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CORPORATE SOCIAL RESPONSIBILITY: TOWARDS CLEAN REVENUE AND FINANCIAL OUTPERFORMANCE

Faculty of Management and Business
Master's Thesis
April 2021

ABSTRACT

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Leadership for Change
April 2021

The current global situation, where sustainability and responsibility issues are becoming more important and severe than ever, has put firms under public pressure to change their traditional business models. As a result, the relevance of CSR keeps growing, and firms continue to increasingly engage in CSR, thus it is key for firms to find not only the societal and environmental justifications for their sustainability efforts, but also an economic justification that can prove that doing good translates into doing well.

The purpose of this study is to examine the relationship between CSR and CFP through the evidence of front-runner sustainable firms, listed in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights. This study contributes to the previous academic literature by providing new insight into the relationship between CSR and CFP, analyzing the relationship between a relatively new metric of sustainability, clean revenue, and overall sustainability score and CFP. Additionally, the timeframe of the study offers the most recent data on the topic.

The study uses clean revenue percentage and overall sustainability score as measures of Corporate Social Responsibility. To measure Corporate Financial Performance, accounting-based measures ROA, ROE, EBIT and EBITDA, and market-based measure Tobin's Q are used. The research sample is drawn from the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights by including firms that have appeared consequently in the index between 2018 and 2020. After excluding financial firms, the research sample consists of 36 firms.

The research sample was analyzed using regression analysis in order to test if the clean revenue percentage and the overall sustainability score affect corporate financial performance. The findings of this thesis suggest that the clean revenue percentage is positively associated with ROA and ROE and that the overall sustainability score does not have a statistically significant relation to accounting- or market-based measures of corporate financial performance. The findings indicate that those firms that have high shares of revenue from clean goods and services are utilising their assets and the capital that their shareholders have invested better than similar firms with lower clean revenue percentages.

Keywords: Corporate social responsibility, clean revenue, stakeholder theory, legitimacy theory, regression analysis, financial performance

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1. INTRODUCTION

1.1. Research Background

Corporate Social Responsibility (hereafter CSR) is a key concept in today's society and in the current global business environment that is significantly changing the way business is done by redirecting firms' efforts from merely economical to also societal and environmental, and by constructing the understanding of business, society and the environment as an integral whole. Traditionally, to become successful, firms focused on meeting their shareholders' interests and the firm's economic goals, mainly through generating profits. Nevertheless, although these still represent a fundamental part of any firm, CSR is becoming central to the success of firms. Engaging in CSR is becoming a source of competitive advantage and it is proving to benefit firms in terms of employees' and customers' satisfaction, customer loyalty, innovation, improved reputation and position in the market, costs savings, sales growth, higher market value, and a higher level of competitiveness (Mandl and Dorr, 2007; Porter and Kramer, 2006; Zeng, 2016; Sony, Ferguson, and Beise-Zee, 2015). Most importantly, firms´ engagement in CSR serves as a means to achieve sustainability (EC, 2001; Sharma and Khanna, 2014).

For decades, the concept of CSR has been present in the business environment and has been gradually disrupting traditional business models. One of the first scholars to address the study of CSR was Howard Bowen, who introduced, in 1953, the first definition of CSR: "the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 2013, p.6). However, over the years, several definitions for the concept of CSR have been proposed, since it is a concept that, alongside with the world, is constantly evolving given its complex nature. The number of definitions given to this concept, range from different perspectives to different categorizations, yet Carroll's (1979) is one of the most popular and widely cited, defining CSR from a four-part perspective: "the social responsibility of business encompasses the economic, legal, ethic, and discretionary expectations that society has of organizations at a given point in time" (p. 500).

Throughout the years, the concept of CSR has exponentiated its significance. With a growing number of sustainability and responsibility issues across the globe, there is a growing global concern over environmental and social issues. As a result, environmental and social well-being good practices are more valuable than ever. To address this socially conscious market

environment, firms are pressured to engage in CSR as a means to address the current social and environmental issues and challenges, thus creating value for its stakeholders and at the same time, generating value for themselves (Du, Bhattacharya and Sen, 2010). Additionally, with faster data diffusion, awareness is continuously increasing amongst stakeholders, allowing stakeholder pressure to become stronger and to exponentialize the relevance of epistemic CSR. Freeman (1984) defines a stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (p. 46). Stakeholder pressure is then the power of stakeholders to influence corporate decisions and consequently, have an effect on firms (Fassin, 2009; Kassinis and Vafeas, 2006). Pressures on transparency, environmental protection, and other regulations are increasing and the number of competitors in the market is also on the rise (Galan, 2006). In consequence, firms are increasingly adopting and taking action towards CSR in order to avoid corporate irresponsibility scandals (Hoepner, Yu, and Ferguson, 2010) as well as to be able to meet stakeholders' demands, stay competitive and thereby reach higher Corporate Financial Performance (hereafter CFP) (Michelon, Boesso, and Kumar, 2013; Sony et al., 2015).

Numerous studies have looked into the relationship between firms' engagement in CSR and their CFP, as it has been argued that the benefits that result from firms' engagement in CSR, such as the positive relationships between the firm and its stakeholders, the commitment of firms to the interests of their stakeholders, and especially aligning firms' economic objectives to social and environmental ones, lead up to positive financial performance and long-term success. (Martin, Petty, and Wallace, 2009; Feng, Wang and Kreuze, 2017; Alniacik, Alniacik, and Genc, 2011; Porter and Kramer, 2006) Nonetheless, despite being a widely researched topic, the results of these studies still vary given the complex nature of the CSR-CFP relationship, and the wide variety of factors involved in it, such as country, industry, and firm size. While positive relationships remain as the prevalent result throughout the studies, negative, and non-significant relationships have also been found. The stakeholder theory, as well as the legitimacy theory, however, support the notion that by meeting with its stakeholders' interests through its CSR, a firm is able to positively contribute to society and the environment and simultaneously achieve financial outperformance.

As part of this growing engagement in CSR, new terminology has surfaced, as is the case of the "clean revenue" – also called "green revenue". Firms have started to distinguish in their annual reports their clean revenue, the revenue that comes from their "clean" goods and services, from their total revenue (e.g., Philips; Neste). Accordingly, the term clean revenue has also started

to appear in different indices from different financial data providers such as Corporate Knights and FTSE Russell, using firms' clean revenue as a new variable for determining a firm's sustainability level. Deriving from goods and services with clear positive social and environmental benefits, clean revenue is the representation of firms' CSR, hence their significance. Moreover, they are the motivation drivers for this research, as the study intends to study the relationship of CSR on CFP in terms of firms' overall sustainability scores, their clean revenue, and their accounting-based and market-based financial measures.

1.2. Research Aim

CSR has become a significant megatrend in our society given the growing concerns over environmental and social issues. Consequently, firms are not only increasingly engaging in CSR to address stakeholder pressure, but also trying to outperform financially. In regard to this, the overall aim of the research is to analyse the relationship between CSR and CFP through evidence from firms listed in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights. The research will explore how engaging in CSR and shifting towards goods and services with clear environmental and social benefits -therefore generating clean revenue- is associated with the CFP of firms. Lastly, through a regression analysis, I will examine the relationship between firms' clean revenue, overall sustainability scores and their CFP, in the interest of unveiling a positive link between CSR engagement, clean revenue and financial outperformance.

As mentioned previously, in this research a relatively new metric is used: clean revenue. Therefore, there is little to no academic literature on it. Importantly, it is to be noted that some literature refers to clean revenue as green revenue. The academic literature on the effect of clean revenue on financial performance is scarce. Most of the literature studies the effect of "green scores" on financial performance, with clean revenue being just one of the variables in the process of generating the score. Therefore, there is no clear representation in academic literature on the relationship between clean revenue itself and financial performance. This research will help to fill the gap in the academic literature on how some of the most sustainable firms in the world, as ranked by Corporate Knights, are benefiting from their clean revenue. The research sample consists of firms with high corporate sustainability performance scores from a range of industries, which will contribute to existing literature by illustrating whether a firm's clean revenue is positively related to its financial performance. The main expected

outcome of the research is that the results will hopefully contribute to the validation that by achieving stakeholder and sustainable value through social and environmental responsibility, firms are able to tackle environmental and social issues, leading to a positive effect on firms' CFP, and therefore prove that doing well by doing good is possible.

This research will also help to fill this gap in academic literature by covering the evidence of front-runner sustainable firms that have engaged in CSR and explore the relationship between clean revenue, a result from their engagement in CSR, and their financial and market performance over the last years. By using the available data on clean revenue, overall sustainability scores and financial performance, the study will indicate whether the relationship between these variables is positive or negative.

1.3. Research Contribution

Given that firms are still day-to-day increasing their engagement in CSR, this research will provide up-to-date data on the topic. Hoepner et al. (2010) explain that time is a key factor in determining a link between corporate social performance (CSP) and CFP, given the constantly changing corporate externalities. Similarly, such statement can be applied to CSR, thus the importance of this research. Moreover, while research on the relationship between CSR and CFP is not new, key research gaps remain when it comes to new measures of sustainability such as clean revenue. Understanding how firms are generating revenue directly from goods and services with clear environmental and social benefits as a result of their engagement in CSR, along with exploring how the clean revenue of these firms affect their CFP will highlight the importance of engaging in CSR, creating stakeholder and sustainable value and prove that it is not only possible, but necessary to transition to a sustainable future within the business environment.

Independently from the results, the research will provide further insight into the relationship between CSR and CFP, a popular research topic, but contributing with a new and unique perspective by looking at the relationship between clean revenue and overall sustainability score (as measures of CSR) and CFP. Additionally, the timeframe that will be used to analyse the research data (2018-2020), will provide new and current information on the topic.

All in all, this research is relevant for its up-to-date insight into the growth in CSR engagement by firms, the progression towards clean revenue and how it affects firms' CFP, through evidence from front-runner sustainable firms, across industries and countries.

1.4. Research Questions

Based on the research gap, and following the aim of the research to explore the relationship between clean revenue, engagement in CSR, and the corporate financial performance of front-runner sustainable firms, over the last three years (2018-2020), the proposed research questions are:

1. *What is the relationship between clean revenue and CFP?*
2. *What is the relationship between the overall sustainability score of firms and CFP?*

Regarding the first research question, this study aims to unveil the nature of the relationship between the clean revenue percentage and the CFP of front-runner sustainable firms, as ranked by Corporate Knights. This is done with the purpose of examining how one of the newest metrics of sustainability and a clear result of firms' engagement in CSR, clean revenue, is impacting firms' financial performance. Its significance relies on its portrayal of how firms are benefiting financially from their sustainability efforts.

Clean revenue is an important metric of sustainability for firms that need evidence that engaging in CSR can also mean financial outperformance. CSR has been on the spotlight not only by its importance and the benefits that can derive from it, but also it has been perceived by some as a bearer of higher costs (Waddock and Graves, 1997; Makni, Francoeur, and Bellavance, 2009). Therefore, the answer to this research question will pose an important insight for firms that are looking to engage in CSR.

The second research question examines the relationship between the overall sustainability score and the CFP of front-runner sustainable firms, intending to not only discover if front-runner sustainable firms are outperforming financially, but also to examine if the overall sustainability score and the clean revenue percentage have similar a relationship with firms' CFP, given that clean revenue is only a part in the measurement process of the overall sustainability score (as by Corporate Knights), which includes not only clean revenue but also key performance indicators (KPIs) on factors such as greenhouse gases emissions, supplier sustainability, and innovation capacity.

Both research questions allow to get a further understanding of how or if firms are benefiting from their sustainability efforts, through the engagement of CSR.

1.5. Thesis Structure

The structure of the thesis is divided as follows: The first chapter consists of an introduction to the research problem and the research aim, as well as it presents the research questions that ought to be answered throughout the thesis. Following, chapter two provides a literature review covering the key concepts and previous studies related to the research topic. Chapter three explores the theoretical framework of the research and it presents the proposed research hypotheses that resulted from the findings in the literature review and are based on the theoretical framework. Continuing, chapter four concerns the methodology section of the research and provides a description of the variables used, as well as elaborates on the research data and the data analysis method utilized. Finally, the regression models to be tested are introduced. Chapter five details the findings of the research, covering the descriptive statistics and the results from the regression analyses. The last chapter, chapter six, discusses these findings. Next, it presents the limitations of the research and suggestions for future research. Lastly, the conclusions and the contribution of the research are presented.

2. LITERATURE REVIEW

2.1. Defining Corporate Social Responsibility

In the last decades, the awareness of the importance of social and environmental responsibility has exponentially increased throughout the world. Specifically, governments and firms have been the center of attention when it comes to accountability of the numerous environmental issues and natural disasters that have been occurring on a global scale. These problems have taken a significant role in reminding society that firms should operate not only under the purpose of economic achievement but also with the purpose of looking out for society and the environment (Haryono and Iskandar, 2015). Stakeholders and society as a whole have been urging firms to mitigate the negative impacts of their operations. As a part of this call for action, firms have begun to add CSR into their agendas.

The concept of Corporate Social Responsibility has been widely used throughout the years and it is constantly increasing its importance around the world. Still, it is a concept that is complex and continuously developing, which has led to several definitions and conceptualizations. Considered as the father of the study of CSR, Howard Bowen gave in 1953 the earliest definition of CSR:

"The obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (Bowen, 2013, p.6).

This definition sustains that because of the power and influence embedded in firms, they have a great responsibility, an indisputable obligation to work towards the improvement of the values of the society and the society as a whole. It places society in a significant position within the business environment and claims for actions and strategies that go in accordance with the values of society, without putting firms' values and objectives above society's values, needs, and concerns.

Nowadays, a common definition of CSR is the one by the European Commission, defining CSR as firms' responsibility for their impacts on society. The definition indicates that to achieve CSR, firms "should have in place a process to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy in close collaboration with their stakeholders", by doing it, firms are able to create shared value for its shareholders and stakeholders (EC, 2011 p.6). These concerns comprise different societal issues

such as human rights; corruption; labour, including gender equality, diversity, health, working conditions; and the environment, including climate change, resource allocation, pollution mitigation, and other environmental issues (EC, 2011).

As previously mentioned, there is not a unique definition of CSR, however, a previous definition by the European Commission, states that definitions within the realm of CSR often define it as:

"A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (EC, 2001, p.7).

Adding to this, the definition defends that by integrating economic, social and environmental interests, firms enhance shared value between them and their stakeholders, and thus improve their competitiveness in the market while also providing for social development. (EC, 2001) Similarly, the European Commission's 2006 definition explains that CSR "is about enterprises deciding to go beyond minimum legal requirements and obligations...in order to address societal needs. ...through CSR, enterprises of all sizes, in cooperation with their stakeholders, can help to reconcile economic, social and environmental ambitions" (EC, 2006, p.2). Supporting the notion that firms that engage in CSR show a higher degree of compromise with the society and the societal issues that must be addressed and tackled, which in turn improves the relationship with stakeholders and thus a firm's performance.

One of the most popular and accepted CSR definition is Carroll's (1979), which refers to CSR as firms' social responsibility towards society's expectations on firms' economic, legal, ethical and discretionary (philanthropic) aspects. Calling for firms' response to their stakeholders' expectations, this definition highlights the relevance of stakeholders in the construction of CSR. CSR is then constructed through the communication and relationship between firms and their stakeholders and firms' subsequent actions.

In terms of conceptualization, Carroll's (1991) four-part framework is portrayed as a pyramid (see Figure 1). The pyramid's portrayal denotes that the philanthropic and ethical responsibilities are respectively desired and expected by society, while the legal and economic responsibilities are both society's requirements, hence the hierarchical representation. However, Carroll (1991) states that although philanthropic responsibilities are located on top of the pyramid, it depicts a lower significance in comparison to the other three responsibilities. The philanthropic responsibilities are the "icing on the cake", which means that although

desired, CSR is not limited to them. Nevertheless, to fully engage in CSR, all four responsibilities must be met simultaneously, and ethical responsibilities despite being a category of its own, must be also present in every category of the pyramid. With that said, Carroll's pyramid of CSR presents a hierarchical representation only in the sense of firm's fundamentals for their existence, and no in respect to the four different categories of responsibilities; these must be seen as an integrated whole. (Carroll, 2016)

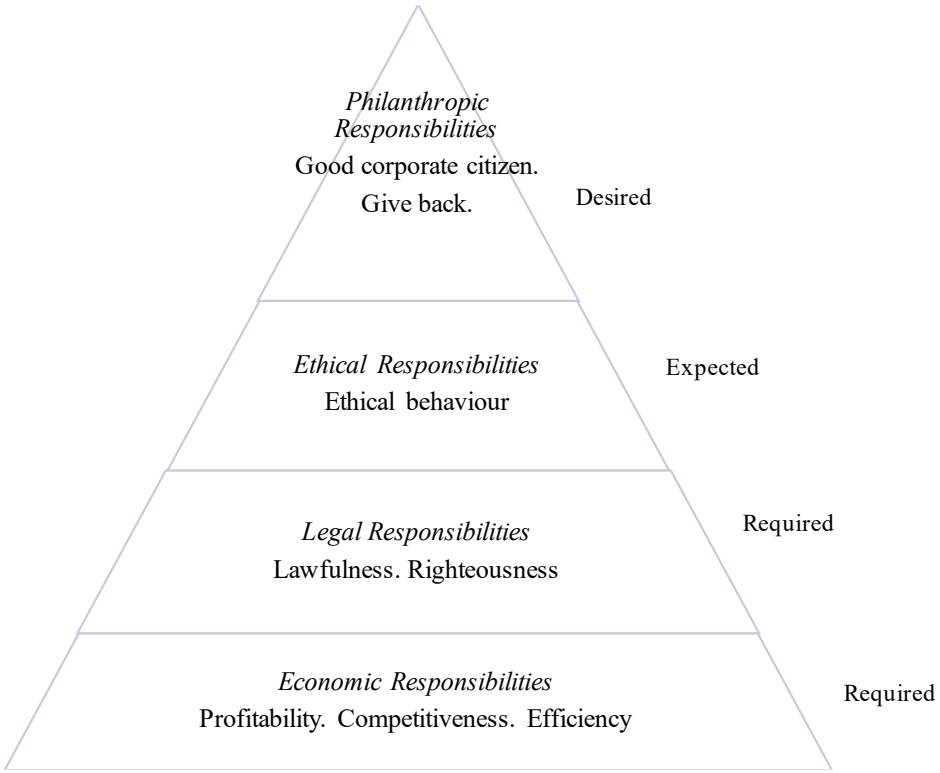

Figure 1. Corporate Social Responsibility pyramid. Adapted from Carroll (1991).

In short, the economic responsibilities concern to the basic function of any firm, which is to make profit. The stakeholders affected primarily by this CSR category are shareholders and employees. The legal responsibilities concern to the compliance of the law. The stakeholders affected primarily by this category are the shareholders, employees and consumers. The ethical responsibilities concern firms' obligation to act ethically in every organizational aspect. The stakeholders affected primarily by this category are the employees, consumers and nature. Lastly, the philanthropic responsibilities concern to firms being good corporate citizens; it is going beyond what is required and expected in order to contribute to society and improve society's quality of life. The stakeholders affected primarily by this category are the community and non-profit organizations. (Carroll, 1991; 2016)

This definition, however, along with most of the earlier definitions and models of CSR, seem to be lacking an ecological perspective; a deeper understanding of how without a healthy natural environment, we would not be even able to meet present needs. As stated by DesJardins (1998), CSR models that rely on standard market economics and economic growth, are destined to fail since they are not environmentally and economically suitable for the near future; they are outdated to the needs and current situation of our planet and fail to recognize the moral responsibility that firms have towards ecologically sustainable activities.

Other studies have defined CSR as:

"The business level equivalent to sustainable development" (Guenther, Hopper and Poser, 2007, p.8).

Correspondingly, during the EU Multi-Stakeholder Forum on CSR (CSR EMS Forum) in 2004, it was recognized that CSR is fundamentally interconnected to the pillars of sustainability: the economy, society, and the environment, and therefore firms are able to contribute to sustainable development through their engagement in CSR. Based on these understandings, the CSR EMS Forum (2004, p.5) defines CSR as:

"The voluntary integration of environmental and social considerations into business operations, over and above legal requirements and contractual obligations".

Following this notion, other studies have categorized CSR into three dimensions; economic responsibility, social responsibility, and environmental responsibility, with respect to the three sustainability pillars in Elkington's 1994 triple bottom line (TBL) framework (see Figure 2).

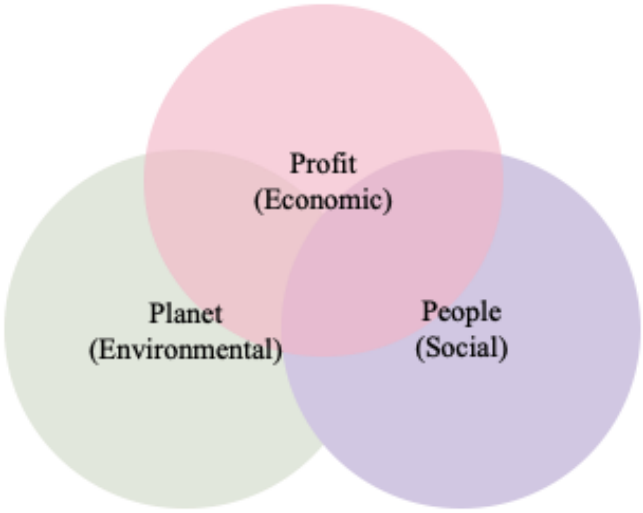

Figure 2. Triple Bottom Line framework.

As previously mentioned, both sustainable development and CSR are commonly equated to each other and are surrounded by the three sustainability pillars. (Guenther et al., 2007; Fauzi, Svensson and Rahman, 2010; Henriques and Richardson, 2013)

An alternate approach to CSR is dividing CSR into four categories of target stakeholders: employees-oriented CSR, society-oriented CSR, market-oriented CSR, and environment-oriented CSR (Mandl and Dorr, 2007). First, aimed for one of firms' most valuable internal stakeholders, the employees-oriented CSR refers to the CSR activities that target the well-being and empowerment of employees through different actions such as good working conditions, fair pay, work-life balance, good employee benefits, training, equal opportunities, and labour rights. Through this, employees become motivated, committed, and efficient, which in turn tends to have a positive effect on firms' performance. Second, society-oriented CSR refers to the CSR activities that target the well-being, improvement, and development of the communities where firms operate, through community involvement in terms such as education, financial contributions, local partnerships, and quality of life. Through the support to the communities they operate in, firms not only improve the lives of those communities, but also improve the firm's own image. Third, market-oriented CSR refers to the CSR activities that involve firms' business activities such as responsible supply chain management, product quality, fair pricing, product safety, and ethical advertising. Some of the stakeholders targeted by this CSR category are customers, suppliers, business partners, investors, and shareholders. This CSR category aims to draw more consumers by improving products' image. Lastly, the environment-oriented CSR refers to the CSR activities with the aim to protect the natural environment and contribute to sustainable development, through various efforts such as the efficient use of natural resources, circular economy, waste and pollution management, ecological strategies, green policies, the use of renewable resources, and the use of green energy. (Mandl and Dorr, 2007; Feng et al., 2017)

2.1.1. Corporate Environmental Responsibility

With the growth of critical environmental issues and the collective global awareness of these, this last category has increased significantly its importance, and thus, deriving from the environment-oriented CSR, comes the Environmental Corporate Social Responsibility (ECSR) which conceptualizes the environmental dimension of CSR as an individual concept. Parallel to the environment-oriented CSR, ECSR aims to contribute to sustainable development and to protect the environment.

Post, Rahman, and Rubow (2011, p.191) define ECSR as:

"A firm's environmental agenda and its performance in reducing negative and increasing positive environmental outcomes".

Similarly, DesJardins (1998) coined the concept of Corporate Environmental Responsibility (CER), which aims to tackle ecological deterioration by addressing environmental and ecological issues derived from business decisions, as well as to influence business policy. Moreover, it suggests that firms must embrace their moral responsibility and shift towards ecologically sustainable business activities, advocating that the environmental responsibilities of firms must stand from an ecocentric approach. This can be understood through three principles: 1) "renewable resources ought not to be used at rates that exceed the system's ability to replenish itself", 2) non-renewable resources can be used only at the rate at which alternatives are developed or loss of opportunities compensated, and 3) wastes and emissions should not be generated at rates that exceed the capacity of the ecosystem to assimilate them" (DesJardins, 1998, p.833). This last concept, CER, highlights the importance of environmental responsibility and relates it to the concept of sustainability/sustainable development.

2.1.2. CSR and Sustainability

Current efforts to ensure sustainability can be observed from firms' engagement in CSR, especially CER. Although they bear in certain dissimilarities, in practice, these concepts are commonly used interchangeably (Van Marrewijk, 2003). Through CSR, firms aim to safeguard social and environmental sustainability, thus supporting sustainable development (EC, 2001).

More precisely, the concept of sustainability or also known as sustainable development is drawn from the United Nation's Brundtland Report of 1987, where it is defined as:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own" (World Commission on Environment and Development (WCED), 1987, p.54).

Thus, by highlighting the important role that time plays in this concept, it is understood that sustainability calls for intergenerational equity (Bansal and DesJardine, 2014). Sustainability then aims to balance societal development and the conservation of the natural environment, with the ultimate goal of preserving these achievements for future generations which in turn ensures a continuous satisfaction of human needs. (WCED, 1987; Dyllick and Hockerts, 2002) When applied to a business context, sustainability can be translated as meeting the short-term

needs of the firm and the needs of its present stakeholders, without compromising the ability to meet the long-term needs of the firm and the ones of its future stakeholders. Therefore, in order to achieve the best strategic organizational and societal outcomes in the short and the long term, intertemporal tradeoffs are vital in the firm's process of decision making (Bansal and DesJardine, 2014; Dyllick and Hockerts, 2002). Moreover, the definition of sustainable development of the WCED can be applied as a moral principle for firms. As stated by DesJardins (1998), this would force firms to stop and avoid harming the ecosphere, for instance, by halting their business activities that use resources at an unsustainable rate or stop generating waste that is non-degradable or that takes a long time to decompose.

Over time, a number of different but similar theoretical concepts pertaining to responsibility and sustainability have emerged. just as the ones previously mentioned such as Corporate Social Responsibility, Sustainability/Sustainable Development, Triple Bottom Line, and Corporate Environmental Responsibility, still more similar concepts exist, for instance, Corporate Sustainability (CS), Business Ethics, among others. These concepts aim to achieve the same goal, however, possess different connotations, approaches, or perspectives.

There seems to be a special puzzlement between the concepts of CSR and CS. Although it is believed that they have different origins; one more focused on social responsibility aspects and the other on the natural environment respectively, they have nonetheless gradually converged. Consequently, more often they are used as synonyms rather than two different concepts. (Van Marrewijk, 2003; Bansal and DesJardine, 2014) Van Marrewijk (2003, p.102) mention that both CSR and CS:

"Refer to company activities – voluntary by definition – demonstrating the inclusion of social and environmental concerns in business operations and in interactions with stakeholders".

Similarly, Sharma and Khanna (2014, p.16) convey that both CSR and CS:

"Involve assessment of the company's economic, social and environmental impact; taking steps to improve it in line with stakeholder requirements and reporting on relevant measurements"

Thus, supporting the previously mentioned notion in respect to the broad nature of the definitions of these concepts and highlighting their similarities.

Van Marrewijk (2003, p.102) further develops an approach to distinguish CSR and CS, in which CSR refers to the relationship between the firm and its stakeholders, through "transparency, stakeholder dialogue, and sustainability reporting" while CS refers to agency, through "value

creation, environmental management, environmental friendly production systems, human capital management and so forth". Likewise, Dyllick and Hockerts (2002, p.136) describe CS as "a firm's efficient use of natural capital" (eco-efficiency), shown through the firm's goods and services that aim to reduce resource intensity and that have a low or nonexistent negative impact on the natural environment. Additionally, they mention that it is of great importance that a firm's goods and services are aligned to the carrying capacity of the environment.

In most cases, however, firms combine activities of CSR and CS into their responsibility and sustainability efforts. Additionally, firms are also often ranked in accordance with these efforts, which can include different variables or aspects in regard to both, CSR and CS. Furthermore, one can observe that these two concepts go hand by hand, for instance, for sustainability reporting, an environmentally friendly production or environmental management must exist in the firm. In accordance with this, Montiel (2008) discusses whether a further differentiation between CSR and CS is needed, or if an integration between these two concepts would be more adequate, since it appears that a merge between them would result in a richer and more concrete definition that would allow firms who are working to become sustainable and responsible to create clearer goals and aim towards more specific actions. Moreover, it would allow a standardization of responsibility/sustainability reports, which nowadays vary from firm to firm in name as well as content-wise, for instance different report are called "Global Citizenship Report", "Corporate Social Responsibility report", "Environmental Sustainability Report", "Sustainability Report", and "Environmental & Social Responsibility Report". This variation in the reports makes it hard to accurately evaluate a firm's relative success in becoming sustainable or being socially responsible and can play out negatively for firms' legitimacy.

It is without doubt that firms need to further transition into a more proactive role for sustainable development, by balancing economic and societal development and the conservation of the natural environment, but more importantly, taking into account that foremost, a healthy natural environment is necessary in order to even sustain human life and thenceforth allow sustainable economies and societies. Sustainability and responsibility concepts therefore must recognize that planetary boundaries and a healthy natural environment are the foundation for everything. As mentioned by Dyllick and Hockerts (2002), both the "natural case" and the "societal case" for sustainability must be met by firms in order to be sustainable, which means going beyond the "business case" for sustainability. More importantly, they highlight and support the above-mentioned notion of the importance of putting the natural environment first; "as long as a firm

is operating close to (or even beyond) the environment's carrying capacity, it can never become truly sustainable" (p.135).

All in all, it is important to note that, since the objective of the research is not to go further into the discussion of the definitions of different concepts regarding social and environmental responsibility, such as sustainability/sustainable development, CSR, CER, and CS, these concepts are therefore used interchangeably in this research. Nonetheless, the term CSR will continue to be used throughout the research, given that it is the most commonly used in the academic literature regarding the relationship between firms' CSR (sustainability efforts) and their CFP. Additionally, it should be noted that when referring to CSR, the research leans towards a corporate environmental responsibility (CER) focus.

2.2. Clean Revenue

The emergence of the term clean revenue, also referred to by different organizations as green revenue (e.g., FTSE Russell and Newsweek) comes as a result of firms' engagement in CSR.

One of the main objectives of CSR is to positively impact all the stakeholders of a firm, as well as to satisfy the stakeholders by meeting their interests and addressing their concerns. As part of firms' engagement in CSR, firms need to and are urged to address the current demands to tackle social and environmental issues, thus leading them to adopt green initiatives. Green initiatives aim to mitigate negative environmental impacts of a firm's goods and services, through internal and external processes and actions, such as adapting or changing their current business models to sustainable ones, implementing environmental measures throughout the whole life cycle of their goods and services, and decreasing their resource intensity. (Li, Ngniatedema, and Chen, 2017; De Mendonca and Zhou, 2019) Specifically, with the green initiatives on the rise, firms are gradually beginning to offer goods and services that come from green operations; from green product and service development to green manufacturing and green management, connoting a positive impact on the environment and society as a whole (Li et al., 2017), and thus generating the so-called clean revenue.

Accordingly, during the past years, several firms have started to disclose their clean revenue data on their annual reports, which demonstrate stakeholders their commitment to their CSR, and consequently, the term has emerged as well in different sustainability indices from different financial data providers and organizations. Clean revenue is used as a metric to measure firms' sustainability level; therefore, they are a significant variable in the representation of firms' CSR.

Two commonly used definitions of clean revenue are the ones developed by FTSE Russell and Corporate Knights, both financial data providers. FTSE Russell defines clean revenue as the revenue that derives from a firm's goods and services with a positive environmental utility, in terms of preventing, restoring, and adapting to the issues and challenges concerning climate change, natural resource limitations, and environmental degradation (FTSE Russell, 2017).

Corporate Knights began to provide clean revenue data in 2018, using it as one of the 21 KPIs for scoring the overall sustainability score of the firms in the Global 100 universe for their Global 100 Most Sustainable Corporations in the World Index. The clean revenue definition was developed in the search for "a global clean revenue taxonomy standard for calculating Clean Revenue that is consistent, comparable, relevant, and specific as well as being public and free of charge, with the eventual aim of having "Clean Metrics" (Clean Revenue & Clean Investment) integrated into the segmented reporting guidance by global accounting standards setting bodies" (Corporate Knights, 2020, p.1). Clean revenue is defined by Corporate Knights as the revenue that derives from a firm's goods and services with clear positive environmental and social benefits, including the revenue from clean transition, low-carbon economy, and circular economy revenue segments (Corporate Knights, 2020, p.1).

Corporate Knights has identified numerous clean revenue segments, that include for instance, clean household and cleaning products, natural food enzymes, chemicals, flavors, additives and products, plastic manufacturing with renewable feedstock (including biomass and biowaste), biobased polymer products, clean materials, energy efficient processes and products, biodegradable and cradle to cradle products, environmentally certified consumer products and/or equipment, sustainable furniture, renewable energy products and technologies, FSC certified forests and paper products, organic, fair trade, sustainable or recycled: textile, clothing, and products, non-combustible, zero emission vehicles, vehicle parts and vehicles leasing, recycled or used goods, solar cells and parts, wind turbines and parts, organic and sustainably harvested food, beverages, and products, organic, sustainable and/or low carbon farming and fishing, organic and sustainable supplements, food, beverages, and other products, sustainability and environmental services and consulting, greenhouse gases (GHG) efficient processes, recycled steel manufacturing, use of renewable fuels in transport, clean power generation, storage and transmission (heat and non-heat), and sustainable packaging (Corporate Knights, 2020, p.2). Each of these clean revenue segments is matched to the UN's sustainable development goals.

From these clean revenue segments, is that firms receive a clean revenue. A firm's clean revenue percentage is measured by the ratio of clean revenue to the total revenue. In addition to the clean revenue percentage, Corporate Knights gives a clean revenue score to the firms, by percent-ranking the clean revenue percentage against peers from the same industry group, also included in the Global 100 universe.

The following table (see Table 1) exemplifies clean revenue segments by industry sector and shows examples of the clean products and services within that segment. Additionally, pertinent UN sustainable development goals to each clean revenue segment are presented. The research sample of this thesis consists of 36 firms across 10 industry sectors; these sectors are depicted in Table 1.

Undoubtedly, it is clear that clean revenue acts as strong indicators of firms' commitment to sustainable development and to tackling environmental and societal challenges. Moreover, clean revenue plays an important role in legitimizing firms' CSR, which in turn drives firms' longevity.

Table 1. Clean Revenue segments and examples by GICS sector. Adapted from Corporate Knights (2020)

GICS Sector	Examples of Clean Revenue Segments	Examples of Clean Products or Services	UN Sustainable Development Goals
Information Technology	Environmental Programme Development and Design Services	Revenue from: -programming services for computer systems to monitor or regulate emissions or energy usage	GOAL 7: Affordable and Clean Energy GOAL 12: Responsible Consumption and Production
Energy	Transition Segment - GHG Efficient Refining Systems	Revenue from GHG Efficient Refining System in 3 Levels, with Level 3 being the most energy efficient: -Level 1: Industrial Energy Efficiency with a 25%-50% reduction in Industry Average-GHG emission intensity based on the scope within company's control (count as 25% clean) -Level 2: Industrial Energy Efficiency with a 50%-90% reduction in Industry Average-GHG emission intensity based on the scope within company's control (count as 50% clean)	GOAL 12: Responsible Consumption and Production
Consumer Discretionary	Non-combustible, Zero Emission Vehicle Parts	Revenue from: -Electric and Hybrid Vehicle parts and components, count at 100%	GOAL 9: Industry, Innovation and Infrastructure GOAL 7: Affordable and Clean Energy GOAL 12: Responsible Consumption and Production
	Organic, Fair Trade, Sustainable or Recycled: Textile, Clothing and Products	Sales Revenue from: -Organic, FairTrade, sustainable or recycled textiles, clothing or products with the following certifications: -Organic Content Standard - OSC 100 - count at 100% -Recycled Claim Standard - RCS 100 - count at 100% -Global Recycled Standard (GRS) - count at 50% -Cotton Certification: Better Cotton count at 50% -Only TENCIL (cellulostic fabric or bamboo) count at 100% -Responsible Wool Standard, count at 50% -ZQ Accreditation, count at 50% -Global Organic Textile Standard (GOTS) – count at 70% -Global Traceable Down Standard (Global TDS) - count at 100% -Responsible Down Standard - count at 50%	GOAL 12: Responsible Consumption and Production
Health Care	Equitable Pricing Strategies for Products	Total volume and revenue of 2018 sales for each of the products with equitable pricing strategies used to treat any of the 66 Access to Medicine Index Report In scope diseases, conditions and pathogens.	GOAL 3: Good Health and Well-being
Industrials	Other Energy Efficient Products and Services	Revenue from: -Energy efficient products and services for use in varied industrial markets. These include products and core components which improve energy profiles, and products or systems which reduce energy usage within industrial & manufacturing processes. -Energy efficient products and services for use in residential, commercial and municipal buildings. Products include integrated buildings control systems, insulation materials, energy efficient lighting such as LEDs, efficient heating, HVAC system, ventilation and air-conditioning equipment, advanced materials such as reflective roof materials/systems, and green concrete (i.e. Cement manufactured with lower clinker content, automation by comparing one production technology to another). All products and services in this category must meet the standard requirements for at least LEED GOLD or equivalent, where applicable. -Energy efficient consumer products and services. This includes components for consumer appliances, such as high-efficiency power electronics, LEDs and control systems -Rail and bus transportation components for diesel engines count for 50%, hybrid count at 75%, electrical count at 100% -Not including revenue for military and weapons purposes	GOAL 9: Industry, Innovation and Infrastructure GOAL 12: Responsible Consumption and Production
	Wind Turbines and Parts	Revenue from: -Wind turbine equipment and components, (including bearings, gearboxes, blades, and towers); and specialist materials into the wind value chain -Clutches and shaft couplings, including universal joints -Liquid dielectric transformers having a power handling capacity <=650 kVA, >650 kVA but <=10,000 kVA, and exceeding 10,000 kVA -Transformers electric power handling capacity > 16 kVA but <=500 kVA, and exceeding 500 kVA -Electric generating sets, wind-powered	GOAL 7: Affordable and Clean Energy
Communication Services	Sustainability Related Training/Education/Curriculum for Green Jobs and Career	Revenue from: -Revenues from courses and programs fully dedicated to sustainability-related education -Research grants and income from sustainability-related areas -Training software, software used to reduce or monitor energy usage, pollution	GOAL 4: Quality Education

Consumer Staples	Protein Alternatives	Sales revenue from: -Soy and Plant-based meals and products -Insect protein containing products	GOAL 2: Zero Hunger GOAL 3: Good Health and Well-being GOAL 15: Life on Land
	Organic and Sustainably Harvested: Food and Beverages	Sales Revenue from -Food and beverage items which are 100% made from verified organic, sustainably-sourced and non-GMO ingredients certified by the U.S. Department of Agriculture (USDA) or equivalent. -Farm Sustainability Assessment (FSA) Gold ingredients -100% RSPO Certified products -non-GMO products (less than 0.9% GMO) -For food with GMO variants like soy, tomotoes, products must be labelled GMO-free/Non GMO in order to get 100% credit -Food and beverage items with sustainable third party certifications (hormones free alone does not get any credit) -100% organic that is 100% certified vegan and GMO-free – count at 100% -100% certified vegan and GMO-free – count at 50% -100% vegetarian and GMO-free – count at 25%	GOAL 1: No Poverty (Social) GOAL 2: Zero Hunger GOAL 3: Good Health and Well-being GOAL 4: Quality Education GOAL 8: Decent Work and Economic Growth (Social) GOAL 15: Life on Land
	Biodegradable and Cradle to Cradle Products	Revenue from: -Product meets multiple attributes designed to improve product's safety to humans and the environment and design for future life cycles, meeting one of four levels of achievement ranging from basic to platinum -Certification that products meet ASTM D6400 or D6868 standards for biodegradability when composted.	GOAL 9: Industry, Innovation and Infrastructure GOAL 12: Responsible Consumption and Production
Materials	Natural Food Enzymes, Chemicals, Flavours, Additives and Products	Revenue from: -Microbial solutions and cultures, -Natural enzymes and probiotics -Natural color, additives and flavours -Soy-based writing inks	GOAL 12: Responsible Consumption and Production
Utilities	Clean Power Generation, Storage and Transmission (Non-Heat)	Revenue from: -Mechanical energy storage (Flywheels, pumped hydro – where the facility will not be charged with carbon intensive energy OR facility is contributing to a grid which has at least 20% share of intermittent renewables, compressed air energy storage) -Chemical energy storage (Batteries, flow cells, thermochemical energy storage) -Electrical energy storage (Capacitors, supercapacitors, superconducting magnetic energy storage (SMES)) -Thermal energy storage (Low and high temperature storage) -Electric vehicles as storage for grid support (Mobile storage) -Wind -Marine renewables including tidal and wave energy generation facilities – using ocean thermals, salinity, gradients, etc.; and heating/cooling facilities using ocean thermals (where an 80% reduction in gCO2e/kWh is achieved compared to fossil fuel alternatives) -Geothermal power plant (where direct emission amounts to less than 100g/CO2/kWh) -Hydropower plant (run-of-river and large scale where the power density >5W/m2 or emissions of electricity generated <100gCO2e/kWh) -Solar photovoltaic (PV) and Concentrated solar power plant (CSP) -Transmission to enable renewable electricity -Electricity as a service -Smart Grid and Microgrid Systems (smart meters, voltage reduction/control technologies, advanced monitoring and forecasting systems, integration and Control systems, communication and cyber security systems -Distributed energy resource management systems (Ability to monitor, control and optimize distributed-connected -Generation such as smaller scale (<50MW) wind, solar, geothermal, etc.)	GOAL 7: Affordable and Clean Energy GOAL 9: Industry, Innovation and Infrastructure GOAL 11: Sustainable Cities and Communities GOAL 12: Responsible Consumption and Production GOAL 13: Climate Action (Social)
Real Estate	Green Buildings Efficiency, Retrofits and Upgrades Projects	Revenue from a building with retrofits and upgrades that significantly improve energy efficiency and/or water efficiency of, or make other environmentally beneficial improvements to a building, building subsystem or land where a substantial reduction in gCO_2/m^2 because of the upgrade or retrofit, examples include: -Skylights, Solar Panels, Cool roofing, Roofing and Wall Materials, and LED/efficient lighting -Sustainable, recycled and locally sourced construction materials, materials such as precast concrete -Access to daylighting (reducing need for installed lighting) -Energy/water tracking devices, such as smart metering, that help tenants/inhabitants create awareness around usage and aim to reduce emissions -Water conservation measured such as Xeriscaping and Drought-Tolerant Plants -Electric and renewable energy charging stations and batteries -Waste diversion -Wind -related projects -Energy storage systems	GOAL 9: Industry, Innovation and Infrastructure GOAL 11: Sustainable Cities and Communities

2.3. Corporate Social Responsibility and Corporate Financial Performance

Firms have been widely held accountable for the consequences of their business activities, particularly publicly listed companies. As a consequence, firms are pressured to engage in CSR, especially by stakeholder groups such as non-governmental organizations (NGOs), communities, employees, and customers. (Michelon et al., 2013; Charlo, Moya, and Muñoz, 2015) Additionally, the stakeholder theory has given CSR momentum in recent years, and firms' executives are becoming more inclined to accept that while gaining firm's success, social responsibilities must be met correspondingly (Lu, Chau, Wang and Pan, 2014).

Although CSR is globally becoming a priority for firms, firms still need an economic justification to engage in CSR, and conversely, CSR needs a strong economic foundation in order to be sustained in competitive environments. For firms to consider and continue engaging in CSR they need to recognize the advantages that derive from it and the benefits that it can bring to their CFP (Wang, Sewon, and Claiborne, 2008).

Studies have found that engaging in CSR is a way in which firms commit to its stakeholders and build and maintain positive relationships with them which eventually translates into positive corporate and financial performance and long-term success (Martin et al., 2009; Feng et al., 2017). In addition to this, previous studies argue that strategically engaging in CSR, based on stakeholder's pressure and interests, also leads to a corporate performance advantage and builds a positive reputation amongst stakeholders, which translate into positive CFP (Alniacik et al., 2011, Charlo et al., 2015).

Furthermore, Porter and Kramer (2006) suggest that firms' economic and CSR objectives can be aligned. They indicate an existing interdependence between business, society, and nature and thus by accepting this, engaging in CSR presents opportunity, innovation and competitive advantage, as opposed to the notion that CSR presents costs and constraints. As a result, studies have explored the relationship between CSR and CFP in order to reveal an economic justification for firms' engagement in CSR (Lu et al., 2014).

Despite the numerous studies on CSR effects on CFP, results still vary given the multifactorial complexity of this relationship. For instance, previous research has found positive, (e.g., Curcio and Wolf, 1996; Luo and Bhattacharya, 2006; Lev, Petrovits and Radhakrishnan, 2010; Gololo, 2016; Tsoutsoura, 2004; Wen and Fang, 2008; Lee and Park, 2009; Jo and Harjoto, 2011),

negative (e.g., Hirigoyen and Rehm, 2015; Surroca and Tribo, 2008; Makni et al., 2009; López, Garcia, and Rodriguez, 2007) and even no significant relation between CSR and CFP (e.g., Ullman, 1985; Aupperle, Carroll, and Hatfield, 1985; Moneva, Rivera-Lirio, and Munoz-Torres, 2007). Positive causal relationships are, nevertheless, predominant, in contrast to the studies reporting a non-significant relationship or a negative causality (Lu et al., 2014).

The most prevalent types of CFP used in empirical studies follow the classification proposed by Orlitzky, Schmidt and Rynes (2003): market-based, accounting-based and perceptual CFP measures. These measures are frequently encountered in academic research; however, in numerous studies, a combination of these measures is generally used (Lu et al., 2014). Other studies have revealed that engaging in CSR translates into higher firm value, and that firms who have engaged in CSR have experienced an increase in their customers' satisfaction, which in turn has translated into greater market returns (Luo and Bhattacharya, 2006; Jo and Harjoto, 2011). Additionally, firms with a higher ranking in CSR indexes are less inclined to commit tax aggressiveness and these firms exhibited an increased market value (Zeng, 2016). Moreover, by aligning CSR to the objectives that firms' executives aim for (e.g., economic objectives), studies have argued that a firm's long-term competitiveness and CFP is thus strengthened (Michelon et al., 2013).

Studies often examine the relationship between CSR and CFP in terms of a specific industry or country. For instance, industries with strong consumer proximity are more likely to have a positive relationship between CSR and CFP, given that in these industries the stakeholders, in this case consumers, are directly responsible for their consumption behaviours. Consumers show more interest in social concerns, thus they tend to incline their consumption towards more ethical, ecological and environmentally friendly goods and services, and are more likely to favour firms who engage in CSR, whereas firms' procurement departments are less likely to (Hoepner et al., 2010). These statements are supported by Lev et al. (2010); Curcio and Wolf (1996); and Baron, Harjoto and Jo (2011), whose studies indicated a positive effect of CSR on sales growth and firms' performance in industries with strong consumer proximity. Additionally, studies tend to exhibit a consideration towards the effect of time on CSR and CFP relationships (e.g., Makni et al., 2009; Seifert, Morris and Bartkus, 2003; Peters and Mullen, 2009; Becchetti, Di Giacomo, and Pinnacchio, 2008). This supports the notion that the belief of an immediate effect on CFP by engaging in CSR is flawed and explains the reason why firms' executives engage in CSR rather slowly, since they are pressured and required by the shareholders to increase profitability in the short term (Lu et al., 2014).

Lastly, Table 2. summarizes the key articles used in the literature review regarding the relationship between CSR and CFP. In Table 2 we are able to appreciate the above-mentioned multifactorial complexity of the relationship between CSR and CFP. As evidenced, the complex nature of this relationship also conveys a complexity in the methods and data used for its research. For instance, prior research on the relationship between CSR and CFP listed on Table 2 vary in years coverage; from covering one year to covering 16 years, with an average of 6,5 years. Dataset characteristics also vary; for instance, the dataset can be country-specific, region-specific or global, industry-specific or compiling a range of industries. In the key articles listed in Table 2, 1) global, across industries; 2) region-specific, across industries; 3) country-specific, across industries; and 4) country-specific, industry-specific characteristics can be observed, with global, across industries being the most common. Additionally, the research samples vary, ranging from a sample of 7 firms to a sample of 2952 firms, with six samples below 100 firms, eight above 100 firms, and two above 1000 firms, and all in all, with an average of 428 firms. Likewise, significant differences amongst the key articles listed in Table 2 relate to the data analysis method; the methods used are: regression analysis, Mann-Whitney U-test, ANOVA test, Kruskall-Wallis test, Kolmogorov-Smirnov test, Shapiro-Wilk tests, Levene's test, Granger causality test, first stage probit regression, second-stage Heckman regression, three-equation structural model, panel data regression, Wooldridge test, and partial least squares structural equation model, with regression analysis being the most commonly used. Furthermore, differences in variables used in the analyses, data sources, and so forth can be found.

To summarize, the key articles show that there are different ways in which the relationship between CSR and CFP can be analysed. Furthermore, there is a lack of standardization of CSR and CFP measurements which explain how and why prior research regarding the relationship between CSR and CFP differs in its findings. One of the aims of this research is to analyse the relationship between CSR and CFP with the use of publicly available data, to facilitate the reproduction/replicability of the research in future years and make it simple to trace the progress of the results through the years.

Table 2. Key articles on the relationship between CSR and CFP.

Authors	Title of the Article	Focus of the Article	Dataset	Findings	Relationship
Curcio and Wolf, 1996	Corporate Environmental Strategy: Impact on Firm Value	The aim of the study is to find out the relationship between corporate environmental strategy and firm value, through a series of regression analyses.	Firms ranked by the Council of Economic Priorities (CEP) with information available from the time period 1976-1989 (91 firms). The CEP ranks firms environmentally regarding three categories: 1) Environmentally Proactive, 2) Environmentally Ambiguous Strategy, and 3) Environmentally Irresponsible Strategy.	Corporate performance concerning environmental responsibility is related to overall firm value. Except in firms with industrial customers.	Positive
Tsoutsoura, 2004	Corporate Social Responsibility and Financial Performance	The study explores the relationship between CSR and financial performance, through a series of regression analyses.	Dataset includes 422 firms out of the S&P 500 Index, covering the time period 1996-2000.	The relationship between CSR and financial performance is positive and statistically significant .	Positive
Luo and Bhattacharya, 2006	Corporate social responsibility, customer satisfaction, and market value	The study develops and tests a conceptual framework regarding CSR and its impact on the market value of firms, through a regression analysis.	Dataset includes 113 firms out of the Fortune 500 firms list, covering the time period 2001-2004.	CSR is related to increased market value, and to increased customer satisfaction, leading to positive financial returns. However, when firms are not innovative, CSR decreases their market return and financial returns, thus CSR initiatives should be implemented according to the firm's corporate abilities.	Positive
Lopez, Garcia, and Rodriguez, 2007	Sustainable development and corporate performance: A study based on the Dow Jones sustainability index	The study examines if a firm's performance is impacted by practices under the term CSR, such as sustainability practices, through regression analysis and the Mann-Whitney U-test, a non-parametric test.	Two groups of 55 firms; one with 55 European firms included in the Dow Jones Sustainability Index (DJSI) and the other group includes also 55 European firms, belonging to the Dow Jones Global Indexes (DJGI) but never been included in the DJSI, covering the time period 1998-2004.	Sustainability practices impact on performance is negative, in the short-term.	Negative
Moneva, Rivera-Lirio, and Munoz-Torres, 2007	The corporate stakeholder commitment and social and financial performance.	The study aims to find if a firm's strategic commitment to stakeholders is related to a positive financial performance, through ANOVA test, Kruskall-Wallis, Kolmogorov-Smirnov, Shapiro-Wilk tests, and Levene's test.	Dataset includes 52 Spanish listed firms, covering the year 2005.	The relationship between a firm's strategic stakeholder orientation and positive financial performance is positive and statistically no significant.	No significant
Surroca and Tribo, 2008	Managerial entrenchment and corporate social performance	The aim of the study is to examine the relationships amongst managerial entrenchment practices, social performance and financial performance, through a regression analysis.	358 firms from 22 countries, covering the time period 2002-2005.	Through a combination of entrenchment practices and through the implementation of socially responsible actions, the firm's financial performance is affected negatively.	Negative
Makni, Francoeur, and Bellavance, 2009	Causality between corporate social performance and financial performance: Evidence from Canadian firms	The study analyses the causal relationship between corporate social performance (CSP) and financial performance, through a Granger causality test.	179 listed Canadian firms, covering the time period 2004-2005.	No significant relationship between CSP and financial performance. Except for market returns. Causal negative relationship between the environmental dimension of corporate social performance and financial performance, in the short term.	Negative
Peters and Mullen, 2009	Some Evidence of the Cumulative Effects of Corporate Social Responsibility on Financial Performance	The study explores the cumulative effects of CSR on the future financial performance of firms, through a multiple regression analysis.	100 firms from the Fortune 500 list of the year 1996, covering the time period 1991-1996.	The cumulative effects of CSR on financial performance is positive and strenghtens over time.	Positive
Lee and Park, 2009	Financial Impacts of Socially Responsible Activities on Airline Companies	The study examines the effect of CSR on the financial performance (value and accounting performance) of airline companies, through a multiple regression analysis.	7 airline firms, covering the time period 1991-2006.	CSR has a positive effect on market value performance. However, CSR has no impact on accounting performance.	Positive No significant
Lev, Petrovits and Radhakrishnan, 2010	Is doing good good for you? how corporate charitable contributions enhance revenue growth	The aim of the study is to explore the effect of corporate philanthropy growth on sales growth, through Granger causality tests.	251 listed firms from the United States, covering the time period 1989-2000.	The relationship between corporate philanthropy grrowth, in the form of charitable contributions and future sales growth is positive. Customer satisfaction is identified as the mechanism underlying the relationship.	Positive

Jo and Harjoto, 2011	Corporate governance and firm value: The impact of corporate social responsibility	The study examines if engaging in CSR, as well as corporate governance and monitoring mechanisms positively impact firm value, through the use of first-stage probit regressions and second-stage Heckman regressions.	2952 CSR and no-CSR firms from the United States available in the Kinder, Lydenberg, and Domini's (KLD) Socrates database, the Investor Responsibility Research Center (IRRC) governance and director database, and the Institutional Broker's Estimate System (IBES) database, covering the time period 1993-2004.	Engaging in CSR positively affects firm value.	Positive
Baron, Harjoto and Jo 2011	The Economics and Politics of Corporate Social Performance	The study analyses the relationship amongst CFP, CSP and social pressure, through a three-equation structural model.	1600 firms with social engagement, covering the time period 1996-2004.	The relationship amongst the variables CSP, CSP and social pressure vary across industries. There is a positive relation between CFP and CSP for firms in consumer industries and a negative relation between CFP and CSP for industrial industries. In both industries, CSP is affected by social pressure.	Positive Negative
Michelon, Boesso and Kumar, 2013	Examining the Link between Strategic Corporate Social Responsibility and Company Performance: An Analysis of the Best Corporate Citizens	The study analyses if implementing CSR initiatives that are related to the firm's strategies and its stakeholders can enhance firm's performance, through panel data regression, Wooldridge test, and multiple regression analysis.	188 firms from KLD's 100 Best Corporate Citizens list, covering the time period 2005-2007.	CSR initiatives that are linked to the preferences of a firm's stakeholders and are relevant to the firm's strategies, positively impact corporate performance, in both: accounting-based and market-based measures.	Positive
Hirigoyen and Rehm, 2015	Relationships between Corporate Social Responsibility and financial performance: What is the Causality?	The study analyses the causal relationships between various areas of CSR and financial performance, through linear regression analysis and the Granger causality test.	329 public firms from three geographical areas: United States, Europe and Asia Pacific, covering the time period 2009-2010.	CSR negatively affects financial performance, and financial performance negatively affects CSR.	Negative
Zeng, 2016	Corporate Social Responsibility, Tax Aggressiveness, and Firm Market Value	The aim of the study is to examine the relationships amongst CSR, tax aggressiveness, and firm market value, through a series of regression models.	53 Canadian firms from the S&P/TSX index, covering the time period 2005-2009.	Firms with higher CSR ranking are less likely to engage in tax aggressiveness. Firms with a high CSR reputation, increase their firm market value.	Positive
De Mendonca and Zhou, 2019).	Environmental Performance, Customer Satisfaction, and Profitability: A Study among Large U.S. companies	The study aims to find out how customer satisfaction translates firms' environmental performance on long-term oriented profitability, through a partial least squares structural equation model.	92 listed firms from the U.S. assessed with green rankings by Newsweek, covering the time period 2013-2015.	Customer satisfactions positively impacts firm's long-term profitability.	Positive

3. THEORETICAL FRAMEWORK

In order to assess the relationship between CSR, clean revenue and financial outperformance, it is important to explore beforehand the theoretical framework of sustainability and organizational management. The theoretical framework provides the base for the research, by applying relevant theories to the research study and thus providing an understanding of the phenomena in question. It guides the proposed research throughout all of the study, from the definition of the research problem, the literature review, methodology, the discussion of the findings, and the presentation of the conclusions. Furthermore, it supports the developed hypotheses (Adom, Hussein, and Adu-Agyem, 2018).

One of the most relevant and widely used theories regarding firms and CSR is the stakeholder theory (Montiel and Delgado-Ceballos, 2014). The stakeholder theory is an organizational management theory that argues that firms' purpose is to create value for all its stakeholders (Hörisch, Freeman, and Schaltegger, 2014). Just as mentioned by Freeman, Harrison, Wicks, Parmar, and De Colle (2010, p.10) the "stakeholder theory, like most theories, is a tool to better describe and act in a complex world". Accordingly, the significance of the stakeholder theory relies on its role explaining firms' reasons for engaging in CSR (Schaltegger, Hörisch, and Freeman, 2017).

Another relevant theory in the sustainability and organizational management fields is the legitimacy theory. The legitimacy theory explores firms' effort to be perceived as organizations that comply with the values and expectations of the society of which they are part of, thus legitimizing their behaviors and consequently, receiving recognition and validation from the society, which in turn reinforces the firm's survival and success (Suchman, 1995; Schiopoiu Burlea and Popa, 2013). Thus, indicating that the more legitimacy a firm can get, the more it can ensure its survival. When it comes to CSR, the legitimacy theory explains the reasons behind firms' disclosure of their CSR activities.

3.1. Stakeholder Theory

Consistent with the current global awareness of social and environmental issues, as well as the awareness of the importance of social and environmental responsibility, the call to take action towards the prevention and mitigation of social and environmental issues has driven firms to engage in CSR. As firms start engaging in CSR, they expect to consequently, outperform financially. This is supported by the stakeholder theory which indicates that by creating value

for the stakeholders, firms too generate value for themselves (Freeman et al., 2010). Stakeholders are defined by Freeman (1984) as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (p. 46). Amongst the mains groups of stakeholders are employees, customers, suppliers and distributors, shareholders, the government, local communities, the environment, and society as a whole. Just as firms have the power and resources to positively impact all of its stakeholders, stakeholders hold power to pressure firms into engaging in CSR.

Contradicting traditional business models in which the sole purpose of firms is to generate profits and value for their shareholders, the stakeholder theory stresses the need for firms to recognize its stakeholders' needs and interests in order to succeed. Furthermore, the stakeholder theory highlights firms' role as good corporate citizens, with rights, duties and responsibilities towards society, just as the rest of the citizens in society and thus implies that firms' existence is not merely focused on maximizing the benefits of the shareholders, but also the stakeholders. (Visser, Matten, Pohl, and Tolhurst, 2010; Haryono and Iskandar, 2015)

Being a management theory, the stakeholder theory argues that by building and maintaining positive relationships between a firm and its stakeholders, value can be jointly created (Freeman et al., 2010). Hence its recognition as one of the most recurred to theories in CSR and sustainability management research studies (Montiel and Delgado-Ceballos, 2014; Schaltegger et al., 2017; Feng et al., 2017). Additionally, it "aims to connect a concern for moral conduct with the process of value creation" (Freeman et al., 2010, p.19) and depicts this joint value creation as the firms' core purpose (Schaltegger et al., 2017).

The stakeholder theory encourages firms to act responsibility towards their stakeholders as a way to not only serve its stakeholders but also to enhance competitiveness and financial performance. As mentioned by Freeman (1984, p.107) "the expectations of stakeholders in the firm and societal issues will determine the ability of the firm to sell its products". Studies have shown that firms that address the interests of more stakeholders have an enhance CSR performance and consequently improve their financial performance (Margolis and Walsh, 2003: Jo and Harjoto, 2011).

Meeting stakeholders´ increasing demands to engage in CSR, ought to generate positive outcomes for firms. Several studies have found that employees' commitment, customer loyalty and satisfaction, firms' reputation, market value, and firms' overall competitiveness, are heightened when meeting the demands of stakeholders, which consequently improves firms'

profitability and financial performance (Luo and Bhattacharya, 2006; Mandl and Dorr, 2007; EC, 2001; Jo and Harjoto, 2011; Zeng, 2016; De Mendonca and Zhou, 2019). Therefore, with regard to the relationship between CSR and CFP, the stakeholder theory leads to predict a positive impact of CSR on a firms CFP (De Mendonca and Zhou, 2019).

3.2. Legitimacy theory

As the current environmental and societal situation worsens, and, accompanied by a vastly spread global awareness of these, the importance of social and environmental responsibility has increased exponentially, and therefore the need for firms to engage in CSR in order to comply with these has become crucial in the last decades. At the same time, this has instigated a large portion of society to become socially and environmentally conscious, demanding firms to mitigate the negative environmental and societal impacts derived from their operations, therefore leading to an exponentialized stakeholder pressure and an increased demand for goods and services that do not pose a threat to the environment and society (Haryono and Iskandar, 2015). As stated by Du et al. (2010), stakeholders tend to favour firms that are good corporate citizens and reprimand those who are not. Consequently, firms find themselves in the need to demonstrate that they are behaving as good corporate citizens, and in order to do so, firms must legitimize their actions by proving that they are truly acting in the best interests and under the cultural standards of society, in the interest to receive validation from stakeholders and society as a whole, and therefore gain the status of legitimacy. The legitimacy theory comes into play when explaining the efforts of firms to prove that they are functioning under the societal norms and values of the society they are embedded in (Deegan, 2002). Additionally, when it comes to CSR, the legitimacy theory can explain why firms choose to disclose some of their social and environmental information, such as clean revenue.

Suchman (1995, p. 574) defines legitimacy as “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions”. Similarly, Lindblom (1994, p. 2) defines legitimacy as “a condition or status which exists when an entity’s value system is congruent with the value system of the larger social system of which the entity is part”. Both definitions indicate that legitimacy is society’s perception of a firm and how it unfolds within the limits of the society. These definitions also bring up the political economy theory roots of the legitimacy theory which recognize firms as part of a broader social system. Correspondingly, from the

point of view of the legitimacy theory, this means that the right to resources and the right to exist of firms relies on the consideration of society; if society perceives the firm to be legitimate, then the status of legitimacy is granted to the firm (Deegan, 2002). This is as well supported by Gray et al. (2009, p. 28) who mentions that "organizations can only continue to exist if the society in which they are based perceive the organization to be operating a value system that is commensurate with the society's own value system".

The legitimacy theory also implies the existence of a social contract between a firm and the society it is embedded in. This social contract embodies the societal norms expected to be fulfilled by firms (Deegan, 2002). In regard to this social contract, Mathews (1993, p.26) states that "society (as a collection of individuals) provides corporations with their legal standing and attributes and the authority to own and use natural resources and to hire employees. Organisations draw on community resources and output both goods and services and waste products to the general environment. The organisation has no inherent rights to these benefits, and in order to allow their existence, society would expect the benefits to exceed the costs to society". Undoubtedly, as previously mentioned, it is sustained that society and firms are intertwined in a relationship in which firms benefit from society when acquiring material and human resources, and society benefits from firms by being provided with goods and services. Notwithstanding, it is important for firms to present society with more benefits than costs, in order to survive (Deegan, 2002). Therefore, the legitimacy theory supports the notion that by meeting the expectations and norms of society, the society will in turn endorse the firms.

In accordance with the previous statements, it is clear that both legitimacy and social contract are the key concepts that constitute the legitimacy theory. As stated by Deegan (2002) firms are able to continue their operations and therefore survive, as long as the social contract with the society is not breached. When society perceives that a firm is not operating with legitimacy, then the social contract is revoked by society, in terms such as consumers decreasing or stopping to buy the firm's goods and services, society's human resources stopping to work for the firm, losing financial capital from stakeholders, and being adjudged with increased taxes or fines. In addition to this, society can sanction firms when major scandals or accidents demonstrating their lack of respect towards the societal norms and values of society come out to light and therefore endangering their legitimacy (Schiopoiu Burlea and Popa, 2013). Nevertheless, it is also important to note that legitimacy is a dynamic concept (Lindblom, 1994). Shocker and Sethi (1973, p. 67) explain that "in a dynamic society, neither the sources of institutional power

nor the needs for its services are permanent. Therefore, an institution must constantly meet the twin tests of legitimacy and relevance by demonstrating that society requires its services and that the groups benefiting from its rewards have society's approval."

The perception society has of a firm can be influenced by the firm's engagement in CSR and its CSR disclosures. One of the main reasons why firms engage in CSR is to achieve legitimacy from the society it is embedded in and consequently be able to continue its operations. In accordance, firms' CSR disclosures aim to communicate this engagement, thus playing an important role as well in the process of legitimizing the firm's operations. Through the disclosure of CSR information in CSR and sustainability reporting, firms can address the external concerns on environmental and social responsibilities, business ethics, and sustainability (Gray et al. 1998, p.3 in Deegan, 2002, p.288). Consequently, it is implied that firms can achieve legitimacy by their engagement in CSR and through CSR reporting, highlighting their importance (Gray et al, 2009; Deegan 2002; Haryono, and Iskandar, 2015).

In regard to clean revenue, which reflects to firms the outcome of their commitment to CSR in the form of revenue, the legitimacy theory supports the notion that firms are starting to disclose this information on their annual reports as a way to legitimize their CSR actions and receive validation from its stakeholders since it goes hand by hand to the expectations of society and meets stakeholders' current and eminent environmental and social concerns. Furthermore, by getting validation from their stakeholders, firms can improve their financial performance. Just as when society perceives a firm is not operating with legitimacy and therefore loses consumers, future employees, and capital, when society perceives that a firm's operations are legitimate, it can yield an increase in consumer sales, employees, and can attract capital, for example, through green investing (Deegan, 2002).

Through the legitimacy theory, it can be understood that abiding by the norms of society is a start, but it is not enough; firms must too disclose their impact on society in order to influence society's perception, and in turn, achieve legitimacy. A firm's legitimacy is vital, not only for its survival but also its level of success. Just as the stakeholder theory, the legitimacy theory predicts too that as firms meet with the concerns and demands of the stakeholders, their financial performance will improve. After all, firms are influenced by society, and society is influenced by firms. All in all, the legitimacy theory explains firms' engagement in CSR and the disclosure of information that leads them to fulfil the social contract with the society,

provides legitimacy of their actions, and reassures their existence. (Schiopoiu Burlea and Popa, 2013)

3.3. Summary of the Literature Review and Theoretical Framework

To summarize, the literature review consists of relevant literature regarding the key concepts addressed in this research. Firstly, it defines CSR and explores similar concepts revolving around it, such as corporate sustainability, sustainability/sustainable development, and corporate environmental responsibility to present a holistic perspective of the number of current concepts that exist nowadays regarding sustainability, and thus clearly define and present the approach of these concepts, in the context of this research. Secondly, it presents the term clean revenue and indicates its use and its relevance in portraying firms' commitment to CSR and sustainability itself. Lastly, the literature review draws on previous research on the relationship between CSR and CFP, which provides evidence of the complex and multifactorial nature of the relationship, as evidenced by the varying results of the studies. Following the literature review, the theoretical framework presents the stakeholder theory and legitimacy theory that help explain the reasoning behind the research topic and support the notion that firms engage in CSR, as a way to meet with stakeholders' environmental and societal concerns and demands as well as a way to support their legitimacy. Therefore, the theoretical framework plays a fundamental role in understanding the interconnection on how by engaging in CSR, by providing clean goods and services and hence generating clean revenue, firms can financially outperform.

3.4. Research Hypotheses

Based on the findings from the previous literature review, theoretical framework, and research questions, the following hypotheses are therefore proposed:

H_0. There is no relation between clean revenue percentage and corporate financial performance.

H_1. There is a statistically significant relation between clean revenue percentage and corporate financial performance.

$H_{0.1}$. There is no relation between a firm's sustainability overall score and corporate financial performance.

$H_{1.1}$. There is a statistically significant relation between a firm's sustainability overall score and corporate financial performance.

4. METHODOLOGY

In this chapter, the research method, as well as the research data and data analysis method chosen for the research, will be discussed. Additionally, the research framework is presented. Firstly, for the research, I plan to use a quantitative methodology with a correlational design, and following, the research data will be analysed through regression analysis. The research framework of the thesis is presented below, in Figure 5. The framework presents the context of the study. It is based on the research hypotheses and illustrates the concepts and variables used in the study.

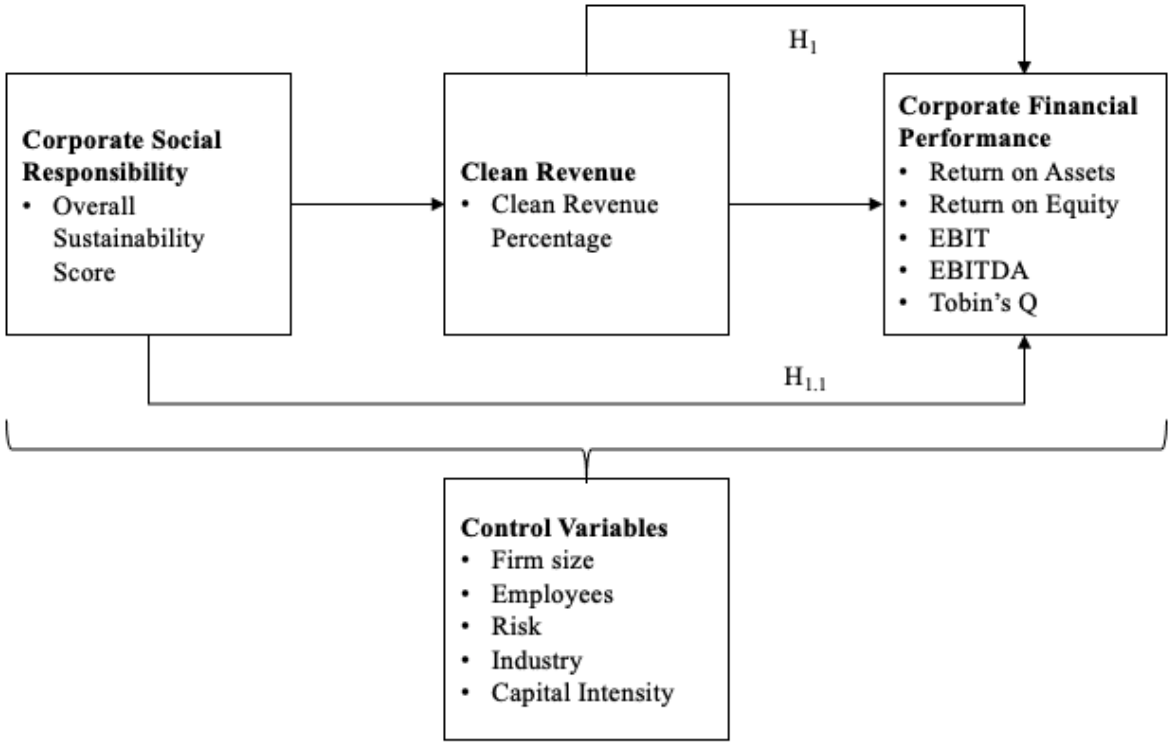

Figure 3. Research Framework.

The framework establishes that Corporate Social Responsibility instigates firms' clean revenue, thereafter, affecting their Corporate Financial Performance. It also establishes a direct impact of Clean Revenue on Corporate Financial Performance (H_1) and Corporate Social Responsibility on Corporate Financial Performance ($H_{1,1}$). The aim of this research is to unveil and understand the relationship between firms' engagement in Corporate Social Responsibility, Clean Revenue, and their Corporate Financial Performance, by using the available data on clean revenue percentages, overall sustainability scores, and financial performance from front-runner sustainable firms listed in the Global 100 Most Sustainable Corporations in the World Index,

by Corporate Knights. The research framework proposes a positive relationship between CSR engagement, clean revenue, and financial outperformance that will support the hypotheses H_1 and $H_{1.1}$.

4.1. Research Philosophy and Approach

The philosophical assumption underpinning the research is positivism. Positivism explores phenomena through the lens of scientific methods and seeks to find out correlations, relationships, or regularities between an independent variable and one or more dependent variables (Collins, 2010). Positivists rationalize these relationships and regularities in accordance with the laws of cause and effect, therefore, and given the objective ontology and the empiricist epistemology of positivism, an objective research methodology is required in order to study variables and test hypotheses under causal explanations (Antwi and Hamza, 2015). Positivist research relies on the hypothetico-deductive model of science. This model comprises a process that starts by proposing hypotheses to be tested which are based on theory from previous literature, then identifying the dependent and independent variables to be used in the study, followed by conducting an empirical study, by which the results will either confirm or reject the hypotheses proposed. Given that positivism is mostly used in studies with quantifiable data, and that require statistical analysis, quantitative studies tend to be based on this philosophical paradigm (Park, Konge, and Artino, 2020).

The research will be conducted through a quantitative approach. The main focus of this approach is on building hypotheses, testing them, and consequently, testing theories (Antwi and Hamza, 2015). Accordingly, quantitative research collects quantitative (numerical) data, measures variables from a specific sample, and uses statistical analyses to find a relationship between the variables. By identifying relationships between the data, it allows to build probabilistic predictions and generalizations (Antwi and Hamza, 2015). This research approach is chosen since the research aim is to find the relationship between firms' clean revenue and their CFP.

In quantitative research, there are four main research designs: descriptive, correlational, causal-comparative, and experimental. For the research, I will be using a correlational research design. In a correlational design, the researcher intends to find out the relationship or the degree of association between the research variables of the study with the use of statistical analyses. This research design is characterized by the use of a correlation matrix which is a visual display of

the correlation coefficients for all the variables used in the research, and by the use of statistical analyses to test and interpret the direction, form of distribution, degree, and strength of the relationship. (Creswell, 2015)

Creswell (2015) recognizes two forms of correlational research design depending on the objective of the research. On the one hand, the prediction design is a correlational design that is used when the aim of the research is to predict outcomes by identifying and using variables as predictors. This type of research design allows the researcher to forecast future behavior. On the other hand, the explanatory design is a correlational design in which the researcher intends to find out the extent to which the variables in the study covary, meaning to which extent changes in a variable reflect changes in the others. The explanatory research design allows researchers to describe and explain the relationship between or among the variables in the study. To reach the purpose of this research, an explanatory design is used.

4.2. Research Data

For the empirical analysis, the research data will be collected from secondary sources: the Orbis database and from Corporate Knight's Global 100 Most Sustainable Corporations in the World Index. This index is annually published by Corporate Knights, a Canadian "media and investment research company that produces rankings and financial product ratings based on sustainability performance" (Corporate Knights, 2020, p.1). For the literature review, academic articles, as well as published reports, will be used.

The research aims to find the relationship between the established variables - clean revenue, overall sustainability score, and CFP – therefore, secondary sources provide the necessary data for the data analysis, such as firms' clean revenue percentage, return on assets, and return on equity, that cannot be obtained through primary sources.

The research sample is preselected. The sample was drawn from the Global 100 Most Sustainable Corporations in the World Index, by Corporate Knights. Given that Corporate Knights began to publish the clean revenue data in 2018, the following sample criteria were applied to select the firms, in order to be able to conduct a regression analysis: (1) The firms appeared in the top Global 100 Most Sustainable Corporations in the World Index consecutively for the past three-year period (2018 to 2020); (2) the financial ratios of the firms were available at the Orbis database or at their annual reports.

Table 3. Research sample drawn from the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights, from 2018-2020.

Global 100 Index 2018	Global 100 Index 2019	Global 100 Index 2020
1 Dassault Systemes SE	1 Chr. Hansen Holding A/S	1 Orsted A/S
2 Neste Oyj	2 Kering SA	2 Chr. Hansen Holding A/S
3 Valeo SA	3 Neste Oyj	3 Neste Oyj
4 UCB SA	4 Orsted A/S	4 Cisco Systems Inc
5 Outotec Oyj	5 GlaxoSmithKline plc	5 Autodesk Inc
7 Cisco Systems Inc	7 Umicore SA	12 Sekisui Chemical Co Ltd
8 Autodesk Inc	10 Taiwan Semiconductor Manufacturing Co Ltd	14 Umicore SA
9 Siemens AG	11 Pearson PLC	18 Outotec Oyj
10 Samsung SDI Co Ltd	12 Outotec Oyj	19 CEMIG
14 Natura Cosmeticos SA	13 McCormick & Company	21 Dassault Systemes SE
15 Pearson PLC	14 Cisco Systems Inc	22 McCormick & Company
18 CEMIG	15 Natura Cosmeticos SA	23 Kering SA
22 Sanofi SA	17 Analog Devices Inc	25 Taiwan Semiconductor Manufacturing Co Ltd
23 McCormick & Company	19 CEMIG	28 Sanofi SA
28 Ericsson	20 Sanofi SA	29 Schneider Electric SE
31 Kesko Oyj	21 Ericsson	30 Natura Cosmeticos SA
33 Biomérieux SA	25 City Developments Ltd	33 Verbund AG
34 AstraZeneca PLC	26 Biomérieux SA	34 Valeo SA
39 ABB Ltd	28 Siemens AG	36 City Developments Ltd
42 Analog Devices Inc	29 Valeo SA	37 Vestas Wind Systems A/S
44 Takeda Pharmaceutical Co Ltd	33 CapitaLand Limited	38 Biomérieux SA
45 Schneider Electric SE	34 Vestas Wind Systems A/S	41 Siemens AG
47 Kering SA	38 Dassault Systemes SE	52 Ericsson
53 GlaxoSmithKline PLC	39 HP Inc	56 AstraZeneca PLC
55 Sekisui Chemical Co Ltd	42 Verbund AG	58 HP Inc
56 Acciona SA	45 ABB Ltd	61 ABB Ltd
66 Chr. Hansen Holding A/S	48 Autodesk Inc	63 Capitaland Limited
70 Orsted A/S	50 AstraZeneca PLC	64 Pearson PLC
74 Taiwan Semiconductor Manufacturing Co Ltd	60 Schneider Electric SE	68 Takeda Pharmaceutical Co Ltd
77 HP Inc	68 Acciona SA	70 Acciona SA
82 Verbund AG	78 Takeda Pharmaceutical Co Ltd	76 UCB SA
84 L'Oreal SA	79 UCB SA	79 GlaxoSmithKline PLC
95 Umicore SA	83 Samsung SDI Co Ltd	80 Samsung SDI Co Ltd
96 Vestas Wind Systems A/S	88 Kesko Oyj	82 Analog Devices Inc
98 CapitaLand Limited	89 Sekisui Chemical Co Ltd	98 L'Oreal SA
100 City Developments Ltd	98 L'Oreal SA	99 Kesko Oyj

Colour	Mentioned in Indices
	Appears 1 or less times below rank 50
	Appears 2 times below rank 50
	Appears 3 times below rank 50

As a result, the research sample selection consists of 36 firms (see Table 4) from a range of industry sectors (see Table 5).

Table 4. Research sample with ranking by year from the Global 100 Most Sustainable Corporations in the World Index.

Firm	G100 2018	G100 2019	G100 2020
ABB Ltd	39	45	61
Acciona SA	56	68	70
Analog Devices Inc	42	17	82
AstraZeneca PLC	34	50	56
Autodesk Inc	8	48	5
Biomérieux SA	33	26	38
CapitaLand Limited	98	33	63
CEMIG	18	19	19
Chr. Hansen Holding A/S	66	1	2
Cisco Systems Inc	7	14	4
City Developments Ltd	100	25	36
Dassault Systemes SE	1	38	21
Ericsson	28	21	52
GlaxoSmithKline PLC	53	5	79
HP Inc	77	39	58
Kering SA	47	2	23
Kesko Oyj	31	88	99
L'Oreal SA	84	98	98
McCormick & Company	23	13	22
Natura Cosmeticos SA	14	15	30
Neste Oyj	2	3	3
Orsted A/S	70	4	1
Outotec Oyj	5	12	18
Pearson PLC	15	11	64
Samsung SDI Co Ltd	10	83	80
Sanofi SA	22	20	28
Schneider Electric SE	45	60	29
Sekisui Chemical Co Ltd	55	89	12
Siemens AG	9	28	41
Taiwan Semiconductor Manufacturing Co Ltd	74	10	25
Takeda Pharmaceutical Co Ltd	44	78	68
UCB SA	4	79	76
Umicore SA	95	7	14
Valeo SA	3	29	34
Verbund AG	82	42	33
Vestas Wind Systems A/S	96	34	37

Table 5. Sample selection by sector.

GICS Sector	Frequency
Communication Services	1
Consumer Discretionary	3
Consumer Staples	4
Energy	1
Health Care	6
Industrials	5
Information Technology	8
Materials	2
Real Estate	2
Utilities	4
Total	**36**

The original research sample included firms from the financial industry. Nonetheless, they were excluded at the end given that the accounting measures for financial firms, such as banks and insurance firms, differ from the rest of the firms from the industries listed above. Excluding financial firms is a common practice in academic research (e.g., Kruse, Mohnen, Pope, and Sato, 2020; Hirigoyen and Rehm, 2015; Eccles, Ioannou, and Serafeim, 2014).

4.3. Data Analysis

For the research, an empirical analysis will be conducted, using regression analysis as a data analysis method in order to discover the relationship between the firms' clean revenue and their CFP over the last three years (2018 to 2020). This data analysis method was selected because it suited best the research questions of the research.

A regression analysis allows to determine the relationship between a dependent and one or multiple independent variables, by examining the impact the independent variables have on the dependent variable, and thus discovering the strength of the relationship. For this research, the independent variables are the clean revenue percentage (CR) and the overall sustainability score (OSS); the dependent variables are the return on assets (ROA), return on equity (ROE), earnings before interest, and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and Tobin's Q; the control variables are firm size, employees, risk, industry, and capital intensity.

4.3.1. Measuring CSR

The first independent variable of this research is the overall sustainability score, collected from Corporate Knights' Global 100 Most Sustainable Corporations in the World Index, from 2018-2020. The ranking process, that leads to the overall sustainability score, starts with the screening of publicly listed firms with gross revenue of over $1 billion USD regarding their sustainability disclosure practices, product categories and behavior, financial health, and financial sanctions. The firms that are not eliminated in the screening phase are then scored on 21 KPIs – eight that are universal KPIs, and thirteen priority KPIs that are for their specific industry group. These KPIs concern firms' resource management, financial management, employee management, and clean revenue. The eight universal KPIs are: 1) Percentage Tax Paid, 2) Pension Fund Status, 3) Supplier Sustainability Score, 4) Women in Executive Management, 5) Women on Boards, 6) Sustainability Pay Link, 7) Sanction Deductions, and 8) Clean Revenue. The rest of the KPIs are: 9) Energy Productivity, 10) GHG Productivity, 11) Water Productivity, 12) Waste Productivity, 13) Volatile Organic Compounds (VOC) Productivity, 14) Nitrogen Oxides (Nox) Productivity, 15) Sulfur Oxides (Sox) Productivity, 16) Particulate Matter Productivity, 17) Innovation Capacity, 18) CEO-Average Employee Pay, 19) Injuries, 20) Fatalities, and 21) Employee Turnover. Additionally, the KPIs are weighted in accordance with their relative impact; the weighting being tailored to each industry sector and peer group. Only five of the twenty-one KPIs have a fixed weight: Clean Revenue has a fixed weight of 50%, Sustainability Pay Link has a fixed weight of 5%, Supplier Sustainability Score a fixed weight of 2.5%, Women in Executive Management a fixed weight of 5%, and Women Board Members a fixed weight of also 5%. By measuring all of these, Corporate Knights establishes the overall sustainability score, resulting in the final Global 100 population. (Corporate Knights, 2019)

4.3.2. Measuring Clean Revenue

The second independent variable of this research is the clean revenue percentage, collected from Corporate Knights' Global 100 Most Sustainable Corporations in the World Index, from 2018-2020. As mentioned in the literature review, the clean revenue percentage is measured by the ratio of clean revenue to the total revenue.

4.3.3. Measuring CFP

To determine the firms' CFP, this research uses the financial ratios ROA, ROE, EBIT, EBITDA, and Tobin´s Q drawn from the Orbis database. These financial ratios are categorized into accounting-based measures of current profitability, and market-based measure of expected profitability. The accounting-based measures help illustrate the firms' historical performance, while stock market-based measures capture the firms' value.

The accounting-based measures of current profitability capture the historical profitability performance. ROA measures the profitability on total assets, ROE measures the profitability on equity, the EBIT-margin measures profitability before interest and taxes, and the EBITDA-margin measures profitability before interest, taxes, depreciation and amortization. The market-based measures of expected profitability reflect the investors' expectations of the future performance. In this research, Tobin's Q is used as a market-based measure, to examine if a firm is undervalued or overvalued.

A two-year lag is used between the CFP data (2016, 2017, and 2018 data) and the CSR data (2018, 2019, and 2020 data) to account for Corporate Knights' methodology.

4.3.4. Measuring Control Variables

For the research, five control variables are used: firm size, firm risk, industry, and capital intensity. In regard to firm size, two measures of size were used: the operating revenue (turnover) and the number of employees.

Firm size was chosen as a control variable due to findings from previous studies that have found firm size (by revenue) to be a factor for significant differences between large and smaller firms. As stated by Murphy, Poist, and Braunschweig (1995), larger firms were more concerned about environmental issues, had a larger amount of resources and the perceived benefits from adopting environmental strategies were higher, as opposed to smaller firms. This is supported by Hoepner et al. (2010), who also state that firm size is a factor in determining the level at which a firm can benefit from profiting from its CSR activities, and Waddock and Graves (1997) who state that the larger the firm, the more attention it gets from its stakeholders and therefore the more they need to pay attention to and address stakeholders' demands. In addition, the number of employees is also used as a measure of size, as carried out by similar studies (e.g., Wolf, 2014; Waddock and Graves, 1997).

The second control variable is risk, measured as the debt to assets ratio. Previous studies have found that firm risk has an influence on the CSR performance of firms, given that it controls the amount of resources a firm can allocate to pursue CSR (Waddock and Graves, 1997; Hull and Rothenberg, 2008). Additionally, industry is included as a control variable, given the multi-industry sample and the disparity between industry sectors. Including the industry and time in panel regression as fixed effects allows to control for unobserved differences across industries over time.

Lastly, capital intensity is used as a control variable, similarly to De Mendonca and Zhou (2019) and Kruse et al. (2020). The capital intensity is measured as a ratio of total assets to sales, and it is intended to capture the varying capital requirements of different industries. As Kruse et al. (2020) point out, the capital intensity is also a proxy for barriers to entry.

Table 6. Description of key variables.

Variable	Description
Overall Sustainability Score	Score obtained from Corporate Knight's Global 100 Most Sustainable Corporations in the World Index (used in this research as the CSR measure).
Clean Revenue	Revenue that derives from firms' goods and services with clear positive environmental utility and social benefits, particularly preventing and tackling environmental issues.
ROA	The Return on Assets is defined as the ratio of net income to total assets.
ROE	The Return on Equity is defined as the ratio of net income to shareholder funds.
EBIT	Earnings before interest and taxes.
EBITDA	Earnings before interest, taxes, depreciation, and amortization.
Tobin's Q	Tobin´s Q is defined as the ratio of market value to total assets.
Size	Firm size is defined by the operating revenue (turnover).
Employees	Number of employees.
Risk	Firm risk is defined as the ratio of debt to total assets.
Capital Intensity	The capital intensity is defined as the ratio of total assets to sales.
Industry	The industry classification follows the Global Industry Classification Standard (GICS)'s Sectors.

Sources: Orbis, n.d.; Corporate Knights, 2020; FTSE Russell, 2017

All of the control variables are log-transformed in order to create more normalized distributions and for convenience since it standardizes the data, thus facilitating the interpretation of the results.

4.4. Regression Models

To test whether the clean revenue percentage (CR) has a statistically significant impact on CFP, I examine the following regressions in Model 1:

$$ROA_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$ROE_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$EBIT_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$EBITDA_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (5)$$

where *i* and *t* denote the firm and year respectively. $Size_{i,t}$ measures firm size, defined by the annual operational revenue, $Risk_{i,t}$ is intended to capture the riskiness of a firm by a ratio of debt to total assets, $CI_{i,t}$ measures the capital intensity of a firm, $Industry_{i,t}$ indicates the industry sector and $\varepsilon_{i,t}$ is the error term. The impact of the clean revenue percentage is estimated separately for CFP measures $ROA_{i,t}$, $ROE_{i,t}$, $EBIT_{i,t}$, $EBITDA_{i,t}$, and $Tobin's\ Q_{i,t}$.

To further examine the relationship between CSR and CFP, the measures of $ROA_{i,t}$, $ROE_{i,t}$, $EBIT_{i,t}$, $EBITDA_{i,t}$, and $Tobin's\ Q_{i,t}$ are regressed on the overall sustainability score $OSS_{i,t}$, firm size, risk, capital intensity, and industry in the following, Model 2:

$$ROA_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (6)$$

$$ROE_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (7)$$

$$EBIT_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (8)$$

$$EBITDA_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (9)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Size_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (10)$$

While Models 1 and 2 use operational revenue as a measure of size, Models 3 and 4 repeat the same tests using the number of employees as firm size. The purpose of this is to test whether the results of Model 1 and 2 are robust to changes in control variables. Model 3 intends to measure the impact of clean revenue percentage (CR) on CFP, with the following regressions:

$$ROA_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (11)$$

$$ROE_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (12)$$

$$EBIT_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (13)$$

$$EBITDA_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (14)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 CR_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (15)$$

where $Employees_{i,t}$ measures firm size, defined by the number of employees.

Model 4 examines the impact of the overall sustainability score (OSS) on CFP through the following regressions:

$$ROA_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (16)$$

$$ROE_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (17)$$

$$EBIT_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (18)$$

$$EBITDA_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (19)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 OSS_{i,t} + \beta_2 Employees_{i,t} + \beta_3 Risk_{i,t} + \beta_4 CI_{i,t} + \beta_5 Industry_{i,t} + \varepsilon_{i,t} \quad (20)$$

In all the regression models, the variables size, risk, and capital intensity are measured in logarithmic form. Additionally, each regression contains year and industry dummy variables to create a fixed-effects model. The purpose of including time and industry fixed effects is to control for possible industry-specific variations or time-specific externalities.

5. FINDINGS

The descriptive statistics of the research sample (a total of 108 observations) are reported in Table 7. Corporate Knights' Global 100 Most Sustainable Corporations in the World Index consists of firms with revenue of over one billion USD, which explains why the research sample contains fairly large firms with operating revenue ranging from one to almost a hundred billion USD and the number of employees ranging from 392 to over 300 000. The clean revenue percentage of the firms in the research sample is on average 45%, while the average overall sustainability score is 70%. The overall sustainability score and the clean revenue percentage are measured between 0 and 100 percent. In the research sample, the highest clean revenue percentage is 100%, and the lowest is 0%. The lowest overall sustainability score is 41%, with the highest being 86%. This denotes that for a number of firms, their sustainability efforts are still not a hundred percent rewarded in the form of revenue.

Table 7. Descriptive Statistics

	Minimum	**Maximum**	**Mean**	**Std. Dev.**	**Skew.**	**Kurt.**
ROA	-0,25	0,20	0,06	0,07	-1,55	5,79
ROE	-0,71	1,31	0,17	0,22	0,79	11,31
EBIT	-0,53	0,48	0,13	0,13	-1,04	5,58
EBITDA	-0,16	0,66	0,20	0,14	0,58	2,16
TOBIN'S Q	0,14	6,82	1,43	1,24	2,32	6,29
Clean Revenue %	0,00	1,00	0,45	0,32	0,16	-1,14
Overall Sustainability Score	0,41	0,86	0,70	0,09	-0,77	0,83
Size (Operating Revenue, th USD)	1 060 434	98 603 706	17 923 886	19 318 276	2,06	5,29
Employees	392	379 000	51 018	68 996	2,89	10,53
Risk (Debt/Total Assets)	0,21	1,13	0,58	0,19	0,75	0,47
Capital Intensity (Total Assets/Sales)	0,40	13,33	2,19	1,90	3,58	16,40
Size (log)	13,87	18,41	16,15	1,11	-0,07	-0,87
Employees (log)	5,97	12,85	10,01	1,44	-0,44	0,08
Risk (log)	-1,58	0,13	-0,60	0,33	-0,20	0,20
Capital Intensity (log)	-0,92	2,59	0,55	0,67	0,11	0,95

The statistics show that the average EBIT- and EBITDA-margins for included firms are 13% and 20%, respectively, while the average ROA is 6% and ROE is 17%. Of the 36 included firms, 19 have a three-year average Tobin's Q above one while the sample average is 1,43. A Tobin's Q above one denotes that the market valuation of a firm exceeds its assets' replacement costs.

Although the research sample is small, the average EBITDA, ROA, ROE, and the Debt to Total Assets are comparable to those of similar studies with larger samples (e.g., Waddock and Graves, 1997; Tsoutsoura, 2004; Surroca and Tribo, 2008; Michelon et al, 2013; Eccles et al., 2014; Feng et al., 2017; De Mendonca and Zhou, 2019; Kruse et al., 2020).

Table 8 present the correlations amongst the dependent variables and Table 9 amongst the independent variables. As can be seen in the correlation matrix in Table 8, the accounting-based measures of profitability have positive and statistically significant pairwise correlations. As expected, ROA is strongly correlated with ROE, but the correlation between ROA and EBIT is even stronger. The strongest pairwise correlation is between EBIT and EBITDA, which is expected given that both of these variables measure pure profitability. The market-based measure Tobin's Q shows a low and significant correlation with ROA and ROE, but no correlation with EBIT and EBITDA. Since the accounting-based measures show little to no correlation with Tobin's Q, it is important to include both market- and accounting-based measures when studying financial performance.

Table 8. Correlation matrix of dependent variables

	(1)	**(2)**	**(3)**	**(4)**	**(5)**
(1) ROA	1				
(2) ROE	0,636**	1			
(3) EBIT	0,761**	0,481**	1		
(4) EBITDA	0,551**	0,292**	0,824**	1	
(5) Tobin's Q (log)	0,352**	0,235*	0,101	0,109	1

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

* Correlation is significant at the 0.05 level (2-tailed).

The correlation matrix of the independent variables is reported in Table 9. The first thing to note is that none of the independent variables have a pairwise correlation over 0,5, and therefore multicollinearity is not considered to be a problem in the regression models. The only exception is the correlation between size and the number of employees, but these variables are not included simultaneously.

It can be seen that the clean revenue percentage and the overall sustainability score are only weakly correlated. This is explained by the fact that clean revenue is just one of the 21 KPIs that Corporate Knights use to calculate the overall sustainability score. Firm size, number of employees, and firm risk are all correlated with the clean revenue percentage. Firm risk has a low positive correlation with the clean revenue percentage, while firm size and the number of employees have a moderate negative correlation with the clean revenue percentage. These negative correlations show that the two measures of firm size, operating revenue, and number of employees, play an important role in determining a firm's clean revenue percentage.

Although the research sample includes only large firms (with revenue over $1 billion USD) the negative correlation between both measures of size and the clean revenue percentage shows that the relatively smaller firms tend to have higher clean revenue percentages. Murphy et al. (1995) find that firms with revenue of over $1 billion USD are more likely to engage in CSR than firms with revenue of less than $1 billion USD, however, the correlation results show that the largest firms included in this research sample are likely to have revenue that is not categorized as clean. It can be expected that extremely large firms are not yet able to profit exclusively from revenue coming from clean goods and services. Furthermore, the overall sustainability score is negatively correlated with the measures of size but less so. The correlation matrix does not show any sign of correlation between the control variables and the overall sustainability score.

Table 9. Correlation matrix of independent variables

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
(1) Clean Revenue %	1						
(2) Overall Sustainability Score	0,254**	1					
(3) Size (log)	-0,305**	-0,115	1				
(4) Employees (log)	-0,303**	-0,153	0,797**	1			
(5) Risk (log)	0,212*	0,181	0,033	0,028	1		
(6) Capital Intensity (log)	0,016	-0,031	-0,237*	-0,181	-0,193*	1	
(7) Industry	0,488**	0,048	-0,187	-0,307**	0,053	0,415**	1

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

* Correlation is significant at the 0.05 level (2-tailed).

As expected, there is a significant correlation between the industry sector and the clean revenue percentage as some industries have the majority of the revenue coming from clean sources while

other industries do not have any clean revenues without adopting new technologies. This is also supported by other studies that have found that the effect of CSR on CFP is heterogeneous across industries (Eccles et al., 2014; Feng et al., 2017; Hoepner et al., 2010). Additionally, the industry sector is negatively correlated with the number of employees, and more importantly, it is positively correlated with capital intensity. This is expected, as some industries have higher capital and asset needs than others.

The results of the regression models 1 and 2 for the accounting-based measures of current profitability are shown in Table 10. The clean revenue percentage has a positive and statistically significant impact (at the 5% level) on both ROA and ROE and a positive but not statistically significant impact on EBIT and EBITDA. This implies that higher clean revenue percentage is associated with better financial performance. The null hypothesis (H_0) is only partially rejected, as the clean revenue percentage has a statistically significant impact only on ROA and ROE.

Table 10. Regression results for accounting-based measures, Models 1 and 2

	ROA	**ROA**	**ROE**	**ROE**	**EBIT**	**EBIT**	**EBITDA**	**EBITDA**
Intercept	-0,37*** (-3,40)	-0,27** (-2,30)	-1,21*** (-2,66)	-0,74 (-1,51)	-0,53** (-2,52)	-0,47** (-2,12)	-0,63*** (-2,63)	-0,59** (-2,35)
Clean revenue %	0,07** (2,44)		0,29** (2,44)		0,09 (1,62)		0,10 (1,61)	
Overall Sustainability Score		0,05 (0,66)		0,17 (0,53)		0,14 (0,96)		0,19 (1,15)
Risk (log)	-0,08*** (-4,78)	-0,08*** (-4,20)	0,08 (1,03)	0,09 (1,00)	-0,12*** (-3,52)	-0,12*** (-3,34)	-0,16*** (-4,22)	-0,16*** (-4,09)
Size (log)	0,02*** (3,69)	0,02*** (2,93)	0,07*** (3,00)	0,05** (2,13)	0,03** (2,51)	0,02** (2,13)	0,04*** (2,78)	0,03** (2,47)
Capital Intensity (log)	0,01 (0,37)	0,00 (-0,03)	0,04 (0,72)	0,03 (0,52)	0,10*** (3,81)	0,09*** (3,30)	0,13*** (4,32)	0,12*** (3,76)
R^2	0,55	0,51	0,37	0,32	0,58	0,57	0,51	0,50
Observations	108	108	103	103	108	108	108	108
Time FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes

*Notes: 1. The asterisks ***, **, and * denote significance at 1%, 5%, and 10%, respectively; 2. The t-test values are presented in the parentheses; 3. Risk, size, and capital intensity are measured in logs; 4. All the regression models include time and industry fixed effects.*

The magnitude on ROA and ROE can be interpreted by standardizing the effects using the standard deviations of clean revenue percentage, ROA, and ROE. When the clean revenue percentage is increased by one standard deviation (32 percentage points), ROA is increased by 0,32 (= 0,07 x 0,32 / 0,07) standard deviations and ROE by 0,42 (= 0,29 x 0,32 / 0,22) standard deviations.

For an average firm in the sample, with ROA of 0,06 and ROE of 0,17, an increase of one standard deviation in the clean revenue percentage (32 percentage points) is associated with a 0,02 point increase in ROA and 0,09 point increase in ROE. This shows that although the clean revenue percentage has a statistically significant impact on ROA and ROE, only relatively large changes in the clean revenue percentage result in material changes in ROA and ROE.

Firm size, measured as the operating revenue, has a statistically significant impact (at the 1% and 5% levels) on all profitability measures. This finding implies that larger firms have, on average, better profitability than smaller firms. Risk has a negative impact on profitability – the regression coefficients for risk are negative and statistically significant (at the 1% level) with all profitability measures except ROE. The capital intensity has a statistically significant impact (at the 1% level) on the EBIT- and EBITDA-margins with both clean revenue percentage and the overall sustainability score.

The overall sustainability score does not have a statistically significant effect on any of the accounting-based measures, and therefore the second null hypothesis ($H_{0.1}$) is not rejected. However, all the regression coefficients for OSS are positive as expected.

Table 11 presents the results of the regression models 3 and 4 for the accounting-based measures of current profitability. In these regression models, size is measured as the number of employees, instead of the operating revenue. Since some similar studies use the operating revenue as a measure of firm size and others use the number of employees, I repeat the test using both measures of size in order to test the robustness of the results.

The clean revenue percentage has a positive impact on all accounting-based measures; however, the impact is only statistically significant (at the 10% level) on ROE with the clean revenue percentage. In addition, the overall sustainability score has a positive but not statistically significant impact on the accounting-based measures of profitability. When firm size is measured using the number of employees, the null hypotheses (H_0 and $H_{0.1}$) are not rejected at the conventional 5% level.

Similar to the results from Table 10, risk has a negative and statistically significant impact (at the 1% level) on all the accounting-based measures, except on ROE. The capital intensity has a positive and statistically significant impact (at the 1% level) on the EBIT- and EBITDA-margins with both clean revenue percentage and the overall sustainability score, resembling the results shown in Table 10.

Table 11. Regression results for accounting-based measures, Models 3 and 4

	ROA	**ROA**	**ROE**	**ROE**	**EBIT**	**EBIT**	**EBITDA**	**EBITDA**
Intercept	-0,06 (-0,79)	-0,02 (-0,24)	-0,33 (-1,15)	-0,16 (0,41)	-0,04 (-0,31)	-0,07 (-0,39)	0,02 (0,12)	-0,04 (-0,22)
Clean revenue %	0,04 (1,34)		0,23* (1,84)		0,04 (0,63)		0,03 (0,42)	
Overall Sustainability Score		0,03 (0,34)		0,17 (0,51)		0,09 (0,57)		0,12 (0,66)
Risk (log)	-0,08*** (-4,34)	-0,08*** (-4,02)	0,08 (0,94)	0,08 (0,89)	-0,12*** (-3,29)	-0,12*** (-3,25)	-0,16*** (-3,91)	-0,16*** (-3,94)
Employees (log)	0,01 (1,09)	0,00 (0,66)	0,04* (1,71)	0,02 (1,11)	0,00 (0,07)	0,00 (-0,05)	0,00 (-0,15)	0,00 (-0,16)
Capital Intensity (log)	-0,01 (-0,48)	-0,01 (-0,56)	0,02 (0,30)	0,02 (0,24)	0,08*** (3,17)	0,08*** (2,88)	0,11*** (3,57)	0,10*** (3,25)
R^2	0,47	0,46	0,32	0,29	0,55	0,54	0,46	0,46
Observations	108	108	103	103	108	108	108	108
Time FE	yes	yes	yes	yes	yes	yes	yes	yes
Industry FE	yes	yes	yes	yes	yes	yes	yes	yes

*Notes: 1. The asterisks ***, **, and * denote significance at 1%, 5%, and 10%, respectively; 2. The t-test values are presented in the parentheses; 3. Risk, employees, and capital intensity are measured in logs; 4. All the regression models include time and industry fixed effects.*

As previously mentioned, the number of employees is used as a measure of size for the regression models 3 and 4. The number of employees does not have an impact on the accounting-based measures, except for ROE together with the clean revenue percentage, where the number of employees shows a positive and statistically significant impact (at the 10% level) on ROE. This shows that, overall, the number of employees does not relate to the profitability of a firm, even though the variables of operating revenue and number of employees have a significant pairwise correlation.

Table 12 presents the results of the regression models 1-4 for the market-based measure of expected profitability. Neither the clean revenue percentage nor the overall sustainability score has a statistically significant relation to Tobin's Q. The regression coefficients for the clean revenue percentage are positive in regression models 1 and 3 (columns 1 and 2). The regression coefficient for the overall sustainability score is positive in regression model 2 (column 3), and negative in regression model 4 (column 4).

Table 12. Regression results for Tobin's Q

	TOBIN' S Q			
Intercept	-0,13 (-0,11)	0,16 (0,23)	0,58 (0,46)	0,72 (0,80)
Clean Revenue %	0,47 (1,52)	0,27 (0,93)		
Overall Sustainability Score			0,32 (0,38)	-0,17 (-0,22)
Risk (log)	-0,28 (-1,46)	-0,27 (-1,45)	-0,24 (-1,20)	-0,22 (-1,15)
Size (log)	-0,08 (-1,24)		-0,11* (-1,90)	
Employees (log)		-0,16*** (-2,89)		-0,18*** (-3,48)
Capital Intensity (log)	0,26* (1,73)	0,30** (2,13)	0,22 (1,43)	0,30** (2,08)
R2	0,60	0,63	0,59	0,63
Observations	108	108	108	108
Time Fixed Effects	yes	yes	yes	yes
Industry Fixed Effects	yes	yes	yes	yes

*Notes: 1. The asterisks ***, **, and * denote significance at 1%, 5%, and 10%, respectively; 2. The t-test values are presented in the parentheses; 3. Risk, size, employees, and capital intensity are measured in logs; 4. All the regression models include time and industry fixed effects.*

Risk has a negative but not statistically significant relation to Tobin's Q across all the regression models. Size has a negative but not statistically significant relation to Tobin's Q in regression model 1, but a negative and statistically significant impact (at the 10% level) in regression model 2 (column 3). The number of employees has a negative but statistically significant

relation (at the 1% level) to Tobin's Q. The capital intensity has a positive relation to Tobin's Q in all regression models; however, it is only statistically significant (at the 5% and 10% levels) in the regression models 1, 3, and 4 (columns 1, 2, and 4).

6. DISCUSSION AND CONCLUSIONS

The constant growth of sustainability and responsibility issues across the world has emphasized the critical role that is embedded in large firms which not only have an inherent moral responsibility towards the environment and society to make compensation for the damages incurred by their operations, but also possess the influence, the necessary resources, and the indisputable obligation to turn things around by engaging in CSR and lead the change towards a sustainable future.

This study focuses on the relationship between CSR and CFP using evidence from large, listed firms. As opposed to small- and medium-sized firms, large firms find themselves under the lens of the public attention more often than not; they are constantly under stakeholder pressure, scrutinized by NGOs, activist groups, the communities they operate in, their own employees, and customers; and are ordinarily the targets of irresponsibility scandals (Hoepner et al., 2010; Michelon et al., 2013; Charlo et al., 2015). Correspondingly, there has been an increase in the number of large firms that are engaging in CSR (Feng et al., 2017). Thus, as the importance of CRS keeps escalating, and CSR continues disrupting the way business is made, it is key to understand how firms are benefiting from their sustainability efforts. As firms expect to outperform financially, it is important to examine if there is an economic justification for engaging in CSR.

The study aims to analyze the relationship between CSR and CFP of large firms, recognized as front-runner sustainable firms by Corporate Knights in their Global 100 Most Sustainable Corporations in the World Index, between 2018 and 2020. While the focus of most similar studies has been to explore this relationship in the lens of a specific industry or country, my research provides new insight into the complex relationship between CSR and CFP through the analysis of firms' clean revenue and introduces the case for the latest front-runner sustainable firms, from a range of industries and countries. With bases on the stakeholder and the legitimacy theory, it is expected that firms that engage in CSR meeting the demands of their stakeholders, firms can contribute to the environment and society as a whole, while also financially outperforming.

In order to examine this assumption and fill the gap in academic literature on how front-runner sustainable firms, listed in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights, are benefitting from their sustainability efforts, by engaging in CSR, and benefitting from their clean revenue gained from their goods and services with clear

environmental and social benefits – clean goods and services, two research questions were established: 1) What is the relationship between clean revenue and CFP? and 2) What is the relationship between the overall sustainability score of firms and CFP?

The methodology of the study involved a quantitative approach, and regression analysis was utilized as the data analysis method. In order to select the research sample, three criteria were applied to the sample universe. Ultimately, 36 firms from different industry sectors and countries were selected.

Four regression models were developed to test the hypotheses and discover if the relationship between CSR and CFP is either positive, not significant, or negative. According to studies such as Aupperle et al. (1985), Hirigoyen and Rehm (2015), and Makni et al. (2009), the negative relationship between CSR and CFP is explained by the trade-off hypothesis, which holds a neoclassical economic perspective and suggests that CSR drives firms to incur into additional costs and consequently it decreases the profitability and the competitiveness of the firms, as well as reduces shareholder wealth and negatively impacts firms' market value. Similar studies have found a non-significant relationship between CSR and CFP, following Ullman's (1985) point of view, who implies that a non-significant relationship exists given the number of factors involved in the relationship and in the methodology used in the studies, by using different samples, a variety of time periods and different analysis methods. This is also supported by studies such as Waddock and Graves (1997) and Aupperle et al. (1985), which have found that the complexity embedded in the relationship between CSR and CFP diminishes evidence of CSR being an enabler of financial outperformance hence prevents to support that a relationship indeed exists. Nevertheless, several studies have found a positive relationship between CSR and CFP. The studies have found for instance that CSR drives firms' competitive advantage and innovation by meeting with the stakeholders' demands (Porter and Kramer, 2006), this improves the relationship between firms and their stakeholders, thus leading to an enhanced reputation and customer loyalty, both which increase sales and consequently, firms' profitability (Feng et al., 2017; Alniacik et al., 2011; Charlo et al., 2015), and market value (Luo and Bhattacharya, 2006; Jo and Harjoto, 2011), and all in all, a positive relationship between CSR and CFP suggests that these benefits outweigh the alleged costs of engaging in CSR, as is explained by Freeman's (1984) stakeholder theory and the legitimacy theory.

The research data was analyzed in SPSS using regression analysis with a fixed effects model. In order to answer the first research question, regression models 1 and 3 were tested, and to find the answer to the second research question, regression models 2 and 4 were tested.

The findings reveal that the clean revenue percentage has a statistically significant impact only on ROA and ROE and that the overall sustainability score does not have a significant relation to any of the tested CFP measures. Since the clean revenue percentage has a statistically significant (at the 5% level) relation to ROA and ROE, the null hypothesis (H_0) is partially rejected, and the alternative hypothesis (H_1) is instead supported by the evidence. Similar results were found, for instance, by Michelon et al. (2013) and De Mendonca and Zhou (2019). The second null hypothesis ($H_{0.1}$) is not rejected as the evidence does not suggest a relation between the overall sustainability score and CFP measures. As suggested by Ullman (1985) and Aupperle et al. (1985) the multifactorial and complex nature of the relationship between CSR and CFP, leads to thinking that such a relationship does not exist. Correspondingly, a related explanation behind why the research does not find a statistically significant relation between OSS and CFP could relate to the fact that the OSS is composed of 21 KPIs, from which not all of them are related to profitability, hence could explain the nonexistent relation between these two variables.

Although only three of the CR coefficients are statistically significant, the regression coefficients for both CR and OSS are positive in every regression specification except one. The positiveness of the coefficients is expected according to the stakeholder theory and the legitimacy theory, both of which propose that by meeting stakeholder demands and being good corporate citizens, firms not only contribute to society and the environment but also, they, themselves, benefit financially. The lack of statistical significance of CR and OSS coefficients might arise from the relatively small sample size, and further research with broader data sets could provide more conclusive research.

Risk, measured as total debt to total assets, has negative and statistically significant relation (at the 1% level) to every accounting-based measure except ROE. Since the firm risk has a high explanatory power on every accounting-based measure of CFP except ROE, it could be that firm risk subsumes some of the explanatory power of CFP and ROE.

The results do not answer the question of why the clean revenue percentage explains changes in ROA and ROE but not in other accounting- or market-based measures. Since ROA measures how efficiently a firm is utilising its assets, the results suggest that firms with a high share of revenue coming from clean sources, are, on average, making better use of their assets than firms with lower clean revenue percentages. The same goes for ROE, which measures how well firms are using the capital that the shareholders have invested. ROA is measured as a ratio of net income to total assets and ROE as a ratio of net income to equity, and therefore, a higher ratio

is achieved either with a higher profit margin or lower need for assets or equity. Because the clean revenue percentage does not show significant relation to the pure measures of profitability (EBIT and EBITDA), the findings indicate that firms with high clean revenue percentages achieve higher ROA and ROE ratios because they have a lower need for assets and equity than similar firms with a lower share of revenues coming from clean sources.

6.1. Limitations and Suggestions for Future Research

Given the purpose of the study to the relationship between CSR and CFP, which is by nature a complex and multifactorial relationship, limitations arose during the research process. These limitations are important to consider at the time of interpreting the research results. First of all, the sample selection consists solely of large, listed firms that are ranked in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights; given that other databases with clean revenue data were not publicly accessible, therefore, the sample selection is relatively small and limited to firms with high corporate sustainability performance scores. Additionally, another of the limitations relate to the availability of clean revenue data. Given that the clean revenue data has been disclosed by Corporate Knights only since 2018, the research focuses exclusively on firms that have appeared consecutively in Corporate Knight's index, from 2018 to 2020 in order to be able to conduct the regression analysis. As time passes, future research could expand the research time frame to get more conclusive results. In addition to this, future research can expand the number of the sample selection, including firms from other sustainability indices, or those with low corporate sustainability performance scores, in order to be able to increase the generalizability of the results of this research. Lastly, the term "clean revenue" is fairly new, therefore there is still further development in its conceptualization and taxonomy standard for its calculation, and research pertaining to firms' clean revenue is still in its early stage.

6.2. Conclusions

The purpose of this study was to shed a light on the relationship between firms' engagement in CSR and CFP, through evidence of front-runner sustainable firms, ranked in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights, between 2018-2020. The study assesses whether there is an economic justification for firms to engage in CSR and provide a new approach to the study of the relationship between CSR and CFP in different instances. Firstly, clean revenue is a relatively new metric, and the study offers an insight into

the research of this concept. Secondly, the study uses the latest data available on clean revenue percentage and overall sustainability score for the years 2018, 2019, and 2020, and on the CFP measures for the years 2016, 2017, and 2018. Lastly, both the research sample and the research data are publicly accessible, thus it provides replicability. As Ullman (1985) and Aupperle et al. (1985) state, the heterogeneity between similar studies, has led to a great number of studies that focus on the same topic but that cannot be easily or objectively compared between each other, and consequently, varying results are found. Therefore, being able to replicate a study, facilitated by using publicly available data is highly important in order to get a research base with comparable results.

In order to find the relationship between firms' engagement in CSR and their CFP, regression analysis is utilized. Both, the stakeholder theory and the legitimacy theory are used to support the research topic and analyze and explain the reasons behind CSR engagement and how it translates into financial outperformance.

The research posed two research questions to guide the study. Based on the quantitative analysis of clean revenues and overall sustainability score as measures of CSR and accounting- and market-based measures ROA, ROE, EBIT, EBITDA, and Tobin's Q to reflect CFP, the results of the study provide the answers to these research questions. Regarding the first research question, the results suggest that the clean revenue percentage is positively associated with ROA and ROE. This study does not find a statistically significant relation between the clean revenue percentage and EBIT, EBITDA, or Tobin's Q. To address the second research question, the results suggest that the overall sustainability score is not associated with the included accounting- and market-based measures. This finding somewhat contradicts the previous findings, since Curcio and Wolf (1996), Jo and Harjoto (2011), and Eccles et al. (2014) find that corporate social responsibility is positively associated with market valuation.

This study contributes to the ongoing literature on the relationship between CSR and CFP, with evidence from front-runner sustainable firms, listed in the Global 100 Most Sustainable Corporations in the World Index by Corporate Knights. The study uses the most recent data on the topic with a timeframe of 3 years – 2018-2020. Additionally, the study uses publicly available data to facilitate the replicability of the study. This study also contributes to the literature gap on clean revenue, a relatively new sustainability metric used by organizations to present the revenue that comes from clean products or services. All in all, the study provides a new perspective on the relationship between CSR and CFP, utilizing clean revenue percentage and overall sustainability score as measures of CSR.

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