Sunniva Monsen
Henrik Heggen

The impact of ESG performance on Corporate Financial Performance

A quantitative study on companies in the Consumer Staples Industry

Master's thesis spring 2020

Oslo Business School

Oslo Metropolitan University

Master's program in business administration

Abstract

This study investigates the influence of Environmental, Social and Governance (ESG) performance on Corporate Financial Performance (CFP) in the Consumer Staples industry. We use two different dependent variables for financial performance: return on assets (ROA) as a proxy for short term CFP and Tobin`s q as long-term CFP. The dataset is based on 5236 firm-year observations, where 374 companies and 42 countries are represented in the years 2005-2018. The data is collected through the Thomson Reuters Eikon database. We find that ESG performance has a positive influence on CFP, both short and long term. Moreover, we find evidence that suggests that social performance has the biggest influence on CFP. In addition to the ESG-CFP relationship we want to investigate if innovation and greenhouse gas (GHG) emissions could have an influential role. We find evidence of a win-win relationship, which suggests that by reducing GHG emissions the financial performance will increase. However, we find that increasing GHG emission could affect the ESG score positively. We believe that a reason for this can be explained by firms relocating their resources towards other aspects within ESG – leading them to a better score overall. In terms of innovation, our results display insignificant results of its effect on CFP. But we find that our result leans towards innovation having a positive effect on both CFP and ESG. Overall, our results indicate that firms will gain by investing in non-financial activities, which are in line with stakeholder theory. Our goal for this thesis is to provide further perspective on the value of ESG performance, which is motivated by the increasing global focus on sustainability. We find it particularly interesting to study an industry highly important in providing us goods essential to basic living.

Keywords: ESG, innovation, GHG emissions, Corporate Financial Performance, Consumer Staples Industry, stakeholder theory, sustainability.

Preface

The idea for this study was to see if there exists a win-win opportunity for companies to consider sustainable solutions for their operations and improve their ESG performance. It has been particularly interesting do this research at this current time, as sustainability and ESG strategy are very time applicable.

This study has been written as a master's thesis at Oslo Metropolitan University. It is a part of the Business Administration course of study and is considered as the concluding part of the course.

We want to thank our supervisor, Muhammad Azeem Qureshi, for giving us ideas, inputs and helpful answers throughout this semester. His enthusiasm and guidance have been very appreciated.

Next, we want to thank our family, friends and fellow students for being a fundamental support system for us, throughout this semester. Valuable insights, feedbacks, good laughter and conversations have been crucial in keeping our motivation up.

Finally, we want to thank each other for solid discussions, conversations and a good cooperation, especially through the challenging times of COVID-19.

Oslo, June 2020

Sunniva Monsen Henrik Heggen

Table of Contents

1 Introduction

This study investigates whether a company`s Environmental, Social and Governance (ESG) performance affects the Corporate Financial Performance (CFP). Climate change is by many stated as the biggest threat of the 21st century (Bazylevych & Kupalova, 2014), and there are activists who claim that we must act now (Thunberg, 2019). Research regarding climate change is saying that the problem is created by humans (European Comission). Co-operation is key to solve the problem and the sooner we start, the better (Calzolari, Casari, & Ghidoni, 2018). In this thesis we want to investigate whether that must come at a cost, or if firms can benefit from implementing sustainable solutions. We also see increasing trends such as customers buying more sustainable products, an increase in people becoming vegan and new solutions to packaging (Forgrieve, 2018; Liu, Kim, & Wang, 2016; Whelan & Kronthal-Sacco, 2019).

Sustainable investing and non-financial reporting have been terms for a long time and became more popular in the 1970s with social contracts, and the term Corporate Social Responsibility (CSR) was invented (ACCP, 2020). Sustainability focus grew even more after the Brundtland commission in 1987 found critical environmental issues, which founded the basis of climate agreements such as the Kyoto protocol and Paris agreement (Pokharel, Norouzi, Martin, & Breault, 2016). The term ESG was first reported in the article “Who cares wins” in 2005 to create a framework and guidelines for incorporating ESG (The Global Compact, 2004). This was a wish from the secretary-general of the UN, Kofi Annan.

To delineate our research area, we have chosen to investigate the Consumer Staples industry. We find this an interesting industry because it involves products which are life necessary and products that consumers tend to buy regardless of their situation (Chen, 2020). The industry stands out by being non-cyclical (Christensen & Russell, 2015). Because of this delineation, we should be careful in generalizing our results, as there might be different results in other industries. Moreover, there might be differences regarding firm characteristics, as well as geographical and cultural changes in the Consumer Staples industry. Therefore, we want to check if our result is robust by adding both firm and country control variables.

A part of fighting against the climate threat could be to innovate new and more sustainable solutions (Aghion, Hepburn, Teytelboym, & Zenghelis, 2019). However, it is not certain that the cost of being innovative is profitable for the companies, and moreover that the customers

are willing to pay more for sustainable solutions (Liu et al., 2016). Because of this, we want to see how innovation affects the ESG-CFP relationship. Innovation is important for a company to differentiate from others, and studies argue that higher level of innovation leads to a higher CFP (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Bigliardi, 2013). However, there are research implying that the combination of ESG and innovation is different, and that ESG have a bigger impact on CFP when innovation is excluded (Hull & Rothenberg, 2008).

At last we want to investigate how Greenhouse Gas (GHG) emissions affects ESG and CFP. GHGs is one of the main reasons of the climate crisis (European Comission) and some studies show that it pays off to reduce GHG emissions in the long run (Delmas, Nairn-Birch, & Lim, 2015), while others have discovered the opposite (Wang, Li, & Gao, 2014).

In this thesis we try to contribute to the existing pays-to-be-green research, and formulate the following research question:

Can ESG performance affect Corporate Financial Performance, and how does Innovation and GHG emissions affect this relationship?

2 Consumer Staples Industry

In this section we present valuable industry characteristics from the Consumer Staples industry. We further present some of the challenges that the industry faces.

2.1 Review of the Consumer Staples industry

The Consumer Staples industry consists mainly of companies that offer products such as food, beverage, household goods, personal products, and also alcohol and tobacco (Miller, 2019). Consumer staples represents products that people are unwilling or unable to cut out of their budget and is essential to basic living. The industry is stable in terms of there always being a demand and can therefore be considered non-cyclical (Christensen & Russell, 2015). Meaning the demand for goods is relatively constant, regardless of the price or if the economy is performing or not. The sector is broken down into six industries:

- Beverages
- Food and staples retailing
- Food products
- Household products
- Personal products
- Tobacco

Since the sector consists of products that have a constant demand, the pressure of keeping the products at low prices are high. The consumers often look to shop the cheapest product on the market. The suppliers face challenges of keeping their costs down, despite of rising commodity prices. To face this challenge, it is highly important to identify consumers preferences early, and adjust there after (Christensen & Russell, 2015). Adopting new technologies and processes, and introduce innovative products is important to stay competitive (Chen, 2020). We see trends such as healthier living and choosing more environmentally friendly products, as being especially central in this industry in the nearest future (Christensen & Russell, 2015).

2.2 Challenges in the Consumer Staples industry

The world today is populated with 7,7 billion people (2019), and the UN expects the population to grow to 11,2 billion by the end of the century (Roser, 2019). With population growth comes consumption growth, and the global demand for food will increase. With the current threat of climate change, added with the growing competition for land, water and energy, the food industry is expected to face several new challenges and uncertainty (Godfray et al., 2010).

Today, almost 800 million people do not have access to enough food to live a healthy, active life (Food Aid Foundation, 2020). To face this challenge, it is a given that there is a need to produce more food. Yet, there is a lack of land to be exploited into agriculture. This indicates that there needs to be produced more from the same amount of land that already is exploited. Moreover, the world is expected to face more droughts, floods and storms, which can threaten the amount of food production even more (Daily Sabah, 2019). Expanded trade between countries can be a necessary insurance against all the uncertainty that the climate changes bring (Godfray et al., 2010). The increase of carbon-dioxide in the atmosphere, is also recently being related to lowering nutrition value in food staples like rice and wheat (Woodward, 2019). In the report on Climate change and Land from IPCC (2019), it is reported that agriculture, forestry and other land use account for 23% of human GHG emissions. In addition, the report stated that the food system overall (farming, transportation, packaging and feed production) accounts for 37% of GHGs. Changing the way we farm, reduce waste and preserving land and forests, is an important part in reducing emissions (Mcfall-Johnsen & Woodward, 2019). As we know, the natural processes of the earth absorb carbon dioxide through plants and trees. This happens mostly on land that is not touched by humans. The part that is touched by humans on the other hand, mostly emits GHG through for instance soil management – that release the gases that is stored inside the soil (Mcfall-Johnsen & Woodward, 2019).

Another important challenge in the Consumer Staples industry, is the amount of waste that is produced. Around 25-30% of food in the world is lost to waste (IPCC, 2020, p. 7). In developing countries this is mainly due to absence of food-chain infrastructure, lack of knowledge or investment in storage. While in developed countries, where food prices are relatively low, most of food waste occurs at the consumers hands. Low prices lead to low incentives to avoid waste. Meanwhile, the consumers are used to buying foods at the highest

standard, which leads retailers to discard food that is still edible. The practice of "use by" dates, and the use of "super-sized" or "buy one get one free" are also factors that leads consumers to buy more food than they need, and also throw away food sooner than necessary (Godfray et al., 2010).

Further, there is an increase in wealth in developed countries, which results in a higher purchasing power and therefore higher consumption and demand of processed foods (Godfray et al., 2010). This has also led to an increase in demand for meat and dairy products. Livestock production is a major source of the greenhouse gas methane that is an important contributing factor of increasing GHG emissions in the atmosphere (Mcfall-Johnsen & Woodward, 2019). A big challenge is to reduce the fraction of meat that we see in our diets (Stehfest et al., 2009).

For personal products most of the challenges we see is related to an increased awareness from consumers to choose more products that are sustainable and made from ethical production. They demand products that doesn't harm them with chemical ingredients, but also doesn't harm the environment or the society. This forces producers to act and change the way they operate. Green formulations, raw material sourcing and reducing environmental impact should be in focus. Especially, the use of microbeads in products have gotten a lot of attention. Microbeads are viewed as little pieces of plastic, that take long time to degrade and often ends up in waters and harms marine life (HPS, 2018).

All these challenges the Consumer Staple industry faces, is why there now is a larger pressure from investors and consumers to deliver non-financial transparency in these types of organizations (Chia, 2018).

3 Theoretical Framework

In this section we present the theoretical framework for our study. First, we present theory related to non-financial information, respectively Corporate Social Responsibility (CSR), Social Responsible Investments (SRI) and the Triple Bottom Line (TBL). Secondly, we introduce theory on ESG and the shareholder and stakeholder perspective. We also present theoretical framework on our proxies for Corporate Financial Performance (CFP).

3.1 The focus on non-financial information

Focus on non-financial operation and ethical responsibility for businesses goes way back. Concepts such as CSR – Corporate Social Responsibility became more known in the 1970s, when the term "social contracts" started to form (ACCP, 2020). The concept of CSR involved the idea that organizations have a responsibility for their impact on the society that they operate in (regjeringen.no, 2016). In 1987, the UN`s Brundtland commission released a report on critical environmental and development problems. Sustainability was defined as "*development that meets the need of the present without compromising the ability to future generations to meet their own needs*" (Jarvie, 2016). The report laid foundation for future agreements such as the Kyoto protocol and the Paris agreement. In addition, with the start of the digital age in the 1990s-2000s, came an increased awareness of global issues. The pressing issues of the climate change has made concepts such as Corporate Social Responsibility, Responsible Investments and Triple Bottom Line important and a central part of how organizations now operate. In relation to this, there is an increased interest in disclosing on non-financial information (Eccles, Serafeim, & Krzus, 2011).

There have been many debates regarding what Corporate Social Responsibility should involve. Archie B. Carroll (1979) was the first to define categories, a conceptual framework, of what social responsibility should involve in business performance. There were four categories (Carroll, 1979): economic-, legal-, ethical- and discretionary responsibilities. He specified that companies should evaluate all these categories in a decision-making process. Economic responsibilities are defined as the core responsibility to produce goods and services that the society want and make profit. Legal responsibility includes the social expectation that companies should conduct its business according to laws and regulations. Ethical responsibility involves meeting the norms and values of society, which includes actions that go above laws and regulations. Last, but not least, the discretionary responsibilities are actions that are not covered by the categories previously mentioned. There is no clear

definition of what such actions should be, but it is dependent on a business' voluntary contribution.

Some would say that the evolution of socially responsible investments (SRI) has in the recent years been an important contributing factor on influencing companies to address CSR issues (Sparkes & Cowton, 2004). SRI is also known as ethical or "green" investments, and is an investment strategy, which takes both financial return and ethical evaluations into account (L. Smith, 2020). There is an increased trend in SRI as investors are more aware that they can influence practices that are in line with positive values, such as sustainability (Kostigen, 2019).

John Elkington (1994) created a new accounting framework that included environmental and social dimensions with the financial, this is called the triple bottom line (TBL). TBL is meant to consider the interrelated dimensions of profits, people and the planet (Slaper & Hall, 2013) This framework implies that sustainable activities leads to more value creation, which you could call a win-win-win strategy. The implementation of such accounting framework can be an important tool for firms to meet the sustainability challenges the world faces today.

3.2 ESG

ESG is highly linked with ethical or socially responsible investments and has become a standard for measuring non-financial performance and management. There is also signs that it is a big factor for investors, as research argues that there is a positive correlation between ESG and financial performance (Friede, Busch, & Bassen, 2015; Lin, Kabel, Parker, & Joye, 2019). ESG is a measure for how well firms include environmental (E), social (S) and governance (G) factors into decision-making and investment processes. Further, ESG cover factors which is seen as non-financial but can have an impact on the financial performance. The score embraces how companies respond to climate change, treat their workers, manage their supply chains and build trust and foster innovation (Galbreath, 2013). The name ESG was first mentioned in the 2004 study "Who Cares Wins" (The Global Compact, 2004). This was a cooperation between United Nations and the Swiss Federal Government. The background for this paper was a wish from Secretary-General Kofi Annan of UN to create a framework and guidelines of how to integrate environmental, social and corporate governance into capital markets (Kell, 2018).

One of the barriers that ESG had to overcome was the shareholder focus. Especially institutional investors were reluctant to embrace the concept of ESG. This was because their only focus was to maximize the shareholders financial return. Another barrier that has been reduced or overcome is the lack of complete data. The Global Reporting Initiative (GRI), International Integrated Reporting Initiative (IIRC) and the Sustainability Accounting Standard Board (SASB) have contributed to making ESG a part of relevant information for investors. Today more than 80% of the world's large cooperation's use GRI standards. This combined with new technology and a better ability to process complicated datasets makes ESG information more valuable to shareholders as well as other stakeholders (Kell, 2018).

ISCA (2017, p. 9) gives some examples of what kind of challenges or circumstances that should be considered in each of the E, S and G categories. We provide them in the sections below:

- **Environmental issues**

  One example of an environmental issue is biodiversity conservation, which means the acquirers must be aware what kind of materials they use and consider if more environmentally friendly raw materials exist. It is also about effective use of the materials. Another issue is waste and how effective you are at recycling. Effluent management, as well as water management is also a part of the environmental score. Especially water is a valuable good some countries struggle to get enough of. Further, a big environmental challenge is to reduce GHG emissions and use of energy (ISCA, 2017). Innovation is a part of the environmental issues as well. This applies to new environmental technologies and processes as well as eco-designed products. Companies are dependent on new ideas to become more sustainable ("Thomson Reuters ESG Scores," 2017).

- **Social issues**

  Social issues revolve around stakeholders, both in the nearby community and the community where the raw-material origins. This can often be in different parts of the world. The issues involve human rights, rights of indigenous people and child and forced labour. Also, HSE measures is a part of the social issues.

  Further, it involves the workers and about creating a good working environment, in addition to having good gender diversity and a non-discrimination policy. In the

Consumer Staples industry, the security of food and other products is important. It is essential that they ensure that products don't contain toxic ingredients that can hurt the consumers. Handling personal information (credit card information, addresses, etc.) which the companies receive, is also a part of the social factor (ISCA, 2017).

- **Governance issues**

Governance issues involve anti-corruption and environmental and socioeconomic compliance. Which means businesses have a responsibility to trade with countries and companies that do not tolerate corruption (ISCA, 2017). Management is a crucial part of governance, as it involves the managements plans for running the business with both shareholders and stakeholders in mind. A part of this is CSR strategy, which is a plan for disclosing both financial and non-financial information and include this in their decision-making processes ("Thomson Reuters ESG Scores," 2017).

The above challenges are according to ISCA (2017) challenges especially relevant to businesses in the food and beverage sector. We want to highlight the wide range and complexity of the ESG concept. In addition, we want to illuminate what kind of actions falls below each subcategory and investigate how each of these subcategories (E, S and G) affects ESG. The reason for this is that we should be aware that the total ESG score could mean that a company is good in one category, but not so good in another.

3.3 Shareholder & Stakeholder Theory

Shareholders are people, companies or institutions that owns shares of a company. They have a financial interest in a company but is not responsible for its debt. Shareholders have the right to vote at the general assembly and can therefore influence the management. The shareholders are investing in a company because they want the stock price to rise (Banton, 2020).

A shareholder is always a stakeholder, but a stakeholder is not always a shareholder. A stakeholder can be a company, institution, employees, bondholders, customers, suppliers and nearby residents (Freeman, 2010). A major difference to stakeholders is that shareholders do not necessarily have a long-term interest in a company. They can just sell their shares and buy some other shares. When the term CSR first appeared, it incorporated a way that firms could take care of all their stakeholders, not just the shareholders. This contradicted the fundamental views of the shareholder theory. Friedman (2009, p. 133) argued that socially

responsibility undermines the very foundation of corporate responsibility, which is to make as much money for their shareholders as possible. He stated that *"there is one and only one social responsibility of business--to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud"* (Friedman, 1970). The interest of shareholders and stakeholders can therefore be conflicting. Shareholders care mostly about profit maximation, which can compromise on the well-being of stakeholders. For instance, increased pollution can improve the financial result, and therefore the shareholders. But more pollution will have a negative impact of nearby residents, stakeholders (Banton, 2020).

Shareholder theory states that a company and its management should only spend its funds in the way the shareholders have authorized. Stakeholder theory on the other hand, states that a company has responsibility not only to its shareholders, but also to the affected parts of the company. The theory lists two main responsibilities. Firstly, that a corporation ensures that no ethical rights of its stakeholders are violated. Second, to balance the interest of stakeholders in the decision-making processes (H. J. Smith, 2003). The article by H. Jeff Smith (2003) argues that stakeholder theory is often misunderstood. The reason is that some believe that companies make decisions which is not profitable, because of stakeholders. However, this is not logical because stakeholders are dependent on the company's continuing operations. Additionally, the shareholders are a part of the stakeholders, so it's in the managers interest to keep them happy.

There is also research that links stakeholder theory and company size with CSR disclosure. This is because larger firms tend to have more shareholders interested in social activities and have more customers than smaller firms. Bigger companies are also better in disclosing and communicating their ESG activities, because they have employees working explicitly with this, while the smaller firms don't have the resources to report. Stakeholder theory can be used to check if a company take ESG performance into consideration. Examples can be the compositions of management and board, and if they take stakeholders or shareholders side in conflicting cases (Tamimi & Sebastianelli, 2017).

3.4 Corporate Financial Performance

Financial performance expresses how well a firm can generate revenues by using assets from its primary mode of business. It can give an indication of a firm´s overall financial health over a given period and is often used to compare similar firms or industries (Kenton, 2020). There are different measures often used to measure financial performance. A popular measure for researchers to use is return on assets (ROA). Hull and Rothenberg (2008) find ROA as a proper measure for financial performance as it represents the profitability of a firm, with respect to its total set of resources. In addition, ROA yields the most direct information about the results of how the chosen resources get exploited. Delmas, Nairn-Birch and Lim (2015) define ROA as a short-term measure for financial performance with the idea that the measure considers tangible costs and revenues, and for investments to be profitable they must pay off immediately. It is calculated by taking earnings before interest and dividing it by total assets. Additionally, they use Tobin`s q (TQ) as a long-term measure for financial performance. Delmas et al. (2015) define Tobin`s q as the ratio of a firm`s market value to the replacement cost of its assets and emphasis that this measure can, unlike ROA, consider the markets interpretation of how a firm will perform in the future. Fatemi, Glaum and Kaiser (2018) calculate Tobin`s q by taking book value of assets and subtracting book value of equity and deferred taxes, then adding market value of equity, and finally dividing this by book values of assets.

4 Literature Review

In this section we present relevant literature on ESG, nonfinancial reporting, innovation and GHG emissions. The theoretical framework and literature will be the foundation for our hypotheses which will help us answer our research question.

4.1 Previous research on the effect of ESG

The connection between corporate financial performance (CFP) and ESG is studied in the article by Lin, Kabel, Parker and Joye (2019). They conclude that ESG display no statistically significance in measuring alpha or beta for companies in Europe and Japan. In America and Australia, they found evidence that there is a statistically significant connection between ESG score and a reduced beta. They also find evidence that higher ESG score leads to higher credit ratings and a decrease in beta. In this study they have tested whether either environment, governance or social score is a better predictor of financial performance. They conclude that Governance is the best measure, with a nearly monotonically increasing alpha, and is close to being statistically significant. This means that the governance factors significantly give higher returns and lower risk for companies. The total ESG score shows signs of doing the same, without being completely significant. Both shareholders and stakeholders should benefit from this, as this could give companies incentives to invest in ESG activities (Lin et al., 2019).

Freide, Busch and Bassen (2015) conducted a review study with aggregated evidence from more than 2000 empirical studies on the effect of ESG investment on corporate financial performance. They created two samples, one with vote-count studies and one with meta-analyses. *Vote-count studies count the number of studies with significant positive, negative and no significant results, and then "votes" the category with the highest share as winner (Light and Smith, 1971)* (Friede et al., 2015). The findings from the analysis indicate that 90 % of the studies show a non-negative ESG-CFP relation. Moreover, most of the studies show positive findings. Only 10,7% of the vote-count studies indicates negative ESG-CFP relation. The sample of meta-analyses consists of 25 studies, and only one of these studies displays a result with negative ESG-CFP correlation. The analysis also presented tests on sub-effects in ESG categories. Some of the meta-analyses found significant positive relations for corporate environmental performance and CFP. For the sample of vote-count studies, there was relatively even positive relation for Environmental, Social and Governance. The highest proportion was found in the governance-related aspects with 62,3%, but on the other hand, it

also had the highest negative correlations with 9,2%. The analysis provide evidence that that ESG-CFP relation is stable over time and that there is a business case for ESG investing. They concluded that ESG criteria and CFP are on average positively correlated (Friede et al., 2015).

Fatemi, Glaum and Kaiser (2018) investigated what effect ESG disclosure had on firm value, based on publicly traded U.S. firms. They wanted to distinguish between strengths and weaknesses regarding environmental, social and governance disclosure. On one hand, one may think that increasing disclosure of ESG factors will lead to a reduction in information asymmetries and help investors get a clearer picture of a company`s ESG strengths and weaknesses. On the other hand, some may view such disclosure as "greenwashing" or "cheap talk" which can contribute to reducing the firm value. They wanted to investigate if the firm value was affected both by its ESG activities, but also on the intensity of its ESG disclosure. In other words, study the moderating role of disclosure related to ESG activities. Their findings suggest that the effect of ESG disclosure differ for ESG strengths and ESG concerns. Firms with ESG concerns have a decreasing effect on firm value, and ESG strengths increases it. Disclosure on governance, either concerns or strengths had the biggest impact on firm value (Fatemi, Glaum, & Kaiser, 2018).

Qureshi, Kirkerud, Theresa and Ahsan (2019) concludes that sustainable (ESG) disclosure has a positive correlation with firm value and stock prices for European firms. Their study supports the stakeholder theory and concludes that companies should state their sustainability commitment. This will be appreciated by more stakeholders, leading to more growth, which again leads to higher stock prices, because growth is highly valuable to stock market players. Further, they checked if either environmental, social or governance are more relevant to firm value. The results suggest that environmental and social score is more relevant. Overall, this study concludes that ESG disclosure are good for sustainability, the society and will also increase firm value (Qureshi, Kirkerud, Theresa, & Ahsan, 2019).

A study by Cécile Churet and Robert G. Eccles (2014) investigated the effects of integrated reporting. The integrated reporting framework considers both financial and sustainability performance in an integrated way. The idea behind the framework is that all stakeholders can get a deeper understanding of the interconnectedness between business results and dynamic factors in the environment of the business. RobecoSAM conducts an annually Corporate Sustainability Assessment (CSA), which analyzes how large public companies manage ESG

and economic issues to create value and continue to stay competitive over time. The analysis made in this article is based on RobecoSAM`s two-year systematic search for several indicators of integrated reporting in 2011 and 2012. The database includes 2000 companies from all over the world. They wanted to test if integrated reporting influenced financial performance, and they used return on invested capital (ROIC) as their proxy. The results found that there was no conclusive evidence of there being a correlation between integrated reporting and companies achieving higher ROIC over a 10-year period. But the companies investing in integrated reporting did not appear to be penalized for their investments either. However, when tested for sector, they found a positive relationship between integrated reporting and ROIC in the sectors Healthcare and Information Technology (Churet & Eccles, 2014).

4.2 Innovation

Innovation is an important factor that can impact the financial result. With innovation we mean a new product, change in a product or service an organization provide. It could also be a change in the use of a product. This means an already existing product can be a solution to a new problem, which is not what the product was originally designed for. Further, innovation can be a new way to make a product or service. In addition, it can be a change in the business model, so that the business can cover more areas to make money (Johnson, 2001).

The research by Bigliardi (2013) investigated 98 small and medium sized Italian firms in the food machinery industry. They checked whether the company's ability to implement new ideas, processes and products successfully have an impact on the financial performance. The conclusion was that innovations which are made for the customers and to differentiate from other companies, increases CFP. The study finds that new technology in innovations doesn't improve the financial result alone. For a technology to lead to a better financial performance it must benefit the customers in some way. This study also points out that firm size influences the use of innovation. The innovativeness of firms was higher amongst firms with fifty employees or more, compared to those below fifty (Bigliardi, 2013).

Hull and Rothenberg (2008) argued that innovation is one factor that is a significant driver of firm performance. Just like corporate social performance (CSP), innovation can be a way for firms to differentiate themselves. Hull and Rothenberg (2008) wanted to further investigate this by examine the effect of CSP on financial performance and see if this effect would be moderated by innovation and the level of differentiation in the industry. Their research is

based on KLD ratings data, which incorporates areas involving community, corporate governance, diversity, employee relations, environment and human rights. Their results indicate that there is a positive effect of CSP and innovation on financial performance, but the effect of industry differentiation was not significant. Furthermore, their findings suggest that the effect of CSP on financial performance is moderated by both innovation and industry sensitivity, meaning the effect of CSP is stronger among firms that are relatively undifferentiated and are low on innovation (Hull & Rothenberg, 2008).

Aguilera-Caracuel and Ortiz-de-Mondojana (2013) studied whether firm-level green innovation improves firm-level financial performance. Moreover, they wanted to investigate if national institutional conditions that firms face may favor or deter the improvements of financial performance. Using an institutional approach, they used a sample of 88 green innovative firms and 77 matched-pairs firms, both green innovative and non-green innovative firms. Their results show that green innovative firms do not achieve higher improvement in financial performance, compared to non-green innovative firms. However, when focusing on only green innovative firms, their findings show that the intensity of green innovation is positively correlated to a firm`s financial performance. When studying the moderating role of national context on the relationship between financial performance and green innovation intensity they found that stringent environmental regulations makes it harder for firms to take full financial advantage of the benefits of green innovation. While environmental normative conditions in a country do not have a significant impact on how firms take advantage of green innovation to increase financial performance (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013).

4.3 GHG emissions

Delmas, Nairn-Birch and Lim (2015) further explore the “pays-to-be-green” and the “win-win” phenomenon, which indicates that firms can profit from improving environmental performance. They wanted to take time horizon into account, when studying if improved environmental performance leads to improved financial performance. Therefore, they investigated the impact over a period where you have the initiation stage of climate change policy, which is characterized by high legislative and regulatory uncertainty. Their finding suggests that during this period there is a decreasing effect of improving corporate environmental performance on short-term financial performance. However, that investors see a long-term improvement on financial performance with an increase in Tobin`s q. Moreover,

they investigated the effect of changes in greenhouse gas (GHG) emissions on financial performance. The measure they used to indicate short-term financial performance was return on assets (ROA). In addition, Tobin`s q was used as a proxy for long-term financial performance, which considers potential future cash flows and profitability. To test the effect on financial performance they used longitudinal data for 1095 U.S corporations in the time period from 2004 to 2008. The results show that decreasing GHG emissions have a negative effect on ROA but a positive effect on Tobin`s q (Delmas et al., 2015).

Wang, Li and Gao (2013) wanted to further study the relationship between corporate social performance (CSP) and corporate financial performance (CFP). A widely used measure of corporate environmental performance, which falls under CSP, is greenhouse gas emissions (GHG). The purpose of their study was to investigate a possible relationship between GHG and CFP of Australian public listed companies. Institutional settings found in Australia may show a different picture of the GHG-CFP relationship. They conducted a multiple regression analysis with a sample of 69 Australian public companies listed on the ASX 200, for the year of 2010. The GHG emission data used was from the Carbon Disclosure Project (CDP), which collects GHG emission disclosure from companies from all over the world (CDP, 2020). To measure CFP they used Tobin`s q, which takes into account investors' expectations of a firms future profitability under changing surroundings. Their results show a positive relationship between GHG emission and corporate financial performance, which supports a win-lose argument. Which indicates that emission reduction initiative can result in lower financial performance, and hence harm firm competitiveness (Wang et al., 2014).

Giannarakis, Konteos and Sariannidis (2014) have investigated whether emission reduction policies lead to higher ESG scores. This study is based on large-sized companies from the S&P 500. The results indicated that emission reduction initiative positively influence the ESG score. Emission reduction initiative are especially significant with the environmental score. It is also significant with the governance score, as well as the ESG total score. Further, they also investigated whether an increase in GHG emissions could lead to an increase in ESG score. The results confirmed this hypothesis and showed that increased GHG emissions lead to more disclosure on ESG activities. GHG emissions is especially positively correlated with the social and governance score. The authors beliefs that companies want to lead the focus away from the GHG emissions and mitigate stakeholders’ concerns about the emissions, which strengthen the total picture of the company. This could lead to a higher total

ESG score. Especially the CSR strategy disclosure, which is a part of the governance score, is highly correlated with GHG emissions (Giannarakis, Konteos, & Sariannidis, 2014).

4.4 Summary

The Consumer Staples industry faces challenges that are highly related to climate change and sustainability issues. For firms to stay competitive it is important for companies to meet the trends we see in consumer habits. In general, there is an increased trend to focus on sustainable options. As much of the industry is heavily dependent on natural resources, and there are many things that companies do not have control over – factors related to the environmental performance is relatively more important. Strategies such as CSR, SRI and TBL have long been very relevant in meeting sustainability concerns, and the stakeholder theory give explanation as to why. The evolution of ESG extends the already existing strategies and has become globally known (Kell, 2018). Previous research mostly find support for there being a positive effect of implementing ESG strategy and disclosure (Friede et al., 2015; Qureshi et al., 2019). The research by Churet and Eccles (2014) was one of few that found no conclusive evidence of there being a correlation between integrating reporting and CFP. Fatemi, Glaum and Kaiser (2018) highlighted that there may be differences to whether the disclosure involves ESG strengths or weaknesses. Although, most of the previous studies suggest a positive relation to ESG and firm value or CFP, there have been differences regarding sample, time periods investigated, databases and observations. To the best of our knowledge, we have not found a study that investigates the value of ESG performance on Corporate Financial Performance, only in the Consumer Staples industry.

Additionally, we find that innovation may be an important subject in this industry, as the need to differentiate is necessary. Previous research highlights the relevance of innovation on firm performance. Aguilera-Caracuel and Ortiz-de-Mondojana (2013) found evidence of a positive correlation between the intensity of green innovation and financial performance. However, their results also found that green-innovative firm did not outperform non-green innovative firms. Overall, innovation seem to have a positive impact on financial performance (Bigliardi, 2013; Hull & Rothenberg, 2008). Further, it was highlighted in the section on challenges in the Consumer Staples industry, that a key element is GHG emissions. Researchers find both positive and negative results of reducing GHG emissions on financial performance. In addition, the research by Giannarakis et al. (2014) highlighted that emission reduction initiatives could positively affect the ESG score. Moreover, increased

GHG emissions could lead firms to “greenwash” themselves by focusing on social and governance disclosing. We identify that most of the previous studies presented in the section above apply either panel data estimation method (Delmas et al., 2015; Lin et al., 2019), OLS estimation method or an extension of OLS estimation method (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Bigliardi, 2013; Fatemi et al., 2018; Qureshi et al., 2019; Wang et al., 2014).

5 Hypotheses

Based on our theoretical framework and previous research presented above, we propose five hypotheses to help us answer our research question.

Previous studies have shown indications of both positive and non-significant relationships between ESG performance and corporate financial performance. Churet and Eccles (2014) found no conclusive evidence of a positive relationship between ESG and CFP. However, they did find evidence that firms who implemented non-financial reporting, were not penalized for their investments. Moreover, the evidence from the study of Freide, Busch and Bassen (2015), which gave empirical evidence from more than 2000 studies, indicated that most of the studies showed a non-negative relationship between ESG and CFP. ESG activities and disclosure can create value for a firm as it indicates that a firm considers more of its stakeholder's interest. This can result in better growth (Qureshi et al., 2019), which ultimately can lead to better financial performance. Consideration of ESG factors can also help a firm to stay competitive in the market, as we have seen a trend in the consumer's habits to choose more sustainable options (Whelan & Kronthal-Sacco, 2019). To further investigate the pays-to-be-green concept and seeing that most of the studies we have read indicate a positive effect of ESG performance, we formulate the first hypothesis:

H1: *ESG performance is associated with higher CFP.*

Several of the studies we have read have additionally tested if either environmental, social or governance performance, has more effect on financial performance or firm value than the other. This can be interesting for us to look at, as it can give an indication of which of the three factors that can be more valuable for a firm to focus on, especially when looking at the Consumer Staples sector specifically. Lin et al. (2019) found that the governance score was the best predictor of financial performance. This is also supported by Fatemi, Glaum and Kaiser (2018), which found that disclosure on governance had the biggest impact on firm value. We draw the conclusion that a positive effect on firm value can mean a positive effect on financial performance, and vice versa. However, Qureshi et al. (2019) found evidence that indicated that the environmental and the social factors had the biggest impact on firm value. Looking at the possible future challenges the Consumer Staple industry may face in the coming years, many of them relates to the environmental factor. Climate change is a global

focus, and corporations are forced to change the way they operate to be more sustainable and to stay competitive. We therefore develop the following hypothesis:

H2: *Environmental performance has a bigger impact on CFP than social and governance performance.*

From the research by Bigliardi (2013) we learned that innovation can be one of the most important factors of improving the financial performance. Aguilera-Caracuel and Ortiz-de-Mondojana (2013) found in their study that green innovative firm did not perform better than non-green innovative firms. However, they did find that when only focusing on the green innovative firm, a higher level of green innovation leads to better financial performance. Hull and Rothenberg (2008) implied that innovation had a positive effect on financial performance, as innovation helps firm stay differentiated from other firms. Their findings supported this. The results from these articles indicate a positive relationship between innovation and CFP. We want to investigate if this is the case in the Consumer Staples industry by adding innovation as an independent variable, and make the following hypothesis:

H3: *Innovation is associated with higher CFP.*

Earlier, we described that innovation is included as part of the environmental variable. A natural assumption would be that innovation and the environmental variable would therefore have a positive correlation. However, only green innovation is covered in the environmental variable ("Thomson Reuters ESG Scores," 2017). In this thesis we incorporate expenses for research and development divided by total revenue, which is a proxy for both green and non-green innovation in total. Hull and Rothenberg (2008) investigated whether innovation had a moderating effect on the relationship between Corporate Social Performance (CSP) and corporate financial performance (CFP). They conclude that the effect of CSP on CFP is stronger without innovation, and argued that CSP and innovation is both ways to differentiate. When innovation is included this undermines the positive effect CSP has on CFP by itself. The CSP term considers many of the same areas as ESG (Migliorelli & Dessertine, 2019, p. 96). If we draw this result to the relationship between innovation and ESG, we could expect innovation to weaken the relationship between ESG and CFP. This

with the understanding that innovation and ESG are both ways for a firm to separate themselves from other firms. Leading us to our fourth hypothesis:

H4: *Innovation weaken the relationship between ESG performance and CFP.*

The level of GHG emissions may affect financial performance. The study of Delmas et al. (2015) on U.S firms found that reducing GHG emissions had a negative effect on financial performance short term but could give positive effects long-term. Moreover, Wang, Li and Gao`s (2013) study on Australian firms showed a negative effect of reducing GHG emissions on financial performance. In other words, the effect of GHG emissions can be partially explained by institutional differences. It could be interesting to see if GHG emissions in the Consumer Staples industry can influence the relationship between ESG performance and CFP. Intuitively, we would expect GHG emission to have a positive effect on CFP, seeing that a larger portion of GHG emission means that a company can produce more, and therefore increase its financial performance. The study by Giannarakis et al. (2014) highlighted that increased GHG emissions could lead to an increase in disclosure on social and governance factor, which could result in an overall higher ESG score. However, emission reduction initiatives implemented by firms were positively correlated with the environmental and governance score, which affects the ESG score positively. GHG emissions are globally viewed as a negative component regarding sustainability, ESG however is viewed as a positive contributing factor in this matter. We initially would assume that increased GHG emissions will have a negative effect on the ESG-CFP relationship in the Consumer Staples industry, seeing that GHG emissions are conflicting with the positive effects of ESG performance. This leads us to our last hypothesis:

H5: *GHG emissions weaken the relationship between ESG performance and CFP.*

Table 1: Presentation of dependent and independent variables, their model name and proxy

Variable level	*Variable name*	*Model name*	*Proxy*	*References*
Dependent	Short-term CFP	ROA_{it}	Income before taxes for the fiscal period divided by the average total assets	Hull & Rothenberg (2008); Delmas et al. (2018).
	Long-term CFP	TQ_{it}	Market value of equity plus book value of liabilities divided by total assets	Delmas et al. (2015); Fatemi et al. (2018); Wang et al. (2014).
Independent	ESG Score	ESG_{it}	Thomson Reuters overall score for environmental, social and governance	Thomson Reuters Eikon
	Social Pillar Score	S_{it}	Thomson Reuters Social Pillar Score	Thomson Reuters Eikon
	Governance Pillar Score	G_{it}	Thomson Reuters Governance Pillar Score	Thomson Reuters Eikon
	Environmental Pillar Score	E_{it}	Thomson Reuters Environmental Pillar Score	Thomson Reuters Eikon
	ESG Controversies Score	$ESGC_{it}$	Thomson Reuters score for ESG Controversies	Thomson Reuters Eikon
	Innovation	I_{it}	Thomson Reuters listed expenses for research and development divided by total revenue	Hull & Rothenberg (2008); Fatemi et al. (2018).
	GHG emissions	GHG_{it}	Ln (Total Carbon dioxide and CO2 equivalents emission in tonnes) divided by Ln (Total revenue)	Delmas et al. (2015).
Control Firm Level	Firm size	SZ_{it}	Ln (Total assets)	Hull & Rothenberg (2008); Quershi et al. (2019); Delmas et al. (2015); Wang et al. (2014).
	Leverage	LV_{it}	Ratio of total debt to total assets	Hull & Rothenberg (2008); Quershi et al. (2019); Delmas et al. (2015); Wang et al. (2014).

Control Country Level	Inflation	$INFL_{jt}$	Annual inflation (consumer prices rate)	Quershi et al. (2019) and World Bank database.
	HDI	HDI_{jt}	A summary measure of average achievement in key dimensions of human development	United Nations Development program
	CO2 emissions/GDP	CO_2GDP_{jt}	Total amount of metric tons of carbon dioxide equivalent (mtCO2) divided by gross domestic product (GDP)	World Bank database and the Global Carbon Atlas.
	Patents	PAT_{jt}	Number of patent application filed through the Patent Cooperation Treaty or a national patent office	World Bank database

Notes: Table 1 gives an overview of the dependent and independent variables included in the following study, in addition to their model name, proxy and the proxy`s related reference or informational provider.

6 Data Description and Methodology

Under this section we present the methodology used to investigate our hypotheses. First, we present our models included in the analysis. Second, we present the statistical method we use, and the robustness tests we will conduct to examine our results. Lastly, we will describe how we selected our data.

6.1 Models

In this section we want to present our primary models for investigating the effect of ESG performance on financial performance. Our baseline model is presented as followed:

Model 1

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \alpha_i + \mu_t + \varepsilon_{i,t}$$

Where $CFP_{i,t}$ is the corporate financial performance of firm i at time t. $ESG_{i,t}$ is the total score for environmental, social and governance performance of firm i at time t. α_i is the country fixed effects, μ_t is the time-fixed effects and $\varepsilon_{i,t}$ is the error term for firm i at time t.

We extend our baseline model to examine the relation between financial performance and innovation, to see if innovation provides additional value on CFP. We add $I_{i,t}$ which represents the listed expenses for research and development divided by total revenue for a firm i at time t, and present our second model:

Model 2

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 I_{i,t} + \alpha_i + \mu_t + \varepsilon_{i,t}$$

In addition, we want to investigate the relationship between CFP and greenhouse gas emissions, as well as ESG performance and innovation. We extend the model by adding $GHG_{i,t}$ which represent the natural log of total Carbon dioxide and CO2 equivalents emission in tonnes divided by the natural log of total revenue for firm i at time t, and present our third model:

Model 3

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 I_{i,t} + \beta_3 GHG_{i,t} + \alpha_i + \mu_t + \varepsilon_{i,t}$$

Further, we extend our model by adding control variables for firm specific time-varying factors, and present our fourth model:

Model 4

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 I_{i,t} + \beta_3 GHG_{i,t} + \beta_4 SZ_{i,t} + \beta_5 LV_{i,t} + \alpha_i + \mu_t + \varepsilon_{i,t}$$

$SZ_{i,t}$ represent the natural logarithm of total assets of firm i at time t. $LV_{i,t}$ is the ratio of total debt to total assets (leverage) for firm i at time t.

Furthermore, we want to control for country specific time-varying factors and therefore add CNT_{jt} which represents the four country control variables we like to add (annual inflation rate, summary measure of average achievement in key dimensions of human development (HDI), CO2 emission divided by GDP, and number of patent applications) of country j at time t. And we hereby present our final and fifth model:

Model 5

$$CFP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 I_{i,t} + \beta_3 GHG_{i,t} + \beta_4 SZ_{i,t} + \beta_5 LV_{i,t} + \beta_6 CNT_{jt} + \alpha_i + \mu_t + \varepsilon_{i,t}$$

6.2 Statistical method

Since we have data consisting of both time series and cross-sectional elements, we will conduct a dataset as panel data, also called longitudinal data (Brooks, 2008, p. 487). Such data consist of multiple entities, and each entity is observed two or more times (Stock & Watson, 2015, p. 396). By using panel data, we can learn from the experiences of all the entities in the dataset, and from the evolution over time of the variables for each entity. Our panel data consist of 5236 firm-year observations from 2005-2018. Throughout our analysis we will use the estimation method commonly used in multiple regression analysis, which is the ordinary least square (OLS) estimation method (Wooldridge, 2016, p. 90).

To justify the use of OLS estimation, the assumptions included in the Gauss-Markov Theorem should be fulfilled (Wooldridge, 2016, p. 89). The five assumptions are:

1. The model is linear in the parameters.
2. There is a random sample of *n* observations.
3. No perfect collinearity between the independent variables.
4. Error term has a population mean equal to zero.
5. The error term has the same variance given any value of the independent variables.

If the four first assumptions hold the OLS estimators are unbiased estimators of the population parameters (Wooldridge, 2016, p. 77). If in addition, assumption five holds, the Gauss-Markos Theorem states that the estimators are the best linear unbiased estimator (BLUE) (Wooldridge, 2016, p. 89). We base our study on OLS estimation method, and correct for any violations (Wooldridge, 2016, p. 388).

First, we need to distinguish if our dataset is a balanced or unbalanced panel. An unbalanced panel has some cross-sectional elements with fewer observations or missing observations at different times (Brooks, 2008, p. 490). Whereas a balanced panel has the same amount of time-series observations for each cross-sectional entity. Our data sample is set up as a balanced panel.

Fixed effects models and random effects models are the two most commonly used panel estimator approaches (Brooks, 2008, p. 490). With the first one you can have entity fixed effects, which is omitted variables that vary across entities, but do not change over time. Or you can have time fixed effects, which is constant across entities, but change over time. With fixed effects models the intercept can differ cross-sectionally, but not over time (Brooks, 2008, p. 490). With the random effects model the intercept is equal over time and for all cross-sectional units (Brooks, 2008, p. 498). Fixed effects models are more appropriate when the entities in the sample incorporate the entire population, and random effects model is more appropriate when the sample can be looked at as if it has been randomly selected from the population (Brooks, 2008, p. 500).

6.3 Robustness tests

We want to check if our results are robust when including firm size and leverage. Firm size is the natural logarithm of the companies' total assets. We want to use the natural logarithm to reduce the possibility of heteroscedasticity and because it gives us a relative number which is more comparable across companies (Brooks, 2008, p. 138). The reason we want to add firm size is the fact that bigger firms with more assets can invest more in ESG. Total assets are retrieved from the Thomson Reuters Screener app. The data on Leverage (total debt/total assets) is also fetched from Thomson Reuters. This is another form of firm characteristics that we find interesting to investigate, and that might affect the CFP - ESG relationship. Secondly, we want to check if our results are robust when adding country control variables. This is because we have reason to believe that institutional differences may influence the CFP-ESG relationship (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Wang et al., 2014).

Further, we want to check if our results are robust with the use of different statistical methods such as panel data estimation method. We conducted a Hausman test to investigate whether we were to use a fixed effects (FE) or random effects (RE) model. The null hypothesis states that you should use a random effects model (Wooldridge, 2016, p. 444). The test showed that we have regressions where some is preferred to a random effects model, and some is preferred with a fixed effects model. Wooldridge (2016) states that in the case where you fail to reject the Hausman test, it does not matter if you use FE or RE, because the RE and the FE estimates are so sufficiently close. Clark and Linzer (2015) argued that if the test fails to reject the null hypothesis, it is not because there is no correlation and therefore the random effects estimator can suffer from a bias (Clark & Linzer, 2015). Furthermore, Wooldridge (2016) argues that FE is almost always much more convincing than RE. In this study we are interested in looking at the effect of ESG performance, which may vary over time. In addition, we are conducting an analysis based on one industry, which consists of six different sectors. These sectors may have large differences, seeing that one sector involves tobacco while another involves food products. These differences may influence the predictor values, which is why we want to control for them (Torres-Reyna, 2007). A fixed effects model allows us to control for all time-invariant unobserved firm characteristics that might affect the predictor values of the explanatory variables (Delmas et al., 2015).

In addition to the fixed effects panel data we run a feasible GLS regression model. The GLS model is robust for heteroscedasticity and autocorrelation (Brooks, 2008, pp. 136, 150). GLS is used on panel data and can be used to look at variation in financial performance within the companies.

6.4 Data selection

To gather our data, we used Thomson Reuters Eikon database provided by Oslo Metropolitan University, which is widely used by researchers and analysts. Thomson Reuters provides financial information on firms from all over the world, going all the way back to 1973 ("Thomson Reuters Eikon," 2019). To select companies, we use two criteria. First, we choose the sector Consumer Staples industry through the Screener App provided. Second, we only include firms that have reported ESG score in the sample period. We choose to screen all our data in US dollars. We further limit our search by choosing the time period 2005-2018. The countries represented in our sample are Australia, Belgium, Brazil, Canada, Chile, China,

Colombia, Cyprus, Denmark, Egypt, Finland, France, Germany, Greece, Hong Kong, Netherlands, New Zealand, Norway, Peru, Phillipines, Poland, Portugal, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, Ukraine, United Kingdom, USA, Zimbawe. The two American continents (herby Americas) and Asia is most represented in our dataset, with respectively 35,98% and 32,47%.

We use return on assets (ROA) as a proxy for short-term CFP, expressed in percentage. This is calculated as the income before taxes for the sample period, divided by the average total assets. We also use Tobin`s q (TQ) as a proxy for long-term financial performance, as it considers how investors view a company`s market value over time. Tobin`s q is calculated by dividing total market value of the firm on total asset value of firm. Total market value is the sum of market value of equity and book value of liabilities. We want to study both short-term CFP and long-term CFP, to check whether there are differences between the two.

The ESG scores provided through Thomson Reuters`s screener App, is composed by three pillars. The pillars are namely, Environmental, Social and Governance. The ESG score is measured through publicly reported data, which reflects a company`s ESG performance, commitment and effectiveness ("Thomson Reuters ESG Scores," 2017).

Each of these pillars have subcategories which is differently weighted in the calculation of each pillar score and finally the ESG score. The subcategories are displayed in Table 2 below. The score of each subcategory is multiplied by the weights, and from this the pillar scores are calculated. The weights can differ from one industry to another, which can lead to a difference in the calculation of the ESG score (Refinitiv, 2020).

In addition, the Screener App provides an ESG controversies score which represent ESG challenges. The score penalizes companies overall ESG combined score. It is calculated through the evaluation on 23 ESG controversy topics, and reflects negative events which are captured by global media ("Thomson Reuters ESG Scores," 2017).

Table 2: Thomson Reuters`s ESG categories

Environmental	Social	Governance
Resource use	Workforce	Management
Emission	Human rights	Shareholders
Innovation	Community	CSR strategy
	Product responsibility	

Notes: The table presents 10 main categories included by Thomson Reuters to evaluate ESG scores (Thomson Reuters, 2019).

To gather data on inflation, gross domestic product (GDP) and patents we used the World Bank database (worldbank.org), which had reported data from 2005-2018. This will help us understand the institutional differences that occur. Furthermore, we gathered data on the number of metric tons of carbon dioxide equivalent (mtCO2) for each country in our dataset from the Global Carbon Atlas, available through the website globalcarbonatlas.org. This will give us the opportunity to control for CO2 on a country-level. We also gathered data on the human development index (HDI) for each country from 2005-2018, through United Nations Development Program. This can give us indications of a country`s economic and social development.

7 Results and Discussion

In this section we present results from the analysis and discuss the findings from our data. First, we describe extreme values and how we further limited our data. Next, we present a section on descriptive data, correlation matrix, heteroskedasticity and multicollinearity. We further present the results from our regression analysis and our robustness tests, and discuss interesting findings linked up to our hypotheses and research question.

7.1 Extreme values and data dropping

To limit our research and make our analysis more reliable we focus only on companies who have reported ESG in the Thomson Reuters database from 2005 to 2018. We further choose to exclude countries that do not have reported data on inflation and HDI in the time period we are investigating. This leads us to a sample of 5236 firm-year observations, where 374 firms are represented.

We want to deal with extreme values in our dataset, as outliers can greatly affect the OLS estimates (Wooldridge, 2016, p. 296). Outliers minimize the sum of squared residuals, which means that large outliers receive a lot of weight in the analysis. We conducted summarized statistics to identify if our dataset consists of any extreme values, which are presented in Appendix 3. We observed negative values for Total Revenue, which seems unlikely. We therefore decided to drop these values. We also noticed high values of kurtosis for ROA, TQ, leverage, innovation and total revenue. This led us to further limit our data by excluding less than 1% of the observations on either upper or lower side of ROA, TQ and total revenue – removing 25 extreme observations that seemed to affect our data and therefore could affect our estimations greatly. This limitation seemed to improve the high kurtosis leverage and innovation had. Our dataset now consists of 5211 firm-year observations.

7.2 Descriptive statistics and correlation matrix

We present descriptive statistics of our dependent and independent variables in Table 3, which includes mean, median, standard deviation, minimum value, maximum value, skewness and kurtosis.

The descriptive statistic let us know that the ESG measures in our dataset have large variation. The minimum value for ESG is 0,326 and the maximum value is 93,81. This indicates that there is a large gap between the best and least ESG performing company in the

dataset. ESG controversies supports this as it varies from 0,234 to 73,07, indicating that some companies have more ESG challenges than others. The overall mean is 45,39. The mean for the environmental score is 46,57, 44,60 for the social score and 51,76 for the governance score.

Table 3: Descriptive statistics

Variable	N	Mean	Median	Std. Dev.	Min.	Max.	Skewness	Kurtosis
ROA	4702	0,109	0,090	0,107	-0,903	0,988	1,27	12,81
TQ	4612	2,313	1,727	1,961	0,119	22,23	3,84	23,97
ESG	2886	45,39	44,60	23,17	0,326	93,81	0,05	1,908
ESG Controversies	2843	49,99	59,82	21,41	0,234	73,07	-1,27	2,855
Environmental	2542	46,57	48,60	27,41	0,114	98,72	-0,05	1,78
Social	2865	44,60	42,87	25,54	0,091	97,93	0,17	1,92
Governance	2886	51,76	53,20	23,43	0,439	99,58	-0,17	2,14
Innovation	956	0,014	0,010	0,018	0,00002	0,1851	4,97	38,14
GHG emissions	1553	0,567	0,572	0,051	0,268	0,818	-0,63	4,35

Notes: This table display the descriptive statistics (observations, mean, median, standard deviation, minimum and maximum value, skewness and kurtosis) for our dependent and independent variables.

Skewness refers to a deviation from the normal distribution curve and measures the lack of symmetry in the data distribution (Brooks, 2008, p. 161). The normal distribution has a skewness equal to zero (Stock & Watson, 2015, p. 70). As expressed in Table 3 ESG controversies, GHG emissions and the environmental and governance score are negatively skewed, meaning they have a longer or fatter tail on the left side of the curve (Jane, 2018). While ROA, TQ, ESG, the social score and innovation are positively skewed, meaning they stretch out to the right side of the distribution. TQ and innovation have the highest degrees of skewness with respectively 3,84 and 4,97.

Kurtosis measures how fat the tails are on either the left or right side of the distribution (Brooks, 2008, p. 161). High kurtosis indicates heavy tails, that display data that exceed the normal distribution. Low kurtosis indicates the opposite - light tails that is closer to the normal distribution. A normal distribution inhabits a kurtosis coefficient of 3 (Brooks, 2008, p. 161). Our data variables ROA, Tobin`s q and innovation exhibit kurtosis values that indicate a leptokurtic distribution, meaning a fatter tail (Brooks, 2008, p. 162). Moreover, our ESG related variables and GHG emissions show signs of a platykurtic distribution, which indicate thinner tails (Brooks, 2008, p. 162).

Table 4: Correlation matrix

Panel A: Correlation matrix with dependent variable ROA

	ROA	ESG	E	S	G	ESG C.	GHG	Innovation
ROA	1.000							
ESG	0.0951*	1.000						
	(0.0000)							
E	0.0887*	0.8943*	1.000					
	(0.000)	(0.0000)						
S	0.1130*	0.9367*	0.8024*	1.000				
	(0.0000)	(0.0000)	(0.0000)					
G	0.0280	0.7109*	0.4590*	0.5162*	1.000			
	(0.1343)	(0.0000)	(0.0000)	(0.0000)				
ESG C.	-0.0381	-0.4163*	-0.3535*	-0.4124*	-0.2954*	1.000		
	(0.1388)	(0.0000)	(0.0000)	(0.0000)	(0.0000)			
GHG	-0.1376*	0.1368*	0.0280	0.1306*	0.1683*	-0.2080*	1.000	
	(0.0000)	(0.0000)	(0.2797)	(0.0000)	(0.0000)	(0.0000)		
Innovation	-0.0414	0.2601*	0.2582*	0.2282*	0.1571*	-0.0928	-0.0253	1.000
	(0.2057)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0261)	(0.6091)	

Panel B: Correlation matrix with dependent variable Tobin`s q

	TQ	ESG	E	S	G	ESG C.	GHG	Innovation
TQ	1.000							
ESG	0.0707*	1.000						
	(0.0001)							
E	0.0453	0.8943*	1.000					
	(0.0226)	(0.0000)						
S	0.1098*	0.9367*	0.8024*	1.000				
	(0.0000)	(0.0000)	(0.0000)					
G	0.0016	0.7109*	0.4590*	0.5162*	1.000			
	(0.9321)	(0.0000)	(0.0000)	(0.0000)				
ESG C.	-0.0286	-0.4163*	-0.3535*	-0.4124	-0.2954*	1.000		
	(0.1388)	(0.0000)	(0.0000)	*(0.0000)	(0.0000)			
GHG	-0.1815*	0.1368*	0.0280	0.1306*	0.1683*	-0.2080*	1.000	
	(0.0000)	(0.0000)	(0.2707)	(0.0000)	(0.0000)	(0.0000)		
Innovation	-0.1023*	0.2601*	0.2582*	0.2282*	0.1571*	-0.0928	-0.0253	1.000
	(0.0018)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0261)	(0.6091)	

Notes: This table presents the correlation matrix. Panel A shows the correlation matrix with return on assets (ROA) and panel B shows the correlation matrix with Tobin`s q (TQ). Both panels include the variables ESG, Environmental, Social, Governance, ESG Controversies, GHG emissions and Innovation. P-values is shown in parentheses, * indicating significance at the 1% level.

In Table 4 we present the correlation matrix with the dependent variables ROA and TQ, and the explanatory variables. Correlation can give evidence of a linear relationship between two variables (Brooks, 2008, p. 28). A coefficient of 1.000 indicates a perfect positive correlation, and a correlation coefficient of -1.000 indicates a perfect negative correlation. We observe that the environmental and social variable are significantly positively correlated with ROA. Further, the social variable is the only one of the E, S, G variables that are significantly positively correlated with TQ. This gives us indications that the social variable has the most

relevance to financial performance in the long run. ESG correlates significantly positively with both ROA and TQ, which strengthen our initial assumption that ESG performance has a positive effect on financial performance. ESG controversies correlates negative with both ROA and TQ, which is to be expected, although this relationship is not significant.

Since we in this thesis are focused on ESG related matters, it is important for us to ascertain that there is a significant relationship between innovation and ESG related factors. Especially regarding the environmental variable, as innovation could be a key contributing factor to strengthen this variable. In addition, innovation could be essential for a firm to contribute to business sustainability (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013). As observed in Table 4, we see that innovation is significantly positively correlated with ESG and E, S and G separately. In addition to looking at the correlation matrix, we want to further test the ESG-innovation relationship by conducting a regression with ESG as the dependent variable. The result of this regression is displayed in Appendix 6. The result gave us a further indication that there is a positive relationship between ESG and innovation, and that innovation does not negatively affect ESG and its effect on CFP. Unfortunately, the coefficient for innovation was not significant. Moreover, we notice that innovation is negatively correlated with both ROA and TQ. For TQ, the relationship is also significant. This is somewhat surprising, as we expected innovation to have a positive relationship with financial performance, which could indicate that the value of innovation does not exceeds its costs. Additionally, we observe that innovation is negatively correlated with GHG emissions, but not significantly.

Further, we observe a significantly negative correlation between GHG emission and CFP. This could indicate that reducing GHG emissions could have a positive effect on financial performance, both short and long term. In addition, we observe that GHG emission have a positive correlation with ESG, E, S and G. This is somewhat unexpected results. The correlation with the environmental variable is not significant, and we would initially expect the relationship to show a negative correlation. The environmental variable consists of three categories: emission, innovation and resource use. Increased GHG emissions would result in lower score for emission but could be positively correlated with innovation and/or resource use. This could result in an overall positive correlation between GHG emissions and E, especially since resource use is a significant part of the environmental factor in this industry (33%-45% approximately) (Refinitiv, 2020, p. 21). The positive correlation with social and governance is significant. A possible explanation for the positive relationship would be that an increase in GHG emissions results in more resources used in social and governance

activities. This may be due to firms feeling the need to "green-wash" themselves by displaying good scores in the S and G categories (Giannarakis et al., 2014). Since we find positive correlations for these three individual variables and GHG, it is also natural that there is displayed a positive relationship between ESG-GHG, as it displays the overall score. Further, we observe that GHG emissions are significantly positively correlated with ESG controversies. A possible explanation for this relationship could be that more ESG challenges (negative publicity) will lead to a reduction in GHG emissions. Overall, we initially expected GHG emissions to influence the ESG-CFP relationship negatively, but the results could indicate that increasing emissions give firms incentives to focus their resources towards social and governance performance, which gives the effect of GHG an overall positive effect on the ESG score.

7.3 Multicollinearity

We want to investigate whether there is a multicollinearity problem in our data. For this we use the variance inflation factor (VIF), which can help us determine how much the slope of coefficient *j* is determined by the correlation between *Xj* and the other explanatory variables (Wooldridge, 2016, p. 86). We have multicollinearity between two or more variables when the correlation is high, but not perfect (Wooldridge, 2016, p. 84). High collinearity leads to higher standard errors for the OLS estimates and can lead to misleading results of the dependent variable (Brooks, 2008, p. 172). We conduct a VIF test in Stata and find that for both the dependent variable TQ and ROA the explanatory variables get a VIF below 10, which indicate that we do not have a multicollinearity problem in our data. We display the predicted VIF-values in Appendix 4.

7.4 Heteroskedasticity

We have heteroskedasticity if the error term has nonconstant variance given any value of the explanatory variable (Wooldridge, 2016, p. 45). If the error term has the same variance, we have homoscedasticity. The consequence of conducting an OLS regression where heteroskedasticity is not handled, is that the estimated OLS coefficients will no longer be BLUE. In addition, it can lead to wrong standard errors and any assumptions made could be misleading (Brooks, 2008, p. 135). To conclude whether our data suffers from heteroskedasticity we conduct a White test and Breusch-Pagan test for heteroskedasticity. Additionally, we look for heteroskedasticity graphical by plotting standardized residuals

against predicted values. The scatterplot for both return on assets and Tobin`s q shows signs of a heteroskedastic pattern.

The White's test is used to identify heteroscedastic errors in the regression which invalidate the OLS standard errors (Wooldridge, 2016, p. 252). The null hypothesis is that the variance errors are equal. The alternative hypothesis is that the variances are not equal. The Breusch-Pagan test assumes that the errors are normally distributed (Wooldridge, 2016, p. 251), and the alternative hypothesis tells us how the variances change compared to the change in Y. We conduct both tests in STATA. The null hypothesis in the Breusch-Pagan test can be rejected at a 0,1% level for both ROA and Tobin`s q. The same can be done in the White`s test. We conclude that our data have evidence that suggest that it suffers from heteroskedasticity.

To face the heteroskedasticity problem in our data, we use heteroskedasticity-robust standard errors, attributes to White (1980) (Wooldridge, 2016, p. 246). The robust standard errors make hypotheses test more conservative and they require more evidence for a null hypothesis to be rejected (Brooks, 2008, p. 138).

7.5 Regression results

7.5.1 The effect of ESG performance on CFP

Table 5: Regression results baseline model

Panel A: Regression result baseline model with ROA

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)
ESG	0.000639***				
	(0.000103)				
Environmental		0.000542***			
		(0.0000861)			
Social			0.000619***		
			(0.0000928)		
Governance				0.000262***	
				(0.0000755)	
ESG Controversies					-0.000176*
					(0.0000871)
_cons	0.0574***	0.0666***	0.0607***	0.0603***	0.0817***
	(0.00912)	(0.00983)	(0.00892)	(0.00980)	(0.0103)
N	2858	2520	2842	2858	2665
adj. R2	0.186	0.210	0.189	0.173	0.176
F-Test	15.39***	15.55***	15.67***	14.43***	4.07*
Country Effect	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes

Panel B: Regression result baseline model with Tobin`s q

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)
ESG	0.0104***				
	(4.73)				
Environmental		0.00836***			
		(4.80)			
Social			0.0116***		
			(5.60)		
Governance				0.00354*	
				(2.39)	
ESG Controversies					-0.00293
					(-1.94)
_cons	1.377***	1.585***	1.398***	1.453***	1.790***
	(9.95)	(10.61)	(10.43)	(9.49)	(11.32)
N	2871	2531	2854	2871	2685
adj. R2	0.327	0.371	0.332	0.317	0.316
F-Test	16.52***	19.21***	16.73***	17.70***	3.77
Country Effect	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes

Notes: Table 5 shows the regression results obtained through OLS estimation method for model 1. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

Hypothesis one is mainly connected to the models above. The results from the model where return on assets is the dependant variable is quite clear. Model (I) explains the sample variation in ROA by 18,6% (Wooldridge, 2016, p. 35), when controlling for country and year. As we can see from the coefficient an increase in ESG leads to an increase in ROA. This result is significant at a 0,1% level. In model (V), we see that the ESG controversies score affects the CFP in a negative way. This result is significant at a 5% level and has an explanatory factor of 17,6%. The negative relationship is in line with the findings from Fatemi et al. (2018).

When doing the same regression but switching the dependent variable to Tobin's q, we see some interesting changes. The results in model (I) display a positive and significant TQ-CFP relationship. The model explains 32,7% of the sample variation in TQ. In model (V) we see a negative relationship with ESG controversies and TQ, similarly to ROA. This relationship is not significant, and we also observe that the F-test is not significant.

The results support the findings from the correlation matrix that both ROA and TQ is positively correlated with ESG. This means that ESG is a relevant factor to consider when explaining a firm's financial performance both short term and long term. The results are also

supportive to our hypothesis one: "*ESG performance is associated with higher CFP"*, and is in line with earlier research (Fatemi et al., 2018; Friede et al., 2015; Qureshi et al., 2019).

7.5.2 The effect of Environmental, Social and Governance performance individually

In our hypothesis two, we state that *Environmental score has a bigger impact on CFP, than social and governance score.* We want to investigate whether environmental, social or governance performance has the biggest impact on CFP.

We use the same models as in hypothesis one but look at different regressions. The environmental score is significant at a 0,1% level for both ROA and TQ. The size of the coefficient tells us that there is a significant positive relationship with the environmental score and CFP. When we investigate the adjusted R^2 model (II), it is respectively 15,55% and 19,21%, for ROA and TQ.

For the social coefficient we see that the relationship with CFP is positive and significant. It is significant for both ROA and TQ which tells us that investing in social activities affect CFP both short term and long term. The relationship is significant at a 0,1% level for both ROA and TQ and the adjusted R^2 in model (III), is respectively 15,67% for ROA and 16,73% for Tobin's q.

From regression (IV) we can investigate the governance – CFP relationship. Once again, we find the coefficient to be positively associated with CFP both short term and long term. This time though the relationship is more significant with ROA where governance is significant at a 0,1% level, while for TQ it is significant at 5%.

To conclude which of these three factors has the biggest effect on CFP, we thought from earlier research and assumptions that the environmental factor would have the biggest impact on financial performance for firms in the Consumer Staples industry. The results from both the regressions in this model and the correlation matrix indicate that the social factor is the best influencer. In the correlation matrix we see that the social score is positively correlated with both ROA and TQ at a 1% significance level. The correlation matrix also displayed a positive relationship between the environmental and governance variable and CFP. The governance-CFP relationship was not significant, and the correlation with the environmental variable was only significant with ROA. The social score showed the strongest positive correlation with both ROA and TQ, in addition it displayed the highest coefficient value in Table 5.

From earlier research Lin et al. (2019) and Fatemi et al. (2018) argued that the governance pillar score has the biggest impact on firm value. Another view from earlier research is that environmental and social pillar score are the most influential (Qureshi et al., 2019). Our study partially supports Qureshi et al. (2019) and contradicts the findings from Lin et al. (2019) and Fatemi et al. (2018).

7.5.3 The Value of Innovation on ESG and CFP

To investigate if we have support for hypothesis three: *Innovation is associated with higher CFP*, we study the results from model 2, presented in Table 6. We notice that the coefficients for innovation are insignificant in all models for both ROA and TQ. Innovation is negative in model (II) in Panel B, but positive in Panel A. This could indicate that innovation influences financial performance positive short-term, but negative long-term. The adjusted R-squared is respectively 12,4% in Panel A and 33,2% in Panel B. Unfortunately, we do not have a significant F-test in model (II) in either of the panels, and therefore cannot draw any conclusions. The findings are partially in line with the results conducted from the correlation matrix. The correlation between innovation and ROA and TQ was negative. For ROA this relationship was not significant, and we therefore cannot validate it. However, for TQ the correlation was significant, which support the findings of a negative relationship between innovation and CFP. We do, however, see indications of there being a positive relationship between innovation and CFP, as most of the innovation coefficients are positive for the other models in both Panel A and B. All in all, we do not have sufficient results to conclude if we have support for hypothesis three. The findings of both Bigliardi (2012) and Hull and Rothenberg (2008), indicated a positive relationship between innovation and financial performance.

Table 6: Regression results model 2

Panel A: Regression result model 2 with ROA

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
ESG	0.000526**					
	(0.000183)					
Innovation	0.0575	0.0104	0.155	0.0601	0.159	0.0698
	(0.243)	(0.119)	(0.242)	(0.240)	(0.248)	(0.250)
Environmental			0.000318			
			(0.000178)			
Social				0.000524**		
				(0.000178)		
Governance					0.000601***	
					(0.000131)	
ESG Controversies						-0.000307
						(0.000176)
_cons	0.130***	0.131***	0.119***	0.132***	0.116***	0.149***
	(0.0199)	(0.0265)	(0.0255)	(0.0198)	(0.0229)	(0.0232)
N	658	938	580	657	658	570
adj. R2	0.222	0.124	0.275	0.223	0.228	0.212
F-Test	8.442***	0.01	8.233***	8.804***	8.756***	7.922***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Regression result model 2 with Tobin`s q

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)
ESG	0.00788**					
	(0.00295)					
Innovation	4.399	-2.219	6.872	4.025	6.000	3.863
	(5.779)	(2.319)	(6.603)	(5.548)	(6.067)	(5.792)
Environmental			0.00421			
			(0.00253)			
Social				0.00968**		
				(0.00311)		
Governance					0.00678**	
					(0.00222)	
ESG Controversies						-0.00343
						(0.00288)
_cons	2.803***	2.958***	2.905**	2.816***	2.674**	3.052***
	(0.788)	(0.700)	(1.059)	(0.784)	(0.829)	(0.828)
N	655	930	577	654	655	573
adj. R2	0.447	0.332	0.479	0.452	0.447	0.466
F-Test	19.13***	0.92	29.95***	23.24***	19.41***	25.65***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table 6 shows the regression results obtained through OLS estimation method for model 2. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

We further wanted to investigate if innovation affect the relationship between ESG and CFP. The explanatory power changes from Table 5 to Table 6. The adjusted R-squared for model (I) increases for both ROA and TQ. For ROA it goes from 18,6% to 22,2%, and for TQ it increases from 32,7% to 44,7%. We observe that the increase is larger for Tobin`s q, than for ROA. This indicates that innovation is of value relevance to financial performance. Moreover, we do observe that the number of observations changes drastically from Table 5 to Table 6. The reason for this is most likely the innovation variable, where we only have 956 firm-year observations. This is due to limited reported data on research and development in the Thomson Reuters Eikon database. We look at the ESG-related coefficients from Table 5 to Table 6 and see that even though there is a decrease in number of observations, the coefficients stay consistent. There is no change in signs, and the coefficient values does not drastically change. Therefore, we do want to report the following findings where we include innovation.

Furthermore, we notice in Table 6 that the innovation variable is positive but not significant in Panel A and B for model (I) and (III)-(VI). The environmental, social and governance coefficients are positive, and S and G are significant. When including both ESG-related variables and innovation in the regressions the overall effect results in a larger positive impact on CFP, than in the models where the ESG variables are alone. The results support the findings from the correlation matrix, which also indicated a positive relationship between innovation and ESG. This does not give us support for hypothesis four: *Innovation weaken the relationship between ESG performance and CFP*. Which contradicts the findings from Hull and Rothenberg`s (2008) article. We do not observe that innovation influence the ESG-CFP relationship negatively, which could indicate that there is not a conflicting relationship between ESG and innovation in the Consumer Staples industry.

After including innovation in Table 6, we also observe that the environmental variable loses its significance from Table 5, but the coefficient value stays consistent. Model (III), where the environmental variable is included has the highest explanatory power, with respectively 27,5% in panel A, and 47,9% in Panel B. However, the social variable displays the highest coefficient value in Panel B, and governance displays the highest value in Panel A. ESG controversies loses its significance from Table 5 for ROA, and remains negative for both dependent variables presented in Panel A and B.

7.5.4 The effect of GHG emissions on the ESG-CFP relationship

In Table 7 we present the results from model 3, where we further include the variable GHG emissions. An interesting observation is that the innovation variable becomes more significant in several of the models. For ROA, we observe in Panel A, that innovation becomes significant at a 5% level in model (VIII) with the environmental variable, and model (XI) with ESG controversies. For TQ, we observe in Panel B that the innovation variable now is significant in all models where we further have included GHG emissions.

We observe that ESG remains positively significant in model (I) with GHG emissions. When including both GHG emissions and innovation in model (VII), ESG loses its significance but is still positive. The ESG-related variables environmental, social, governance and ESG controversies are all significant in the models when only GHG emissions is included, in both Panel A and B. Model (III), with the social variable, has the highest explanatory power with respectively 34,1% in Panel A and 51,2% in Panel B. Social also has the highest coefficient value of the three. In the models where both GHG emissions and innovation are included, we observe that only the governance variable is significant. The environmental variable now turns negative, which could indicate that the involvement of innovation effects the results.

Table 7: Regression results model 3

Panel A: Regression result model 3 with ROA

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)
ESG	0.000604***						0.000271				
	(0.000122)						(0.000213)				
GHG Emissions	-0.373***	-0.336***	-0.346***	-0.381***	-0.361***	-0.337***	-0.275***	-0.245**	-0.277***	-0.304***	-0.225**
	(0.0714)	(0.0679)	(0.0692)	(0.0716)	(0.0698)	(0.0759)	(0.0777)	(0.0742)	(0.0796)	(0.0713)	(0.0727)
Environmental			0.000247*					-0.000146			
			(0.0000965)					(0.000173)			
Social				0.000610***					0.000249		
				(0.000104)					(0.000192)		
Governance					0.000383***					0.000685***	
					(0.0000923)					(0.000147)	
ESG Controversies						-0.000306**					-0.000160
						(0.0000946)					(0.000154)
Innovation							0.607	0.757*	0.604	0.581	0.748*
							(0.360)	(0.381)	(0.350)	(0.332)	(0.360)
_cons	0.297***	0.302***	0.299***	0.305***	0.292***	0.316***	0.306***	0.316***	0.310***	0.302***	0.300***
	(0.0414)	(0.0416)	(0.0415)	(0.0420)	(0.0412)	(0.0481)	(0.0346)	(0.0342)	(0.0356)	(0.0358)	(0.0378)
N	1543	1543	1543	1543	1543	1463	407	407	407	407	346
adj. R^2	0.337	0.327	0.329	0.341	0.334	0.336	0.439	0.438	0.439	0.456	0.436
F-Test	17.81***	24.51***	13.11***	21.48***	16.55***	10.90***	4.88**	5.29**	4.85**	11.96***	4.88**
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Regression result model 3 with Tobin`s q

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)
ESG	0.0115***						0.00223				
	(0.00190)						(0.00284)				
GHG Emissions	-7.419***	-6.633***	-6.820***	-7.615***	-7.119***	-7.139***	-8.068***	-7.649***	-8.315***	-8.446***	-7.443***
	(0.853)	(0.799)	(0.810)	(0.866)	(0.829)	(0.860)	(1.000)	(0.957)	(1.034)	(0.977)	(0.968)
Environmental			0.00464**					-0.00420			
			(0.00152)					(0.00257)			
Social				0.0121***					0.00459		
				(0.00165)					(0.00247)		
Governance					0.00632***					0.00759***	
					(0.00138)					(0.00216)	
ESG Controversies						-0.00471***					-0.00129
						(0.00124)					(0.00214)
Innovation							14.34**	16.76***	13.35**	13.76**	16.24***
							(4.832)	(4.946)	(4.782)	(4.488)	(4.495)
_cons	5.910***	5.973***	5.915***	6.087***	5.839***	6.480***	9.290***	9.488***	9.325***	9.241***	9.157***
	(0.528)	(0.526)	(0.528)	(0.534)	(0.528)	(0.579)	(1.020)	(1.018)	(1.014)	(1.046)	(1.012)
N	1545	1545	1545	1545	1545	1473	405	405	405	405	350
adj. R^2	0.506	0.491	0.495	0.512	0.498	0.506	0.633	0.636	0.636	0.643	0.677
F-Test	41.70***	68.94***	37.55***	44.33***	39.23***	34.71***	24.76***	24.92***	24.77***	32.62***	25.44***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table 7 shows the regression results obtained through OLS estimation method for model 3. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

Further, we observe that the GHG emissions variable is significantly negatively associated with CFP. The relationship is significant for both short-term and long-term CFP in all models. We also observe that including GHG emissions in the regressions lead to a jump in the adjusted R-squared. From Table 5 to Table 7, model (I) increases from 18,6% to 33,7% for ROA. For TQ it goes from 32,7% to 50,6%. This is a clear indication that GHG emissions is a valuable explanatory variable for financial performance. The negative association displayed in the models above, supports the finding from the correlation matrix, which also displayed a negative relationship. The findings indicate that a GHG emission reduction is positive for financial performance, supporting a win-win relationship regarding sustainability. Our result gives partially support to the findings from Delmas et al. (2015), which stated that reducing GHG emissions would be negative for short-term CFP, but positive for long-term CFP. The study by Wang et al. (2013) however, found only support for a win-lose relationship, and that reducing GHG emission would lead to poorer financial performance. Our findings indicate the contrary for firms in the Consumer Staples industry.

From the correlation matrix earlier, we found evidence of a positive relationship between ESG, E, S and G and GHG emissions, and a negative correlation between ESG controversies

and GHG. The relationship with the environmental variable was the only correlation coefficient that did not display a significant relationship. We would initially assume that the relationship would be negative. However, like earlier explained, the positive relationship could be due to the influence of a correlation with innovation and resource use which are also covered by the environmental variable. The results do not give us support for hypothesis five: *GHG emissions weaken the relationship between ESG performance and CFP*. Our results support however the findings from Giannarakis, Konteos and Sariannidis (2014), which found evidence of there being a positive relationship between GHG emissions and governance and social disclosure. Their belief was that firms that tend to have higher levels of GHG emission, try to "cover up" the negative effects by focusing on social and governance disclosure. This all in all paint a "greener" picture of the organization. Even though our results show that increasing GHG emissions could lead to a better ESG score, which strengthen ESG performance`s positive effect on CFP, it does not take away the negative effect GHG emissions have on CFP. Indicating that ESG all in all could display a greener picture of a company than it necessarily is, but that this "greenwashing" does not take away the overall negative effects of GHG emissions.

7.6 Robustness tests

7.6.1 Firm-control variables

We investigate whether our result presented in Table 6 and 7 is robust when adding firm control variables. On a firm level we control for firm size and leverage. Large firms may have more resources to use on ESG reporting and ESG activities, and are therefore more likely to report these activities (Drempetic, Klein, & Zwergel, 2019; Tamimi & Sebastianelli, 2017). Indicating that larger firms have higher ESG score. Furthermore, in general larger firms may have more visibility, and thereby have better financial performance. In addition, firm size could be correlated with innovation (Bigliardi, 2013). Therefore, controlling for firm size is a central element, which is also done by Delmas et al. (2015), Qureshi et al., (2019), Hull and Rothenberg (2008) and Wang et al. (2014). Firm size is measured as the natural log of total assets. We further control for leverage as previously done by Delmas, Nairn-Birch & Lim (2015), Wang, Li & Gao (2013), Hull and Rothenberg (2008) and Qureshi et al. (2019). The level of leverage can impact ESG activities, as firms with more borrowing opportunities, are

able to borrow more and may therefore spend more on ESG activities (Qureshi et al., 2019). Leverage is measured as the ratio of total debt to total assets.

Table 8: Regression results including firm-control variables

Panel A: Regression result with ROA including firm-control variables

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.00125***						0.00106***						0.000969***				
	(0.000207)						(0.000156)						(0.000246)				
Innovation	0.108	0.0713	0.0595	0.159	0.357	0.362							0.147	0.453	0.241	0.347	0.673*
	(0.219)	(0.0990)	(0.219)	(0.218)	(0.255)	(0.269)							(0.347)	(0.376)	(0.330)	(0.312)	(0.341)
Firm Size	-0.0149***	0.00414	-0.0107*	-0.0114**	-0.00824*	-0.000673	-0.0128***	-0.00468*	-0.00908***	-0.0123***	-0.00808***	-0.00904***	-0.0103*	-0.00235	-0.00734	-0.00823*	-0.000206
	(0.00438)	(0.00222)	(0.00465)	(0.00397)	(0.00374)	(0.00377)	(0.00266)	(0.00206)	(0.00253)	(0.00249)	(0.00231)	(0.00247)	(0.00486)	(0.00531)	(0.00413)	(0.00418)	(0.00486)
Leverage	-0.172***	-0.181***	-0.171***	-0.168***	-0.174***	-0.162***	-0.0264	-0.0178	-0.0215	-0.0217	-0.0259	-0.0103	-0.113***	-0.0967***	-0.105***	-0.102***	-0.0648
	(0.0310)	(0.0239)	(0.0334)	(0.0312)	(0.0316)	(0.0383)	(0.0171)	(0.0174)	(0.0172)	(0.0172)	(0.0172)	(0.0182)	(0.0291)	(0.0277)	(0.0289)	(0.0274)	(0.0338)
Environmental			0.000771***						0.000519***					0.000135			
			(0.000190)						(0.000116)					(0.000216)			
Social				0.000995***						0.000940***					0.000658***		
				(0.000185)						(0.000124)					(0.000173)		
Governance					0.000863***						0.000541***					0.000887***	
					(0.000155)						(0.000103)					(0.000159)	
ESG Controversies						-0.000285						-0.00051***					-0.000109
						(0.000196)						(0.000112)					(0.000196)
GHG Emissions							-0.306***	-0.317***	-0.295***	-0.316***	-0.319***	-0.300***	-0.277***	-0.257***	-0.282***	-0.282***	-0.256***
							(0.0474)	(0.0479)	(0.0476)	(0.0481)	(0.0475)	(0.0485)	(0.0645)	(0.0648)	(0.0656)	(0.0648)	(0.0648)
_cons	0.460***	0.0876	0.379***	0.396***	0.317***	0.202*	0.527***	0.399***	0.466***	0.534***	0.442***	0.507***	0.499***	0.369***	0.462***	0.467***	0.328***
	(0.0860)	(0.0497)	(0.0949)	(0.0791)	(0.0726)	(0.0822)	(0.0556)	(0.0459)	(0.0525)	(0.0544)	(0.0493)	(0.0609)	(0.0851)	(0.0874)	(0.0756)	(0.0728)	(0.0928)
N	641	901	571	640	641	553	1530	1530	1530	1530	1530	1450	404	404	404	404	343
adj. R^2	0.280	0.249	0.288	0.269	0.267	0.211	0.377	0.350	0.360	0.380	0.363	0.366	0.414	0.392	0.410	0.435	0.365
F-Test	17.04***	20.10***	11.30***	13.65***	16.78***	6.84***	22.84***	24.97***	20.33***	24.44***	20.79***	17.28***	12.25***	10.81***	11.32***	15.48***	8.05***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Regression result with Tobin's q including firm-control variables

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.0279***						0.0196***						0.0220***				
	(0.00346)						(0.00253)						(0.00396)				
Innovation	6.384	-1.403	4.542	7.119	11.91	11.59							6.006	12.36*	7.459	11.31*	16.71***
	(6.504)	(1.906)	(6.473)	(6.434)	(8.128)	(8.162)							(5.153)	(5.335)	(5.078)	(4.660)	(4.878)
Firm Size	-0.545***	-0.0823*	-0.486***	-0.489***	-0.372***	-0.259***	-0.274***	-0.123***	-0.204***	-0.272***	-0.178***	-0.192***	-0.408***	-0.240***	-0.358***	-0.325***	-0.205***
	(0.0690)	(0.0352)	(0.0753)	(0.0624)	(0.0617)	(0.0620)	(0.0383)	(0.0271)	(0.0355)	(0.0358)	(0.0316)	(0.0329)	(0.0674)	(0.0697)	(0.0592)	(0.0512)	(0.0614)
Leverage	-1.700***	-1.633***	-1.960***	-1.604***	-1.739***	-1.723***	0.439	0.569*	0.504*	0.529*	0.455	0.657**	-1.047**	-0.728	-0.899*	-0.763*	-0.562
	(0.374)	(0.341)	(0.439)	(0.370)	(0.395)	(0.439)	(0.234)	(0.242)	(0.237)	(0.236)	(0.237)	(0.248)	(0.365)	(0.374)	(0.362)	(0.348)	(0.403)
Environmental			0.0180***						0.00950***					0.00428			
			(0.00289)						(0.00186)					(0.00319)			
Social				0.0241***						0.0183***					0.0168***		
				(0.00315)						(0.00204)					(0.00286)		
Governance					0.0166***						0.00865***					0.0158***	
					(0.00266)						(0.00159)					(0.00255)	
ESG Controversies						-0.0101**						-0.00840***					-0.00560*
						(0.00311)						(0.00150)					(0.00246)
GHG Emissions							-5.158***	-5.247***	-4.838***	-5.381***	-5.374***	-5.448***	-7.205***	-6.772***	-7.391***	-7.216***	-6.678***
							(0.695)	(0.695)	(0.689)	(0.706)	(0.698)	(0.711)	(1.022)	(1.033)	(1.047)	(0.993)	(0.997)
_cons	13.74***	4.952***	13.24***	12.74***	10.15***	9.011***	10.22***	7.756***	8.992***	10.48***	8.510***	9.775***	16.21***	13.45***	15.70***	14.92***	13.23***
	(1.535)	(0.960)	(1.795)	(1.443)	(1.404)	(1.575)	(0.870)	(0.706)	(0.815)	(0.856)	(0.761)	(0.893)	(1.557)	(1.505)	(1.467)	(1.359)	(1.536)
N	639	898	569	638	639	557	1532	1532	1532	1532	1532	1460	402	402	402	402	347
adj. R^2	0.558	0.427	0.577	0.554	0.529	0.534	0.532	0.499	0.511	0.539	0.511	0.522	0.629	0.596	0.631	0.635	0.638
F-Test	21.79***	10.12***	15.04***	21.70***	13.72***	7.94***	28.38***	29.72***	24.54***	31.17***	24.66***	23.87***	30.20***	23.73***	29.48***	36.49***	25.32***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table 8 shows the regression results obtained through OLS estimation method for model 4, including firm-control variables. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

In Table 8 we present our regression models where we include firm size and leverage as control variables. The results are consistent with the findings from Table 6 and 7. ESG remains positively significant for both ROA and TQ. Which further supports our hypothesis one. The results reported in Table 6 with innovation stay consistent when adding firm-control variables, which is displayed in model (I) – (VI). The social variable now displays the highest coefficient value of the three E, S and G variables for both ROA and TQ. Model (VII)-(XVII) shows us that the results from Table 7 are fairly robust. We observe that the environmental variable turns positive in model (XIV) after including firm size and leverage but is not significant. Between the models (VII)-(XII) the social variable still displays the highest coefficient value. And for the models (XIII)-(XVII) governance still display the highest coefficient value in Panel A, but for Panel B social now displays the highest value. The GHG emissions variable remains negative and significant, which support the findings from Table 7.

Further, we observe that firm size is negative in all models except for in model (II) with innovation in Panel A. In addition, it is also significant in model (VII)-(XII) in Panel A, where GHG emissions is included. In Panel B for TQ, it is significantly negative in all models. Leverage is negative in all models in Panel A, and significant in model (I)-(VI) with innovation and model (XIII)-(XVI) with both innovation and GHG emissions. In Panel B, leverage is significantly negative in model (I)-(VI). In the models where GHG emissions is included, model (VII)-(XII), leverage is positive and significant for some of the regressions. Furthermore, it is negative in model (XIII)-(XVII) and significant in all, except model (XIV) with the environmental variable and (XVII) where ESG controversies are included. The explanatory power increases for all models after including firm size and innovation.

7.6.2 Country-control variables

For country-level control variables we add inflation, human development index (HDI), CO2 emissions divided by GDP and patents. Institutional differences may affect the ESG-CFP relationship.

Table 9: Regression results including country-control variables

Panel A: Regression results with ROA including country-control variables

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.00136***						0.00108***						0.00105***				
	(0.000214)						(0.000158)						(0.000236)				
Innovation	0.0704	0.0745	0.0337	0.120	0.344	0.350							0.175	0.469	0.274	0.400	0.692*
	(0.216)	(0.100)	(0.218)	(0.214)	(0.256)	(0.268)							(0.332)	(0.372)	(0.317)	(0.298)	(0.331)
Firm Size	-0.0160***	0.00445*	-0.0121*	-0.0124**	-0.00829*	-0.000642	-0.0129***	-0.00465*	-0.00913***	-0.0125***	-0.00807***	-0.00901***	-0.00967	-0.00184	-0.00659	-0.00710	0.000686
	(0.00447)	(0.00224)	(0.00484)	(0.00408)	(0.00381)	(0.00383)	(0.00266)	(0.00207)	(0.00254)	(0.00250)	(0.00232)	(0.00247)	(0.00493)	(0.00529)	(0.00425)	(0.00432)	(0.00481)
Leverage	-0.178***	-0.183***	-0.173***	-0.173***	-0.179***	-0.161***	-0.0254	-0.0178	-0.0207	-0.0212	-0.0257	-0.0109	-0.107***	-0.0921***	-0.0989***	-0.0951***	-0.0621
	(0.0326)	(0.0246)	(0.0346)	(0.0327)	(0.0335)	(0.0399)	(0.0173)	(0.0176)	(0.0174)	(0.0174)	(0.0174)	(0.0184)	(0.0287)	(0.0274)	(0.0289)	(0.0277)	(0.0348)
HDI	-0.0355	-0.0608	-0.00804	-0.0336	-0.0615*	-0.0437	-0.0189	-0.0232	-0.0179	-0.0225	-0.0207	-0.0163	0.0273	0.0360*	0.0343*	0.0252	0.0421**
	(0.0220)	(0.0333)	(0.0269)	(0.0215)	(0.0276)	(0.0302)	(0.0230)	(0.0245)	(0.0222)	(0.0221)	(0.0266)	(0.0242)	(0.0158)	(0.0155)	(0.0160)	(0.0153)	(0.0155)
Inflation	0.00147	-0.00103	0.000196	0.00126	-0.0000420	-0.00128	0.000831	0.00122	0.00131	0.000935	0.000660	0.00120	0.00127	0.00124	0.000816	0.00205	-0.00175
	(0.00366)	(0.00365)	(0.00405)	(0.00377)	(0.00384)	(0.00463)	(0.00133)	(0.00136)	(0.00135)	(0.00133)	(0.00133)	(0.00143)	(0.00348)	(0.00354)	(0.00351)	(0.00339)	(0.00413)
Patents	-0.000000387	-0.000000107	-0.000000503*	-0.000000418	-0.000000245	-0.000000256	-8.42e-08	-1.72e-08	-8.29e-08	-4.97e-08	-1.55e-08	-8.71e-09	-0.000000388*	-0.000000350*	-0.000000393*	-0.000000201	-0.000000259
	(0.000000227)	(5.73e-08)	(0.000000227)	(0.000000232)	(0.000000227)	(0.000000237)	(9.12e-08)	(8.65e-08)	(9.06e-08)	(8.60e-08)	(8.91e-08)	(8.47e-08)	(0.000000159)	(0.000000169)	(0.000000157)	(0.000000155)	(0.000000150)
CO2/GDP	-182430342.5	9433388.1	-181480583.0	-1693703591	-108379868.8	-98888385.6	-51426756.7	-45628210.0	-60772216.4	-57947499.4	-29934583.6	-33079596.4	40591915.0	67756233.5	38404332.2	71318092.4	111993575.9
	(159415847.8)	(104024659.3)	(186784459.0)	(162430086.5)	(161935172.7)	(181896526.2)	(55622735.2)	(56692782.0)	(57414196.5)	(55127772.9)	(55913067.8)	(57063721.9)	(146707185.9)	(144686847.0)	(148148547.6)	(143300222.5)	(170240683.9)
Environmental			0.000887***						0.000532***					0.000225			
			(0.000203)						(0.000119)					(0.000226)			
Social				0.00111***						0.000957***					0.000723***		
				(0.000197)						(0.000126)					(0.000173)		
Governance					0.000891***						0.000541***					0.000887***	
					(0.000160)						(0.000103)					(0.000162)	
ESG Controversies						-0.000306						-0.000507***					-0.000118
						(0.000199)						(0.000113)					(0.000199)
GHG Emissions							-0.303***	-0.315***	-0.293***	-0.313***	-0.318***	-0.300***	-0.277***	-0.258***	-0.281***	-0.282***	-0.262***
							(0.0473)	(0.0477)	(0.0474)	(0.0479)	(0.0473)	(0.0483)	(0.0635)	(0.0632)	(0.0643)	(0.0636)	(0.0623)
_cons	0.580***	0.122*	0.486***	0.512***	0.402***	0.281*	0.561***	0.432***	0.502***	0.574***	0.468***	0.531***	0.471***	0.327**	0.432***	0.413***	0.269**
	(0.120)	(0.0569)	(0.125)	(0.117)	(0.102)	(0.114)	(0.0654)	(0.0559)	(0.0624)	(0.0647)	(0.0594)	(0.0705)	(0.102)	(0.0995)	(0.0970)	(0.0923)	(0.100)
N	615	873	549	614	615	551	1518	1518	1518	1518	1518	1449	393	393	393	393	343
adj. R^2	0.284	0.253	0.294	0.271	0.263	0.199	0.362	0.334	0.344	0.365	0.347	0.352	0.407	0.382	0.402	0.424	0.366
F-Test	10.74***	10.28***	8.54***	8.96***	9.95***	4.23***	11.70***	10.86***	10.34***	12.52***	10.62***	8.86***	10.72***	9.46***	10.20***	12.33***	7.71***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Regression results with Tobin`s q including country-control variables

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.0292***						0.0199***						0.0231***				
	(0.00331)						(0.00253)						(0.00406)				
Innovation	5.630	-1.262	3.979	6.307	11.39	11.02							5.272	11.68*	6.798	10.76*	16.37***
	(6.273)	(1.935)	(6.366)	(6.163)	(8.037)	(8.086)							(5.143)	(5.379)	(5.054)	(4.712)	(4.871)
Firm Size	-0.551***	-0.0778*	-0.482***	-0.497***	-0.371***	-0.249***	-0.279***	-0.126***	-0.209***	-0.279***	-0.180***	-0.196***	-0.419***	-0.247***	-0.369***	-0.337***	-0.206**
	(0.0689)	(0.0350)	(0.0748)	(0.0627)	(0.0626)	(0.0624)	(0.0381)	(0.0271)	(0.0355)	(0.0358)	(0.0315)	(0.0329)	(0.0692)	(0.0704)	(0.0610)	(0.0536)	(0.0629)
Leverage	-1.889***	-1.751***	-2.009***	-1.778***	-1.898***	-1.680***	0.435	0.546*	0.496*	0.516*	0.436	0.630*	-1.089**	-0.765*	-0.937*	-0.790*	-0.580
	(0.359)	(0.326)	(0.422)	(0.355)	(0.374)	(0.415)	(0.234)	(0.242)	(0.237)	(0.236)	(0.237)	(0.248)	(0.369)	(0.379)	(0.366)	(0.352)	(0.401)
HDI	-3.961***	-3.520**	-3.700***	-3.901***	-4.486***	-4.192***	-0.0979	-0.179	-0.0793	-0.163	-0.138	-0.147	-2.936***	-2.741***	-2.782***	-2.944***	-2.746***
	(0.663)	(1.102)	(0.608)	(0.773)	(0.977)	(1.158)	(0.667)	(0.682)	(0.663)	(0.646)	(0.706)	(0.670)	(0.220)	(0.231)	(0.217)	(0.220)	(0.242)
Inflation	-0.0967	-0.0441	-0.123	-0.0950	-0.135	-0.128	-0.000530	0.00647	0.00780	0.00143	-0.00219	0.0128	-0.0367	-0.0316	-0.0418	-0.0222	-0.0478
	(0.0697)	(0.0720)	(0.0764)	(0.0701)	(0.0775)	(0.0868)	(0.0214)	(0.0207)	(0.0206)	(0.0213)	(0.0213)	(0.0205)	(0.0644)	(0.0658)	(0.0658)	(0.0629)	(0.0678)
Patents	-0.00000721	-0.00000102	-0.00000549	-0.00000799*	-0.00000438	-0.00000457	-0.00000122	-4.75e-08	-0.00000123	-0.000000645	1.95e-09	-0.000000158	-0.00000311	-0.00000233	-0.00000346	0.000000558	-0.00000142
	(0.00000371)	(0.00000103)	(0.00000325)	(0.00000374)	(0.00000372)	(0.00000321)	(0.00000124)	(0.00000117)	(0.00000123)	(0.00000116)	(0.00000121)	(0.00000115)	(0.00000260)	(0.00000253)	(0.00000256)	(0.00000246)	(0.00000261)
CO2/GDP	-3.69873e+09	-1.50718e+09	-2.22563e+09	-3.54850e+09	-2.05881e+09	-2.20264e+09	-1.88890e+09*	-1.79706e+09*	-2.06219e+09**	-2.00565e+09**	-1.56201e+09*	-1.87427e+09*	-1.29874e+09	-771649984.5	-1.53507e+09	-668607887.4	-102073293.6
	(2.30635e+09)	(2.16009e+09)	(2.53549e+09)	(2.36792e+09)	(2.36686e+09)	(2.63240e+09)	(750074842.0)	(774706743.8)	(780903630.5)	(745582516.8)	(759858257.8)	(786717904.3)	(2.57747e+09)	(2.53982e+09)	(2.56239e+09)	(2.45925e+09)	(2.72685e+09)
Environmental			0.0179***						0.00982***					0.00494			
			(0.00274)						(0.00188)					(0.00327)			
Social				0.0257***						0.0186***					0.0177***		
				(0.00303)						(0.00205)					(0.00297)		
Governance					0.0175***						0.00855***					0.0165***	
					(0.00269)						(0.00158)					(0.00259)	
ESG Controversies						-0.00987**						-0.00849***					-0.00559*
						(0.00306)						(0.00151)					(0.00245)
GHG Emissions							-5.057***	-5.155***	-4.741***	-5.256***	-5.278***	-5.365***	-7.160***	-6.787***	-7.312***	-7.219***	-6.656***
							(0.692)	(0.693)	(0.688)	(0.703)	(0.697)	(0.709)	(1.032)	(1.036)	(1.051)	(0.996)	(0.987)
_cons	18.35***	7.982***	16.92***	17.36***	14.28***	12.91***	11.13***	8.650***	9.949***	11.51***	9.287***	10.68***	18.39***	15.24***	17.91***	16.73***	14.67***
	(1.776)	(1.280)	(1.799)	(1.727)	(1.729)	(1.996)	(1.168)	(1.039)	(1.127)	(1.156)	(1.088)	(1.205)	(1.614)	(1.543)	(1.568)	(1.422)	(1.651)
N	613	870	547	612	613	555	1520	1520	1520	1520	1520	1459	391	391	391	391	347
adj. R^2	0.597	0.445	0.592	0.593	0.565	0.556	0.514	0.479	0.492	0.522	0.491	0.503	0.628	0.592	0.629	0.634	0.641
F-Test	19.49***	6.94***	29.08***	17.89***	10.29***	6.13***	15.36***	13.92***	13.37***	17.89***	10.29***	12.97***	38.40***	32.86***	36.52***	39.00***	30.60***
Country Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Table 9 shows the regression results obtained through OLS estimation method for model 5, including firm-control and country-control variables. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

After including country-control variables we observe that the result is consistent with the results presented in Table 8 with firm-control variables, and previous results in Table 6 and 7. ESG remains strongly consistent for both ROA and TQ. For TQ, in model (I)-(VI) we now observe that the model with the social variable has the highest adjusted R-squared with respectively 59,3%, and the highest coefficient value of the three E, S and G variables. This is a change from Table 8 Panel B, where the model with the environmental variable displayed the highest adjusted R-squared. Although, we also observe that the value of the adjusted R-squared are very similar between the two. Model (III) in panel B with the environmental variable display an adjusted R-squared of 59,2%. All together, we observe that the social variable consistently displays the highest coefficient value, except for in models where both innovation and GHG are presented. This give us further indications of it being the variable of the three E, S and G to have the biggest influential power on CFP.

The variables firm size and leverage remains consistent after further including country-control variables for both ROA and TQ. Furthermore, we observe in Panel A that that the HDI variable is negative in model (I)-(XII) with respectively innovation and GHG emissions separately, and positive in model (XIV)-(XVII) with innovation and GHG emissions together. It is only significant in four of the models. In addition, the inflation variable display both positive and negative coefficients in Panel A, non-which was significant. Patents display a negative association with ROA and is significant in model (III) and (XIII)-(XV). Additionally, CO2/GDP is non-significantly negatively associated with ROA in model (I), (III)-(XII), with innovation and GHG emissions separately, and positively associated with ROA in model (XIII)-(XVII) with both innovation and GHG emissions.

In Panel B, we observe that HDI is negatively associated with TQ in all models. It is also significant in model (I)-(VI) with innovation, and (XIII)-(XVII) with both innovation and GHG emissions. Inflation is insignificantly negatively associated with TQ, except for in model (VIII)-(X) and (XII). Patents, also not significant, display a negative association with TQ, except for in model (XI) and (XVI) – both including governance. Furthermore, CO2/GDP display a negative association with TQ in all the models and is significant for model (VII)-(XII) with GHG emissions. The findings suggest that institutional differences impact a firm`s short-term and long-term financial performance differently.

7.6.3 Panel data regression

In addition to both country and firm control variables, we conduct a panel data analysis with fixed effects. When investigating the results from the fixed effects panel data regression, we see that the results does not support our OLS results when ROA is the dependent variable. We see that the coefficients ESG, environmental, social, governance and ESG controversies all changes sign, and display the opposite result than with OLS. Further, we observe that some models do not have a significant F-test. The results with GHG emissions are still the same and support our results from earlier.

However, when we change the dependent variable to Tobin's q there are fewer changes compared to ROA. Panel B still give consistent results for GHG emissions, in addition both the social pillar score and the ESG score are positive and significant. This support the rejection of our hypothesis two, that the environmental factor is the most influential on CFP. In the models where innovation is included, we do not get any support for our previous findings. The F-tests are only significant in the models where innovation is not included.

The reason for these conflicting results we are uncertain about. By inspecting the models in Table 10, we also observe a poor overall R-squared. We have tried to adjust the model to see if we could fix the issues. First, we tried changing the error specification by adding a robust standard error. Next, we introduced several control variables; country, year and industry, to see if this could fix the results. Last, we checked if our models were better suited to use random effects. Neither of these changes improved the results. The results from the panel data could indicate that the dataset is relatively skewed, which could be related to number of observations.

Table 10: Panel data regression – Fixed effects

Panel A: Panel data regression with ROA – Fixed effects

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	-0.000633*						-0.000273*						-0.000524*				
	(0.000261)						(0.000108)						(0.000241)				
Innovation	0.0779	0.222	-0.175	-0.0847	-0.312	-0.623							1.382*	1.143	1.266	1.220	0.407
	(0.934)	(0.455)	(0.915)	(0.934)	(0.939)	(1.040)							(0.692)	(0.684)	(0.692)	(0.707)	(0.759)
Environmental			-0.0011***						-0.00015					-0.00067**			
			(0.000217)						(0.0000851)					(0.000205)			
Social				-0.000315						-0.000262**					-0.000259		
				(0.000221)						(0.0000893)					(0.000184)		
Governance					0.000196						-0.0000655					0.0000189	
					(0.000221)						(0.0000824)					(0.000179)	
ESG Controversies						0.000183						0.0000598					0.000212
						(0.000180)						(0.0000600)					(0.000114)
GHG Emissions							-0.215***	-0.208***	-0.218***	-0.212***	-0.207***	-0.176**	-0.126	-0.164	-0.0986	-0.119	0.206
							(0.0582)	(0.0583)	(0.0585)	(0.0581)	(0.0583)	(0.0580)	(0.172)	(0.172)	(0.174)	(0.174)	(0.187)
cons	0.131***	0.105***	0.162***	0.117***	0.0944***	0.101***	0.241***	0.221***	0.236***	0.239***	0.225***	0.201***	0.189*	0.224*	0.159	0.153	-0.0246
	(0.0167)	(0.00701)	(0.0168)	(0.0157)	(0.0163)	(0.0169)	(0.0340)	(0.0331)	(0.0341)	(0.0336)	(0.0334)	(0.0332)	(0.0954)	(0.0957)	(0.0945)	(0.0954)	(0.103)
N	658	938	580	657	658	570	1543	1543	1543	1543	1543	1463	407	407	407	407	346
Overall R^2	0.0183	0.017	0.0141	0.022	0.0104	0	0.006	0.0189	0.0149	0.04	0.015	0.013	0.0026	0.0002	0.0025	0.0005	0.0126
F-Test	2.97	0.24	13.62***	1.04	0.42	0.69	9.62***	12.76***	8.04***	10.71***	6.69**	5.13**	2.67*	4.64**	1.74	1.08	1.86

Panel B: Panel data regression with Tobin`s q - Fixed effects

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.00122						0.00293*						0.00163				
	(0.00289)						(0.00141)						(0.00320)				
Innovation	-7.283	-0.119	-7.054	-7.786	-7.851	-2.342							-5.838	-5.810	-5.617	-8.689	0.580
	(10.90)	(5.469)	(8.979)	(10.84)	(10.90)	(10.62)							(10.08)	(9.997)	(10.02)	(10.20)	(9.674)
Environmental			-0.000248						0.00114					-0.00425			
			(0.00202)						(0.00112)					(0.00274)			
Social				0.00270						0.00327**					0.00240		
				(0.00244)						(0.00117)					(0.00244)		
Governance					0.00196						0.000443					0.00390	
					(0.00245)						(0.00108)					(0.00237)	
ESG Controversies						-0.000247						0.000146					0.00185
						(0.00185)						(0.000797)					(0.00146)
GHG Emissions							-3.153***	-3.224***	-3.155***	-3.164***	-3.229***	-3.174***	-0.712	-1.059	-0.914	-0.705	-0.0952
							(0.761)	(0.762)	(0.765)	(0.760)	(0.762)	(0.769)	(2.321)	(2.322)	(2.324)	(2.312)	(2.397)
_cons	2.465***	2.391***	2.501***	2.402***	2.426***	2.484***	3.816***	4.032***	3.923***	3.805***	4.008***	4.008***	2.742*	3.315*	2.806*	2.637*	2.342
	(0.190)	(0.0842)	(0.161)	(0.178)	(0.184)	(0.174)	(0.445)	(0.433)	(0.446)	(0.440)	(0.437)	(0.441)	(1.282)	(1.293)	(1.262)	(1.265)	(1.321)
N	655	930	577	654	655	573	1545	1545	1545	1545	1545	1473	405	405	405	405	350
Overall R^2	0.0132	0.0105	0.091	0.0267	0.0092	0.0169	0.0475	0.0329	0.0348	0.0578	0.0345	0.0322	0.061	0.0234	0.0979	0.0229	0.0016
F-Test	0.28	0	0.32	0.81	0.51	0.03	11.14***	17.92***	9.48***	12.89***	9.04***	8.54***	0.26	0.98	0.5	1.08	0.54

Notes: Table 11 shows the regression results obtained through panel data with random effects for model 2 and 3. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

7.6.4 FGLS regression

Furthermore, we conduct a feasible GLS regression. This allows us to look at company effects over time. GLS is robust against heteroscedasticity and autocorrelation (Brooks, 2008, pp. 136, 150). The results are overall quite consistent with previous results. For the models with ROA as the dependent variable we find all results significant and supportive, except for the innovation coefficients. ESG still has a positive relationship with ROA and both social and governance is positive, with social being the most significant. Further, the environmental

score is only significant in model (III). We also get support for the results on GHG emissions when innovation is not included, however with the two both included the results are mixed. Innovation is not consistent with our main results. Moreover, we observe that the Chi2 is not significant in model (II), (XIV) and (XVII). In these models neither of the coefficients are significant, which indicate that we can't conclude anything from them.

There are many of the same changes in the models with Tobin's q as the dependent variable. ESG is still significant and the coefficient values are quite consistent. The same applies to the models with the GHG emissions, which is still significantly negative. In the models (XIII)-(XVII) we observe the GHG variable to be more significant in panel B than panel A. The innovation variable is still not significant. The governance score is now only significant in model (XI) and we do not get any support for the environmental score either. However, the social score is still significant in all models and is the most consistent of the three.

Table 11: Panel data regression – FGLS

Panel A: Panel data regression with ROA – FGLS

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.000790***						0.000642***						0.00163				
	(0.000162)						(0.000132)						(0.00320)				
Innovation	-0.535	-0.214	-0.495	-0.545	-0.357	-0.484							-5.838	-0.327	-0.455	-0.340	-0.529
	(0.321)	(0.169)	(0.325)	(0.317)	(0.315)	(0.339)							(10.08)	(0.414)	(0.401)	(0.405)	(0.445)
GHG Emissions							-0.275***	-0.245***	-0.247***	-0.279***	-0.273***	-0.268***	-0.712	-0.157	-0.195*	-0.183*	-0.130
							(0.0450)	(0.0449)	(0.0448)	(0.0448)	(0.0453)	(0.0486)	(2.321)	(0.0814)	(0.0806)	(0.0823)	(0.0965)
Environmental			0.000494***						0.000155					0.000316			
			(0.000150)						(0.000109)					(0.000208)			
Social				0.000633***						0.000628***					0.000712***		
				(0.000143)						(0.000109)					(0.000187)		
Governance					0.000457**						0.000413***					0.000547*	
					(0.000169)						(0.000114)					(0.000229)	
ESG Controversies						-0.00049**						-0.00033**					-0.00039*
						(0.000188)						(0.000102)					(0.000190)
_cons	0.0784***	0.112***	0.0811***	0.0776***	0.0807***	0.130***	0.220***	0.242***	0.233***	0.224***	0.233***	0.271***	2.742*	0.179***	0.179***	0.180***	0.205***
	(0.0088)	(0.00405)	(0.00895)	(0.00816)	(0.0103)	(0.0112)	(0.0258)	(0.0256)	(0.0262)	(0.0255)	(0.0256)	(0.0292)	(1.282)	(0.0458)	(0.0450)	(0.0455)	(0.0578)
N	658	938	580	657	658	570	1543	1543	1543	1543	1543	1463	405	407	407	407	346
Chi2	14.42***	1.61	11.32**	20.19***	7.85*	8.06*	53.68***	29.76***	31.82***	63.63***	43.20***	34.88***	13.59**	5.31	17.61***	8.73*	6.23

Panel B: Panel data regression with Tobin`s q – FGLS

	Model (I)	Model (II)	Model (III)	Model (IV)	Model (V)	Model (VI)	Model (VII)	Model (VIII)	Model (IX)	Model (X)	Model (XI)	Model (XII)	Model (XIII)	Model (XIV)	Model (XV)	Model (XVI)	Model (XVII)
ESG	0.00627*						0.0125***						0.0132***				
	(0.00301)						(0.00214)						(0.00361)				
Innovation	-17.02**	-9.209**	-14.14*	-18.64**	-14.48*	-18.70**							-14.58*	-10.44	-14.22*	-10.95	-17.52**
	(5.940)	(2.935)	(5.542)	(5.860)	(5.826)	(6.175)							(5.999)	(6.099)	(5.822)	(5.963)	(6.353)
Environmental			0.00252						0.00331					0.00300			
			(0.00257)						(0.00175)					(0.00307)			
Social				0.00963***						0.0129***					0.0135***		
				(0.00265)						(0.00175)					(0.00275)		
Governance					0.00221						0.00614***					0.00644	
					(0.00312)						(0.00184)					(0.00341)	
ESG Controversies						-0.00535						-0.00438**					-0.00607*
						(0.00343)						(0.00165)					(0.00272)
GHG Emissions							-6.010***	-5.368***	-5.408***	-6.142***	-5.824***	-5.892***	-8.664***	-7.687***	-8.882***	-8.140***	-8.650***
							(0.740)	(0.740)	(0.740)	(0.735)	(0.750)	(0.788)	(1.265)	(1.259)	(1.241)	(1.286)	(1.382)
_cons	2.346***	2.523***	2.452***	2.212***	2.499***	2.952***	4.869***	5.251***	5.070***	4.929***	5.139***	5.762***	6.606***	6.625***	6.715***	6.672***	7.801***
	(0.164)	(0.0705)	(0.153)	(0.151)	(0.190)	(0.205)	(0.423)	(0.422)	(0.433)	(0.417)	(0.422)	(0.472)	(0.694)	(0.707)	(0.685)	(0.702)	(0.827)
N	655	930	577	654	655	573	1545	1545	1545	1545	1545	1473	405	405	405	405	350
Chi2	10.16**	9.84**	6.62*	19.11***	6.29*	10.82**	87.93***	52.61***	56.3***	108.89***	64.07***	57.14***	52.90***	39.40***	64.57***	42.26***	45.46***

Notes: Table 10 shows the regression results obtained through panel data with GLS estimation method for model 2 and 3. Panel A shows the results with return on assets as the dependent variable and panel B with Tobin`s q as the dependent variable. In the parentheses we display robust standard errors. *** p<0.001; ** p<0.01; * p<0.05 based on a two-tailed test.

7.7 Further discussion

To summarize, our results find only support for hypothesis one. ESG is positively significant in Table 5 for both ROA and Tobin`s q. This result is also consistent throughout the analysis and robust for firm-control variables, country-control variables and FGLS estimation method. ESG performance is in other word significantly positively associated with both short-term CFP and long-term CFP. ESG controversies displayed a negative association with CFP, which indicate that challenges related to ESG could influence financial performance negatively. We also have a consistent and robust result for GHG emissions, and its effect on the ESG-CFP relationship. GHG emissions is consistently negatively associated with CFP in all models and this is robust through different statistical methods. Moreover, the correlation between GHG emissions and ESG, social, governance and ESG controversies is significant. The correlation displayed a positive relationship, which contradicts our initial assumptions and does not give us support for hypothesis five that GHG emission weakens the ESG-CFP relationship.

Throughout the analysis, we do not find support for hypothesis two. The environmental variable is the one of the three E, S and G variables, that displays the most unstable results throughout the analysis. In model 1 we found that it significantly influenced CFP, and it`s model displayed the highest adjusted R-squared. However, the social variable displayed the

highest coefficient value. Throughout the rest of the analysis, the environmental variable lost its significance and changed signs in some of the models. Both social and governance displayed more stable results which indicated that they significantly impact CFP more than environmental performance. We find most support and consistent results that would suggest social performance to have the biggest influencing power over CFP, both through the correlation matrix and the regression analysis.

For hypotheses three we unfortunately did not find significant results to find support for our assumptions. This could be due to the lack of observations we have on the innovation variable. The innovation coefficient rarely displayed significant results, which made it hard to conclude its effect on CFP. From the correlation matrix it indicated to have a negative relationship with CFP, and for Tobin`s q this relationship was also significant. However, our extended research through the OLS regressions mostly displayed a positive association between innovation and CFP. This result was not robust through different statistical methods. Therefore, we cannot conclude whether we have support for our hypothesis three or not.

Furthermore, we observed that innovation significantly correlated positively with ESG, E, S and G. This could indicate that innovation influence the ESG-related variables positively, which again could strengthen the positive effect that ESG have on CFP. However, our hypothesis four states that innovation could weaken the ESG-CFP relationship, as innovation and ESG performance would be two conflicting ways for firm to differentiate (Hull & Rothenberg, 2008). The result from the correlation matrix and the regressions indicate however that the battling relationship between ESG and innovation may not be the case in the Consumer Staples industry, and that innovation strengthen the ESG-CFP relationship.

Throughout the analysis we have found results which support views from the stakeholder theory. By investing in activities which includes ethical actions and is related to improving a company`s ESG score, we see that firms can also improve its financial performance. This can again benefit both shareholders and stakeholders. Moreover, it can attract investors who feel like their values align with the company. Activities related to a strong ESG score could also help a company improve its reputation, which will help it to stay competitive in the market. This indicates that such investments should not be viewed as unprofitable investments regarding a company`s shareholders, but rather an opportunity to increases the company`s financial growth.

8 Conclusion

In this section we present our conclusion from the analysis and suggest some policy implications. In addition, we present suggestions for further research and highlight limitations in our study.

8.1 Conclusion

The purpose of this study is to answer our research question "*Can ESG performance affect Corporate Financial Performance, and how does Innovation and GHG emissions affect this relationship?".*

Our ambition with this thesis is to illuminate the effect of non-financial reporting on the financial performance. The primary focus is the ESG concept both as a total concept, but also the differences between the environmental, social and governance factors. In addition, we also emphasize the effect of innovation and greenhouse gas emissions. To delineate our data set we have chosen to investigate these effects in the Consumer Staples industry. The results are run through a series of robustness tests to confirm the results and we have tested for both return on assets and Tobin's q to see the effect on both short-term and long-term CFP. Moreover, the results from the thesis show that all in all it pays to be green, as the ESG score show a positive association with financial performance. The contradiction of ESG, ESG Controversies, indicates to have a negative relationship with CFP. We have implications that innovation affects CFP and ESG positively, but there are inconsistent and few significant results. In addition, there are some variations in the robustness tests. However, we can conclude that innovation has a positive impact on the ESG-CFP relationship. Further, when adding GHG emissions to the model, we saw the complexity of the ESG concept. The reason was that increased GHG emissions leads to a better ESG score. Initially we thought that this didn't add up, but previous research argues that it is possible to cover up a bad result in one category with positive results from other ESG activities. By focusing on other aspects of ESG, the score can rise. This is interesting as it is likely that this phenomenon is not only valid with GHG emissions and displays the complexity of ESG disclosure. Even though GHG emissions increases ESG, it has a negative effect on CFP overall. All our results support stakeholder theory, which means it pays off to invest in non-financial aspects and care about stakeholder interests.

8.2 Policy implications

We provide evidence from our study that imply that firms in the Consumer Staples industry that adopt an ESG strategy into their operations, will benefit from this in their overall financial performance. Especially focus related to social performance, such as workforce, human rights, community and product responsibility. Additionally, our results give indications that firms should work to avoid ESG controversies, as they reduce the overall positive effect of ESG, and yield a negative association with financial performance. In addition, firms can with the use of innovation strengthen its ESG score.

Moreover, we find evidence that firms will benefit positively by operating more sustainably. We provide evidence of a win-win relationship indicating that reducing GHG emissions will lead to an increase in financial performance. This relationship was valid for a short-time and long-term perspective on financial performance. Firms can be an important contributing force to reduce the challenges we see in the industry. This could hopefully over time help the industry become more sustainable. Companies that meet the needs of multiple stakeholders can gain a better reputation and improve its overall performance at the same time.

8.3 Further research

Even though we were able to conclude that ESG have a positive impact on CFP both short-term and over time, we have some suggestions to what could have made these results even better or more robust. First, we suggest looking into each of the sectors which goes under the Consumer Staples industry. There could be changes due to whether firms operate in household products, tobacco, personal products, food products, food and staples retailing and beverages that could influence the ESG-CFP relationship. We also suggest looking into if some of the countries deviated from or affected the results in some way. Earlier, we described that there are three subcategories that is evaluated when giving a firm the environmental score: emission, innovation and resource use. We have studied both GHG emissions and innovation, therefore we suggest looking into the effect of resource use. In relation to this, it could be interesting to incorporate proxies such as water use and waste. Next, we suggest comparing the results we got from Thomson Reuters with another distributor of information, for instance Bloomberg, since differences in disclosure and database can occur.

In this thesis we have checked which effect ESG have on return on assets and Tobin's q. For future research we suggest turning it around and check how ROA and TQ influence ESG, to

understand if there is a two-way relationship between ESG and CFP. Further, we suggest checking if ESG is of value relevance for stock prices in the Consumer Staples industry.

8.4 Limitations

Our study contains some limitations. We could have included corporate life cycle as a control variable, to find out if ESG is something that is important from the startup-face of a firm, or if this is something that is central when a company is well established. Further, the innovation variable used in this study is based on the research and development expenditures collected from the Thomson Reuters Eikon database. This is not necessarily the same as innovation, as other factors than innovation are included. This could have been inadequate and lead us to some inconsistent answers and may not reflect the full effect of innovation in the dataset. In addition, this proxy had limited observations, which may have impacted the results. Therefore, another proxy for innovation may have given us other outcomes. Furthermore, the robustness test where we use panel data does not support our results and is a limitation in our study. We believe that this could possibly be fixed by extending the dataset and number of observations.

Appendix

Appendix 1: List of Consumer Staples Sectors

Industry	*Obs*	*Mean ESG*	*Min ESG*	*Max ESG*	*Mean E*	*Mean S*	*Mean G*	*Mean ESG C.*
Beverages	882	43,69	0,40	93,23	45,73	40,73	51,58	49,75
Food & Staples Retailing	1091	46,35	0,32	91,69	47,39	45,97	52,29	50,42
Food Products	2272	40,93	0,42	93,81	41,62	40,36	47,49	52,25
Household Products	280	56,72	9,93	91,36	52,45	59,10	60,95	47,30
Personal Products	462	50,34	9,73	92,27	52,78	50,33	56,95	46,09
Tobacco	224	52,95	6,84	89,64	69,87	61,00	66,17	38,48

Appendix 2: List of continents

Region	Frequency	Percent
Africa	210	4,03
Americas	1875	35,98
Asia	1692	32,47
Europe	1078	20,69
Oceania	356	6,83
Total	**5125**	**100**

Appendix 3: Summarized statistics including extreme values

stats	ROA	TQ	ESG	ESGCon~s	Enviro~l	Social	Govern~e	normRD	normGHG	Leverage	FirmSi~A	TotalR~e
mean	.1073112	2.380868	45.53658	49.75008	46.72778	44.76066	51.85472	.0161986	.5682678	.2451513	21.69754	1.01e+10
max	.9883327	205.7938	93.81622	73.07692	98.72598	97.93631	99.58453	1.310811	.8184969	9.808168	26.27073	5.14e+11
min	-2.543147	.1190322	.3265602	.2347418	.1147842	.0910029	.4390874	.0000294	.2687722	2.20e-06	12.03092	-1.04e+08
p50	.0901709	1.729702	44.75997	59.82143	48.67123	43.00842	53.24151	.0110064	.5732089	.2303237	21.65806	2.90e+09
sd	.1241433	3.748029	23.23778	21.628	27.45248	25.59056	23.48924	.0461864	.0519751	.2237667	1.598383	2.84e+10
skewness	-3.76094	36.36421	.0456989	-1.254408	-.0596554	.1648041	-.1750198	23.32582	-.6479947	17.70984	-.0122674	11.00509
kurtosis	97.16037	1894.075	1.900507	2.79638	1.78209	1.91598	2.137935	644.9026	4.336608	731.4542	3.388952	165.4321

Appendix 4: Variance Inflation Factor

ROA as the dependent variable:

Variable	VIF	1/VIF
FirmSizeTA	2.85	0.351215
ESG	2.80	0.356754
CO2GDP	2.27	0.440150
ESGControv~s	1.74	0.574907
HDI	1.68	0.594796
Inflation	1.57	0.635576
Patents	1.53	0.652773
Leverage	1.40	0.716012
normRD	1.27	0.785138
normGHG	1.15	0.871272
Mean VIF	1.83	

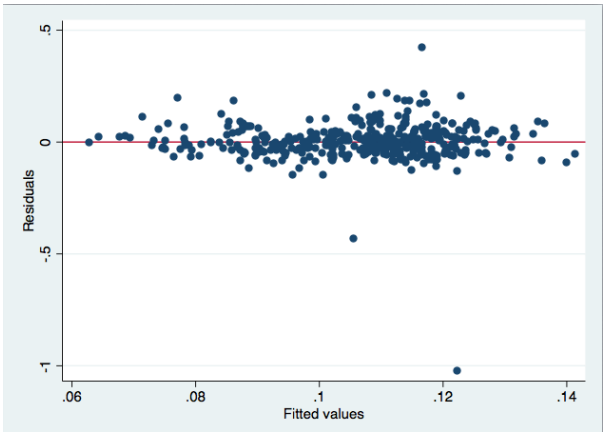
Tobin`s q as the dependent variable:

Variable	VIF	1/VIF
FirmSizeTA	2.85	0.350825
ESG	2.76	0.361781
CO2GDP	2.26	0.441652
ESGControv~s	1.74	0.574821
HDI	1.68	0.596395
Inflation	1.56	0.642119
Patents	1.52	0.658624
Leverage	1.38	0.725364
normRD	1.27	0.786707
normGHG	1.15	0.872078
Mean VIF	1.82	

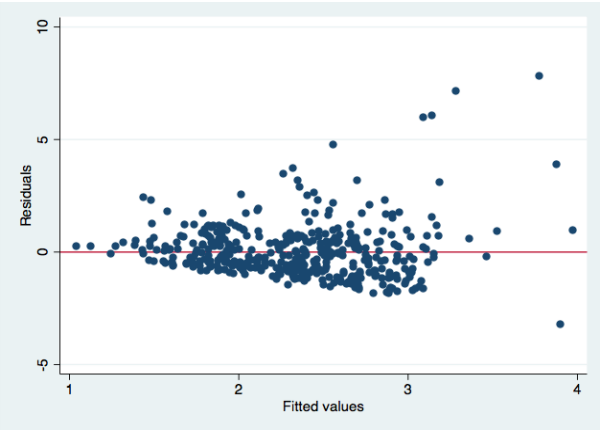
Appendix 5: Tests for heteroskedasticity

Scatter plot

ROA as dependent variable:



Tobin`s q as dependent variable:



Breusch-Pagan test for heteroskedasticity

With Return on Assets:

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROA

         chi2(1)      =    44.43
         Prob > chi2  =   0.0000
```

With Tobin`s q:

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of TQ

         chi2(1)      =   171.83
         Prob > chi2  =   0.0000
```

White`s test for heteroskedasticity:

With Return on Assets:

White's test for Ho: homoskedasticity
against Ha: unrestricted heteroskedasticity

chi2(9) = 84.89
Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	84.89	9	0.0000
Skewness	11.44	3	0.0096
Kurtosis	1.14	1	0.2861
Total	97.47	13	0.0000

With Tobin`s q:

White's test for Ho: homoskedasticity
against Ha: unrestricted heteroskedasticity

chi2(9) = 127.01
Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	127.01	9	0.0000
Skewness	39.46	3	0.0000
Kurtosis	4.17	1	0.0410
Total	170.64	13	0.0000

Appendix 6: ESG as the dependent variable in relation to innovation

```
. reg ESG ROA normRD i.year i.country, vce(robust)
```

Linear regression

Number of obs = 658
F(35, 622) = 67.78
Prob > F = 0.0000
R-squared = 0.4368
Root MSE = 19.055

ESG	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
ROA	24.44675	9.983359	2.45	0.015	4.84158	44.05192
normRD	228.1249	150.8784	1.51	0.131	-68.16788	524.4176
year						
2006	2.732282	5.577291	0.49	0.624	-8.220319	13.68488
2007	3.084886	5.814468	0.53	0.596	-8.33348	14.50325
2008	10.91333	5.897166	1.85	0.065	-.6674422	22.49409
2009	14.85618	5.649173	2.63	0.009	3.762421	25.94995
2010	18.02939	5.38984	3.35	0.001	7.444903	28.61388
2011	19.16485	5.278338	3.63	0.000	8.799328	29.53037
2012	19.42751	5.235242	3.71	0.000	9.146616	29.7084
2013	20.7396	5.070988	4.09	0.000	10.78126	30.69793
2014	20.0055	5.047572	3.96	0.000	10.09315	29.91785
2015	21.88319	5.060173	4.32	0.000	11.9461	31.82029
2016	20.56316	5.03286	4.09	0.000	10.6797	30.44661
2017	22.19304	4.946458	4.49	0.000	12.47926	31.90682
2018	20.01771	5.023173	3.99	0.000	10.15327	29.88214
country						
Brazil	36.94987	7.880544	4.69	0.000	21.47418	52.42557
China	-16.38317	8.11444	-2.02	0.044	-32.31819	-.4481539
Denmark	37.18333	7.381707	5.04	0.000	22.68724	51.67942
France	46.25446	8.104059	5.71	0.000	30.33983	62.16909
Germany	28.42999	8.048434	3.53	0.000	12.6246	44.23539
Hong Kong	-3.82125	8.352254	-0.46	0.647	-20.22328	12.58078
India	11.93112	8.379962	1.42	0.155	-4.525326	28.38756
Indonesia	-13.23888	7.959586	-1.66	0.097	-28.8698	2.392034
Ireland; Republic of	4.161639	7.701592	0.54	0.589	-10.96263	19.28591
Japan	9.603999	7.70558	1.25	0.213	-5.528105	24.7361
Korea; Republic (S. Korea)	17.02815	7.867919	2.16	0.031	1.577243	32.47905
Luxembourg	12.92722	8.945858	1.45	0.149	-4.640527	30.49496
Malaysia	1.131411	7.639703	0.15	0.882	-13.87132	16.13415
Netherlands	44.74429	8.174569	5.47	0.000	28.69119	60.79739
New Zealand	-21.95112	7.905565	-2.78	0.006	-37.47595	-6.42629
Spain	9.746331	8.343925	1.17	0.243	-6.639345	26.13201
Switzerland	56.20151	7.65173	7.34	0.000	41.17516	71.22787
Turkey	20.43093	11.31385	1.81	0.071	-1.787042	42.6489
United Kingdom	30.4201	7.933459	3.83	0.000	14.84049	45.99971
United States of America	18.66839	7.70949	2.42	0.016	3.528611	33.80818
_cons	9.813274	8.706768	1.13	0.260	-7.284949	26.9115

```
. reg ESG TQ normRD i.year i.country, vce(robust)

Linear regression                               Number of obs     =        655
                                                F(34, 620)        =      64.30
                                                Prob > F          =     0.0000
                                                R-squared         =     0.4280
                                                Root MSE          =     19.161
```

ESG	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
TQ	1.529879	.6098144	2.51	0.012	.3323273	2.727431
normRD	229.6016	149.6072	1.53	0.125	-64.1967	523.3999
year						
2006	2.204382	5.527522	0.40	0.690	-8.650552	13.05932
2007	2.962067	5.733652	0.52	0.606	-8.297664	14.2218
2008	11.35648	5.856766	1.94	0.053	-.1450269	22.85798
2009	14.65781	5.610805	2.61	0.009	3.63933	25.6763
2010	18.49924	5.328454	3.47	0.001	8.035235	28.96324
2011	19.50473	5.166142	3.78	0.000	9.359472	29.64999
2012	20.00406	5.151682	3.88	0.000	9.887195	30.12092
2013	20.78319	5.042849	4.12	0.000	10.88005	30.68632
2014	20.26805	5.028921	4.03	0.000	10.39227	30.14383
2015	20.95823	5.050505	4.15	0.000	11.04006	30.8764
2016	20.08418	4.970236	4.04	0.000	10.32364	29.84472
2017	21.36826	4.921874	4.34	0.000	11.70269	31.03382
2018	19.46263	4.973787	3.91	0.000	9.695123	29.23015
country						
China	-16.15762	8.008748	-2.02	0.044	-31.88518	-.4300604
Denmark	37.72947	7.222907	5.22	0.000	23.54514	51.91379
France	46.67091	7.986588	5.84	0.000	30.98686	62.35495
Germany	28.98624	7.948312	3.65	0.000	13.37736	44.59511
Hong Kong	-6.724722	8.064219	-0.83	0.405	-22.56122	9.111771
India	7.642128	8.748788	0.87	0.383	-9.538721	24.82298
Indonesia	-11.64733	7.915815	-1.47	0.142	-27.19239	3.897726
Ireland; Republic of	3.986178	7.532657	0.53	0.597	-10.80644	18.77879
Japan	10.72908	7.587186	1.41	0.158	-4.170617	25.62878
Korea; Republic (S. Korea)	17.7177	7.742149	2.29	0.022	2.513682	32.92171
Luxembourg	14.48576	8.786794	1.65	0.100	-2.769729	31.74124
Malaysia	1.357552	7.456207	0.18	0.856	-13.28493	16.00003
Netherlands	45.99211	8.015247	5.74	0.000	30.25179	61.73243
New Zealand	-27.13336	8.620902	-3.15	0.002	-44.06307	-10.20365
Spain	11.10021	8.224936	1.35	0.178	-5.0519	27.25232
Switzerland	56.59877	7.53133	7.52	0.000	41.80877	71.38878
Turkey	21.42413	11.51338	1.86	0.063	-1.185816	44.03408
United Kingdom	31.31162	7.828122	4.00	0.000	15.93877	46.68446
United States of America	18.90184	7.569519	2.50	0.013	4.036833	33.76684
_cons	8.556247	8.542803	1.00	0.317	-8.22009	25.33258

References

ACCP. (2020). Corporate Social Responsibility: A Brief History. *Association of Corporate Citizenship Professionals*. Retrieved from https://www.accprof.org/ACCP/ACCP/About_the_Field/Blogs/Blog_Pages/Corporate-Social-Responsibility-Brief-History.aspx?fbclid=IwAR1UErtX7kWVVTePdFmV_odCvSGITwDdZxq7se0iDCnMaTSUzDQPbC5UpeM

Aghion, P., Hepburn, C., Teytelboym, A., & Zenghelis, D. (2019). Path dependence, innovation and the economics of climate change. *Handbook on Green Growth*. Retrieved from doi:https://doi.org/10.4337/9781788110686.00011

Aguilera-Caracuel, J., & Ortiz-de-Mandojana, N. (2013). Green Innovation and Financial Performance:An Institutional Approach. *Organization & Environment, 26*(4), 365-385. doi:10.1177/1086026613507931

Atlas, G. C. *The Amount of MTCO2, pr. Country*. Retrieved from: http://www.globalcarbonatlas.org/en/CO2-emissions?fbclid=IwAR3ZOd9iwwDOJgcFml7GKSP4PYHKtEvoSp5XQtccPApcZ0RYo68vgDo5Yvs

Banton, C. (2020). Shareholder vs. Stakeholder: What's the Difference? Retrieved from https://www.investopedia.com/ask/answers/08/difference-between-a-shareholder-and-a-stakeholder.asp

Bazylevych, V., & Kupalova, G. (2014). CLIMATE CHANGE: THE MAJOR THREAT OF THE 21ST CENTURY. *Bulletin of Taras Shevchenko National University of Kyiv Economics, 6*, 6-11. doi:10.17721/1728-2667.2014/159-6/1

Bigliardi, B. (2013). The effect of innovation on financial performance: A research study involving SMEs. *Innovation, 15*(2), 245-255. doi:10.5172/impp.2013.15.2.245

Brooks, C. (2008). *Introductary Econometrics for Finance* (2nd ed.). New York: Cambridge University Press.

Calzolari, G., Casari, M., & Ghidoni, R. (2018). Carbon is forever: A climate change experiment on cooperation. *Journal of environmental economics and management, 92*, 169-184. Retrieved from doi:https://doi.org/10.1016/j.jeem.2018.09.002

Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. *The Academy of Management Review, 4*(4), 497-505. doi:10.2307/257850

Chen, J. (2020). Consumer Staples. Retrieved from https://www.investopedia.com/terms/c/consumerstaples.asp

Chia, S. (2018). Transparency, food and the global supply chain. Retrieved from https://www.newfoodmagazine.com/article/75651/transparency-food-and-the-global-supply-chain/

Christensen, A., & Russell, T. (2015). Consumer Staples Sector. Retrieved from https://s3.wp.wsu.edu/uploads/sites/606/2015/02/SectorOverview_CNS_Spring2014.pdf

Churet, C., & Eccles, R. G. (2014). Integrated Reporting, Quality of Management, and Financial Performance. *Journal of Applied Corporate Finance, 26*(1), 56-64. doi:10.1111/jacf.12054

Clark, T. S., & Linzer, D. A. (2015). Should I Use Fixed or Random Effects? *Political Science Research and Methods, 3*(2), 399-408. doi:10.1017/psrm.2014.32

Comission, E. Causes of climate change. Retrieved from https://ec.europa.eu/clima/change/causes_en

Compact, T. G. (2004). Who Cares Wins Retrieved from https://www.ifc.org/wps/wcm/connect/de954acc-504f-4140-91dc-d46cf063b1ec/WhoCaresWins_2004.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-de954acc-504f-4140-91dc-d46cf063b1ec-

jqeE.mD&fbclid=IwAR3cXnevY10GbEhKUmIihw8QjyL-OJHbkU_Oo1OD7VsaOTx94WD3kVNH5ok
Delmas, M. A., Nairn-Birch, N., & Lim, J. (2015). Dynamics of Environmental and Financial Performance:The Case of Greenhouse Gas Emissions. *Organization & Environment, 28*(4), 374-393. doi:10.1177/1086026615620238
Drempetic, S., Klein, C., & Zwergel, B. (2019). The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review. *Journal of Business Ethics*. doi:10.1007/s10551-019-04164-1
Eccles, R. G., Serafeim, G., & Krzus, M. P. (2011). Market Interest in Nonfinancial Information. *Journal of Applied Corporate Finance, 23*(4), 113-127. doi:10.1111/j.1745-6622.2011.00357.x
Elkington, J. (1994). Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development. *California Management Review, 36*(2), 90-100. doi:10.2307/41165746
Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal, 38*, 45-64. doi:https://doi.org/10.1016/j.gfj.2017.03.001
foodaidfoundation.org. (2020). Hunger Statistics. Retrieved from https://www.foodaidfoundation.org/world-hunger-statistics.html?fbclid=IwAR2WM5b9UfPA510_L-3cKQTTNLW5NNdbduQqrpdJSw8YcgR4AbGRZuIE9t4
Forgrieve, J. (2018). The Growing Acceptance of Veganism. Retrieved from https://www.forbes.com/sites/janetforgrieve/2018/11/02/picturing-a-kindler-gentler-world-vegan-month/#54bc877c2f2b
Freeman, R. E. (2010). "Managing in Turbulent Times". In R. E. Freeman (Ed.), Strategic Management: A Stakeholder Approach (pp. 3-30). Cambridge: Cambridge University Press. Retrieved from https://www.cambridge.org/core/books/strategic-management/managing-in-turbulent-times/0AA771916B57CFB2F2A918D9F105E5E9. doi:DOI: 10.1017/CBO9781139192675.004
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*(4), 210-233. doi:10.1080/20430795.2015.1118917
Friedman, M. (1970). The Social Responsibility of Business is to Increase its Profits Retrieved from http://umich.edu/~thecore/doc/Friedman.pdf
Galbreath, J. (2013). ESG in Focus: The Australian Evidence. *Journal of Business Ethics, 118*(3), 529-541. doi:10.1007/s10551-012-1607-9
Giannarakis, G., Konteos, G., & Sariannidis, N. (2014). Financial, governance and environmental determinants of corporate social responsible disclosure. *Management Decision, 52*(10), 1928-1951. doi:10.1108/MD-05-2014-0296
Godfray, H. C. J., Bedington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., . . . Toulmin, C. (2010). Food Security: The Challenge of Feeding 9 Billion People. *Science*. doi:10.1126
HPS. (2018). SUSTAINABILITY CHALLENGES FACING THE COSMETICS AND PERSONAL CARE INDUSTRY. Retrieved from https://www.hps-pigging.com/about-hps/
Hull, C. E., & Rothenberg, S. (2008). Firm performance: the interactions of corporate social performance with innovation and industry differentiation. *Strategic Management Journal, 29*(7), 781-789. doi:10.1002/smj.675
IPCC. (2020). *Climate Change and Land*. Retrieved from https://www.ipcc.ch/site/assets/uploads/sites/4/2020/02/SPM_Updated-Jan20.pdf
ISCA. (2017). Sustainability Reporting; Implementation Roadmap. Retrieved from https://isca.org.sg/media/2238512/isca-sustainability-report-implementation-roadmap.pdf
Jane, D. (2018). Skew and Kurtosis: 2 Important Statistics terms you need to know in Data Science. Retrieved from https://codeburst.io/2-important-statistics-terms-you-need-to-know-in-data-science-skewness-and-kurtosis-388fef94eeaa

Jarvie, M. E. (2016). Brundtland Report. Retrieved from https://www.britannica.com/topic/Brundtland-Report

Johnson, D. (2001). What is innovation and entrepreneurship? Lessons for larger organisations. *Industrial and Commercial Training, 33*(4), 135-140. doi:10.1108/00197850110395245

Kell, G. (2018). The Remarkable Rise of ESG. Retrieved from https://www.forbes.com/sites/georgkell/2018/07/11/the-remarkable-rise-of-esg/#47c36ba01695

Kenton, W. (2020). Financial Performance. Retrieved from https://www.investopedia.com/terms/f/financialperformance.asp

Kostigen, T. M. (2019). Socially responsible investing movement is hot and there are no signs of it cooling off. *CNBC*. Retrieved from https://www.cnbc.com/2019/05/06/socially-responsible-investing-is-hot-with-no-signs-of-cooling-off.html

Lin, K., Kabel, A., Parker, S., & Joye, C. (2019). Are ESG Alpha and Beta Benefits in Corporate Bonds a Mirage? Retrieved from doi:https://dx.doi.org/10.2139/ssrn.3352950

Liu, H., Kim, K. H., & Wang, H. (2016). THE INFLUENCE OF SUSTAINABLE AND INNOVATIVE PRODUCT PACKAGING ON THE CHINESE CONSUMER BEHAVIOR. *Global Marketing Conference*, 1736-1736. Retrieved from http://db.koreascholar.com/Article?code=315377

Mcfall-Johnsen, M., & Woodward, A. (2019). Our food system accounts for a whopping 37% of greenhouse-gas emissions, a UN report found. But it could also offer a solution to the climate crisis. *Businessinsider*. Retrieved from https://www.businessinsider.com/food-system-role-in-climate-crisis-possible-solutions-2019-8?r=US&IR=T&fbclid=IwAR2hnBOklTzHzwPqKe3eY8-TaUajSVqgn3iqwaxv5N-4XcUwt7n8zPkf7AY

Migliorelli, M., & Dessertine, P. (2019). *The Rise of Green Finance in Europe*. In.

Miller, M. (2019). Consumer Sector: Owerweiv and Funds. *valuepenguin.com*. Retrieved from https://www.valuepenguin.com/sectors/consumer-staples?fbclid=IwAR1FzI4EJHIbJf09dhkA_z-RVEiXUZNqdqfM-2kXjwtOFDJcO-5KW3xlEew

Pokharel, S. K., Norouzi, M., Martin, I., & Breault, M. (2016). MAT-755: SUSTAINABLE ROAD CONSTRUCTION FOR HEAVY TRAFFIC USING HIGH STRENGTH POLYMERIC GEOCELLS. Retrieved from https://ir.lib.uwo.ca/csce2016/London/Materials/35/

Program, T. U. N. D. *Human Development Index*. Retrieved from: http://hdr.undp.org/en/data?fbclid=IwAR2KU3JiXdUDH4BAfyxZ3KKjud3F5Wwqj2Do5Z8nYz2ZQSusHjVMq7NZhd8

Qureshi, M. A., Kirkerud, S., Theresa, K., & Ahsan, T. (2019). The impact of sustainability (environmental, social, and governance) disclosure and board diversity on firm value: The moderating role of industry sensitivity. *Business Strategy and the Environment, 29*(3), 1199-1214. doi:https://doi.org/10.1002/bse.2427

Refinitiv. (2020). Environmental, Social and Governance (ESG) scores from Refinitiv. Retrieved from: https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf

regjeringen.no. (2016). Corporate Social Responsibility. *Regjeringen.no*. Retrieved from https://www.regjeringen.no/en/topics/foreign-affairs/business-cooperation-abroad/innsikt/csr/id2076260/?fbclid=IwAR1v9GF7egUuISedNln7EjOf340wtI3RquXIcUf4rtlLMCIKC9TlQ0KkyU0

Roser, M. (2019). Future Population Growth. Retrieved from https://ourworldindata.org/future-population-growth?fbclid=IwAR0DRwxqZkEI8PcGlDbNGpzBF3xjWvX9aq1uP4F6G2HnAPFhHqz50DilfC8#global-population-growth

Sabah, D. (2019). Climate change threatens staple foods. *Daily Sabah*. Retrieved from https://www.dailysabah.com/environment/2019/08/22/climate-change-threatens-staple-foods?fbclid=IwAR2q8VmFkI2W4TjNovzjtVvnoNgtLKA0KrxawCo-pwzIgxtZbevE7hfxPTc

Slaper, T. F., & Hall, T. J. (2013). The Triple Bottom Line: What Is It and How Does It Work? Retrieved from http://web.mit.edu/afs.new/athena/course/2/2.813/www/readings/TripleBottomLine.pdf

Smith, H. J. (2003). The Shareholder vs. Stakeholder Debate(MITSloan Management Rewiev). Retrieved from https://sloanreview.mit.edu/wp-content/uploads/2003/07/b966946aae.pdf

Smith, L. (2020). What is Socially Responsible Investing (SRI)? Retrieved from https://smartasset.com/investing/what-is-socially-responsible-investing

Sparkes, R., & Cowton, C. J. (2004). The Maturing of Socially Responsible Investment: A Review of the Developing Link with Corporate Social Responsibility. *Journal of Business Ethics, 52*(1), 45-57. doi:10.1023/B:BUSI.0000033106.43260.99

Stehfest, E., Bouwman, L., van Vuuren, D. P., den Elzen, M. G. J., Eickhout, B., & Kabat, P. (2009). Climate benefits of changing diet. *Climatic Change, 95*(1), 83-102. doi:10.1007/s10584-008-9534-6

Stock, J. H., & Watson, M. W. (2015). *Introduction to Econometrics* (3rd ed.). Essex, England: Pearson Education Limited.

Tamimi, N., & Sebastianelli, R. (2017). Transparency among S&P 500 companies: an analysis of ESG disclosure scores. *Management Decision, 55*(8), 1660-1680. doi:10.1108/MD-01-2017-0018

Thomson Reuters Eikon. (2019). Retrieved from https://guides.libraries.uc.edu/c.php?g=356377

Thomson Reuters ESG Scores. (2017). Retrieved from https://www.esade.edu/itemsweb/biblioteca/bbdd/inbbdd/archivos/Thomson_Reuters_ESG_Scores.pdf?fbclid=IwAR3W7E4LywkNT6XQ9pL3Hf30QjRr7Sr2BmDEBxDm08UCU3iEIA3HOuCwQ3E

Thunberg, G. (2019). Our house is on fire. *The Guardian, 20*. Retrieved from http://www.spokesmanbooks.com/Spokesman/PDF/142Thunberg.pdf

Torres-Reyna, O. (2007). Panel Data Analysis; Fixed and Random Effects using Stata. from Princeton University https://dss.princeton.edu/training/Panel101.pdf

Wang, L., Li, S., & Gao, S. (2014). Do Greenhouse Gas Emissions Affect Financial Performance? – an Empirical Examination of Australian Public Firms. *Business Strategy and the Environment, 23*(8), 505-519. doi:10.1002/bse.1790

Whelan, T., & Kronthal-Sacco, R. (2019). Research: Actually, Consumers Do Buy Sustainable Products. Retrieved from https://hbr.org/2019/06/research-actually-consumers-do-buy-sustainable-products?fbclid=IwAR3lmhBe0Fc5EwhHINVpcWo8ypvGwAORYudSDm-gJkMX7nvger9iR4HxEEM

Woodward, A. (2019). Rising emissions could drain foods like rice and wheat of their nutrients, causing a slow-moving global food crisis. *Businessinsider*. Retrieved from https://www.businessinsider.com/climate-change-lowers-nutritional-value-of-food-staples-2019-8?r=US&IR=T&fbclid=IwAR2cqrFtS4bu38sqx1Dg9vCmpkPJddhwM0k7rgBYa0Kuhz-JL2Vw-3lhius

Wooldridge, J. M. (2016). *Introductory Econometrics; A Modern Approach* (6th ed.). Boston: Cengage Learning.

Worldbank. *GDP*. Retrieved from: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?fbclid=IwAR3QHfbNhjPYp9eIzTgmRTHFzzL3WTKzVD5cuLjjSA6SaoKklV3BAS59ONU

Worldbank. *Inflation*. Retrieved from: https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?fbclid=IwAR3aCvev59DsaHb1k479OnsJMNWI4KyU-M77HyrZgw8cMHU7kE6fkQIcInc

Worldbank. *Number of patents*. Retrieved from: https://data.worldbank.org/indicator/IP.PAT.RESD?view=chart&fbclid=IwAR00HQbMf2I0kZ8jk8ozxaqdJgKj4fKblmEW6KdrXniPcZ5EXjzn-Iqz5us