs more investigation and let's check what ANOVA test looks like for our regression, which is the second step of regression analysis. Multiple R is usually skipped by researchers as it's not a standard measure. Standard error of regression the common value of difference. In this correlation distance between dependent and independent variables is 17,08.

From figure 27 we can get Significance, for the F-test of overall significance it's acts like p-value. As significance level is lower than p-value, it allows to assume that whole regression model is statistically significant, model can be researched further (Sykes, 1993).

Figure 27. ANOVA test for regression
Source: own calculations

ANOVA	*df*	*SS*	*MS*	*F*	*Significance F*
Regression	4,00	3464,41	866,10	2,97	0,02
Residual	1339,00	390740,36	291,82		
Total	1343,00	394204,77			

Estimates for parameter are shown together with difference in the figure number 28. In our regression model 4 independent variables are included: ROE, ROA, NPM, NIPE. P-values shows us that for the most independent variables significance level is low, ROE, ROA, NPM, and NIPE are statistically insignificant.

Figure 28. Coefficient table for regression by countries and industries
Source: own calculations

Variables	Coefficients	Std. error	t	p-value	overall R-squared	overall Prob > F
ESG Score, Total						
ROE	0,03	0,05	0,55	0,58	0,01	0,02
ROA	0,00	0,00	0,28	0,78		
NPM	0,27	0,77	0,35	0,73		
NIPE	0,00	0,00	-3,22	0,00		
_cons	59,31	0,48	123,89	0,00		
ESG Score, Denmark						
ROE	-5,23	6,46	-0,81	0,42	0,15	0,00
ROA	0,05	0,03	1,93	0,05		
NPM	66,31	18,15	3,65	0,00		
NIPE	0,00	0,00	-3,32	0,00		
_cons	53,70	1,10	48,67	0,00		
ESG Score, Finland						
ROE	-14,84	10,28	-1,44	0,15	0,06	0,01
ROA	0,03	0,44	0,06	0,96		
NPM	7,62	20,27	0,38	0,71		
NIPE	0,00	0,00	-2,34	0,02		
_cons	67,53	1,34	50,42	0,00		
ESG Score, Norway						

ROE	0,08	0,07	1,16	0,25	0,04	0,09
ROA	-0,03	0,23	-0,12	0,91		
NPM	21,94	7,83	2,80	0,01		
NIPE	0,00	0,00	-2,66	0,01		
_cons	60,21	1,38	43,65	0,00		
ESG Score, Sweden						
ROE	-0,11	0,99	-0,11	0,91	0,02	0,03
ROA	0,07	0,03	2,30	0,02		
NPM	0,32	0,87	0,37	0,71		
NIPE	0,00	0,00	-2,20	0,03		
_cons	59,85	0,79	75,67	0,00		
ESG Score, Telecommunications						
ROE	-46,56	17,89	-2,60	0,01	0,63	0,00
ROA	0,03	0,03	0,91	0,37		
NPM	162,37	50,02	3,25	0,00		
NIPE	0,00	0,00	-3,71	0,00		
_cons	81,14	1,64	49,54	0,00		
ESG Score, Utilities						
ROE	-135,89	18,45	-7,36	0,00	0,89	0,00
ROA	-8,50	2,91	-2,92	0,01		
NPM	45,64	15,68	2,91	0,01		
NIPE	0,00	0,00	4,56	0,00		
_cons	67,83	2,55	26,56	0,00		
ESG Score, Technology						
ROE	29,39	11,91	2,47	0,02	0,37	0,00
ROA	-1,13	1,41	-0,80	0,43		
NPM	-22,59	21,09	-1,07	0,29		
NIPE	0,00	0,00	-4,31	0,00		
_cons	50,95	2,25	20,20	0,00		
ESG Score, Real Estate						
ROE	70,11	35,74	1,96	0,05	0,15	0,05
ROA	0,06	0,08	0,68	0,50		
NPM	-22,32	7,57	-2,95	0,00		
NIPE	0,00	0,00	2,93	0,01		
_cons	48,33	7,82	6,18	0,00		
ESG Score, Industrials						
ROE	-20,60	11,26	-1,83	0,07	0,05	0,00

ROA	0,04	0,03	1,43	0,16		
NPM	114,14	30,35	3,76	0,00		
NIPE	0,00	0,00	-1,06	0,29		
_cons	54,81	1,38	39,81	0,00		
ESG Score, Health Care						
ROE	-8,38	12,43	-0,67	0,50	0,13	0,00
ROA	0,03	0,28	0,13	0,90		
NPM	81,07	30,56	2,69	0,01		
NIPE	0,00	0,00	-2,60	0,01		
_cons	51,71	2,10	24,66	0,00		
ESG Score, Financials						
ROE	0,17	9,99	0,02	0,99	0,09	0,14
ROA	-0,94	0,50	-1,88	0,07		
NPM	0,72	0,59	1,21	0,23		
NIPE	0,00	0,00	-1,88	0,06		
_cons	45,00	1,83	24,65	0,00		
ESG Score, Energy						
ROE	-0,06	0,09	-0,68	0,50	0,01	0,88
ROA	0,03	0,15	0,21	0,83		
NPM	-3,50	5,35	-0,66	0,51		
NIPE	0,00	0,00	0,85	0,40		
_cons	60,18	1,97	30,52	0,00		
ESG Score, Consumer Staples						
ROE	1,81	1,17	1,54	0,13	0,29	0,00
ROA	-0,40	0,37	-1,09	0,28		
NPM	130,23	30,78	4,23	0,00		
NIPE	0,00	0,00	-2,86	0,01		
_cons	67,43	1,45	46,66	0,00		
ESG Score, Consumer Discretionary						
ROE	32,44	10,85	2,99	0,00	0,09	0,02
ROA	0,04	0,04	1,16	0,25		
NPM	-95,95	37,67	-2,55	0,01		
NIPE	0,00	0,00	1,49	0,14		
_cons	57,47	1,53	37,60	0,00		
ESG Score, Basic Materials						
ROE	0,08	0,07	1,07	0,29	0,20	0,00

ROA	0,00	0,08	0,05	0,96
NPM	25,64	25,75	1,00	0,32
NIPE	0,00	0,00	-0,14	0,89
_cons	70,18	1,35	52,14	0,00

From figure 28 we see the situation for all industries, only one of the variables is statistically significant, however, the coefficient for NIPE is very close to zero, which means that an increase in net income per employee doesn't affect our dependent variables or influence on ESG Score is very low. Other variables don't show the statistical significance and their influence on ESG Score is not proved.

For listed companies in Denmark, p-values for NPM, and NIPE are lower than 0,05. Thus, a significant relationship exists between these variables and the ESG Score in this model. The coefficient for NIPE is very low, so in this country effect of NIPE on ESG Score is very limited. With a unit change in NPM increase in ESG Score for 66,31% comes. For listed companies in Finland, p-values for ROE, ROA, and NPM are higher than 0,05. Thus, a significant relationship might be only between NIPE and ESG Score. However, the coefficient for NIPE indicates no relationship. For listed companies in Norway, independent variables cannot predict the dependent one reliable. For Swedish companies, no significant relationship can be proven.

For the Telecommunications industry, the p-values for ROE, NPM, and NIPE are lower than 0,05. Thus, a significant relationship exists between the variables in this model. The coefficients for ROA and NIPE are very low, so in this industry effects of ROA and NIPE on ESG Score are very limited. At the same time, ROE has a coefficient of -46,56 and it means that a unit change in ROE leads to a 46,56% decrease in ESG Score. With a unit change in NPM increase in ESG Score for 162,35% comes.

For companies in the Utility industry p-values for ROE, ROA, NPM, and NIPE are lower than 0,05. It means that a significant relationship exists between the dependent and independent variables. A unit change in the value of ROE leads to a decrease of 135,89% in the ESG Score. At the same time, a unit change in the value of ROA leads to a decrease of 8,50% in the ESG Score. With a unit increase in NPM comes an increase of 45,64% in the ESG Score. Overall R-squared value of 0,89 indicates that 89% of the variance in science scores can be predicted from the independent variables.

For the Technology industry v-values only for ROE and NIPE are lower than 0,05. It means that for other variables a significant relationship does not exist. According to coefficients for ROE

and NIPE only in the case of ROE, a positive relationship is observed. A unit change of ROE leads to an increase of 29,39% in the ESG Score. At the same time, overall 31,08% of the variance in ESG Score can be predicted based on independent variables.

Overall Prob > F for Real Estate, Financials, and Energy sectors are higher than 0,05 it means that for these industries independent variables cannot predict the dependent variable reliably.

A slightly different situation is with companies from the sector called Industrials. Only NPM in this group has a p-value lower than 0,05. It means that a significant relationship exists between NPM and ESG Score. A unit change of NPM leads to an increase of 114,14% in the ESG Score. Only 5% of the variance in ESG Score can be predicted from the independent variables.

In the Health Care industry in the Nordic countries, 13% of the variance in ESG Score can be predicted based on financial indicators selected in the study. NPM and NIPE have p-values higher than 0,05. A unit change of NPM leads to an increase of 81,07% in the ESG Score. The coefficient for NIPE is close to zero and its effect on ESG Score is questionable.

For Basic Materials, p-values for all variables are higher than 0,05 and it means that the null hypothesis should be accepted, no relationship between financial performance ration and ESG Score exists in this industry.

In the Consumer Staples industry, a unit change of NPM leads to an increase of 130,23% in the ESG Score and in the Consumer Discretionary industry decrease of 95,95% in the ESG Score. A unit change in ROE in the Consumer Discretionary leads to an increase of 32,44% in the ESG Score.

5. CONCLUSIONS AND IMPLECATIONS

This chapter contains a summary of the statistical findings of the thesis and theoretical implementation of knowledge gained by conducted research. The social implication of empirical results is included as a part of the discussion and the possibility for future research.

5.1 Conclusion

The latest research focused on corporate social responsibility and financial results of the companies show mixed results. In this empirical study data from the comprehensive database is used. ESG Score was taken of firms in Nordic countries from the year 2010 to 2019. The purpose was to find if companies who have a high ESG Score, meaning that corporate social responsibility and sustainability governance is on the appropriate level, have higher financial results. To analyze financial performance following financial ratios were calculated using data from the EIKON database for the last 10 years: return on assets, return on equity, net profit margin, net income per employee.

The Nordic companies were selected because according to the latest ranking and trends in sustainability it's clear that Sweden, Finland, Norway, Denmark, and Iceland are the leading countries in this area. Main regulations and approaches are slightly different, however, didn't have a major effect on the result of the thesis.

To answer the research question: Is there a relationship between corporate sustainability and financial performance in the Nordic countries? A couple of analyses were used such as correlation, normality test, simple linear regression, and regression analysis. All conducted actions led only to one result that none of the financial performance indicators selected has an influence on ESG Score. Meaning that the relationship between corporate social responsibility and financial performance in Nordic countries can't be proved on the selected data. The correlation by industries showed that future research should be focused on industries rather than just locations. However, the number of companies in the data didn't allow to run regression analysis on different industries. At the same time, all variables selected didn't show a significant correlation with ESG Score. Sustainability is a big challenge for companies nowadays, however, looks like improvements in this area can't guarantee additional revenues for the business. The same negative correlation is also not proved by the thesis.

Regression analysis conducted by industries shows that there might be some relationship between ESG Score and different financial ratios. However, the number of the current paper of

observations by industry is limited by Nordic countries. For future research data for companies from similar regions should be added.5.2 Social implication

Society is very focused on sustainability now and this motivates companies, especially in Nordics, to implement non-financial annual reporting which includes corporate social responsibility. Transparent sustainability policy and increasing awareness of environmental concerns might create benefits for companies. Unfortunately, this is not proved yet and additional studies are needed, focused more on customer's recognition of sustainability issues. In the future due to demand for sustainability from society, government and shareholders, will be included in strategy, operations and reporting of more and more companies. In this case the influence of CSR on financial performance should be studied with larger amount of companies.

5.3 Limitations and future research

The research includes only Nordic companies and the number of observations was limited by a number of listed companies in these countries with ESG Score available. For future research, I would increase the scope of countries and would focus on different industries. As companies with high environmental footprints are forced by the government and society to implement sustainability and report it in a transparent way annually. And in such cases reporting is not enough, long-term investments to eliminate environmental damage should be done. Future studies might be focused on more specific groups of companies. The number of companies from different industries should be increased by adding data from similar markets. At the same time for future studies another aspect of operational activities should be included, for instance, dividends payable, free cash flow, net sales, market capitalization.

REFERENCES

Aarhus, I. (2010). *The world guide to CSR.* (1st ed.) London, United Kingdom: Routledge.

Barnett, M.L., Salomon, R.M. (2012). *Does it pay to be really good? Addressing the shape of the relationship between social and financial performance.* Strategical Management Journal. 33, 1304-1320.

Barrena J., López M., & Romero P. M. (2016*). Corporate social responsibility: Evolution through institutional and stakeholder perspectives.* European Journal of Management and Business Economics, 25, 8–14.

Bragg S. (2020). Financial ratio analysis. Retrieved from https://www.accountingtools.com/articles/financial-ratio-analysis.html, 22 November 2020.

Collet, C. C. (2019). *Mandatory CSR reporting in the annual report for 2018.* Retrieved from https://gorrissenfederspiel.com/en/knowledge/news/mandatory-csr-reporting-in-the-annual-report-for-2018#_ftn, 21 October 2020.

Commission of the European Communities. (2015). *Sustainable and responsible business social corporate responsibility.* Retrieved from https://ec.europa.eu/growth/industry/sustainability/corporate-social-responsibility_en, 22 October 2020.

Duque-Grisales E., Aguilera-Caracuel J. (2019). *Environmental, Social and Governance (ESG) Scores and Financial Performance of Multilatinas: Moderating Effects of Geographic International Diversification and Financial Slack.* Journal of Business Ethics. 109, 145-165.

Endrikat J., Guenther E., Hoppe H., 2014. *Making sense of conflicting empirical findings: a meta-analytic review of the relationship between corporate environmental and financial performance.* European Management Journal. 32, 735-751.

EUR-Lex (2014). *Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups Text with EEA relevance.* Retrieved from https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095, 24 October 2020.

FESTA (2013). *Company Profile*. Retrieved from http://festasamfelagsabyrgd.is/about-us, 24 October 2020.

Friede G., Busch T., Bassen A. (2015). *ESG and financial performance: aggregated evidence from more than 2000 empirical studies.* Journal of Sustainable Finance & Investment, 2043, 210-233.

Friede G., Busch T., Bassen A. (2015). *ESG and financial performance: aggregated evidence from more than 2000 empirical studies.* Journal of Sustainable Finance & Investment, 5, 210-233.

Gangi F., Mustilli M., Varrone N. (2018). *The impact of corporate social responsibility (CSR) Knowledge on corporate financial performance: evidence from the European banking industry.* Journal of knowledge management. 23, 110-134.

Gore, A., (2006). *An Inconvenient Truth.* (1st ed.) London, United Kingdom: Brisbane.

Hogg R., McKean J., Craig A. (2005). *Introduction to Mathematical Statistics.* (6th ed.). Upper Saddle River, USA: Pearson Education. Retrieved from

https://chicagounbound.uchicago.edu/law_and_economics/?utm_source=chicagounbound.uchicago.edu%2Flaw_and_economics%2F51&utm_medium=PDF&utm_campaign=PDFCoverPages, 20 November 2020.

Knudson, H. (2016). *CSR in Norway. Joint Thematic Study.* Retrieved from https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1523529564.pdf, 21 October 2020.

KPMG. (2017). *Reporting on corporate social responsibility. Amendments to section 99a requirements of the Danish Financial Statements Act.* Retrieved from https://home.kpmg/content/dam/kpmg/dk/pdf/DK-2017/06/Reporting-on-corporate-social-responsibility.pdf, 22 October 2020.

Landi J., Sciarell M. (2019). *Towards a more ethical market: the impact of ESG rating on corporate financial performance.* Social Responsibility Journal, 5, 11-27.

Leifsdottir, D.K. (2013). *Social responsibility of the 50 largest companies in Iceland.* Reykjavik, Iceland: University of Iceland.

Lu,W., Chau, K.W.,Wang, H., Pan,W. (2014). *A decade's debate on the nexus between corporate social and corporate financial performance: a critical review of empirical studies 2002-2011.* Journal of Cleaner Production. 79, 195-206.

Makni R., Francoeur C., Bellavance F. (2008). *Causality between Corporate Social Performance and Financial Performance: Evidence from Canadian Firms.* Journal of Business Ethics. 89, 409-422.

McWilliams A., Siegel D. (2001). *Corporate social responsibility: A theory of the firm perspective.* Academy of Management Review, 26, 117–127.

Midttun A., Gjølberg M., Kourula A., Sweet S., Vallentin S. (2015). *Public Policies for Corporate Social Responsibility in Four Nordic Countries: Harmony of Goals and Conflict of Means.* Business & Society Journal, 54, 464-500.

Nasdaq. (2020). *Companies listed on Nasdaq Stockholm.* Retrieved from http://www.nasdaqomxnordic.com/shares/listed-companies/stockholm, 15 November 2020.

Niesten E., Jolink A., de Sousa Jabbour, A.B.L., Chappin M., Lozano R. (2017). *Sustainable collaboration: The impact of governance and institutions on sustainable performance.* Journal of Cleaner Production, 155, 1–6.

Ocean Tomo (2015). *Intangible asset market value study.* Retrieved from https://www.oceantomo.com/2015/03/04/2015-intangible-asset-market-value-study/, 28 September 2020.

Olkkonen, L., Quashie, A. (2019). *Corporate Social Responsibility in Finland.* (1st ed.) London, United Kingdom: Palgrave Macmillan.

Oslo Børs. (2020). *Listed companies' home state.* Retrieved from https://www.oslobors.no/ob_eng/Oslo-Boers/Listing/Shares-equity-certificates-and-rights-to-shares/Oslo-Boers-and-Oslo-Axess/Listed-companies-home-state, 15 November 2020.

REFINITIV. (2019). *Proposed all share acquisition of Refinitiv by London Stock Exchange Group (LSEG).* Retrieved from https://www.refinitiv.com/en/media-center/press-releases/2019/august/proposed-all-share-acquisition-of-refinitiv-by-london-stock-exchange-group#, 22 November 2020.

REFINITIV. (2020). *ESG versus financial performance of large CAP firms: the case of EU, U.S., Australia and South-East Asia.* Retrieved from https://www.refinitiv.com/content/dam/marketing/en_us/documents/gated/white-papers/esg-vs-financial-performance-of-large-cap-firms.pdf, 20 November 2020.

Reverte, C., Gomez-Melero, E., Cegarra-Navarro, J.G. (2016*). The influence of corporate social responsibility practices on organizational performance: evidence from Eco-Responsible Spanish firms.* Journal of Cleaner Production. 112, 2870-2884.

RobecoSAM. (2020). *Country Sustainability Ranking.* Retrieved from https://www.robecosam.com/media/a/5/6/a565154e6efcd25e1197da40b69c1238_202008-robecosam-country-esg-ranking-robecosam_tcm1011-25282.pdf, 30 September 2020.

Saunders, M., Lewis, P., Thornhill, A. (2015) *Research Methods for Business Students* (7th ed.). New York, USA: Pearson Education Limited.

Siew R., Balatbat M., Carmichael D. (2013). *The relationship between sustainability practices and financial performance of construction companies*. Smart and Sustainable Built Environment, 2, 6-27.

SolAbility. (2019) *Global Sustainable Competitiveness Index (GSCI).* Retrieved from http://solability.com/category/global-sustainable-competitiveness-index, 29 October 2020.

Statistisk sentralbyrå. (2020). *Annual report on establishments, enterprises and accounts.* Retrieved from https://www.ssb.no/en/bedrifter, 20 October 2020.

Steen, V. (2015). Governmentalities of CSR: Danish Government Policy as a Reflection of Political Difference. *Journal of Business Ethics.* 127, 33-47.

Steingrimsdottir, H. (2006). *Perceptions of Internationally Experienced Icelandic Managers of practices of CSR in the Icelandic Business Community.* Reykjavik, Iceland: University of Iceland.

Sykes A. (1993). *An introduction to Regression Analysis.* Retrieved from

THE WORLD BANK. (2020). *Listed domestic companies, total.* Retrieved from https://data.worldbank.org/indicator/CM.MKT.LDOM.NO, 22 November 2020.

Thomson Reutern EIKON. (2017). *Thomson Reuters ESG Scores.* Retrieved from https://www.esade.edu/itemsweb/biblioteca/bbdd/inbbdd/archivos/Thomson_Reuters_ESG_Scores.pdf, 25 October 2020. roe formula accounting book

Tillvaxtanalys. (2018). *From voluntary to mandatory sustainability reporting.* Retrieved from https://www.tillvaxtanalys.se/download/18.62dd45451715a00666f1dfe3/1586366185982/PM%202018_22_From%20voluntary%20to%20mandatory%20sustainability%20reporting.pdf, 30 September 2020.

Trochim, W. (2020) *Research Methods Knowledge Base.* Retrieved from https://conjointly.com/kb/deduction-and-induction/, 02 November 2020.

Velte P. (2017). *Does ESG performance have an impact on financial performance? Evidence from Germany.* Journal of Global Responsibility, 8, 169-177.

Wang Z., Sarkis J. (2017). *Corporate social responsibility governance, outcomes, and financial performance.* Journal of Cleaner Production. 162, 1607-1616.

Wild J., Chiappetta B. (2006). *Financial and Managerial Accounting.* (2nd ed.). New York, USA: McGraw-Hill.

Zhao C., Guo Y., Yuan J., Wu M., Li D., Zhou Y, Kang J. (2018). *ESG and Corporate Financial Performance: Empirical Evidence from China's Listed Power Generation Companies.* Sustainability 2018 Journal, 8, 267-285.

APPENDICES

Appendix 1. Top 50 from the Global Sustainable Competitiveness Index (2019)

Rank	Country	Score
1	Sweden	60.6
2	Finland	59.5
3	Iceland	57.3
4	Denmark	57.0
6	Norway	56.9
5	Switzerland	56.9
7	Estonia	54.9
8	Luxembourg	54.5
9	Latvia	54.4
10	Croatia	54.2
11	Austria	54.2
12	New Zealand	53.9
13	Slovenia	53.8
14	Ireland	53.6
15	Germany	53.5
16	Czech Republic	53.1
17	United Kingdom	52.8
18	Liechtenstein	52.6
19	Canada	52.2
20	France	52.0
21	Poland	51.9
22	Slovakia	51.6
23	Belgium	51.3
24	Portugal	51.1
25	Japan	51.1
27	South Korea	50.8
26	Romania	50.8
28	Lithuania	50.6
29	Netherlands	50.5

30	Italy	49.9
31	Hungary	49.2
32	Bulgaria	49.2
33	Bosnia and Herzegovina	49.2
34	USA	49.1
35	Georgia	48.8
36	Costa Rica	48.8
38	Spain	48.5
37	China	48.5
39	Paraguay	48.3
40	Belarus	47.8
41	Singapore	47.8
42	Australia	47.6
43	Israel	47.5
44	Greece	47.4
45	Peru	47.3
46	Macedonia	47.2
48	Bolivia	47.1
47	Uruguay	47.2
49	Brazil	46.8
50	Ethiopia	46.7

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