POLITECNICO DI TORINO

Corso di Laurea Magistrale

in Engineering and Management

Tesi di Laurea Magistrale

The impact of Corporate Social Responsibility on Corporate Financial Performance: an empirical study in the Italian market

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A.A. 2017/2018

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Introduction

The topic of Corporate Social Responsibility (CSR) was born many years ago. Nonetheless, its definition and practical application is still in evolution. As a consequence, the monitoring of CSR practises and activities remains difficult, given the lack of data and differences among the reporting practises. With the development of the Global Reporting Initiative (GRI) the reporting of CSR and, more in general, of sustainability, have become more uniform, by providing a structured framework which have become the most used officially by firms all over the world. Its introduction, along with the growing of the importance of CSR aspects, has allowed and made comparable data, becoming a reliable and valid source to be used to evaluate the performance of CSR for enterprises. Starting from the sustainability reports based on the GRI frameworks, the aim of this thesis is to assess the impact of CSR on the performance of firms, looking for the presence of a correlation between selected CSR indicators and financial accounting indicators.

The study has been conducted in three main steps. First, an analysis of the literature has allowed to approach the main topic of this study and its development over time. This analysis has been focused on theoretical frameworks identified by different authors. The second step included an analysis on empirical study previously conducted assessing the correlation of CSR and financial performance, through the use of statistical models, which have become the base on which the regression analysis has been structured in the third and last part of this study. In fact, the third and last part have been focused construction of the model regression, which have also implied the construction of the database of CSR data, on which the regression analysis has been performed.

Even if many studies have been conducted on the correlation between CSR and CFP, this analysis represents a new approach to this topic. In the literature, previous studies using quantitative data belonging to sustainability reports have not been found. In fact, this new approach proposed was possible thanks to the ongoing alignment in sustainability reporting, as well as the development of new laws making mandatory the reporting and the monitoring of these practises. As a result, this study represents a small but meaningful contribution to the existing literature, as well as a source for possible future research based on this new approach of assessment.

1. Corporate Social Responsibility: concept and evolution

1.1 Theoretical definition of CSR: a limit for profit or an opportunity?

The term corporate social responsibility finds its original roots many decades ago, when the concept of “social responsibility” of a businessman was seen as a merely ethical topic, something to be considered as a social duty but which represented a limit for profit, more than an opportunity. The first definition provided was in fact based on a survey conducted in 1946, in which Bowen stated “Social responsibilities of a businessman refers to the obligation of a businessman to pursue those policies, to make those decisions, or to follow those lines of actions which are dezirables in terms of the objectives and values of our society” (Riel, 2017).

In the middle of the industrial revolution in the United States in the early 1900s, which brought to a proliferation of new corporations, public opinion began to challenge the status and mode of action of these organizations, considering they became too big, too strong and developed antisocial practices. “In response, the federal government and US government authorities have initiated and adopted a series of regulations to correct these imbalances, initiating anti-trust laws (to limit the size and influence of corporations), regulations on consumer protection and banking regulations. Under public pressure and new regulations, corporations have initiated programs that addressed social aspects of their activities, from improving the working conditions to social contributions to improving the quality of life in communities” (Riel, 2017).

In 1960, Keith Davis defined the social responsibility as "businessmen's decisions and actions taken for reasons at least partially beyond the firm's direct economic or technical interests” (Carroll, 1979). Again, something which excluded a-priori the possibility to integrate the concept of social responsibility as an opportunity to improve the business, and so which represented, again, a limit to profit, which moreover implicitly includes to sacrifice some profits for social good.

The debate concerning the application of CSR, whether it was a duty for a company or not, started consequently to the challenging words of Milton Friedman in 1962, which expressed his opinion on the CSR topic stating that just making profit, respecting market rules, consists in a socially responsible business (Carroll, 1979). According to Freidman (1970), “There is one and only one social responsibility of business – to use its resources and engage in activities designed to increase

its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud".

His thought was surely based on the pillars raised by Adam Smith with his book "The Wealth of Nations" (1776). There, Smith defined the market economy and stated that a company's responsibility is to respect market rules, rules that are influenced by an "invisible hand". In this context, companies are responsible for meeting market demands, requirements that are influenced by the interest of individuals (Riel, 2017).

Therefore, according to Milton Freidman, to be socially responsible in terms of choosing what could be ethically and socially accepted for a common interest is not a duty of the firm, but the role of institutions. In this case, one of the main controversies is the following: how to behave when operating where institutions do not protect the interest of society? Actually, this is where corporate the turn point on social responsibility arises: when there is a choice to "exploit", to be "unethical", and a corporation chooses not to do it, even if it is legal; choosing to do the interest of all stakeholders, even if doing just the interest of shareholders is possible.

At this point, also the two opposite visions towards the debate on CSR arise: *Profitability* or *Responsibility*? These visions lead to the main paradox on company behaviour: for who is the company? For shareholders or for the entire society? Hereby, this contraposition brings to the identification of the two main positions, which represent these two main visions:

- **Shareholder theory** – managers primarily have a responsibility or duty to maximise shareholder (stockholder) returns → *Profitability*
- **Stakeholder theory** – managers have a responsibility or a duty to balance shareholders' financial interests against the interests of other stakeholders - employees, customers, local community etc. → *Responsibility*

At this regard, it is important to explain one of the most important concepts when speaking about CSR: *stakeholders*. The identification of the presence of stakeholders is attributed to Edward Freeman which developed the so-called "Stakeholders Model" (1984), identifying as stakeholders all individuals which affect or are affected by the presence and the performance of a company (Riel, 2017). Freeman was able to demonstrate the actual presence of stakeholders, or better said the presence of other actors outside shareholders or employees that are interested in the

performance of the company. In this category, there are also actors who have no contractual or legal relationship or connection with the company but which are directly or indirectly influenced by its activities, success or performance, actors that need to be considered. This model was the basis for various studies and other CSR improvements, such as the instrumental thesis of stakeholder theory - to maximize shareholder value over an uncertain period, managers ought to pay attention to key stakeholder relationships - or the normative thesis of stakeholder theory - managers ought to pay attention to key stakeholder relationships (Freeman, 1999).

In the same period the vision of CSR as an opportunity for profit making arises, a vision that is clearly opposed to the one of Milton Freidman. Peter Drucker in 1984 was one of the first to believe in CSR as a business opportunity. He published the article "Converting Social Problems into Business Opportunities: The New Meaning of Corporate Social Responsibility". Through this article, he asserted that CSR is able to turn social problems into profit, in wealth, in economic value (Riel, 2017). This vision goes beyond the previous mentioned dyadic contrast, providing a way through which not necessarily there must be a choice between *responsibility* and *profitability*, but both could be met at the same time.

Up to this point we have seen that there is no clear agreement on the definition of CSR and more important on the consequences of adopting CSR practises into business management, as there are contrasting views on the ability of CSR to create business profits vs. adopting CSR while scarifying profits (Bénabou and Tirole, 2009). But these two opposite lines of thought, the first one represented by Milton Freidman and the other one by Peter Drucker are not necessarily the only two options. Bénabou and Tirole (2009) were able to identify three alternative interpretations of CSR, taking into consideration at the same time both *responsibility* and *profitability* as interdependent variables. It is possible to sum up these three visions as follows:

1. **Win-win: doing well by doing good (long-term perspective)**
   Responsibility as a way for making profits. They identify "the existence of limits to governance and managers' temporal horizons", which cause a focus of the firm on the short term more than on the long term: consequently, there is a loss of profit and an externality for stakeholders. "Managers take decisions that increase short-term profit, but reduce shareholder value and hurt workers or other constituencies". CSR could be a driver "[…] for taking a long-term perspective to maximizing (intertemporal) profits". In this

vision, also investors have an important role because they have the power to invest and so to finance long-term investments. Through this same view, also the concept of 'strategic CSR' is evocated, as able to strengthen one's market position and increase long-term profits. This vision corresponds to the one stated by Peter Drucker.

2. **Delegated philanthropy: the firm as a channel for the expression of citizen values**
   According to this second view, "some stakeholders (investors, customers, employees) are often willing to sacrifice money (yield, purchasing power and wage, respectively) so as to pursue social goals. Put differently, stakeholders have some demand for corporations to engage in philanthropy on their behalf. The corresponding CSR profit sacrifice is then passed through to stakeholders at their demand." This vision corresponds to the initial concept of CSR, as a practise that implicates a profit sacrifice, and could be linked to the vision of the *Stakeholder theory*.
3. **Insider-initiated corporate philanthropy**
   In this third view, the willingness to sacrifice money for social causes is the results of the managements' delegated philanthropy and, as in the previous case, profit is not maximized. The difference between this case and the previous one, in point 2, lies in the choice of how to contribute to social initiatives: in delegated philanthropy, it is a result of stakeholder demand, while in the current one it is the result of top management preferences. The problem in this case is that in the majority of cases the institutions or charities benefitting by this firm's philanthropy are those institutions favoured by the top management. "Robert Reich has argued that there is no way to ensure that private money will go to the 'right' causes and that firms should not substitute for the state (meaning, presumably, that elections provide the legitimacy to define what is 'right'). In practice, the state restricts the set of potential recipients of corporate generosity by deciding which institutions are eligible for tax-deductible contributions".

Even if Bénabou and Tirole identified three different perspectives, they also argued that the line, the limits dividing these three visions are difficult to be set. This is due to the ambiguity, which characterizes the motivations behind the choices of a firm of performing CSR practises, which, most of the time, are controversial. With this study, Bénabou and Tirole, tried to go beyond a proper definition of CSR, while focusing on its motivation, which, as we have seen, could be as ambiguous as the concept of CSR itself.

Nowadays, the most used and shared definitions for CSR are those provided by the European Commissions. In 2001, EU presented a Green Paper where defined CSR as: "[Corporate Social Responsibility] is a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with stakeholders on a voluntary basis" (Commission of the European Communities, 2001). The main characteristics of this definition are the following:

- **Social and ecological concerns integration**: hereby the importance of both the social, in terms of human rights and community commitments and environmental aspects are highline. It refers to the results and outcomes of the activities of the company, which could limit their negative effects if these aspects are considered;
- **Business operations**: all activities performed by the firm to achieve positive economic results;
- **Stakeholders**: all the subjects that are involved, directly or indirectly, in the company's activities, which are affected by the outcomes of these activities;
- **Voluntary:** the company voluntarily undertakes these commitments, going beyond legal limits.

Ten years later, another definition of CSR was provided, a definition that witnesses the continuous evolution of this term and its still ambiguous meaning throughout time. In 2011, the European Commission defined CSR as "the responsibilities of enterprises towards their impacts on society". Compared with the previous one, it is clear that the main difference concerns the voluntarist attribute of this commitment, which disappears. So here there is a transformation from CSR as a choice, to CSR as a burden.

As shown before, there is no a universally accepted definition of CSR. Anyway, after having faced the most significant contributions given to these topics by the most important researchers in the fields during the last decades, it is possible to identify that there are two widely recognised objectives of CSR initiatives from various authors, as Kloppers claimed in 2017:

1. **It should add strategic value for organisations**;
2. **It must contribute to sustainable development**.

Going back to motivations for implementing CSR practises, as we have previously discuss based on Bénabou and Tirole arguments (2009), these two objectives implicitly identify also motivations, which are simultaneously profit for firms and sustainable development for society.

1.2 Sustainability and the Triple Bottom Line

The definitions provided above clearly connects the concept of CSR to the other important concept of sustainability, by including in its definition the societal, environmental and economic aspects at the same time. Therefore, as the last concepts provided remind us, a corporate responsible firm is a firm that, by making the interests of stakeholders, implicitly contributes to sustainable development and so which implements sustainability.

Concerning the concept of sustainability, the most reliable and long-lived definition provided by the United Nations in 1987 in the Brundtland report is “Sustainable Development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (O’Neil, 2014).

A more recent and interesting definition of corporate sustainability defines it as "Aligning the processes and products of the organizations with the expectations of their stakeholders in order to balance economic, social and environmental value" (Fondazione ICSR). Compared to the first definitions of CSR, the one of sustainability does not focus on men and society: we can therefore say that this concept has evolved, it has expanded the initial concept of CSR and has come to involve and merge the global ecosystem with that one of the company, not only including the needs of men.

This definition allows understanding the transition to the most recent concept of Triple Bottom Line, often identified with the 3P framework – People, Planet, Profit - or the 3E framework – Economic vitality, Environment quality, Equal opportunity (O’Neil, 2014).

The expression "Triple Bottom Line" (which for convenience will be later identified by the acronym TBL) was coined by John Elkington in 1994 (O'Neil, 2014); he used this term for the first time in the book "Cannibals with Forks: the Triple Bottom Line of the 21st Century Business" (1994). According to him, companies develop sustainable investments and corporate decisions starting from the base (bottom) simultaneously pursuing three objectives (triple - line), three realities that must coexist, which are the social, environmental and economic aspects. As Carroll (1991) argued through its pyramid model, "[…] companies do not follow CSR by pure altruism also because they must meet the requirements of the market. Thus, [he] declares ones again that the priority should be profit and then other responsibilities. In other words, if the business is not being profitable, the other liabilities cannot be met" (Reinert Lyra, Barbosa De Souza, Verdinelli and Lana, 2017). This thought clearly meets the concept of the TBL, where the economic aspect is as important as the social and environmental ones. These three aspects are shown in the following image and described below.

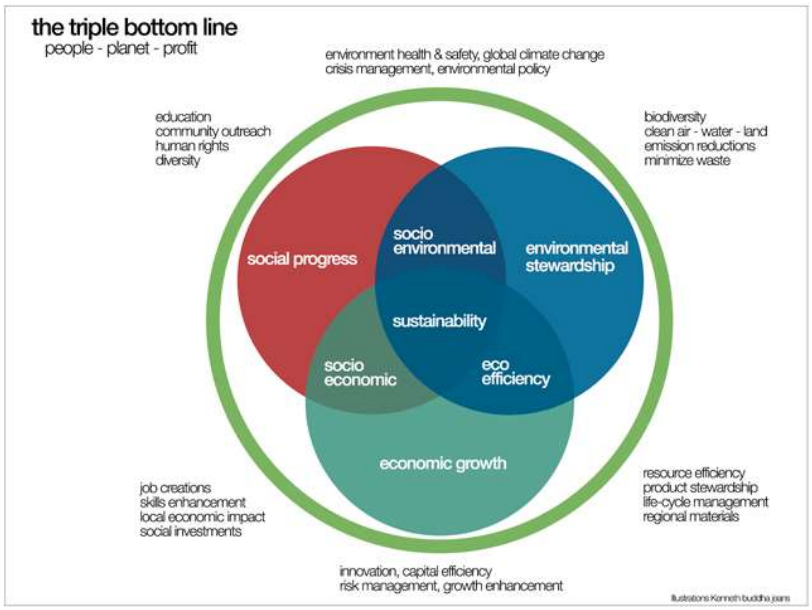

Figure 1: Triple-Bottom Line - Sustainability Accounting Model of Kenneth Lyngaas, 2013 (Foresight University)

1. **Social aspect** → it implies the protection of people and assuring social equity. Very often, especially in the case of the clothing industry, industries are interested by the offshoring phenomenon: production moves to places where labor is cheaper but where the awareness of human rights is often underdeveloped. Social sustainability therefore includes, among others, the importance of equity in the workplace while respecting certain principles, even where local law does not recognize these principles;
2. **Environmental aspect** → the protection of the surrounding environment, often identified as "ecology". In this case too environmental sustainability implies the application of business principles aimed at greater respect for the environment by limiting its exploitation;
3. **Economic aspect** → Coincides with the protection of the company itself and concretely consists in obtaining the greatest possible profit, or company growth, in compliance with the previous points.

These three aspects, if coexisting within a single organization, within a single project or in the development of a certain product, make it possible to define this organization/project/product as sustainable.

It seems clear that this triple objective can only be achieved by finding balance and harmony between the protection of the environment, social equity and profit. However, this triadic vision could be transformed into dyadic, becoming sustainability a balance between two elements: *profitability* (remuneration) and *responsibility* (environmental and social responsibility), which clearly invokes the previous analysis of CSR.

The CSR approach agrees with the key message of the sustainable development strategy adopted by the Gothenburg European Council in June 2001, which involves long-term objectives to reach economic growth, social cohesion and environmental protection: finding a strong cohesion among all these different elements gives birth to the sustainable development.

To conclude, it turns out to be very interesting as according to Svensson and Wagner (2015) the basic concept of TBL could be identified as a business model in which the three elements of the triad are associated with the three fundamental elements of a company, as following:

- *Driver* → Profit (Economical aspect)

- *Input* → People (Social aspect)
- *Output* → Planet (Environmental aspect)

Even if these associations are generalized, compared to the previous provided definitions of the three aspects of the TBL, the fact to identify the TBL as a general company surely highlines the interdependence and indivisibility of its elements, and highlight the fact that our society and the surrounding environment are essential for an economic growth. This last one has not to be the output, but the source for a continuous improvement in the interest of the entire ecosystem.

2. Qualitative analysis of literature

2.1 Conceptual models

CSR has been the object of various studies, starting from the last quarter of the twentieth century. Given its ambiguous definition, for which at the end of this century there was no clear agreement on what CSR is but in particular, what clearly are its implications; different authors have studied this concept providing various framework proposals, trying to find a way to connect this concept to the one of business performance.

2.1.1 Carroll's CSR models

Carroll, during his life, has widely studied the CSR topic, being one of the first in treating to create a model to explain it. As the relative youngness of the concept and its evolution throughout the twentieth century, Carroll's tried to improve his research through his entire life.

The first frameworks he created is the three-dimensional conceptual model of corporate social performance, which tries to describe the social performance of a company. According to Carroll (1979) "social responsibility to fully address the entire range of obligations business has to society, it must embody the economic, legal, ethical, and discretionary categories of business performance. These four basic expectations reflect a view of social responsibility that is related to some of the definitions offered earlier but that categorizes the social responsibilities of businesses in a more exhaustive manner". Carroll identifies one dimension of this framework with these four categories of responsibilities (economic, legal, ethical, and discretionary); the other two dimensions correspond to the range of social issues involved (consumerism, environment, discrimination, product safety, occupational safety, shareholders)) management must address. Finally, the last dimension identifies the philosophy of social responsiveness of the firm, which could be defense, reaction, accommodation or proaction. As Carroll states, "Corporate social performance requires that (1) a firm's social responsibilities be assessed, (2) the social issues it must address be identified, and (3) a response philosophy be chosen. The model presented attempts to articulate these key aspects in a conceptual framework [and] can be used to help managers conceptualize the key issues in social performance, to systematize thinking about social

issues, and to improve planning and diagnosis in the social performance realm." In conclusion, Carroll provides companies a method for choosing which social issues to give a contribution.

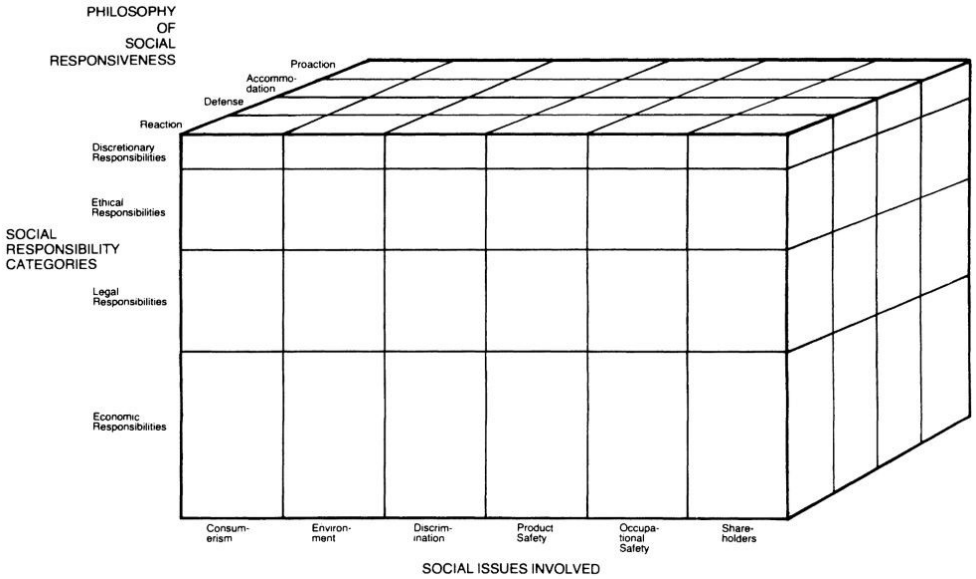

Figure 2: The Corporate Social Performance Model (Carroll, 1979)

From the figure shown, it is clear that the model developed by Carroll seems to be hardly implementable for taking business decisions, given its complex articulation and all resulting intersections among the three dimensions. In fact, some years later, in 1991, Carroll revised its model and developed another framework, the CSR Pyramid, by only focusing on the previous identified four categories of economic, legal and discretionary (philanthropic) expectations of society towards a firm, in a given time frame. In this new model, the base of the pyramid, and so the base to develop CSR, is profit creation for shareholders. "The pyramid was selected as a geometric design because it is simple, intuitive and built to withstand the test of time. Consequently, the economic responsibility was placed as the base of the pyramid because it is a foundational requirement in business. […] The point here is that the infrastructure of CSR is built upon the premise of an economically sound and sustainable business" (Carroll, 2016). Carroll also states that, in this model, companies do not follow CSR by pure altruism but also because they must meet the requirements of the market (Reinert Lyra, Barbosa De Souza, Verdinelli and Lana, 2017). Hereby it is clear an evolution also in the concept of CSR, which finally includes also the economic performance as a must for CSR.

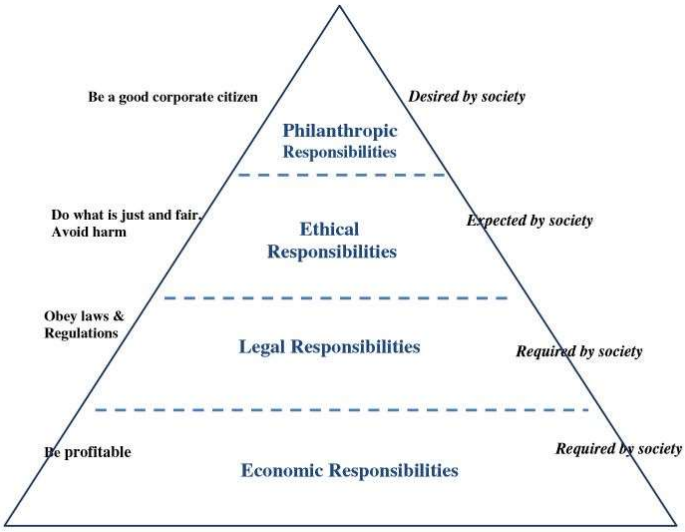

Figure 3: CSR Pyramid (Carroll, 2016)

Carroll also later continues studying CSR and in particular, he finally developed with Schwartz another framework in 2008. The VBA Model (value-balance-accountability) considers the union of the five milestones for the integration of business and society, which are: CSR, business ethics (EN), stakeholder theory (TS), sustainability (SUS) and corporate citizenship (CC), maintained unified by value, balance and accountability. These three links in the chain are defined as follows:

Value → generation of sustainable value as a fundamental element in the field of business and society, which is realized when business needs to meet the long-term needs of society, which correspond to the efficient production of goods and services avoiding negative externalities (Lyra, Barbosa, Verdinelli and Lana, 2017);

Balance → component that stands for the contribution of everyone in the company to the CSR objectives. Normative concepts underlying the balance element are justice, distributive justice, fairness, respect, moral pluralism and moral rights. This principle can be observed in the balance of benefits among stakeholders (equity/distributive justice), fair and non-discriminatory hiring policies (justice, moral pluralism, respect, moral rights) and social inclusion policies (all principles) (Schwartz and Carroll, 2008);

Accountability → refers to the fact that "firms must engage in a process of sufficient, accurate, verifiable and in-proper-time opening of activities that may affect other stakeholders" (Schwartz and Carroll, 2008). Accountability assures the transparency and

honesty of the actions engaged by the company towards CSR, their traceability and reliability.

"Schwartz and Carroll (2008) state that the application of the VBA model could provide the business field proper interaction with the society, generating benefits for both. This model features important instrumental and descriptive characteristics in categorizing the stakeholder management research and does not ignore the economic responsibility to shareholders, while respecting the interests of other stakeholders in the society. Observance of only one of the VBA model elements is not enough for companies to remain in the market, which can even put them at the risk of bankruptcy. Therefore, to be positioned at the center of the VBA model diagram, the firm must observe the three elements simultaneously and be in accordance with the five constructs that gave rise to the model. Schwartz and Carroll (2008) state that the dimensions of the CSR pyramid (1991), economic, legal, ethical and philanthropic, and the three-domain approach converge with the elements of the VBA model, as it unifies the main existing constructs in the field of business and society, including CSR" (Reinert Lyra, Barbosa De Souza, Verdinelli and Lana, 2017).

2.1.2 The evolution of CSR: integration of TBL concepts in CSR Models

In the last decade, the conceptualized models are quite different from the Carroll's previously presented. The evolution of the term CSR, its connection to sustainability and with the always greater importance given to society as an ecosystem, rather a society in terms of human beings.

The Model of Corporate Sustainability presented by Aras and Crowther (2007) confirms the evolution of CSR as an indivisible concept from the one of sustainability and sustainable development. This model is constructed around the concept of CSR and based on the TBL framework introduced by Elkington in 1994, as mentioned before. Besides the presence of the social, environmental and economic (financial) aspect, Aras and Crowter also identify a fourth variable, the *Organisational culture*.

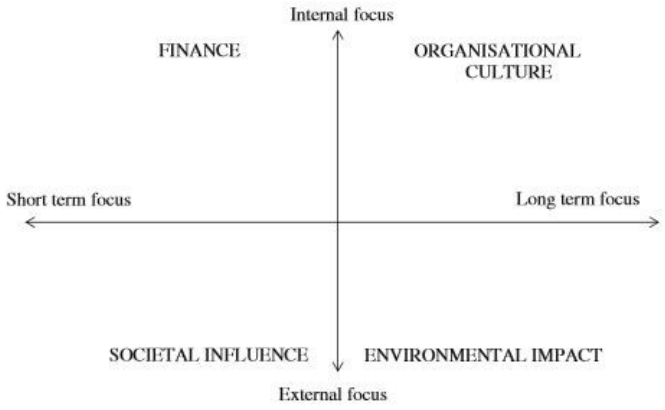

Figure 4: Corporate Sustainability Model (Aras and Crowther, 2007)

According to this framework, the objective of sustainable development can be achieved by the integration of the following elements:

- **Societal influence**: the measure of the impact that society makes upon the corporation in terms of the social contract and stakeholder influence;
- **Environmental impact:** the effect of the actions of the corporation upon its geophysical environment;
- **Organisational culture**: the relationship between the corporation and its internal stakeholders, particularly employees, and all aspects of that relationship;
- **Finance:** in terms of an adequate return for the level of risk undertaken.

One of the innovations brought by the TBL concerns the highlight of the economic aspect, which is given as much importance as to the other variables of the model. All the elements are "equally important". The main difference with the CSR pyramid, presented before, is the concept of financial success. Carroll had identified in the economic wellbeing of the company the base for constructing CSR; in contrast, for Aras and Crowther, profit is not the base for constructing CSR, but an aim to reach with CSR integration in business. It is not the base of the pyramid, as Carroll advocates, rather it is based on the CSR actions of the firm: these two aspects mutually support each other.

Surely, the concept of sustainability and the TBL represent the evolution of CSR: as seen before, the integration of more widespread concepts has brought to a deep change of CSR compared to the previous decades. This is why Visser (2011) used the term *CSR 2.0* in 2008, to refer to the great change that has happened concerning this topic. The concept *CSR 2.0*

includes five main principles, each of them representing an evolution with reference to the previous “era” of CSR.

C *CREATIVIY* → Business is naturally creative and innovative. What is different about the Age of Responsibility is that business creativity needs to be directed to solving the world’s social and environmental problems;

S *SCALABILITY* → The sustainability problems we face, be they climate change or poverty, are at such a massive scale, and are so urgent, that any CSR solutions that cannot match that scale and urgency required are red herrings at best and evil diversions at worst. “How long have we been tinkering away with ethical consumerism (organic, fairtrade and the like), with hardly any impact on the world’s major corporations or supply chains?” What is necessary, considering this point, is a transition from short-term projects of small to long-term inter-sectorial objectives.

R *RESPONSIVENESS* → CSR 2.0 responsiveness also means greater transparency, not only through reporting mechanisms like the Global Reporting Initiative and Carbon Disclosure Project, but also by sharing critical intellectual resources.

2 *GLOCALITY* → In a CSR context, the idea of ‘think global, act local’ recognizes that most CSR issues manifest as dilemmas, rather than easy choices. In a complex, interconnected CSR 2.0 world, companies (and their critics) will have to become far more sophisticated in understanding local contexts and finding the appropriate local solutions they demand, without forsaking universal principles, “giving shareholders hegemony and the transition towards a multistakeholder approach, connecting with stakeholders for a joint action”. So far, this 2 could be interpreted as the duality represented by local and global contexts.

0 *CIRCULARITY* → CSR 2.0 circularity would, according to cradle-to-cradle aspirations, create buildings that, like trees, produce more energy than they consume and purify their own waste water; or factories that produce drinking water as effluent; or products that decompose and become food and nutrients; or materials that can feed into industrial cycles as high quality raw materials for new products. Circularity need not only apply to the environment. Business should be constantly feeding and replenishing its social and human capital, not only through education and training, but also by nourishing community and

employee wellbeing. CSR 2.0 raises the importance of meaning in work and life to equal status alongside ecological integrity and financial viability. The concept of circularity is based on the three laws of sustainability. Hence, CSR 2.0 would be based on "businesses constantly feeding and replenishing its own social and human capital through education, training, community nourishment and employee wellbeing".

The shifting from *CSR 1.0* to *CSR 2.0* includes a completely different business approach; it is solution-oriented and proactive towards society, trying to find sustainable solutions, refusing charity. This shift from the traditional model - *CSR 1.0* - to the one proposed by Visser (2011) is represented in the tables below.

CSR 1.0	**CSR 2.0**
Philanthropic	Collaborative
Risk-based	Reward-based
Image-driven	Performance-driven
Specialised	Integrated
Standardised	Diversified
Marginal	Scalable
Western	Global

CSR 1.0	**CSR 2.0**
CSR premium	Base of the pyramid
Charity projects	Social enterprise
CSR indexes	CSR ratings
CSR departments	CSR incentives
Product liability	Choice editing
Ethical consumerism	Service agreements
CSR reporting cycles	CSR data streams
Stakeholder groups	Social networks
Process standards	Performance standards

Figure 5: Shifting from CSR 1.0 to CSR 2.0 (Visser, 2011)

The five principles presented above are the pillars on which Visser (2011) constructed its revolutionary model: the *DNA Model of CSR 2.0*. This model represents a sort of revolution from the traditional ones. Visser adfirms in his work that, in his opinion, the traditional models have failed and what business needs concerning CSR is a more concrete system, applicable not only to large companies, as Visser (2011) criticized to previous mdoels, and which takes actively into consideration the economic part: it must have economic sense. Again, this last point is strictly correlated with the previous model, and it is clear that, in the last years, a big change in the concept of CSR has happended, which includes the economic aspect integrated into CSR. This is why this model was born. In this model, he finally

identifies four DNA responsibilities Bases, as the four bases which compose DNA, each one of which is related to a strategic goal:

- **Value creation** → for economic development;
- **Good governance** → institutional effectiveness;
- **Societal contribution** → for stakeholders orientation;
- **Environmental integrity** → for sustainable ecosystems.

Each one of the previous topics and related strategic objective is connected with some key indicators, which suggest what aspects to consider to quantify each one of these main aspects. The model is shown in the table below.

DNA Code	Strategic Goals	Key Indicators
Value creation	Economic development	Capital investment (financial, manufacturing, social, human & natural capital) Beneficial products (sustainable & responsible goods & services Inclusive business (wealth distribution, bottom of the pyramid markets)
Good governance	Institutional effectiveness	Leadership (strategic commitment to sustainability & responsibility) Transparency (sustainability & responsibility reporting, government payments) Ethical practices (bribery & corruption prevention, values in business)
Societal contribution	Stakeholder orientation	Philanthropy (charitable donations, provision of public goods & services) Fair labour practices (working conditions, employee rights, health & safety) Supply chain integrity (SME empowerment, labour & environmental standards)
Environmental integrity	Sustainable ecosystems	Ecosystem protection (biodiversity conservation & ecosystem restoration) Renewable resources (tackling climate change, renewable energy & materials) Zero waste production (cradle-to-cradle processes, waste elimination)

Figure 6: The DNA Model of CSR 2.0 (Visser, 2011)

What is surely interesting to see is that the DNA Model of CSR 2.0, besides the novelty represented by the concept CSR 2.0 itself and by the five main principles identified, is unambiguously analogous to the model presented by Aras and Crowther, analyzed before. The four DNA codes correspond to the four areas of the Corporate Sustainability Model.

Both of the two models give to corporate governance a big importance, as much as it is given to the three main aspects of the TBL. Therefore, it is possible to affirm that the main contribution provided from these models is the relevance of Corporate Governance. Corporate Governance has a central role in CSR implementation, as it "helps to assure that

corporations use their capital efficiently [and] to ensure that corporations take into account the interests of a wide range of constituencies, as well as the communities within which they operate, and that their boards are accountable to the company and the shareholders" (OECD, 1999). Clearly, corporate governance is the determinant for the main choices of the company, as it is linked to the survival of the business and addresses the strategic choices of the company Corporate Governance has duties towards society and the company itself, as it is responsible for the outcomes generated by these choices. Corporate Governance is the very socially responsible for the corporate: when speaking about CSR, it is the responsibility of Corporate Governance, as its burden for leading, controlling, accounting and for the effective working and behaving of the company.

First, from the two models analyzed, it is possible to affirm that in the last decade the concept of CSR alone, as it was defined in the twentieth century, does not have a meaning alone, but its sense is defined together with the concepts of sustainability and the triple bottom line. Second, these models also suggest for CSR to be a further evolution from the concept of the TBL, and, as main contribution, they identify in Corporate Governance one of the four basic determinants for CSR implementation.

2.1.3 A new perspective: the CDCR model

Finally, at the end of this chapter, it is interesting to show a recently developed model, very different and unique from the other presented, and which is characterized by an interesting change of perspective in considering CSR.

The acronym CDCR stands for *Consumer Driven Corporate Responsibility*. This model was mentioned for the first time in 2011 by the Journal Social Responsibility. The main principle of it consists on a change of perspective from *enterprise* to *consumer*: in this model, consumers are the actors, which impose the requirements for corporate responsibility. The model is a continuous cycle, which works as follows: consumers demand for CSR requirements: if the company meets these requirements, the consumer base increase, increasing also company's profits; by increasing consumer base, there will be more consumers requiring for CSR commitments and the cycle continues. Thanks to the reputation achieved, the company can increase its customer base, but at the same time, it is

also more incentivized to continue implementing more and more CSR practices as required by its customers.

Therefore, the CDCR model consists in a continuous cycle, based on a win-win logic: consumers are satisfied if requirements are respected, as the company is satisfied by the increment of its consumers' base, obtaining an economic growth and higher profitability (Riel, 2017).

2.2 Integration of CSR in business strategy

The CSR became to have a worldwide attention during the early 1990s, when scandals involving some companies had a real global impact. These scandals involved worldwide companies like Nike, which faced extensive consumer boycott after the New York Times and other media outlets reported abusive labour practices at some of its Indonesian suppliers. Another example is represented by the general fast food industry, starting to be reputed by society as responsible for obesity and poor nutrition (Porter and Kramer, 2006). It is subsequently to the raising interest of society in good companies' practises that made firms starting to consider CSR in a strategic way, by representing a potential source of profit maximization.

There are several studies relating CSR to marketing performance of an enterprise, but the real CSR cannot be evocated just to pursue a socially accepted reputation. In contrast, what a firm must achieve is a mutually beneficial CSR, driven by honest motivations, and which consists as well in a profit return. At this regard, as Bhattacharya, Korschun and Sen argued (2009) "the contribution of CSR initiatives to stakeholder – company relationships hinges on the benefits they provide to the stakeholder. Essentially, we argue that in order for initiatives to provide returns to the company, initiatives must first provide a return to individual stakeholders".

Based on this premise, they elaborated a stakeholder-centric model showing three main outcomes:

1. Stakeholders respond to CSR initiatives based on the degree to which the individual derives personal benefits as a result of the company engaging in CSR activity;

2. The nature of the stakeholder–company relationship is determined by the type of benefits that accrue to the individual;
3. It is important to distinguishing between third-party measures of CSR spending and the perceptions that stakeholders hold about the company's initiatives.

(Bhattacharya, Korschun and Sen, 2009)

Starting from these outcomes, and from the outcomes on multiple studies which showed the mutually beneficial character of integrating CSR in business objectives, it is clear that it is convenient, for both firms and society, to include CSR in business development and therefore, to implement a *strategic CSR*.

2.2.1 Strategic CSR

"Strategic CSR" is a term coined for the first time by Baron in 2001. It "consists in taking a socially responsible stance in order to strengthen one's market position and thereby increase long-term profits. For instance, CSR could be a means of placating regulators and public opinion to avoid strict supervision in the future, or to attempt to raise rivals' costs by encouraging environmental, labour or safety regulations that will particularly handicap competitors" (Bérnabou and Tirole, 2009). Porter and Kramer in 2006 argued: "The essential test that should guide CSR is not whether a cause is worthy but whether it presents an opportunity to create shared value – that is, a meaningful benefit for society that is also valuable to the business".

In contrast with this last sentence, Baron's vision is quite rigid: according to him, to have a pure CSR the motivation, which make a firm to implement it, must be not interested in profits. Therefore, in Baron's vision, even if he recognizes the possibility to increment profits by adopting CSR, he refuses the conciliation between CSR and profits, by asserting: "This strategic CSR is simply a profit-maximization strategy motivated by self-interest and not by a conception of corporate social responsibility" (Baron, 2001).

"The term "strategic CSR" is used to refer to a profit-maximizing strategy that some may view as socially responsible. Consider as an example a firm that can adopt an environmental practice that would make the community a more attractive place to work. If the practice is adopted because worker productivity and hence profits would increase, it is said to be

strategic. The practice may as well have spillovers that benefit other members of the community, but the motivation for the practice is to maximize profits. If the practice goes beyond profit maximization, the motivation must be investigated further" (Baron, 2001).

As mentioned before, unlike decades ago, when CSR was considered a limit for profits, in the last years it started to be taken into consideration in the strategic planning of an enterprise, becoming to be considered a potential source for competitive advantage. Melissa J. Markley and Lenita Davis (2007) conducted a study through which they found that the presence of a sustainable supply chain is positively related to environmental and ethical outcomes ratings, stakeholder ratings and profitability of a firm, and that ratings on customer, employee and social satisfaction are positively related to profitability for a firm. In this way sustainability, and more in general CSR, should be considered in the strategic planning of an enterprise as a profit driven and a source of competitive advantage.

Porter and Kramer (2006) made a strong case on CSR, in their book "Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility". They stated: "The essential test that should guide CSR is not whether a cause is worthy but whether it presents an opportunity to create shared value – that is, a meaningful benefit for society that is also valuable to the business". The characteristics of CSR could be an opportunity for business, in particular their attention to the long-term, strategic commitment rather than short-term, cosmetic responses. According to Porter and Kramer, firms must change from a responsive CSR perspective, which involves only a mitigation to social impacts, to strategic CSR, which is the long-term transformation of firm's value.

Porter and Kramer argue that companies made two main mistakes while attempting to implement CSR in the last years:

1. Pit business against society (clearly the two are interdependent);
2. Pressure companies to think of corporate social responsibility in generic ways instead of in the way most appropriate to each firm's strategy.

According to them, the reason of this is the absolute disconnection between CSR and business strategy in companies, while approaching CSR. And here the turn out point: there is the need to make this integration happening, for both companies and society, because

“when looked at strategically, corporate social responsibility can become a source of tremendous social progress, as the business applies its considerable resources, expertise and insights to activities that benefit society”, as they stated.

Porter and Kramer (2006) identify four prevailing justifications for CSR, which are defined as follows:

1. **Moral obligation** → Companies have a duty to be good citizens
2. **Sustainability** → Emphasizes environmental and community stewardship
3. **License to operate** → Requiring tacit or explicit permission from governments, communities and other stakeholders
4. **Reputation** → Used to improve company image, strengthen brand, enliven morale, etc.

According to them, none of these justifications is able to offer a guidance in approaching CSR, as “[they] focus on the tension between business and society, rather than their interdependence” (Porter and Kramer, 2006). Consequently, there is a need of integration between business and society, to shift from Corporate Social Responsibility to Corporate Social Integration.

The positive implications to implement CSR are analysed by the authors through the frameworks Porter’s Value Chain, which helps identifying social impacts on firm’s activities, and Porter’s diamond, which analyses social influences on the firm.

On the one hand, successful corporations need a healthy society because:

- Education, health care and equal opportunity are essential;
- Safe products and working conditions not only attract customers but lower the internal costs of accidents;
- Efficient utilization of land, water, energy etc. makes business more productive;

Equally, a healthy society needs successful companies because:

- No social program can rival the business sector when it comes to creating the jobs, wealth, and innovation that improve standards of living and social conditions over time.

On the other hand, also business must have a moral purpose because:

- Companies have a duty to be good citizens (moral obligation);
- Corporations have a profound positive influence on society because they offer jobs, invest capital, purchase goods, etc;
- Must contribute to a prosperous economy.

(O'Neil, 2014)

Figure 7: Corporate Involvement in Society: A sSrategic Approach (Porter and Kramer, 2006)

So, strategic CSR could be thought as a strategic approach using CSR to gain competitive advantage, whose strategy includes activities which benefit both company and society, as shown in the image below. Strategic CSR is nothing else than a strategy to perform better than competitors, which includes practises that at the same time are best practises for the company to improve its market position, gaining major profits, but also which are valuable society. Having just generic social impacts because of the Good Citizenship justification can benefit society but is not a sustainable strategy, neither generate sustainable value.

It seems to be clear, from the study of porter and Kramer, that the integration between CSR and strategy has become a need for everybody: a need in terms of social welfare, a need in terms of firm's profits, a need in terms of "moral obligation". At the end, speaking about strategy in the context of CSR means making good choices, finding the best tradeoffs

between making the best investments for social and environmental opportunities while assuring the maximum profit for the firm.

To conclude, using the words of Porter and Kramer: "Strategic CSR moves beyond good corporate citizenship and mitigating harmful value chain impacts to mount a small number of initiatives whose social and business benefits are large and distinctive. Strategic CSR involves both inside-out and outside-in dimensions working in tandem. It is here that the opportunity for shared value truly lie. […] Efforts to find shared value in operating practices and in social dimensions of competitive context have the potential not only to foster economic and social development but to change the way companies and society think about each other" (Porter and Kramer, 2006).

2.3 Mathematical Models

2.3.1 Quantifying CSR implications: Baron's vision

After having discussed the different conceptual models on CSR proposed until now, it is not clear yet at what extent CSR can contribute to firm competitive advantage. It is not possible to quantify CSR implications by just using conceptual models. Therefore, to have a complete overview of the topic it is also important to suitably discuss the contributions given to this study by the implementation of mathematical models. Different researchers have tried to translate the behavior of devoting profit or savings to social institutions, providing mathematical results to the phenomenon of CSR. In particular, they contributed to clearly determine and define if CSR implies a sacrifice in terms of money or, conversely, if it represents a source of further economic gains for the company choosing to implement it.

At this regard, according to one important study conducted by Baron in 2005, it is possible to compare and analyze personal giving and corporate giving as consumer goods. First, Baron makes a distinction between CSR firms and profit-maximizing firms, according to the adoption or not of CSR practices. By starting from this assumption, in Freidman's environment, all citizens have different preferences towards CSR, and corporate giving (hold shares in firms implementing CSR) and personal giving (make personal gifts from hold shares) could be considered as substitutes (Baron, 2005). By obtaining satisfaction from personal giving or from buying shares of firms which devote part of the profits to social

giving, citizens choose if to social contribute through one, or both, of the two cases. Through its study, Baron demonstrates that social and personal giving are imperfect substitutes – in particular that corporate giving is an inferior substitute of personal giving - and, more important, that closer is the substitution for the two goods considered, bigger the firm's financial loss. An important role is given to taxes, which could reduce the financial loss of CSR firms the deductibility of corporate social contributions: in other words, there is a tax advantage on corporate giving unlike on personal giving. Even if there are these taxes, Baron demonstrates that firms, and not citizens, bear the cost of corporate giving, which represents the most important finding of this paper.

In Baron's visions, strategic CSR could actually create a competitive advantage, by selecting those CSR activities, which are rewarded at most by citizens and consequently by increasing profits. In contrast, what could be perceived by the reader as a limit to this research, is surely the net distinction between CSR firms and profit-maximizer firms. First, this rigid division is quite unreal: being a CSR firms does not necessarily mean only providing social giving, but it includes other practices benefitting the environment or generally all stakeholders, practices that are hardly substitutable by personal giving. Second, by making this distinction Baron automatically excludes those firms, which are profit-maximizers by using CSR practices. Therefore, this model surely suggests an interesting reflection whether citizens' choices on investing in social giving firms rather making personal donations, but surely there are many other variables, besides social giving, which are very important in the context of CSR and have not been considered. So, the assumptions made are quite arguable. As a result, based on these findings, it is difficult to determine clearly whether CSR could be seen as profit or loss but, in this particular case, and so considering only social giving, Baron's vision could be agreed.

2.3.2 Monetary value of CSR

Baron is not the only author that tried to quantify the implications of applying CSR practices in a company. In fact, other authors have tried to identify the value generated by CSR, by reaching a mathematical formula, able to translate in monetary terms CSR implications.

In addition, in this case, the studies are various and use different approaches. For example, from a study conducted by Parada (2009) he finds that the monetary value of CSR is

connected to various variables. For his study he starts from the general utility function, which depends on wealth, and develops a family of curves to which the utility function belongs to. For his study, Parada uses the "Emotional-wellbeing function", a function developed by him in 2004: as Parada states, this function "is understood to be the degree of satisfaction resulting from an act and includes different personal values". The BE(w) function (emotional-wellbeing function in function of wealth) depends on three main terms: social responsibility, economic individual and enjoyment of belonging. As social responsibility is related to wealth, according to Parada it is necessary to separate it in two main components: the general CSR and a business owner's social responsibility (OSR). This approach is interesting, as it implies that the two types of social responsibility are different, indirectly assuming that CSR does not corresponds to owners' attitudes towards CSR. In this context, Parada also defines company's wealth as the sum of its assets, stating that a company is responsible up to the amount of its value, whereas owners are responsible up to the amount of wealth contributed to the company.

Through his study, Parada finds that the CSR monetary value depends on wealth, the function of emotional well-being, the enjoyment of belonging of the owner and a CSR global indicator. Consequently, the author finds that each organization has its own monetary value for social responsibility, which depends on how the company perceives it, stating that it is the value of an intangible asset, more than a price.

Although this model tries to identify a monetary value for CSR, at the end, even if there is the identification of the variables implicated in the valuation of CSR, it actually does not provide a way to calculate them, as these variables are not easily quantifiable. The fact is that to provide a mathematical formula with indefinite variables is not sufficient to quantify in monetary terms CSR. Moreover, the variables included should be concrete, or at least a quantification of these variables should have been provided.

On the contrary, the study conducted by Weber (2008) is more exploitable in real life: she bases the calculation of the monetary value added by CSR as the sum of the difference between benefits and costs brought by CSR, discounted by a discount factor. In other words, she identifies the net present value of investing in CSR, which is treated as a general investment. The study she does on the quantification on monetary costs and benefits

deriving from CSR is interesting: while Parada focuses on a mathematical function and the contributions given by the different variables, without properly identifying a CSR quantification, Weber also provide a method to quantify each CSR implication. Firstly, she distinguishes between monetary and non-monetary, qualitative and quantitative contributions of CSR. Besides having identified a formula for the calculation of the monetary value added of CSR, Weber develops a CSR impact assessment, for the determination of the non-monetary qualitative impacts, which are quantified through the development of specific KPI's.

Comparing the two different studies of Parada and Weber for an evaluation of the monetary value of CSR, surely the latter seems to be the more usable but also the more realistic one. The fact to consider CSR as an investment is based on the assumption of the presence of monetary benefits, and so profits, for the company. The model constructed by Parada, compared with the one of Weber, is abstract and difficult to be applied to day-to-day decisions making. Considering CSR just investments, which can contribute to society, and evaluating them with a simple net present value makes things easy for firms and helps them in evaluating how to allocate their budget for CSR assuring profit returns. Only an economical healthy company will be able to invest in CSR, and ensuring benefits from CSR investments will ensure a continuous contribution of that company to social responsibility investments.

By recalling the words of Porter and Kramer (2006) "The essential test that should guide CSR is not whether a cause is worthy but whether it presents an opportunity to create shared value – that is, a meaningful benefit for society that is also valuable to the business". Therefore, we could conclude that the approach identified by Manuela Weber could be a valuable implementation for defining CSR opportunities by firms and consequently to implement Strategic CSR.

3. Quantitative analysis of literature

3.1 Empirical studies assessing the correlation between CSR and CFP: main characteristics

Various studies concerning the association of CSR and corporate financial performance (CFP) through regression models have been conducted in the last decades. By the way, the selection of the variable taken into consideration to conduct these analyses vary from case to case.

On the one hand, it could be state that the CFP is studied as a dependent variable in the majority of the models analysed, being identified with indicators as ROA, ROE, ROS or market capitalization, among others. If these variables are quite similar in the various case studies, there is anyway some argument that point out differences also in the definition of the dependent variable for CFP. On the other hand, indicators and independent variables identified for the CSR are very different in the various case studies.

For this analysis, as it will be the basis for the model constructed in chapter 5, only articles being published from the year 2000 have been considered, given the relatively youth of the topic, its development in the last decades and the improvements achieved in the last years concerning CSR indicators.

In the following table, a classification of some significant previous studies is presented, including studies that contains a limited approach to CSR, considering only the environmental or social aspects. In fact, also considering only one aspect is useful and more accurate in the study of specific variables. Of course, according to the Triple Bottom Line also the economic aspect is an important part of CSR and sustainability, but of course in this analysis CSR is just considered in relation to the social and environmental issues.

The tables below show the 14 articles considered for the empirical literature analysis. All these articles have used statistical tools to investigate about a possible correlation between the CSR and financial performance, building more or less complex regression models.

N	Author (year)	Sample size	Perimeter	Reference period	Years studied	Correlation
1	McWilliams and Siegel (2000)	524	Overlap of Compustat and KLD data sources	1991-1996	6	**No correlation**
2	Tsoutsoura (2004)	422	Companys included in the S&P500 index. Those missing either financial or CSP data were eliminated	1996-2000	5	**P**
3	Al-Tuwaijri, Christensen and Hughes (2004)	198	Of the 531 firms included in the 1994 IRRC Environmental Profiles Directory, 313 do not have sufficient environmental exposure to meet our second criterion. Four firms do not have complete data in the IRRC Directory, and 16 firms do not have complete Compustat data. The final sample includes 198 firms that meet all of the selection criteria.	1994	1	**P**
4	Van de Velde, Vermeir and Corten (2005)	304	Vigeo is an independent corporate social responsibility agency that screens European quoted companies on CSR	2000-2003	4	**P**
5	Clemens (2006)	76	UK steel industry	2003	1	**P**
6	Scholtens (2008)	289	KLD database (only US firms)	1991-2004	14	**P (causality from CFP to CSR)**
7	Eccles, Ioannou, Serafeim (2011)	180	Among 775 US companies, 90 with high sustainability practises and 90 with low were selected	1993-2009	17	**P**
8	Pérez-Calderón, Milanés-Montero and Ortega-Rossell (2012)	122	companies included in the DJSEI selection (except for 35, belonging to financial sector)	2007-2009	3	**P**
9	Cavaco and Crifo (2014)	300	300 biggest European listed (publicly traded) firms	2002-2007	6	**P/N**
10	Pedersen, Gwozdz and Hvass (2015)	492	Swedish fashion industry	2012	1	**P**
11	Elouidani and Zoubir (2015)	20	20 firms listed on the stock exchange of Casablanca	2007-2010	4	**N**
12	Hasan, Kobeissi, Liu and Wang (2016)	5516	U.S. manufacturing firms	1992-2009	16	**P**
13	Wang and Sarkis (2017)	1980	observations from the top 500 Green companies in the United States	2009-2013	5	**P**
14	Dabor, Kaka and Idogen (2017)	60	all manufacturing firms that are quoted with the Nigerian Stock Exchange	2015	1	**P**

Figure 8: Empirical literature analysis

N	CFP variables	CSR variables	Control variables	Source CFP	Source CSR
1	Long-run economic or financial performance of firm i (measures of accounting profits)	Corporate Social Performance: a (0,1) variable, a firm is either socially responsible or it is not. Proxy for corporate social responsibility of firm i (based on an index of social performance)	- RDINTi = R&D intensity of firm i (R&D expenditures to sales ratio); - INDADINTi = advertising intensity of the industry of firm i; - INDi = industry of firm i (4 digit SIC code); - RISKi = proxy for the "risk" of firm i (debt/asset ratio); - SIZEi = proxy for the size of firm i.	COMPUSTAT database	Kinder, Lydenberg and Domini (KLD)
2	ROA, ROE, ROS	KLD scores converted in basis of 10; Domini 400 Social Index as dummy variable (1 for being included in DSI 400, 0 otherwise)	- Size: LogAssets; - Size: LogSales; - Risk: Debt/Assets.	COMPUSTAT database	KLD rating, Domini 400 Social Index
3	Industry-adjusted annual stock return (change in stock price during the year scaled by the beginning-of-year stock price minus the industry median return)	ENVPERF=Environmental performance measured as the percentage of total waste generated that is recycled ENVDISCL=Environmental disclosure score obtained from content analysis of the firm's annual report	Past environmental disclosure, Environmental exposure, Environmental concern, Reporting frequence, Voluntary EPA programs in which the firm participates, Presence of an environmental committe, Unexpected earnings, Growth, Visibility, Size (as market value of common equity)	-	Corporate Environmental Profiles Directory, IRRC database
4	Share price, market capitalization and book value	Scores of Vigeo	-	Datastream	Vigeo database
5	Growth in earnings, growth in revenue, change in market share, ROA, long run level of profitability	Green performance, Green economic incentive	- Size; - Respondents' confidence in existing green standards.	Survey	Survey
6	Total stock returns, Financial risk	KLD's measures: strengths and concerns about social, community, diversity, employee, environment and product topics	-	Datastream	KLD Research & Analytics Inc.
7	Total assets (proxy for size), ROA, ROE, Leverage, Turnover, MTB	Governance, Stakeholder engagement, Long-term orientation, Employee, Customer, Supplier Standards, Audit, Nonfinancial Disclosure	-	-	Thomson Reuters ASSET4, interviews, Sustainable Asset Management (SAM)
8	ROA, ROI, ROS, MBR (profitability) Total Assets, EBITDA, Sales (Firm's size)	Energy consumption, water consumption, emissions to air (CO2, SOX, NOX)	- ES = environmental sensitivity of the industry sector of the company	AMADEUS databse	DJSI (for defining ES); sustainability reports of the companies
9	Tobin's Q, ROA, lsales, ltotalassets, debt ratio (firm size (sales), total assets and debt ratio)	HR, ENV, BB (these three both in form of score and as dummy), CSR Global. All from are scores and ratings from Vigeo	- Dummy variable identifying firms listed on the Dow Jones STOXX600 index (to control for the sensitivity to stock market variations); - R&D Ratio, NO R&D: Research and Development (R&D) variables; - Advertising ratio	Orbis data set	Vigeo database
10	Sales, earnings, market share	Corporate sustainability, business model innovation	-	Survey	Survey

11	Tobin's Q, MR, ROEI, ROA	CSR: Corporate social responsibility. Dichotomous variable that takes the value 1 if the firm holds the label issued by the MEGC, and 0 if it is not labelised	- Size; - Risk; - Financial lever.	States of synthesis, annual reports and shares historical stock prices	Information sheet on companies with label communicated by MEGC
12	Tobin's Q, TFP	index of CSP (a measure of CSR), which we derive from the KLD dataset	- *Firm size:* natural logarithm of the book value of firm total assets; - *Leverage:* ratio of book value of debt to book value of firm assets; - *Assets tangibility:* value of property, plant, and equipment, plus value of inventory divided by firm total assets; - *Sales growth:* percentage change in sales over the previous year; - *Industry competition* with HHI; - *G-index* to measure corporate governance - IRRC based: it captures firm-level investor protection.	COMPUSTAT database	MSCI, ESG, KLD STATS (KLD) dataset
13	ROA, Tobin's Q	CSR Governance and CSR outcomes including both environmental and social outcomes	- Size; - Financial risk; - Liquidity; - Revenue growth.	COMPUSTAT database	Bloomberg environmental, social and governance (ESG) database
14	ROA	CSR (no further detailes)	- Size: total asset is the proxy for the firm size; - Leverage.	-	-

Figure 9: Empirical literature analysis

3.1.1 Sample, boundaries and reference period

Sample size varies from case to case, with a gap from 20 up to 5516 firms considered. By the way, on average we observe a sample of around 750 firms. Sample selection is in many cases the result of previous filters that selected just those companies with available data for both financial performance and CSR. As financial disclosures are more common by far with respect to non-financial disclosures, it is possible to argue that the samples selected are not representative at all of the real population of firms, but just those firms which actually disclose this kind of information. Consequently, it is possible that a significant part of the initial sample, in some of the cases, has been lost increasing bias in the regression models (Tsoutsoura, 2004, and Al-Tuwaijri, Christensen and Hughes, 2004). In many cases, in fact, the data source for non-financial disclosures is given by some sustainability ratings (KLD, VIGEO or the Dow Jones Sustainability Index) which provide information only on firms which apply sustainability.

Another important point is the variety of the sample selected in terms of industrial sectors and/or geographical location of the firms. Among these case studies, the majority of them are limited to specific countries (many in the USA, the UK, Morocco, Nigeria, Sweden, EU).

The reason for this is the data source selected, in particular for financial disclosures. In fact, some data set provide information just on the firms listed in a specific stock exchange, so this could be the reason for this choice. Also concerning non-financial disclosures, data availability could be limited just to some countries (e.g. the KLD Statistical Tool, which provides ESG data for 3000 publicly traded U.S. companies).

The majority of the firms studied belong to the manufacturing sector, with some more detailed cases which consider only the steel industry or the fashion industry. In some cases, voluntarily authors exclude from the sample firms belonging to the financial sector, as relevant topics for this sector is quite different from the others. For example, energy consumption is not a relevant topic; in contrast, there is an increasingly attention to topics related to anti-competitive behaviour and anti-corruption, which are the most relevant concerns and which are also important indicators in the most important international reporting frameworks in the context of the financial sector.

With reference to the table shown above, it seems clear that also different solutions emerge. Except for those cases were the study was conducted based on a survey, so considering data coming from a precise time instant (even if questions in the surveys referred also to previous years), in the other 12 cases we note a time frame of 1 to 17 years studied, with an average of around 7 years.

3.1.2 Variables used and data source

CFP variables

As shown in the table, variables considered for the evaluation of the financial performance are the same in most of the cases. The nature of this kind of data is easier to be defined, even if there is a lack of consensus among some authors, arguing that also for the case of financial information is not clear which measure to take, high lining the differentiation between *accounting-based* and *stock market-based* values. According to Scholtens (2008) and Tsoutsoura (2004), considering these two different points of view there are two main effects. On the one hand aaccounting-based measures put more emphases on the firm's profitability, including different performance indicators (ROA, assets growth, operating revenue, etc). However, they could be susceptible to managerial manipulation and

accounting rules. On the other hand, market-based measures reflect investors' expectations of the firm's future performance, but also in this case it is possible to have some bias due to the presence of asymmetric information (Scholtens, 2008).

The most used measures for CFP are ROA (accounting-based indicator) and Tobin's Q (stock market-based indicator), but in general several other accounting and stock market-based measures are used. Tobin's Q is a measure is not widely adopted in Europe, but it is very common in the USA. The Tobin's Q ratio is a ratio introduced by James Tobin, from Yale University. James Tobin, who elaborated the formula based on the assumption that "the combined market value of all the companies on the stock market should be about equal to their replacement costs" (Investopedia). Consequently, the following formula shows the Q ratio as the market value of a firm divided by its total asset value.

$$Q\ Ratio = \frac{Total\ Market\ Value\ of\ firm}{Total\ Asset\ Value}$$

Anyway, we should observe that both accounting and stock market-based measures, given their difference in reporting the financial status of a company, are both important to consider in a possible research.

Control Variables

The Tobin's Q indicator presented above does not take into consideration only stock market but, by including also total assets it provides an indicator also weighed on firm's size. In fact, several of the studies analysed include in their analysis also different control variables: the most commonly adopted are firm's size, usually identified with the proxy of total assets, financial risk and, less common, financial leverage. In 11 case studies over the 14 analysed also the variable of firms' size is included in the calculations and in the majority of the cases the proxy used for size is total assets. Financial risk and financial leverage, in contrast, are indicators also for the confidence of investors in the firms considered, affecting their choices while buying or not firms' shares.

Unlike what emerged by a meta-analysis conducted by Margolis, Anger Elfenbein and Walsh (2009) the control variable "industry", identifying a dummy variable for each sector present in the sample, is used only in 3 cases over 14. Probably this is due to the "screening" of the

sample: in fact, some of the studies are carried out on a specific industry sector. Therefore, we should anyway consider the industry while assessing the correlation between CFP and CSR.

CSR Variables

All the variables used for defining CSR, except for the 2 surveys and another case with a mixed methodology applied, data come from pre-structured database for assessing CSR and sustainability level of a company. In very few cases, details on the variables considered or further breakdown are shown.

The first highlight concerning variables adopted is the fact that, in 3 cases, these variables consider only environmental performance. This is surely a limit, as also the social performance in term of stakeholders' initiatives is as important as the environmental issue. By the way, environment is a very important aspect in CSR and for this reason also these articles have been selected among the others empirical studies.

At this regard, one of these studies is the one carried out by Pérez-Calderón, Milanés-Montero and Ortega-Rossell (2012). What is interesting in this study is the choice they do for studying the environmental performance: they have identified a variable, not new but from previous study, for sector's environmental sensitivity. This makes sense, because it takes into consideration the fact that in some sectors the environmental aspect is just more relevant than in others. This is also the reason why the author chose not to consider the financial companies in their sample. The sample comes from companies included in the Dow Jones Sustainability Index Europe. The information they use concerning environmental performance refers to indicators disclosed in the non-financial reports of the firms, accessible on firms' corporate websites. Financial data come from AMADEUS database. They take into consideration indicators for energy, emissions and water but they do not provide more information on the kind of indicators used. As investigated in-depth in the next chapter for having an overview on reporting, probably the environmental indicators used are those provided by the GRI Reporting Framework, even if in the next the authors speak about "efficiency variables".

McWilliams and Siegel (2000), Tsoutsoura (2004), Scholtens (2008) and Hasan, Kobeissi, Liu and Wang (2016) use as CSR variables the KLD and the Domini participation coefficient. These coefficients are the 400 Social index from KLD Analytics and research (KLD stats - statistical tool for analysing trends in social and environmental performance) "RMG covers approximately 80 indicators in seven major Qualitative Issue Areas including Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product" (KLD stats). Anyway, how this index is calculated into practice is not detailed in the article, but in the next chapter further explanation on reporting and ranking techniques is provided.

To properly carry out an analysis on the variables selected, a further investigation on how the ratings are made seems to be necessary. By the way, this further investigation is carried out in the next chapter when analysing CSR ratings methods.

The most complete study from the point of view of the definition of CSR variables is the one conducted by Eccles, Ioannou and Serafeim (2011), which provide detailed information on the aspects considered. In their study, they identify several indicators of CSR to correlate to firms' financial performance, which are listed below:

- *Governance*: formal responsibility assumed by the board of directors, presence of a sustainability committee, compensations of executives/top management on social, environmental and external perception metrics;
- *Stakeholder engagement:* in terms of practises adopted, reporting, training;
- Long-term orientation: in terms of type of investors and discussions of top management with analysts;
- *Non-financial information*: specific KPIs specific for including for employees, customers, suppliers and audit (including both internal and external);
- *Disclosure of non-financial information*.

It is clear that the analysis focuses on several social aspects of CSR but with less attention to the environmental one. In fact, indicators which assess environmental performance in terms of energy consumption or emissions, for example, are not considered. At this regard, probably the position of the authors towards CSR is based on stakeholder social interest, without considering largely also the environmental performance. The firm selection is based

on the SAM Corporate Sustainability Assessment based on the annual SAM questionnaire, an in-depth analysis based on the three main aspects of sustainability (environmental, social and economic issue) focusing on long-term value creation (Eccles, Ioannou and Serafeim, 2011). SAM questionnaire collects data which feed the construction of the Dow Jones Sustainability Index, which is topic of discussion in the next chapter.

3.2 Findings

3.2.1 Correlation results

Results of the studies analysed are different, but an overall positive correlation between CSR and CFP have been demonstrated except for 11 cases of the 14 studied. Concerning the remaining 3 studies, in one case results brought to no correlation, in another one negative correlation and in the last one there were contrasting results, which brought to the conclusion that "it is important to disentangle the different dimensions of CSR" (Cavaco and Crifo, 2014). These findings are in accordance to those reported by Margolis, Elfenbein and Walsh (2009) in their meta-analysis studies, which involved 251 case studies: "After thirty-five years of research, the preponderance of evidence indicates a mildly positive relationship between corporate social performance and corporate financial performance" (Margolis, Elfenbein and Walsh, 2009).

One thing very important to highline is that the 3 studies - Scholtens (2008), Eccles, Ioannou, Serafeim (2011) and Hasan, Kobeissi, Liu, Wang (2016) - which showed the largest reference periods involved - 14, 16 and 17, largest by far compared with the remaining 11 article, among which the largest time frame is composed by only 6 years, less than the half- all confirmed a very strong correlation between the 2 variables. Eccles, Ioannou and Serafeim (2011) reports that: "the outperformance of the high sustainability firms occurs only in the long term". As this fact is widely agreed by the major part of researchers in the literature, as presented in the previous chapter, the reliability of these studies overcomes by far the one of the other articles in our sample. Moreover, one of this mentioned three studies also shows the largest sample in terms of number of firms' studies. As a consequence, it would be incorrect weight the 14 articles studied in the same way; on the contrary, as also

statistical science suggests, those studies involving the highest number of data are those closest to reality and so the most credible.

Results from the studies conducted only on the environmental aspect confirms the positive correlation between environmental and financial performance, as the most efficient firms are also those with best financial position. These results become more evident by considering those sectors at high environmentally sensitiveness (Pérez-Calderón, Milanés-Montero and Ortega-Rossell, 2012). This finding is not surprising: as said before, environmentally efficiency will always result in a financial benefit, in the long term, because energy savings are *savings* by definition. But of course, again, for having the highest energy savings huge investments are needed; therefore, it is just a trade-off between energy savings and extent of the investment, which will dictate the extent of the period for the investment return. At this regard, Eccles, Ioannou and Serafeim (2011) raises so the question: "What is the optimal degree of a culture of sustainability under various circumstances?" and they state sustainability implicates trade-offs. Maybe in this case the analysis on the net present value of CSR proposed by Weber (2008) would be the most appropriate.

3.2.2 Beyond correlation: the *causality* issue and the *slack theory*

Actually, the aim of these studies were not just to investigate about the correlation between CSR and CFP, even if that was the main finding of the papers analysed. In fact, many of them were focused on the causality of this correlation: in other words, whether the good performance in CSR is a trigger for good financial performance or, conversely, if high profitability permits the firms also to achieve good social performance. There is no clear evidence from the papers analysed of the direction of this causality; on the contrary, the two aspects seem to contribute the one to each other in a bidirectional way. Wang and Sarkis (2017) affirm in their study "*doing good things* might not be enough for companies to improve financial performance. Organizations need to actually *doing well on good things* in order to enhance organizational legitimacy and generate financially benefit from *doing good things*". At this regard, Margolis, Elfenbein and Walsh (2009) have argued "CSP entails incurring costs and devoting resources to stakeholders other than shareholders, so there is no reason to assume a major impact will be found on measures that capture financial

performance". As investigated before, CSR shows its beneficial effects mostly in the long-term, and to have the opportunity to make this kind of effects in the long-term implicitly implicates to dispose of a significant patrimony. As a result, an investigation on the trade-offs and firms' choices concerning business investments would be interesting to better understand the nature of this correlation and its causality.

Also Tsoutsoura (2004) supports the bi-directionality of the correlation between CSR and CFP. In her research she affirms that there is evidence which confirms that firms in a good financial position also have more resources to dispose which permit better investments in human capital, community engagement activities or environmentally –friendly practises, affording investments more long-term oriented, in contrast to firms with financial problems, which focus on shorten horizons. In particular, she affirms that "Those allocations may be strategically linked to a better public image and improved relationships with the community in addition to an improved ability to attract more skilled employees". This issue, exploited by Tsoutsoura but also raised by several researchers, was actually introduced by Waddock and Graves (1997). According to them, there is a attitude of the companies to invest in these types of projects based on their financial positions, and this trend bears the name of *slack resources theory* (Waddock and Graves, 1997).

3.3 Limitations

Disaggregation of the CSR variable

The majority of the papers analysed find a positive correlation between CSR and CFP, but which are the real triggers, the factors affecting CSR that really enhance profitability? As Tsoutsoura (2004) states "most of these benefits are still hard to quantify and measure". Also Cavaco and Crifo (2014) recognize that, concerning the different aspects of the CSR analysed: "while we find that it is worth taking into account the several dimensions of CSR, we do not investigate more deeply the sub-criteria behind each broad domain." The domain of CSR remains very complex and also the disaggregation of the topics contributing to CSR seem to be still a difficult challenge.

What emerges from the papers analysed is that the main limitation to these researches is the difficulty in determining which aspects of the CSR are the most determinant for a good

financial performance. Not only speaking about the environmental and social aspects, conversely finding out more in de detail which policies and behaviours present the most positive outcomes would be the most interesting and useful to determine (Al-Tuwaijri, Christensen and Hughes, 2004; Cavaco and Crifo, 2014; Pedersen, Gwozdz and Hvass, 2015; Elouidani and Zoubir, 2015).

At this regard, as Margolis, Elfenbein and Walsh (2009) suggest "the aim should be to examine multiple practices within a given type of CSP […] to identify those that most benefit the company and society", which would mean to sacrifice some aspects of CSR in order to give more attention others. This last one point of view corresponds to the direction taken by Al-Tuwaijri, Christensen and Hughes (2004) or Pérez-Calderón, Milanés-Montero and Ortega-Rossell (2012): all of them focused on very specific variables to assess the environmental performance but sacrificing all the other aspects.

Variables selection

The selection of the variables for studying CSR remain the most important but also most difficult aspect of these studies. In studying CSR, researchers identified numerous variables for defining CSR and this is surely a consequence of three main aspects, as highlighted in the previous chapter:

1. CSR is a very recent topic, in continuous evolution, changing its shape overtime;
2. As a consequence of the previous one, after years, there is not yet an agreed definition of CSR;
3. Not being accessible an agreed upon definition of CSR there are not agreed indicators for CSR and so for the variables used.

Complexity of the variable selection was not limited to CSR variables, but it is also related to the different visions on CFP most suitable variables and to the reporting period. In fact, on the one hand, financial variables do not bear a clear consensus, being the topic of discussion between *accounting-based* and *stock market-based* supporters. At this regard Scholtens affirms, supporting this point of view: "The uncertainty about the relation between financial and social performance in part is due to the lack of consensus on the measurement of financial performance" (Scholtens, 2008). On the other hand, Pedersen, Gwozdz and Hvass

(2015) recognizes the reporting period, uncertainty regarding the inclusion of all variables which potentially affect the relationship between organisational values, business model innovation, corporate sustainability, and financial performance all as issues faced and recognized for the criteria for variable selection.

Variables selection represents a big limit to assess CSR and CFP relation, making it also difficult to compare studies and arising the issues of data reliability. Reliability is connected on the one hand with the nature of the data, and so with the variables selected, on the other hand is an issue of data source. This concern refers in particular when speaking about surveys.

Other authors recognize as a limit also the long-term aspect of CSR. The fact that the positive impact of CSR is more clear in the long term, as the literature teaches us, does not allow to study the overall phenomenon: taking into consideration just very few years limits a lot the analysis. It would be needed a bigger scenario to make an appropriate analysis. Unfortunately, this is a characteristics of the majority of the studies, except for the 3 case studies mentioned before - Scholtens (2008), Eccles, Ioannou, Serafeim (2011) and Hasan, Kobeissi, Liu, Wang (2016).

Materiality

The CSR performance but in particular the selected indicator for CSR could affect more some industries with respect to others. For example, while considering environmental performance for some kind of firms, such as steel-machining firms, could be inconsistent and unrelated to firm performance in other types of business, such as banks. In this last case, ethical aspects like the fight against anti-corruption or against anti-competitive behaviours are surely more important in this industry sector. For this reason, it could be arguable the correctness of making a correlation study of CSR performance for firms belonging to different industry sectors: this is why in recent year reporting organizations have implemented a reporting framework through which firms are required to report only relevant (“material”) information. This last concept is identified as the materiality principle, a concept that we are going to deepen in the next chapter. In contrast with this last point of view, another limitation being reported in most of the studies is the necessity to carry out an analysis by business sector (Pérez-Calderón, Milanés-Montero and Ortega-Rossell, 2012).

Actually, both analysis could have positive and negative effects on the studies conducted: on the one hand, as biggest the sample of firm, as most generalized data could be; on the other hand, an analysis by business sector will be surely most accurate for the study focused on the different material aspects.

Geographical area

The major part of the papers analysed focus on a specific geographical area. Sometimes it is forced by the databases used, other it is a choice. Cavaco and Crifo (2014) report that: "despite covering a sample of firms coming from a large number of countries, we only rely on 15 European countries, and our conclusions cannot be applied to American firms for instance". This issue suggest that CSR could be and most probably *is* also linked to the culture, the economic characteristics and external environment where firms operates. Different laws and legislations, different availability of natural resources lead to different firms' behaviours and introduce constraints. In the same way, as CSR is also a topic involving ethics, also culture could be a determinant variable.

Again, what represents on the one hand a limit for generalization, on the other hand also defines a more focused studied for a specific topic. Moreover, it arises concerns in terms of the possibility or not to generalize the problem and eventually it is a suggestion for considering other factors. It could be not a case if the only negative correlation case found is attributed to the study conducted by Elouidani and Zoubir (2015), carried out in the Moroccan context, whose market has characteristics very different from those of the other markets analysed.

To conclude, it is possible to affirm that this research model is still young, very little structured and with no clear variables and factors to be considered. It is not sure a possible generalization, but what is sure is that a more detailed research is needed in term of the consequences of the definite practises adopted in the CSR context. Surely, the very certain thing is that future investigation topics are widespread and a lot of research is needed.

4. International tools used for communicating CSR to stakeholders: an overview on the main reporting methods, stock indexes & standards

"By their commitment in CSR, companies can not only generate favorable stakeholder attitudes and better support behaviors (e.g. purchase, seeking employment, investing in the company), but also, over the long run, build corporate image, strengthen stakeholder–company relationships, and enhance stakeholders' advocacy behaviors" (Du, Bhattacharya and Sen, 2010). This is why the way of communicating CSR activities to stakeholders, choosing the most appropriate tools and methods, is an important part of a CSR strategy.

The aim of this chapter is to provide an overview on the main tools organizations use for communicating CSR to their stakeholders, including reporting practices, standards and stock indexes. It is essential to understand how companies disclose their non-financial information and what are the main indicators used. It is also fundamental to understand the different methods used because they will be the base on which, in the next chapter, there will be presented an analysis aimed to the selection of the variables to be used in the regression model to investigate about the correlation between CSR and CFP.

4.1 International Reporting Frameworks

As it was widely discussed in the previous chapters, CSR is a relatively recent topic and only in the last few decades companies started to integrate CSR in their business. Based on this premise, given its youngness in practical application, ways for reporting are even younger. As presented before, there is no clear agreement on CSR definition; in the same way, there is not a solid set of rules for the disclosure of this kind of information, even if in the last years there has been a significant improvement, thanks to the more definite position of regulatory bodies at this regard.

Sustainability has always more and more relevance on the international scenario and international governments are driving companies to be aware and improve their social and environmental situation but also to make stakeholders aware of this. "Greater transparency is expected to make companies more resilient and perform better, both in financial and non-

financial terms. Over time this will lead to more robust growth and employment and increased trust among stakeholders, including investors and consumers" (European Commission, 2014).

Therefore, more and more institutions are requiring evidences and formal disclosures for sustainability reporting. Recently, in October 2014, the European Commission has issued the *Barnier Directive* through which it requires companies with certain characteristics, in terms of size and number of employees, to disclose a non-financial statement. By reporting this kind of information, the company is required to use an international accepted framework. The Directive, while obliging companies to publish this statement, owes the knowledge and leadership of companies and organizations behind the choice of what framework to use. In particular, the most important Union-based frameworks currently used by companies are the following, mentioned in the subsequently published *Guidelines on non-financial reporting* by the European Commission (2017):

- the Eco-Management and Audit Scheme (EMAS) and the related Sectoral Reference Documents;
- the United Nations (UN) Global Compact;
- UN Guiding Principles on Business and Human Rights implementing the UN 'Protect, Respect and Remedy' Framework.
- Guidelines for Multinational Enterprises of the Organisation for Economic Cooperation and Development;
- ISO 26000 of the International Organisation for Standardisation;
- the Tripartite Declaration of principles concerning multinational enterprises and social policy of the International Labour Organisation;
- Global Reporting Initiative;
- CDP (formerly the Carbon Disclosure Project);
- the OECD Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and UN Sustainable Development Goals, Resolution of 25 September 2015 transforming our world: the 2030 Agenda for Sustainable Development.

The *Guidelines on non-financial reporting* have been published in June 2017, the EU provided some non-binding guidelines for the reporting of non-financial information, as a

guidance for the previous presented Directive, to make it easier for the organizations to respond to it. The guidelines provided by the EU identify the main principles concerning the non-financial disclosure and list the contents to be included in the non-financial statement. In particular key principles identified are:

- in the non-financial statement material information must be included;
- the statement must be clear, honest and complete;
- the statement must include information concerning the business model, strategy and short-term and long-term objectives;
- organizations must consider the needs of all stakeholders when deciding which information to disclose;
- the statement must be coherent with the information disclosed in the other statement released by the same organization.

Information to be reported must include:

- organization business model;
- policy and due diligence
- results obtained following the implementation of the previous mentioned policies;
- main risks against which the organization is exposed to and remedies/ways of mitigation in response to those risks;
- relevant KPI, coherently with the activity of the organization;
- material aspects for the description of growth, performance and main impacts of organization's activity.

(European Commission, 2017)

European directives become applicable just when the state transpose the directive and so when the directive becomes the law of that particular State member – of course there is a time slot every state has for transposing the directive. The state members of the European Union have transposed the Directive in different ways, for the actuation of this one, but there are many differences among the European members states on the sensitivity towards this topic: in France, the disclosure of non-financial information is mandatory from years. In contrast, in Italy, a decrete was issued only at the end of 2016, obliging companies to disclose a non-financial statement (*Dichiarazione di carattere non finanziario*) starting from

2018 (so from the disclosure of information of year 2017). Consequently, the fiscal year 2017 was the first year Italian public interest companies was required to report a mandatory non-financial disclosure.

4.1.1 The Global Reporting Initiative

The GRI is a not-for-profit organization born at the end of the 1990s. It provides a set of rules and methods to report in a formal way the sustainability related aspects of a company, becoming a reliable and trusted institution all over the world.

Currently, the standards provided by the GRI are the most widely used around the world, becoming international standards required by different legislations, even if their adoption as framework to be used is voluntary (Chiarini, 2015). The GRI was defined as a "network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework" (Buhran and Rahmanti, 2012). In particular, the GRI was able to identify a series of indicators associated with the previously identified sustainability aspects and, consequently, it permits to compare different companies on the same topics. Therefore, it demonstrates and measures environmental, social and economic commitments of a firm, benchmarks these actions with law requirements and compare the performance of various enterprises.

"The GRI's declared mission was to elevate sustainability reporting practices to a level equivalent to that of financial reporting in rigor, comparability, auditability and general acceptance" (Willis, 2003). In order to do that, the GRI collaborates with the most important organizations for the sustainable development and internationalization of the world: it cooperates with the United Nations (UN), the Organisation for Economic Co-operation and Development and the ISO (Chiarini, 2015), among others.

Starting from 2000, the GRI has published different reporting guidelines. In the following image, the milestones of this reporting evolution are shown.

Figure 10: Transitioning to the New GRI Global Standards (Global Reporting Initiative, 2016)

The two last frameworks provided by the GRI in 2013 - GRI G4 - and 2016 - GRI Standards - are currently the most used reporting frameworks by organizations for non-financial disclosures, as we will see in the next chapter. The G4 guidelines, when published by GRI, represented a very innovative framework compared with the previous developed by the same organization. In contrast, the GRI standards could be considered an improved version of G4. In fact, the content and indicators of the two tools is quite the same; the main improvement from G4 to GRI Standards concern its structure.

Many organizations continue also in the last reports to adopt G4 guidelines whereas switching to GRI Standards, but in any case the adoption of GRI Standards instead of G4 will be mandatory for all reports published starting from July 2018. The majority of the non-financial reports that will be analyzed in the next chapter are draw up in accordance with the guidelines provided by the GRI, in particular the majority of them is based on the G4 guidelines. Therefore, the main indicators used will be presented in the next chapter; in the next paragraph is instead presented the main structure of the framework and the main reporting principles, on which the framework is based, with an in-depth analysis of the principle of materiality.

Following, a presentation of these frameworks and in particular of the specific topics these frameworks consider with regard to the three main issues of sustainability.

GRI Standards Structure

The content of the GRI Standards framework is almost the same in comparison to those of the GRI G4. The passage from GRI G4 to GRI Standards was aimed to permit companies to change, improve and maintaining up-to-date their reports without making necessary to entirely change them. Each standard can be updated independently without revising the all set, by adding or dismissing the reporting of some indicators without compromising the entire structure of the report - something not possible with the previous model.

The content has been restructured with a set of 36 modular and interrelated standards, including both qualitative and quantitative indicators. Each one of them includes one or several indicators to be reported. As the G4 guidelines, also GRI Standards are divided in Universal Standards and Topic-specific Standards. There is a total of six sections, presented below.

- **Universal Standards** - this section includes three universal standards used by any organization which makes a sustainability report:
  - *Foundation*: this is the starting point for using the standards. It explains how to use and reference the set of standards, by introducing the reporting principles and specifying how to prepare the report in accordance with the following standards;
  - *General disclosures*: it is aimed for reporting contextual information of the organization and its reporting practices including its governance and strategy;
  - *Management approach*: it requires the reporting of how the organization manages its material topics;

- **Topic-specific Standards** - these include three series of topic-specific standards which cover economic, environmental and social impacts. These must be used along with the Universal Standards in order to explain why the reported topics are material and where the impacts occur:
  - *Economic*: it includes six sub-categories, related to company behavior inside the market;

- *Environment*: it includes eight sub-categories, which assess the environmental performance of the firm in terms of resources used and their impacts;
- *Social*: it includes nineteen sub-categories, concerning working conditions of the human capital, diversity management and impacts on stakeholders.

(G4 guidelines, 2013, and GRI Standards, 2016)

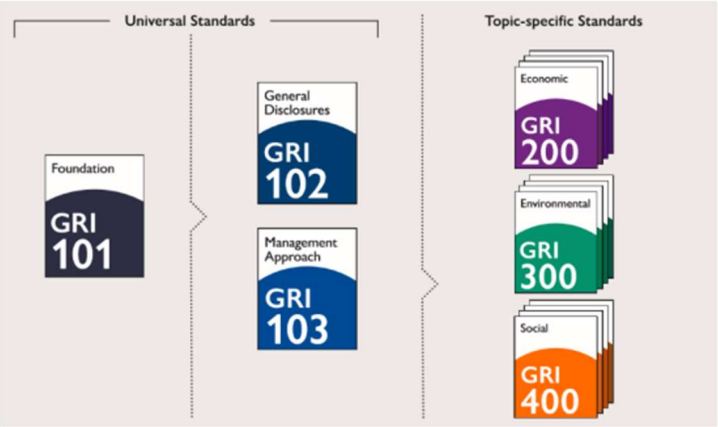

Figure 11: GRI Standards structure (Global Reporting Initiative, 2016)

Each singular GRI Standards has also a modular structure with a distinction in three sections of *reporting requirements*, *recommendations* and *guidance*. This clearly defined structure makes it easier to understand *what* the organization needs to report and *how* to do it.

A last thing important to underline in this context is that organizations can decide to report information while choosing among in three options:

- **Comprehensive**: information required by all standards included must be disclosed;
- **Core**: information related to all standards marked by GRI as *core* must disclosed, while the other standards are optional;
- **Referenced**: this option is used by those organizations with very few experiences in reporting sustainability, and therefore they can use the GRI Standards as guideline with more freedom, without mandatory standards or information to be disclosed.

The option chosen must be specified in the note on methodology of the report.

Principles

According to what is reported in the *Implementation Manual* of the G4 guidelines, valid also for GRI Standards, there are four main principles guiding the structure of the GRI Reporting Framework, to be integrated together for the definition of the report content.

- **Stakeholder Inclusiveness Principle:** identification of stakeholders and explanation on how the company meets their needs and takes them into consideration in the definition of its business and strategy. Stakeholders identification is the starting point for the definition of the main aspects to be considered in the report, which will provide the structure of the report itself;
- **Sustainability Context Principle:** The information disclosed should be coherent with the context and definition of the sustainability concept, underlying organization's contribution to its main aspects of social, environmental and economic issues, as well as its future strategy and objectives, in accordance with the long-term characteristic of the sustainability principle;
- **Materiality Principle:** Among all the topic part of the G4 and GRI standards, only those topics being relevant for the organization coherently to the following statements must be discussed in the report. According to this principle, the only topics an organization must report are those which:
  - Reflect the organization's significant economic, environmental and social impacts; or
  - Substantively influence the assessments and decisions of stakeholders.
- **Completeness Principle:** The concept of completeness refers to the completeness of the coverage of the relevant topics selected in the interest of all stakeholders in terms of scope, boundary and time.

Along with these principles, which defines report content, there are other six principles related to report quality, which state that information reported must be ***balanced***, reporting both positive and negative aspects; ***comparable*** by all stakeholders to monitor any change occurred; sufficiently ***accurate***; ***on time*** and regularly reported; ***clear*** and understandable to all stakeholders; ***reliable*** (G4 guidelines, 2013).

Materiality Analysis

The Standards described above provide a framework to follow for reporting non-financial information, but not each one of the indicators provided has the same importance and influence on stakeholders. This happens because only some of the indicators/information present in the standards could be relevant for a specific industry-sector and organizations. This is why the Directive ask to report only relevant topics when disclosing non-financial information, which therefore are defined as *material* topics, which are linked to the impacts that matter most. This implies the selection of the topic-specific standards that are relevant for the organization. But the point now is *how* to determine these material topics.

Materiality could be defined as the process for identifying material topics through a materiality analysis. The G4 reporting guidelines and also GRI Standards focus on materiality. In fact, according to the GRI, "The organization should be able to report on those topics that demonstrate its impacts; to recognize and address opportunities and risks; and to measure and understand its value in financial and non-financial terms. The G4 Guidelines will also propose that the organization presents its material topics upfront in the report, meaning that higher visibility will be given to the chosen material topics, allowing to have a very clear picture of the material topics identified. Governments have an important role in establishing a baseline about the topics that should be reported by companies and other organizations. These could range from greenhouse gas emissions to human rights or the gender balance of boards of directors. However, each company and sector has a range of specific issues that should be reported as material topics. Policy makers, despite being in a position to identify central topics to be reported, should allow companies the choice on whether to report or explain why not - in case, for example, it is not relevant to the company" (Global Reporting Initiative). At this regard, it should be mentioned that, given the large differences between different industry sectors, the GRI had developed some guidelines that are sector-specific, identifying specific topics per industry. This was done just for limited number of industries and only in accordance to GRI G4. These specific guidelines have not been adapted to the following version of the GRI Standards.

Therefore, materiality varies a lot from a sector to another. It depends not only on the business sector in terms of products or services provided to the consumers, but also on the

geographic locations, industry size, local government and time, among others. This is the reason why materiality is given a considerably importance in the context of CSR and sustainability reporting, but its implementation is very recent. As a result, this process is still in evolution. Anyway, different tools exist which support the identification of material topics, and a specific methodology is identified by the GRI, resulting in a visual map representing material topics.

The materiality analysis could be therefore summed up in the following steps:

1. Identification of all stakeholders of the organization. Usually also this phase results in a visual representation map; an example taken from the non-financial disclosure of the Benetton Group is showed below.

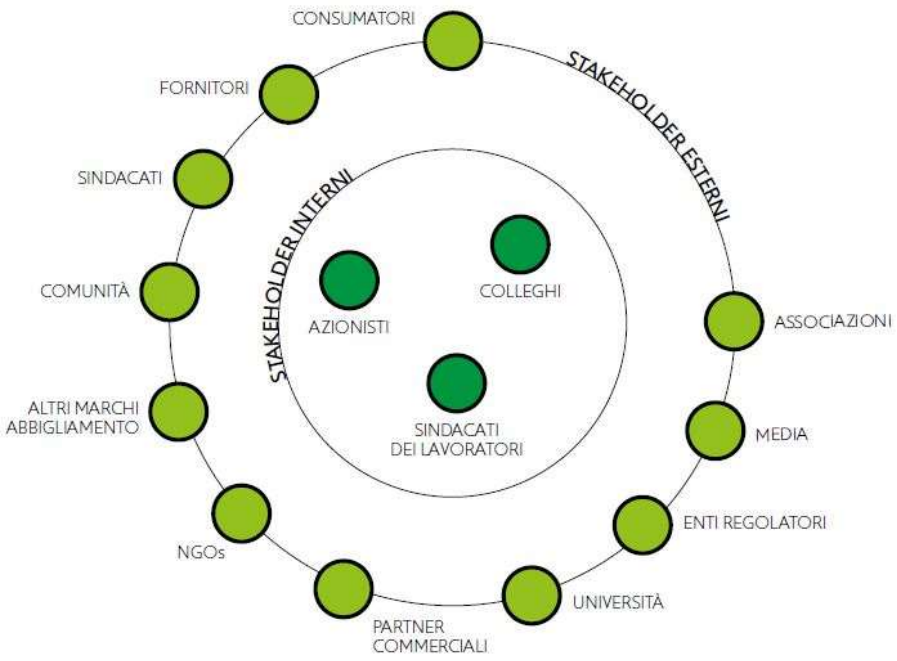

Figure 12: Stakeholders representation (Benetton Group, Bilancio Integrato 2016)

2. Identification of all possible issues and topics among which to select those which will become material: usually, but not necessarily, these topics can coincide with the subcategories proposed by GRI. Examples of these topics could be energy consumption, anti-corruption, market presence, etc.

3. Stakeholders individual evaluation in a pre-established scale through the assignment of a value to each topic, or listing the topic in order of importance. The evaluation

must be conducted based on the importance of the topic for that specific stakeholder;

4. Ranking of the topics based on all the evaluations of all stakeholders and definition of thresholds for the identification of the most relevant topics; material topics are those with result in the highest importance for either stakeholders or shareholders, or both;

5. Visual representation of all the issues subjected to evaluation in a matrix where the two axis represent on the one hand the relevance of the topic for stakeholders, on the other hand the relevance for the organization (so for shareholders).

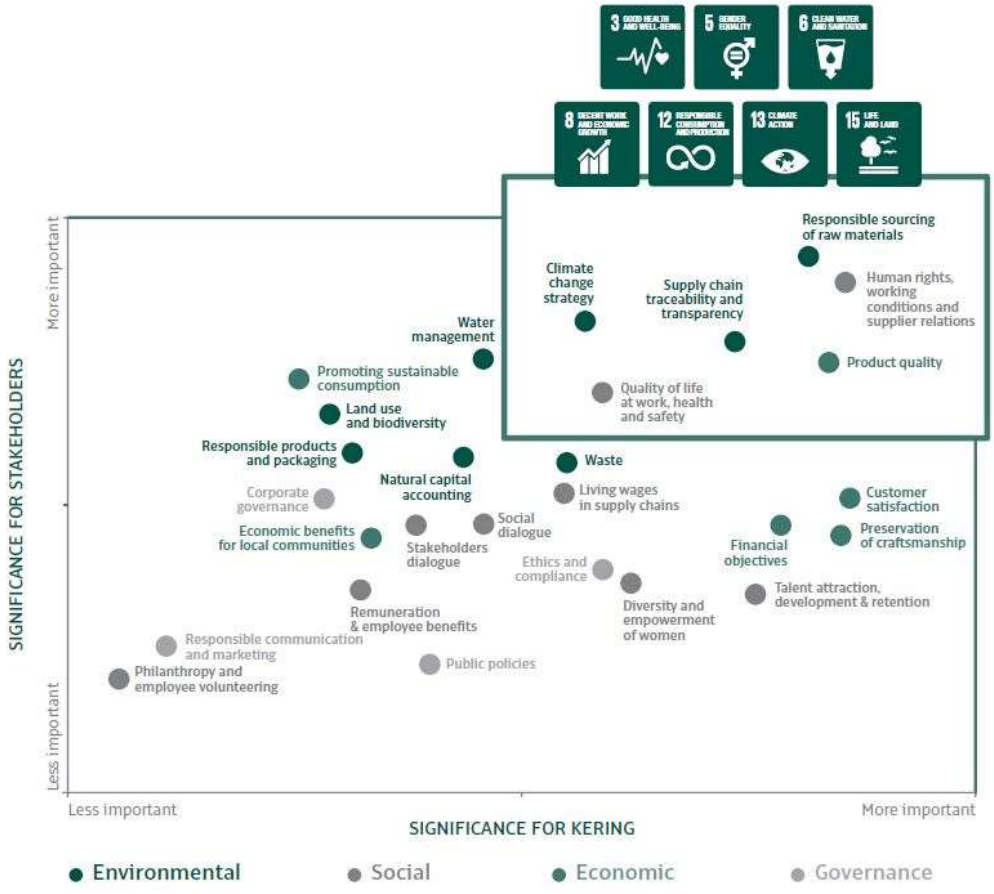

Figure 13: Materiality Matrix (Kering Group, Reference Document 2017)

An example of a materiality matrix is reported above, belonging to the Kering Group, sustainability leader in the fashion industry. As showed in the image, in this case material topics are also associated with the SDGs, in accordance with the UN 2030 Strategy for Sustainable Development.

Usually, the materiality analysis also involves the process of *stakeholder engagement*. This process consists in the identification of all stakeholder and subsequently in their involvement in the materiality analysis, for the identification of all topics to be considered and subsequently for their prioritization. This process could use different tools as surveys, questionnaires, meetings, engagement activities, workshops among others. Unfortunately, many times the stakeholder engagement is not performed and only few representative of the top management are required to conduct the materiality analysis by voting the topics also in accordance with stakeholders' interests.

4.1.2 Sustainable Development Goals

On the 25th September 2015, the United Nations signed an agreement with the aim of an improvement of the conditions of life, with the aim of ending poverty, while protecting and the planet reducing its exploitation. Therefore, the United Nations identified 17 main objectives, named "Sustainable Development Goals (SDGs)", to be met within the end pf 2030, as part of the *2030 Agenda for Sustainable Development*. These objectives are not binding but all countries part of the United Nations are expected to include them in their individual strategies, working for their achievement.

The SDGs have been transposed by the different organizations and have become the base for all sustainability concerns. The European Commission, in response to this strategy, has published "The next steps for a sustainable European future", which are also the base for the guidelines published in 2017 and analyzed in the previous paragraph. In many non-financial disclosures, the different indicators reported are associated with the related SDG. In the same way, also some in the case of the sustainability indexes, SDGs have been translated into indicators for the evaluation of firms' ranking. As RobecoSAM (2017) affirms that not every SDG can be translated in a quantifiable measure, but it is important that firms

use them as a framework considering those aspects more related to their business, given their high specificity and variety of topics covered. Therefore, SDGs could be considered as a framework on which institutions and organizations assessing companies actually base their specific methodology and data collection for firms' evaluation.

Figure 14: SDGs (UN Web Services Section, Department of Public Information, United Nations, 2018)

4.2 Socially Responsible Investments: main indexes

The increasing awareness and demand for CSR and sustainability, among all stakeholders and in particular shareholders, has brought to the development of the Socially Responsible Investments (SRI). Only ten years ago, as reported by Consolandi, Jaiswal-Dale, Poggiani and Vercelli (2008) the share of the SRI over the total of mutual funds has reached the peak of 11% in the USA.

Sustainability indices are indices based on CSR and sustainability screening, whose aim is the identification of the level of specific organizations in terms of their social and environmental performance, as well as their economic one, whose evaluation is based on all corporate behaviors related to corporate social responsibility. Therefore, the analysis conducted to evaluate the performance of these organizations is focused on topics related to stakeholders, governance, business ethics and environment. Based on this evaluation, stakeholders, and in particular shareholders, are able to choose to invest in those companies

with a higher commitment in CSR, assuring long-term vision, ethical practices, but obviously also the achievement of high financial performance.

These indexes have been developed by specialized organizations. Among others, the most famous indexes, there are the Dow Jones Sustainability Index, the FTSE4Good, the Domini 400 Social Index. To understand how the evaluation is conducted, a technical in-depth analysis is provided for these indexes.

Dow Jones Sustainability Indices (DJSI)

This index is one of the most famous and reliable in the context of CSR and sustainability, developed by the RobecoSAM organization. RobecoSAM is the organization in charged for the annual review of organizations inside the DJSI and from 1999, the year in which it has developed the Corporate Sustainability Assessment (CSA). This tool is based on an online questionnaire, compiled by the companies. Of course, the information provided must be supported by formal evidence. This is the core framework on which the DJSI is based.

From 1999, the world's largest 2500 publicly traded companies and 900 additional companies, to have the opportunity of being included in the DJSI, are invited to participate in the online questionnaire. Therefore, a total of 3400 companies has the opportunity to be listed in this special index. The index classifies companies in 60 different industries: the methodology used for this classification is the Global Industry Classification System (GICS), the most common system used. On this classification, industry-specific questions are identified to be included in the questionnaire, which concerns the three main dimensions of sustainability: environmental, social and the economic one. As underlined by Lopez, Garcia and Rodriguez (2007), indicators analyzed for this evaluation are very similar to those provided by the GRI and used by firms in their sustainability reports or non-financial disclosures. Therefore, the main topics relate to the evaluation of intangible assets, development of human capital, business organizational concerns, long-term strategies, corporate governance, stakeholders' management and investor relations.

Based on the answers to the online questionnaire, companies receive a score between 0 and 100 and a ranking per industry is developed. The absolute 10% best companies are selected

to be part of the DJSI World (Measuring Intangibles – RobecoSAM's corporate sustainability assessment methodology, 2017).

FTSE4Good Index Series

The FTSE4Good Index Series is a family of indices born in 2001 for the measurement of CSR and sustainability performance of the enterprises in term of Environmental, Social and Governance (ESG) practices adopted.

These indexes are based on the FTSE Global Equity Index Series. In its ranking, it includes 23 markets and over 2,000 organizations. It is structured in six benchmark indexes covering the most developed countries, being divided into the European, US, Japan, Australia and the UK regions. The FTSE4Good criteria is are developed and approved by a group of experts, with the help of different stakeholders among which there are NGOs, governmental bodies, consultants, researchers, the investment community and the corporate sector. In this case, the industry classification is based on the Industry Classification Benchmark (ICB), the global standard for industry sector analysis, different from the one used for the DJSI (FTSE Russell).

DOMINI 400 Social Index → MSCI KLD 400 Social Index

This category of indexes was used in many studies analysed in the previous chapter. The Domini 400 Social Index was developed in 1990 and renamed twenty years later as MSCI KLD 400 Social Index. It evaluates and lists 400 publicly-traded companies that have met certain standards in terms of social and environmental performances. It includes only American companies, as its parent index is MSCI USA IMI, an equity index including companies with different market caps. Companies engaged in the business of alcohol, tobacco, firearms, gambling, nuclear power and military weapons are cannot be included, in contrast with the other indexes analyzed.

Ratings are carried out by the KLD Research & Analytics, which develop the ranking based on the ESG ratings. The methodology used for assigning the ratings is divided into two stages. After the exclusion of the before mentioned categories of companies, other companies are added to the ranking based on their ESG performance and size. To be included in the index, constituents must have an ESG rating above a certain level, which is monitored at each quarterly Index Review (MSCI Inc., 2018).

Those presented above are the most famous and important indexes in the contest of SRI Funds, but the sample of CSR and sustainability indexes is very wide. All these indexes use a different methodology for carrying out the ratings, but even if different, indicators used for the assessment are all based on the main CSR topics. The fact that the specific questions, measures and indicators used are not accessible makes it difficult to identify the variables and disaggregate the different aspect of CSR for constructing, in the next chapter, the econometric model for study the correlation between CSR and CFP. Therefore, the methodology used for the construction of the model will be based on the reporting frameworks, whose information is publicly disclosed and whose indicators are showed in companies' reports.

4.3 Standards

Standards are a very important and reliable tools, usually third-party certified, used by organizations to communicate and to assure the responsibility to their behaviors to all stakeholders. The possession of some reliable and internationally recognized certifications represents an assurance for stakeholders in term of practices adopted by the organization. As sustainability is not limited to the organization itself but implies also a choice of responsible partners, the possession of these certifications is required by some organizations while choosing for example suppliers, and therefore improves market opportunities. On the other hand, standards are important also in the downward part of the supply chain: marketing researches have conformed the always-higher importance for consumers of the presence of labels certifying social and environmental commitments of an organization while choosing a product to purchase, resulting in an opportunity to improve revenues (Murphy, Maguiness, Pescott, Wislang, Ma and Wang, 2005).

Moreover, as seen in the previous paragraph, standards and certifications also represent criteria when assigning a value in the stock exchange indexes: this is why it is an important concern to speak about when facing the CSR and sustainability topic. In the field of CSR and sustainability, there are several standards as assurance of the firm's behavior related to these fields; following a list of the most widespread and used.

Series ISO 14000 → environmental specific related standards

Series of standards issued for the first time in 1996, imposing requirements related only to the management of the environmental impacts of an organization. This group of standards also provides three tools which help organizations for the implementation of environmental sustainability: **LCA** (Life Cycle Assessment), **EPE** (Environmental Performance Evaluation) and **Environmental Labelling.** Following a list of the most important standards of this series:

- *ISO 14001* → Most famous and used environmental standard. The main requirement for its adoption are the identification of a business policy focused on environment, defining all environmental commitments that the organization wants to take to improve its environmental performance. These policies could be related to energy/water use and reduction, emissions, prevention to pollution, and must reflect and be coherent to the type, dimensions of the organizations, in coherence with the environmental impacts it is responsible for;
- *ISO 14020* → standards related to environmental communication and public statements, which provides some guidelines in particular with reference to the different types of ecolabels, labels used for the declaration of the life cycle of a product, which also certifies the life cycle assessment conducted, providing quantitative indicators;
- *ISO 14031* → standard providing guidelines for the evaluation of internal environmental policies of an organization. It provides some indicators aimed to the planning, monitoring and evaluation of environmental performances and objectives;
- *ISO 14040* → norm providing guidelines for the application methodology related to the life cycle assessment of a product.

(ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale).

ISO 26000 → corporate social responsibility related standard

International Standard related to the social responsibility of organizations. It was issued in 2010 and developed by experts from over 90 countries and 40 international organizations from various areas of social responsibility. This norm is focused in a stakeholder approach and identifies six types of stakeholders, which are consumers, governments, industry, labor, non-governmental organizations and services (research, education). It provides guidelines

for any type of organization regardless business sector, type of industry or size of the organization. It is not certifiable by any third party. This norm includes seven main topics (core subjects), listed below, each one of which is divided into specific issues.

- Topic 1: Organizational Governance (no specific issues)
- Topic 2: Human rights
- Topic 3: Work practices
- Topic 4: Environment
- Topic 5: Fair operating practices
- Topic 6: Consumer issues
- Topic 7: Involvement and community development

(Riel, 2017)

Series AA1000

It includes several standards and guidelines with the aim of the achievement by organizations to have a more responsible and sustainable business. It is focused on three main aspects:

- *AA1000 Accountability* → standard providing a framework for the identification, prioritization and assessment of the main challenges in the field of sustainability;
- *AA1000 Assurance* → standard to assess and improvement of the reliability and the quality of the reporting of the social, economic and environmental aspects of an organization;
- *AA1000 Stakeholder Engagement* → standard providing principles to ensure the quality of the organization's commitment towards stakeholders.

(Riel, 2017)

SA8000 Standard

Standard for all related topics to global social responsibility of the business management inside an organization, used as an assurance of the implementation of fair working practices. It was issued in 1997 by the *Social Accountability International* (SAI) and is based on the *Universal Declaration of Human Rights*, the Convention on the Rights of the Child and other

rules of the *International Labour Organization* (ILO). It includes nine main principles, listed as follows:

- Topic 1: health and safety,
- Topic 2: discrimination / non-discrimination
- Topic 3: child labor
- Topic 4: forced labor
- Topic 5: freedom of association / right to collective bargaining
- Topic 6: conduct / discipline
- Topic 7: working time
- Topic 8: wage
- Topic 9: human resource management

(Sartor, 2014)

EMAS Standard

Very similar to the ISO14000 series. It is a European standard for the management and evaluation of environmental impacts of organizations, with the specific aim of the promotion inside the European Union, of the continuous improvement of the environmental performances with a high attention to its communication to all stakeholders (Sartor, 2014).

5. Model and Findings

5.1 Introduction

The aim of this chapter is to carry out an empirical analysis constructing a model with the objective to assess the correlation between the Corporate Social Responsibility and Corporate Financial Performance. A panel regression model, along with simple and pairwise correlations, has been carried out to assess what type of association there is, if exists, between some indicators representing CSR and others representing CFP.

5.2 Research Method

This analysis is based on previous research found in the literature and presented before in chapter 3. As highlighted, in many articles in literature, a regression model was adopted to study the correlation between the CSR, as independent variable, and CFP, as dependent variable. Therefore, the aim of this study is to perform a correlation between CSR and CFP based on some variables selected from indicators provided by guidelines from the Global Reporting Initiative – a reporting organization widely presented in the previous chapter. The aim of this analysis is to conduct a study in a time period including at least four years, collecting data for years 2017 to 2014, and, were accessible, also for years 2013 and 2012. So, the entire study is conducted over a time period of 4 years, but a minor part of the sample has allowed a study over 6 years.

Having no access to any database containing data on CSR, the most critical part of the study was the variable definition for CSR and consequently also data collection, being necessary for the study the construction of a database for CSR variables. Not every of the variables selected as CSR independent variables have been used, given the lack in data for more than 1 year, as explained afterwards.

Please note that all data collected include information from consolidated reports and balance sheets, both for financial data as well as CSR data.

5.2.1 Sample selection

Given the choice to study some indicators present in some sustainability reports and non-financial disclosures which follows the guidelines of GRI over different years, the starting point for the definition of firms' sample have been the database of GRI – Sustainability Disclosure Database.

This database, freely accessible on Internet, provides a link or a pdf of the reports of firms which publish a sustainability report mainly based on GRI guidelines (also non – GRI reports could be found, but the majority of disclosures are GRI – based).

To select the firm sample, some filters have been applied to the database. The research has been addressed to Large and Multinational Organization in Italy, belonging to all sectors except for the financial and non-profit one. Non-profit sector has been excluded due to the need to have the profit variable inside the study; on the other hand, financial sector was excluded as it has a very different business model as well as it identifies different material aspects with regard to the other sectors (Eccles, Ioannou and Serafeim, 2011).

The other two filters applied concern the reporting year and the type of reporting framework: firms which have published at least one report between 2017 and 2016 (therefore which have a sustainability report referred to the years 2016-2015) in GRI – G4 have been included in the sample. At this point, a sample of 56 firms was found. For those firms which had at least one report published in these years, the presence in Internet of the other report was investigated, as well as the presence of a report published during 2018, as the database was not updated with last-year sustainability reports. Concerning the Sustainability Report 2017, published in 2018, firms could have published the sustainability reports either based on the GRI – G4 or GRI – Standards frameworks. This last framework was in fact applicable just from the 2017 reporting year and will be mandatory for all sustainability reports published starting from July 2018. All firm which have published at least the reports for years 2017 and 2016 were selected to remain in the sample.

Therefore, from a sample of 56 firms selected through the GRI – Sustainability Disclosure Database (accessed on July, 5th 2018) only 42 firms remained in the sample, that is the final

sample of firms on which the analysis has been based. 40 of them have published also the sustainability report 2015 and a total of 34 also the report 2014.

As reported before, data have been collected for all firms from 2017 to 2014. For a minor part of the sample, it was possible also to collect data for 2013 and 2012. Please note that, in each sustainability report, usually data from at least one previous year are reported for comparison reasons, with the aim to allow stakeholders to compare the performance of the firms from previous years with the reference year.

The following table describes the sample grouped by industry sector, according to what is reported in the GRI – Sustainability Disclosure Database. As the table shows, a significant part of the sample belongs to the energy sector. This characteristic will be taken into consideration during the analysis.

INDUSTRY SECTOR	FIRM	%
Energy and energy utilities	12	29%
Telecommunications	2	5%
Textile and apparel	3	7%
Automotive	2	5%
Food and beverage products	3	7%
Media	2	5%
Other	18	43%
TOTAL	42	100%

Figure 15: Sample by Industry sector

5.2.2 Independent variables definition and collection

One of the most critical parts of this study was the selection of the independent variables, so variables representing CSR. As reported before, the aim of the analysis was to use indicators provided by the GRI as independent variable. But, given the fact that each firm choose what indicators to report inside their sustainability reports, indicators that are chosen based on the materiality analysis of the firm, the selection of indicators present for the majority of the firms was difficult. At this regard, the advice and discussion with some experts operating in the sustainability consulting sector have been fundamental to choose what indicators to select, based on their personal experience in auditing and supporting the creation of

sustainability reports of firms belonging to several sectors, which have been capable to advice on which indicators are the most frequently reported by firms.

As presented in the previous chapter, the GRI frameworks are divided in different macro-areas, which include indicators belonging to the three categories of economic, environment and social performance. Therefore, to cover all the main aspects of sustainability, at least one indicator per category has been chosen.

Economic performance

The economic performance is one of the three main aspects of sustainability: only a sane firm, also in economic terms, is able to generate value for society. This is why one of the categories of the GRI framework is dedicated entirely to firm economic performance. But, in this study the firm's financial situation coincides with the dependent variable. Consequently, indicators representing firms' profits could not being selected as dependent variable. But, one GRI indicators, which is reported by many firms in their sustainability reports, is an analysis of the distributed value generated by the firm to its stakeholders. This indicator, among others, also include the value distributed to the community, including donations and direct investments in community. This indicator corresponds to the G4-EC1 and GRI 201-1. Consequently, in this analysis the *economic performance* is one of the independent variables, corresponding to firms' distributions to community, which is different by what we appoint as *financial performance*, which represents our dependent variable.

In 9 cases over 42, the indicator was not reported, whereas in 6 cases over 42 the indicator was reported but it did not show any contribution to community.

Environmental performance

Data concerning the environment are the most difficult to be calculated and the most subjected to approximation, given these difficulties. In this study, inspired by a case analysed in the literature (Pérez-Calderòn, Milanés-Montero and Ortega-Rossell, 2012), GHG emissions have been selected to be the environment representatives' independent variables. More in detail, the indicators selected are GHG emissions Scope 1, 2, 3. These indicators correspond, in the GRI frameworks, to G4-EN15, EN16, EN17 in the G4 guidelines, and to indicators GRI 305-1, 305-2, 305-3 in the GRI-Standards.

Before following with the explanation of these two types of calculation, a premise must be done. Emissions factors used to calculate direct and indirect emissions are provided by international environmental organizations and usually change from one year to another. Therefore, there are many cases for which different values have been found for one firm emissions in the Sustainability report of one year and in one previous year (previous years reported for comparison reasons). In this case, it has been chosen to take the value present in the most recent report published. The unit of measure of GHG emissions is ton of CO_2 or ton of CO_2 eq: this last unit of measure includes also other gases, besides CO2, whose emissions are converted through specific factors to the equivalent as emissions of CO_2.

Scope 1: direct GHG emissions. These emissions correspond to the emissions resulting from direct energy consumption coming from on-site fuel within the boundaries of the sites of the enterprise, including consumption due to heating and firm fleet.

Scope 2: direct GHG emissions coming from energy purchased – electricity, steam, heating. For this emissions type, from reporting year 2017 and therefore with the introduction of GRI-Standards, firms are required to perform calculations in two different ways: location – based and market – based.

- *Location-Based* emissions: the factor converting purchased electricity in ton of CO_2 is based on the national energy mix, according to which emissions change based on the country where electricity is consumed (based on where the site is). This calculation method does not consider if the firm purchase and consume renewable energy or not.
- *Market- Based* emissions: this calculation method is required by GRI if and only if the firm operated in a country where a market regulated by warranties of origin exists (*Mercato GO*). Italy belongs to this category.
    - For this calculation, all emissions resulting from renewable energy sources with origin warranty are assigned 0. For the rest of emissions, resulting from non-renewable energy sources, not covered by warranty, a different emission factor is used: the residual mix - also this one is country-specific. The residual mix factor is different from the one used for the location-based as it considers only non-renewable energy sources.

In the case of G4 guidelines, this distinction was not present: emissions resulting from renewable sources counted 0 and the rest of emissions was calculated using an emission factor similar to the one used in GRI-Standards for location-based. Therefore, beforehand in G4 a mix of these two different methods was adopted.

With regard to the data collection, for Scope 2 emissions data of location-based calculation have been used. In fact, even if with GRI-Standards the reporting of values from both calculation methods is mandatory, not every firm has respected this requirement and in many cases market-based calculations were not present. This is the reason why only data from location-based method have been selected for those organizations using GRI-Standards in reporting year 2017.

Scope 3: indirect emissions from upstream and downstream network, resulting from third-party enterprises performing activities for the considered firm. What differentiates these emissions from emissions of Scope 1 depends on the presence of third-party enterprises performing or not these activities, for example regarding fuel consumption. For example, if the inbound/outbound logistics is assigned to an external firm, these fuel consumptions feed Scope 3 emissions. On the other hand, if the activity is performed by the firm considered, fuel consumption will be part of Scope 1 calculations. Scope 3 emissions are reported by a very limited number of firms: in fact, regarding years 2017 and 2016, only data from 22 firm over 42 have been collected.

Social performance

Data concerning the workforce are the third macro-category of GRI indicators. The selection of the reported data corresponds to the GRI indicators G4-10 and GRI 102-8.

The choice has been focused on data concerning *gender parity* issue and the *contractual typology* of employees and the board (only with reference to the diversity topic). In particular, the reported data are the following:

- Total number of employees, by gender;
- Number of full time and part time employees, by gender;
- Number of permanent contract and fixed-term contract, by gender;
- Number of members in the Board of Directors, by gender.

As for environmental data, also the collection of these data has presented some points that must be highlighted. First of all, in some cases the sum of full time and part time contracts or the sum of permanent and fixed-term contracts does not correspond to the total amount of employees. In fact, some organizations report other contractual forms within employees such as interns, apprentices or interims. For this analysis, the only contractual form included in the category fixed-term contracts, where separated, was apprenticeships.

For those cases for which the sum of the contractual forms does not correspond with the total amount of employees, anyway the number provided by the firm was collected, even if it erroneously includes also people that are part of the workforce but are not employees.

For the purpose of the regression analysis, on the one hand the percentages of female employees, part-time employees and permanent employees over the total number of employees were considered; on the other hand, the number of female members over the total number of members in the Board of Directors has been taken.

5.2.3 Dependent variables definition and collection

With regard to the dependent variables definition, financial indicators were selected based on the literature. First of all, the selection of these variables has been focused on accounting measures. Market-measures were excluded as, as showed in the analysis of the literature, this kind of measure are used mainly for those studies including data for more than 10 years. As this study includes data from 4 to 6 years, it was found to be more appropriate to focus on accounting measures.

Therefore, based on literature, variables selected as dependent variable to assess firm's financial performance are ROA, ROS, Revenues and Net Income/Loss. ROA and ROS are variables selected by several studies in the literature (Pérez-Calderòn, Milanés-Montero and Ortega-Rossell, 2012 and Tsoutsoura, 2004, among others). The last two measures, even if cannot be indicators for firm's financial health, assume importance if studied over more years, to analyse how profits and sales changes over a time period in relation to the sustainability indicators. These two measures are studies separately.

As in literature is usually reported, for this study also the choice to select a control variable for firm's size has been made. In particular, the proxy used for firm's size is firm's total assets – the main proxy used also in literature.

With regard to these financial indicators, differently from the case of CSR measures, a database for data collection was available. The database used is AIDA – free accessible by the students of the *Politecnico di Torino*. This database includes financial data of Italian firms of the last ten years with reference to the year of the last report published. Data collected refers to years from 2017 to 2012. All firms were present in the database, but several of them did not present data for fiscal year 2017. For these cases, when possible, data have been collected from financial reports available on Internet.

5.2.4 Empirical model and hypotheses

In general, the aim of this study is to assess if there is a correlation between CSR and CFP and if this correlation is positive or not. To carry out this final part, which is also the most important one, a paper have been taken as reference.

This paper is not present in the literature analysis, as it does not analyse quantitative data but it is focused on reporting. Despite analysing the impact on sustainability reporting, and not CSR performance, on company performance, this article was the inspiration for the definition of the structure of the model.

The research conducted by Burhan and Rahmanti (2012) studies the impact of sustainability reporting (GRI framework) on company financial performance. In particular, there are two models of frameworks proposed, which are shown below with an adaptation to this case (in the original version, there was *Sustainability Reports* instead of *CSR performance* and the economic, environmental and social disclosures instead of the three performances). The difference with this study lays in the independent variables selected: the study analyses the disclosing of non-financial information, taking as proxy the number of indicators reported in the sustainability reports over the total number of indicators. As financial variable, the ROA is used.

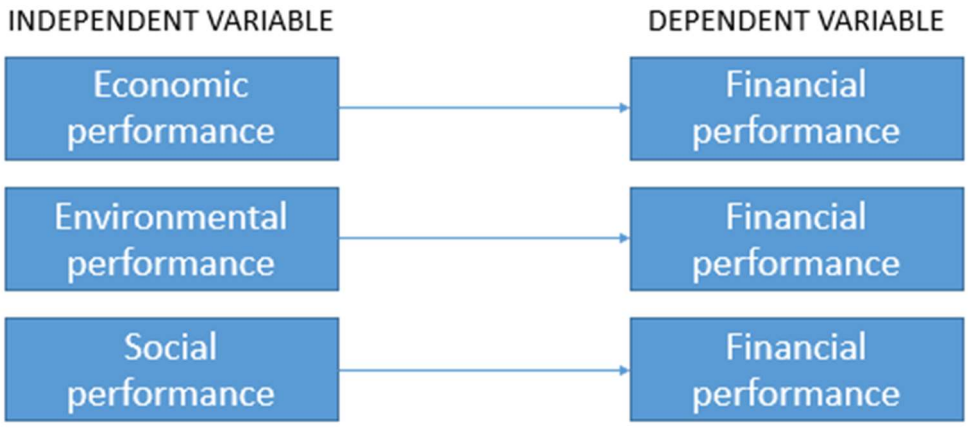

Figure 16: Framework 1

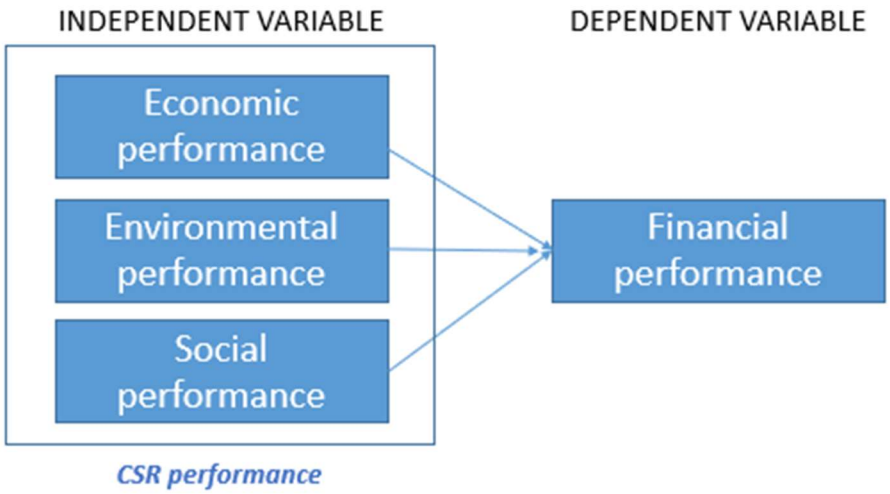

Figure 17: Framework 2

Therefore, both the hypothesis and the reference model have been based on the research by Burhan and Rahmanti (2012). Following the hypothesis selected for our study:

H_1 = The economic performance, in terms of distributions to community, has an association with company's performance;

H_2 = The environmental performance, in terms of GHG emissions, has an association with company's performance;

H_3 = The social performance, in terms of gender parity and favourable contract types, has an association with company's performance.

H_4 = The CSR performance, in terms of economic, environmental and social performances, has an association with company's performance.

The two reference models considered for the two frameworks are the following:

1. **Framework 1**

$Y = a + b_1X_1 + e$ for Framework 1, case of economic performance.

The independent variable was represented by firms' contributions to community. Due to the big order of magnitude, the natural logarithm of this independent variable has been used.

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e$ for Framework 1, case of environmental performance.

The independent variables were represented by Scope 1, 2, 3 GHG emissions. Also in this case, due to the big order of magnitude, the natural logarithm of these independent variables have been used.

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e$ for Framework 1, case of social performance.

The independent variables were represented by the percentages of part time contracts over the total number of contracts, percentage of permanent contracts over the total number of contracts, the percentage of female employees over the total number of employees, the percentage of female members in the Board of Directors.

2. **Framework 2**

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + e$ for Framework 2, which includes all the variables analysed in the previous models all together at the same time.

For all models, both ROA and ROS have been used to study the financial performance.

Control variables

As suggested from previous studies, in particular by the study carried out by Tsoutsoura (2004), some control variables have been introduced the model with the aim to control both firm size and industry. Log of asset and log of sales have been used to control firm size, as suggested by Tsoutsoura (2004), while to control the industry sector, given the variety of sectors reported in the sample according to the GRI – Sustainability Disclosure Database and the significant presence of the energy and energy utilities sector, a dummy variable

identifying such industries belonging to the energy sector has been introduced, with the value of 1 for its belongness and 0 otherwise.

5.3 Results and Discussion

According to the analysis on previous empirical studies carried out in chapter 3, the goal of this study is to find a correlation between the CSR variables and financial performance. What is also expected is to find not the same correlations values for the different aspects identified. As presented in chapter 3, most of the case studies analysed have found a positive correlation between CSR and CFP but the majority of them consider an individual value (usually coming from an international ranking) as indicator for CSR. As a result, although in general we expect to have an overall positive correlation between the CSR indicators and CFP, we also expect to find different interactions types for the selected indicators, given the three different themes we have dealt with. We expect to find what aspects of CSR are more likely to affect firm's performance, which is the principal purpose of the analysis.

More in detail, if it is true that there is a positive correlation between CSR and CFP, we could expect to have the following results:

- A positive but weak correlation between firms' economic performance and financial performance. Van de Velde, Vermeir and Corten (2005) claimed, through their analysis concerning the contribution of the company towards the community, that "the sensitivity to different style factors is more mixed";
- A negative correlation between firms' environmental performance and financial performance. In other words, an increment in firms' financial performance should correspond to a decrement in firm's GHG emissions. Largest firms are more likely to be the largest emissions producers, but we expect that a sustainable enterprise is more able to manage its emissions by reducing them over time proportionally to its growth. Previous studies have found that largest companies in terms of size are also the most efficient in terms of emissions (Pérez-Calderòn, Milanés-Montero and Ortega-Rossell, 2012);

- A positive correlation between firms' social performance and financial performance. According to previous studies, best human resources performance is associated with best financial performance (Van de Velde, Vermeir and Corten, 2005).

5.3.2 Findings

To verify the previous presented hypotheses, cross-sectional time series – panel – regression analysis has been performed. The outputs analysed, that have been obtained through the statistical software STATA, are the panel regression tests, correlations and pairwise correlations, all of them performed for all the four models. All tables showing results are reported in paragraph 5.3.5.

To have a general overview, we present below the descriptive statistics of the sample. We note that observations vary according to the independent variables considered. The reason for this is that in general companies do not report exactly the same indicators in their reports. Donations, among these variables selected, is the less reported variable.

Variable	Obs	Mean	Std.Dev.	Min	Max
ROA	242	.051	.06	-.112	.263
ROS	244	.116	.157	-.151	.733
donations	131	1.19e+07	4.29e+07	0	4.52e+08
scope1	184	5270000	2.07e+07	230	1.28e+08
scope2	169	2570000	3.00e+07	0	3.90e+08
scope3	99	648000	1830000	0	8140000
F_perc	158	.281	.189	0	.813
Fcda_perc	97	.295	.125	0	.571
PT_perc	158	.056	.097	0	.653
INDET_perc	158	.786	.351	0	1
Asset	239	5.36e+07	1.76e+08	64380.07	1.11e+09
Sales	243	6.10e+07	2.62e+08	63374	1.80e+09
Dummy_industry	252	.286	.453	0	1

Figure 18: Descriptive Statistics

Please note that variables names stand for the following indicators:

- F_perc: females over total number of employees;
- Fcda_perc: female members of the Board over total number of members;
- PT_perc: part time contracts over total contracts;
- INDET_perc: permanent contracts over total contracts.

Before introducing results from the frameworks studies, we would like to present the values of the pairwise correlation, which analyses the correlation of each single variable with all the others. From table 1 (tables are shown in paragraph 5.3.5), where the results of the pairwise correlation are shown, we note that, by studying the variables singularly, the scope1 emissions, scope2 emissions and women presence are correlated with ROA (scope1 is negatively correlated, the other two variables positively), whereas the permanent contract variable is positively correlated with ROS. It means that these variables are correlated with the financial performance (when analysed in pair of two). This is the first result of the study.

Therefore, we are expected to find similar results also from the following frameworks, where variables are studied together.

Framework 1: Economic performance

H_1 = The economic performance, in terms of distributions to community, has an association with company's performance

Concerning the first model, no significative correlation has been found between economic performance, in terms of distributions to community, and financial performance. Nevertheless, we note from table 2 that the sign of the variable for donations is negatively related to ROA and positively related to ROS.

By looking at table 3, again it is clear that concerning the regression model no correlation is shown between the natural logarithm of donations and ROA or ROS. It seems therefore that there is not a clear association with financial performance. By the way, from table 2 we note as well that, in comparison with the other tables, the sample included in the panel is more limited, given the lack of available data for this variable.

Therefore, in this context, we reject Hypothesis 1.

Framework 1: Environmental performance

H_2 = The environmental performance, in terms of GHG emissions, has an association with company's performance

The three indicators selected for this aspect of CSR are highly connected among them ($p<0.001$), as table 4 shows. But, as well as in the first model, also in the second case no correlation has been found between the environmental performance and financial performance, when studying the three variables together. Only in the case when there is not scope3 in the correlation, scope2 seems to have a correlation with ROA ($p<0.05$, see table 5). In the other cases, when performing the correlation with at least 2 of these 3 variables, no correlation has been found (tables 6 and 7).

In contrast, the pairwise correlation (table 1) has found a correlation between scope1 emissions and ROA and scope2 emissions and ROA. No correlation at all is shown when

financial performance is represented by ROS. Probably, the association exists due to the more efficient machines used to produce firm's direct energy consumption. It is possible that firms, by investing in more efficient machines, reduce their emissions and increment their assets - as machinery are part of them. This fact could be a possible explanation to the inverse association between scope1 and ROA.

Therefore, the panel regression analysis for framework1 (tables from 8 to 15) has showed an overall significant negative association only between scope1 ($p<0.1$ in tables 9-13 and $p<0.05$ in tables 8-10-11-12, regression 7) and the financial performance when studying the framework with the 3 variables together. Moreover, in tables 10 and 11 we identify an association between ROS and both scope1 (negative) and scope3 (positive). This association is not present when considering ROA or when the dummy variable is not present.

We can affirm that there are not significant differences in all models when changing control variable for size with sales or with assets. What instead seems to be significant by observing tables 13 and 15, is the presence of the dummy for industry, which, if dropped, brings to not significant associations, in particular when using ROS for financial performance: in this last case no significant associations at all are identified in the model (table 15).

In line with results from correlations, when using ROA for financial performance there are very significant results using scope1 and scope2 variables and dropping scope3 ($p<0.01$ for scope1 and $p<0.05$ for scope2, tables 8-9-12-13, regression 4). The presence of a negative coefficient for emissions of scope1 indicates that a reduction in GHG direct emissions is associated with an increase in the financial performance, which meets the expectations of an inverse relationship between financial performance and GHG emissions. In the case of scope2 and scope3, when significant associations are present, the sign of the coefficient is positive. As explained before, scope2 and scope3 refer to indirect energy consumption, which are less controllable by firms. Therefore, this positive relationship could be linked to several factors, for example the increase in the core activity of a firm (and also an increment in financial results) which requires more energy but on which efficiency in machinery is not managed by firms. Anyway, a reduction in the amount of emission of scope2 and 3 seems to have not positive effect on the performance.

Therefore, we can reject the Hypothesis 2 when financial performance is represented by ROS and dummy for industry is not present, and partially accept the hypothesis in the other cases, even if when considering the variables together in the regression the associations are significant just for some of the variables. More in detail, we can also state that, based on this regression results, the most significant associations between CFP and environmental performance appears when ROA is used for the financial performance and the dummy for industry is present. Therefore, the most significant variable which have a significant influence ($p<0.01$) on financial performance among these environmental variables is scope1.

Framework 1: Social performance

H_3 = The social performance, in terms of gender parity and favourable contract types, has an association with company's performance

Tables 16-18 show the results of the correlations carried out for variables representing social performance. In all the correlation models the women presence in the workforce is strongly positively correlated with ROA ($p<0.001$), both in the case of Framework1 (table 16), when considering all social variables together at the same time, and when considering only variables on diversity and contractual typology separately too. The other variables show no correlation with the financial performance. The only exception is represented by the permanent contract variable, which shows a positive correlation ($p<0.05$) with ROS when considering only the two contractual typology variables in the correlation (table 18). This result is in line with those shown in the pairwise correlation matrix (table 1).

As far as panel regression concerns, the result of the panel regression of framework 1 (table 19) involving all variables of social performance together, we can see that in all cases the effect of women presence in the workforce is strongly positive, with a $p<0.01$ in all regression performed when ROA represents the financial performance. When ROS is used, no association is found. In the same regressions, again when ROA is used, also the part time contract variables shows an association with financial performance ($p<0.1$), which is negative. Therefore, an increase in this variable will correspond to a decrease in the value of the dependent variable. In this case, favourable contract types (part time contracts) shows to have a negative impact on the financial performance, which is in contrast with our expectations.

Concerning the other regressions performed (tables 20-27), which analyse separately variables of gender parity and variables of favourable contract types, similar results are found. When considering ROS for financial performance, no significant results are found for any variable (tables 21-23-25-27). In contrast, when considering ROA (tables 20-22-24-26), results are similar to those of table 19, but not the same: in the four tables, women presence has always a positive significant effect on ROA ($p<0.01$), but all other variables, including part time contracts, does not show any significant effect on firm's financial performance.

What is interesting to see is that, when associating the remaining variables in pair of 2 and 3, women presence still has a significative impact on ROA but only in one case (table 28), when considering only the variables women presence, female members in the Board of Directors and part time contracts, this last variable shows a significant negative effect ($p<0.1$) on ROA. In all other regressions performed, this significant association is not present.

Therefore, also in this case we can just partially accept Hypothesis 3, as women presence is the only variable to have shown a significant effect on financial performance, but only when this performance is represented by ROA.

Framework 2: CSR performance

H_4 = The CSR performance, in terms of economic, environmental and social performances, has an association with company's performance

Considering all values together, we have different results with respect to those of Framework1. The correlations emerge only between the permanent contract (negative, $p<0.05$) and ROA and between women presence (positive, $p<0.05$) and ROA, as shown in table 29. This result is only partially in line with those of the other regressions performed.

Due to the limited number of firms which report all the variables selected for CSR in their non-financial reports, a panel regression with all the variables together was not possible to be performed. Therefore, the Hypothesis 4 was not possible to be tested.

5.3.3 Discussion

Previous case studies, analysed in chapter 3, were mainly focused on studying CSR being represented by a specific indicator calculated by rating companies. In contrast, this study

was aimed to analyse more in detail which factors in the context of Corporate Social Responsibility are more relevant in affecting firm's financial performance. Therefore, we can state that a little but meaningful contribution is provided by this research, identifying which GRI indicators are more directly associated with financial performance.

The results found partially confirm our expectations. In particular, we can sum up two main aspects that emerge from this research, valid in the context of the Italian market:

1. The reduction of firm's direct emissions (Scope1) corresponds to an increment in ROA;
2. Female presence in the workforce brings to better financial performance in terms of ROA.

Please note from the descriptive statistics table shown in paragraph 5.3.2 that the two variables for which we have positive significant results are also some of the independent variables with the major number of observations, making stronger the reliability of these results.

A note of attention should be put on the second result. This study has investigated just female presence in the workforce. What would be more interesting to be analysed for future research, but that we have not done due to poor data available, is the percentage of women per career level, which probably would have shown different results. This last one is in fact, along with the gender pay gap issues, is one of the points of most relevant attention on the topic of gender parity nowadays.

Another interesting finding is represented by the fact that these results are more evident when ROA is selected as indicator for firm's financial performance. One possible explanation for this finding, from what we have analysed from existing literature, could be the long-term characteristic of CSR, in terms of investments that its implementation requires. Long-term investments, in fact, have direct effects on firm's assets, more than sales, which could be a possible reason for which the impact of CSR performance is more evident when considering ROA instead of ROS.

5.3.4 Limitations

The results coming from this study deal with several limitations.

First, the most important limitation to this study has been lack in data when constructing the database and performing panel regressions. This issue is the result of a non-uniformization in indicators to be reported in the non-financial report, as mentioned in chapter 4. Therefore, there were several firms with a lack at least in one of the variables selected. This factor has brought to the impossibility to perform a panel regression with all the variables together as well as a limited reliability to other regressions performed.

Second, given the long-term characteristic of sustainability, there is a significant limitation concerning time. Sustainability effects are more evident as more numerous are the years involved in the study. Therefore, the study conducted could bring just to limited evidence in terms of time of the effect of CSR and, even if very few studies in the literature have achieved to study firms CSR behaviour for more years (only 3 studies over the 14 analysed in chapter 3).

Furthermore, an important limitation concerns a limited firms sample, which have included only 42 firms. This study focuses on quantitative data reported in the sustainability reports of firms using the GRI, to allow a minimum uniform model for the variety of indicators used. But the choice of focusing on one framework (GRI) for sustainability reports and their publication for at least two subsequent years has brought to the exclusion of several other firms, which is a clear limitation in term of the application of the results only to firms with data with these years. This limitation is mentioned also by Cavaco and Crifo (2014).

At this regard, another further limitation concerns industry sectors in the sample. To exploit the database AIDA for financial data, the boundaries of the study have been fixed to Italian firms. Focusing just on a geographical market is positive and negative at the same time: on the one hand it is country-specific, focusing just on one country and therefore being more precise in considering the same context for all individuals in the sample, but, on the other hand it makes the study not generalizable to other markets (Cavaco and Crifo, 2014). Moreover, focusing on the Italian market brings to a limit in terms of firms' number and does not allow to have an analysis by business sector, limitation identified also by other

authors (Pérez-Calderòn, Milanés-Montero and Ortega-Rossell, 2012). This is a limitation for the analysis considering that different businesses are difficult to compare but could be also seen as a positive aspect if considering that firms belonging to the same business sector have similar behaviours, besides the fact that the study would have been not generalizable (Clemens, 2006 and Pedersen, Gwozdz and Hvass, 2015).

5.3.5 Appendix

Table 1: Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ROA	1.000												
(2) ROS	0.399*	1.000											
(3) log_donations	-0.012	0.074	1.000										
(4) log_scope1	-0.183*	-0.015	0.360*	1.000									
(5) log_scope2	0.177*	0.060	0.362*	0.501*	1.000								
(6) log_scope3	-0.137	-0.155	0.293*	0.492*	0.423*	1.000							
(7) F_perc	0.458*	-0.051	0.058	-0.461*	-0.072	-0.200*	1.000						
(8) Fcda_perc	-0.022	-0.039	0.087	0.127	0.279*	0.165	-0.255*	1.000					
(9) PT_perc	0.057	-0.034	0.175*	-0.185*	-0.044	0.076	0.499*	-0.446*	1.000				
(10) INDET_perc	0.075	0.174*	0.020	0.010	0.213*	0.075	-0.015	-0.294*	0.178*	1.000			
(11) log_asset	-0.133*	0.059	0.140	0.444*	0.176*	0.398*	-0.137*	0.075	0.136*	0.011	1.000		
(12) log_sales	-0.098	-0.244*	-0.049	0.332*	0.167*	0.324*	0.017	0.044	0.219*	0.004	0.830*	1.000	
(13) Dummy_industry	-0.094	0.155*	0.289*	0.534*	-0.046	0.129	-0.315*	0.059	-0.231*	-0.008	0.274*	0.158*	1.000

* shows significance at the .1 level

Framework 1: Economic performance

Table 2: Correlations matrix

	ROA	ROS	log_donations	log_asset	log_sales	Dummy_industry
ROA	1					
ROS	0.374***	1				
log_donations	-0.0128	0.0701	1			
log_asset	-0.134	-0.0570	0.140	1		
log_sales	-0.110	-0.390***	-0.0545	0.799***	1	
Dummy_industry	-0.122	0.0812	0.290**	0.185*	0.0443	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROS	(4) ROS	(5) ROA	(6) ROA	(7) ROS	(8) ROS
log_donations	3.50e-05	4.88e-05	0.00267	0.00372	-0.000454	-0.000358	0.00292	0.00405
	(0.00364)	(0.00359)	(0.00545)	(0.00532)	(0.00356)	(0.00351)	(0.00542)	(0.00529)
	(0.00229)							
		(0.00273)						
			(0.00296)					
				(0.00374)				
					(0.00229)			
						(0.00273)		
							(0.00296)	
								(0.00374)
Constant	0.00494	-0.0125	0.0331	0.0985	0.0101	-0.00883	0.0389	0.105
	(0.0628)	(0.0656)	(0.0975)	(0.0975)	(0.0622)	(0.0651)	(0.0966)	(0.0969)
Observations	121	123	121	125	121	123	121	125
Number of firm_num	25	26	25	26	25	26	25	26
log_sales	No	0.00444	No	-0.00347	No	0.00435	No	-0.00348
log_asset	0.00333	No	0.00204	No	0.00316	No	0.00208	No
Dummy_industry	Yes	Yes	Yes	Yes	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Framework 1: Environmental performance

Table 4: Correlations matrix

	ROA	ROS	log_scope1	log_scope2	log_scope3	log_asset	log_sales	Dummy_ industry
ROA	1							
ROS	0.304**	1						
log_scope1	-0.179	-0.0420	1					
log_scope2	0.149	-0.121	0.605***	1				
log_scope3	-0.132	-0.143	0.512***	0.437***	1			
log_asset	-0.0610	0.128	0.600***	0.428***	0.398***	1		
log_sales	-0.0136	-0.300**	0.475***	0.438***	0.331**	0.776***	1	
Dummy_industry	-0.126	0.0903	0.765***	0.345***	0.152	0.344***	0.218*	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Correlations matrix

	ROA	ROS	log_scope1	log_scope2	log_asset	log_sales	Dummy_industry
ROA	1						
ROS	0.403***	1					
log_scope1	-0.136	0.0462	1				
log_scope2	0.178*	0.0572	0.501***	1			
log_asset	-0.0500	0.124	0.414***	0.176*	1		
log_sales	-0.0556	-0.229**	0.273***	0.165*	0.795***	1	
Dummy_industry	-0.0904	0.201*	0.611***	-0.0467	0.296***	0.119	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Correlations matrix

	ROA	ROS	log_scope2	log_scope3	log_asset	log_sales	Dummy_industry
ROA	1						
ROS	0.304**	1					
log_scope2	0.149	-0.121	1				
log_scope3	-0.132	-0.143	0.437***	1			
log_asset	-0.0610	0.128	0.428***	0.398***	1		
log_sales	-0.0136	-0.300**	0.438***	0.331**	0.776***	1	
Dummy_industry	-0.126	0.0903	0.345***	0.152	0.344***	0.218*	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 7: Correlations matrix

	ROA	ROS	log_scope1	log_scope3	log_asset	log_sales	Dummy_industry
ROA	1						
ROS	0.304**	1					
log_scope1	-0.179	-0.0420	1				
log_scope3	-0.132	-0.143	0.512***	1			
log_asset	-0.0610	0.128	0.600***	0.398***	1		
log_sales	-0.0136	-0.300**	0.475***	0.331**	0.776***	1	
Dummy_industry	-0.126	0.0903	0.765***	0.152	0.344***	0.218*	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA
log_scope1	-0.00629**			-0.00839***	-0.0107*		-0.0108**
	(0.00251)			(0.00282)	(0.00553)		(0.00543)
log_scope2		0.00236		0.00538**		0.00254	0.00356
		(0.00230)		(0.00244)		(0.00356)	(0.00357)
log_scope3			-0.00240		0.00414	-0.00274	0.00373
			(0.00345)		(0.00484)	(0.00345)	(0.00470)
log_asset	0.00231	-0.000863	-0.00190	-0.000371	-0.00113	-0.00215	-0.00129
	(0.00193)	(0.00209)	(0.00350)	(0.00205)	(0.00346)	(0.00352)	(0.00348)
Constant	0.0864**	0.0465	0.124**	0.0905**	0.146**	0.104	0.116*
	(0.0382)	(0.0404)	(0.0616)	(0.0420)	(0.0627)	(0.0675)	(0.0675)
Observations	177	160	92	160	92	92	92
Number of firm_num	40	37	23	37	23	23	23
log_sales	No	No	No	No	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA
log_scope1	-0.00625**			-0.00820***	-0.0101*		-0.00989*
	(0.00249)			(0.00278)	(0.00557)		(0.00540)
log_scope2		0.00253		0.00542**		0.00300	0.00362
		(0.00227)		(0.00240)		(0.00352)	(0.00351)
log_scope3			-0.00291		0.00333	-0.00335	0.00262
			(0.00336)		(0.00481)	(0.00335)	(0.00464)
log_sales	0.00316	-0.00162	-0.00166	-0.00116	0.000243	-0.00235	-0.000500
	(0.00230)	(0.00267)	(0.00379)	(0.00260)	(0.00393)	(0.00385)	(0.00395)
Constant	0.0727*	0.0547	0.122*	0.0984**	0.125*	0.105	0.103
	(0.0414)	(0.0452)	(0.0682)	(0.0464)	(0.0688)	(0.0698)	(0.0700)
Observations	179	162	94	162	94	94	94
Number of firm_num	41	38	24	38	24	24	24
log_asset	No	No	No	No	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS	(7) ROS
log_scope1	-0.00810*			-0.00909*	-0.0247**		-0.0253**
	(0.00474)			(0.00494)	(0.0116)		(0.0118)
log_scope2		0.00157		0.00270		-0.000143	0.00146
		(0.00419)		(0.00420)		(0.00584)	(0.00572)
log_scope3			0.00193		0.0180*	0.00198	0.0185*
			(0.00603)		(0.00949)	(0.00605)	(0.00962)
log_asset	0.00139	-0.000150	-0.00111	-7.83e-05	-0.00185	-0.00111	-0.00196
	(0.00258)	(0.00289)	(0.00548)	(0.00287)	(0.00534)	(0.00550)	(0.00536)
Constant	0.169**	0.0945	0.156	0.173**	0.238**	0.157	0.225*
	(0.0692)	(0.0701)	(0.112)	(0.0815)	(0.117)	(0.128)	(0.130)
Observations	176	160	92	160	92	92	92
Number of firm_num	40	37	23	37	23	23	23
log_sales	No	No	No	No	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS	(7) ROS
log_scope1	-0.00803*			-0.00908*	-0.0237**		-0.0242**
	(0.00469)			(0.00488)	(0.0115)		(0.0116)
log_scope2		0.00222		0.00329		0.000747	0.00156
		(0.00407)		(0.00408)		(0.00567)	(0.00553)
log_scope3			0.00120		0.0169*	0.00129	0.0173*
			(0.00600)		(0.00951)	(0.00602)	(0.00958)
log_sales	0.00172	-0.00125	-0.00228	-0.00114	0.000882	-0.00228	0.000764
	(0.00328)	(0.00402)	(0.00649)	(0.00398)	(0.00647)	(0.00660)	(0.00655)
Constant	0.162**	0.101	0.173	0.179**	0.187	0.164	0.173
	(0.0735)	(0.0762)	(0.130)	(0.0867)	(0.129)	(0.138)	(0.136)
Observations	179	163	95	163	95	95	95
Number of firm_num	41	38	24	38	24	24	24
log_asset	No	No	No	No	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA
log_scope1	-0.00614***			-0.00729***	-0.00768*		-0.00781**
	(0.00225)			(0.00242)	(0.00396)		(0.00383)
log_scope2		0.00259		0.00483**		0.00230	0.00351
		(0.00227)		(0.00233)		(0.00354)	(0.00355)
log_scope3			-0.00259		0.00242	-0.00292	0.00201
			(0.00343)		(0.00428)	(0.00343)	(0.00415)
log_asset	0.00230	-0.00109	-0.00220	-0.000266	-0.00114	-0.00247	-0.00132
	(0.00192)	(0.00208)	(0.00347)	(0.00205)	(0.00346)	(0.00349)	(0.00348)
Constant	0.0853**	0.0428	0.122**	0.0874**	0.141**	0.105	0.112*
	(0.0372)	(0.0400)	(0.0614)	(0.0418)	(0.0619)	(0.0674)	(0.0668)
Observations	177	160	92	160	92	92	92
Number of firm_num	40	37	23	37	23	23	23
log_sales	No	No	No	No	No	No	No
Dummy_industry	No	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 13: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA	(7) ROA
log_scope1	-0.00597***			-0.00704***	-0.00699*		-0.00700*
	(0.00222)			(0.00238)	(0.00385)		(0.00368)
log_scope2		0.00274		0.00486**		0.00268	0.00367
		(0.00224)		(0.00230)		(0.00350)	(0.00350)
log_scope3			-0.00309		0.00150	-0.00350	0.000928
			(0.00334)		(0.00418)	(0.00335)	(0.00404)
log_sales	0.00312	-0.00176	-0.00174	-0.00112	-0.000278	-0.00237	-0.00102
	(0.00229)	(0.00266)	(0.00378)	(0.00260)	(0.00385)	(0.00385)	(0.00387)
Constant	0.0713*	0.0500	0.118*	0.0959**	0.127*	0.103	0.104
	(0.0407)	(0.0447)	(0.0677)	(0.0462)	(0.0681)	(0.0698)	(0.0691)
Observations	179	162	94	162	94	94	94
Number of firm_num	41	38	24	38	24	24	24
log_asset	No	No	No	No	No	No	No
Dummy_industry	No	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 14: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS	(7) ROS
log_scope1	-0.00630			-0.00693	-0.0151		-0.0157
	(0.00455)			(0.00474)	(0.00993)		(0.0101)
log_scope2		0.00129		0.00199		-6.21e-05	0.00117
		(0.00418)		(0.00419)		(0.00583)	(0.00578)
log_scope3			0.00199		0.0121	0.00204	0.0125
			(0.00601)		(0.00879)	(0.00604)	(0.00891)
log_asset	0.00154	1.45e-05	-0.000967	0.000119	-0.00126	-0.000977	-0.00135
	(0.00258)	(0.00289)	(0.00547)	(0.00287)	(0.00538)	(0.00549)	(0.00540)
Constant	0.169**	0.113*	0.170	0.181**	0.242**	0.171	0.232*
	(0.0694)	(0.0677)	(0.109)	(0.0819)	(0.118)	(0.125)	(0.131)
Observations	176	160	92	160	92	92	92
Number of firm_num	40	37	23	37	23	23	23
log_sales	No	No	No	No	No	No	No
Dummy_industry	No	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 15: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS	(7) ROS
log_scope1	-0.00598			-0.00667	-0.0125		-0.0131
	(0.00448)			(0.00467)	(0.00962)		(0.00975)
log_scope2		0.00190		0.00255		0.000898	0.00154
		(0.00407)		(0.00408)		(0.00566)	(0.00561)
log_scope3			0.00129		0.00975	0.00137	0.0102
			(0.00599)		(0.00870)	(0.00601)	(0.00877)
log_sales	0.00180	-0.00107	-0.00231	-0.000920	-0.000483	-0.00236	-0.000580
	(0.00328)	(0.00402)	(0.00648)	(0.00399)	(0.00652)	(0.00659)	(0.00661)
Constant	0.160**	0.121	0.192	0.185**	0.216*	0.182	0.203
	(0.0737)	(0.0743)	(0.127)	(0.0872)	(0.129)	(0.135)	(0.136)
Observations	179	163	95	163	95	95	95
Number of firm_num	41	38	24	38	24	24	24
log_asset	No	No	No	No	No	No	No
Dummy_industry	No	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Framework 1: Social performance

Table 16: Correlations matrix

	ROA	ROS	F_perc	Fcda_perc	PT_perc	INDET_perc	log_asset	log_sales	Dummy_ industry
ROA	1								
ROS	0.330**	1							
F_perc	0.432***	-0.121	1						
Fcda_perc	-0.0459	-0.0702	-0.222*	1					
PT_perc	0.000456	-0.0202	0.465***	-0.377***	1				
INDET_perc	-0.000277	0.117	-0.167	-0.307**	0.102	1			
log_asset	-0.0958	0.0740	-0.0530	0.0753	0.355***	-0.0255	1		
log_sales	-0.0507	-0.240*	0.107	0.0364	0.415***	0.0292	0.798***	1	
Dummy_industry	0.0160	0.131	-0.289**	0.0553	-0.274**	0.0799	0.204	0.103	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 17: Correlations matrix

	ROA	ROS	F_perc	Fcda_perc	log_asset	log_sales	Dummy_ industry
ROA	1						
ROS	0.330**	1					
F_perc	0.432***	-0.121	1				
Fcda_perc	-0.0459	-0.0702	-0.222*	1			
log_asset	-0.0958	0.0740	-0.0530	0.0753	1		
log_sales	-0.0507	-0.240*	0.107	0.0364	0.798***	1	
Dummy_industry	0.0160	0.131	-0.289**	0.0553	0.204	0.103	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 18: Correlations matrix

	ROA	ROS	PT_perc	INDET_perc	log_asset	log_sales	Dummy_ industry
ROA	1						
ROS	0.389***	1					
PT_perc	0.0640	-0.0310	1				
INDET_perc	0.0655	0.176*	0.174*	1			
log_asset	-0.155	0.0639	0.138	0.0171	1		
log_sales	-0.127	-0.256**	0.228**	0.0173	0.818***	1	
Dummy_industry	-0.122	0.147	-0.220**	0.00790	0.241**	0.103	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 19: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROS	(4) ROS	(5) ROA	(6) ROA	(7) ROS	(8) ROS
F_perc	0.172***	0.172***	-0.0738	-0.0708	0.167***	0.168***	-0.0868	-0.0871
	(0.0433)	(0.0424)	(0.146)	(0.140)	(0.0418)	(0.0409)	(0.140)	(0.135)
Fcda_perc	0.0184	0.0220	0.0114	0.0163	0.0188	0.0231	0.0124	0.0188
	(0.0425)	(0.0405)	(0.0879)	(0.0866)	(0.0423)	(0.0402)	(0.0877)	(0.0861)
PT_perc	-0.144	-0.150*	0.0595	0.0614	-0.153*	-0.160*	0.0496	0.0484
	(0.0911)	(0.0900)	(0.221)	(0.219)	(0.0892)	(0.0881)	(0.219)	(0.216)
INDET_perc	0.00300	0.00308	-0.00632	-0.00668	0.00377	0.00380	-0.00557	-0.00591
	(0.0150)	(0.0148)	(0.0294)	(0.0295)	(0.0149)	(0.0147)	(0.0293)	(0.0294)
	(0.00202)							
		(0.00251)						
			(0.00384)					
				(0.00529)				
					(0.00200)			
						(0.00248)		
							(0.00383)	
								(0.00526)
Constant	0.00185	-0.00247	0.143	0.175*	0.00325	-0.00136	0.152*	0.186*
	(0.0395)	(0.0431)	(0.0891)	(0.0996)	(0.0393)	(0.0428)	(0.0851)	(0.0970)
Observations	91	93	91	93	91	93	91	93
Number of firm_num	31	32	31	32	31	32	31	32
log_sales	No	7.94e-05	No	-0.00244	No	0.000253	No	-0.00230
log_asset	-0.000100	No	8.50e-05	No	4.63e-05	No	0.000177	No
Dummy_industry	Yes	Yes	Yes	Yes	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 20: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA
PT_perc	-0.0446		-0.0455	-0.0521		-0.0529
	(0.0616)		(0.0627)	(0.0610)		(0.0622)
	(0.00187)	(0.00187)	(0.00188)			
INDET_perc		-0.000668	0.000787		-0.00110	0.000645
		(0.0124)	(0.0126)		(0.0122)	(0.0124)
				(0.00212)		
					(0.00212)	
						(0.00213)
Constant	0.0375	0.0370	0.0368	0.0171	0.0174	0.0164
	(0.0304)	(0.0317)	(0.0318)	(0.0330)	(0.0343)	(0.0344)
Observations	148	148	148	150	150	150
Number of firm_num	40	40	40	41	41	41
log_sales	No	No	No	0.00290	0.00269	0.00291
log_asset	0.00150	0.00137	0.00151	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 21: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS
PT_perc	-0.0614		-0.0655	-0.0409		-0.0446
	(0.101)		(0.103)	(0.0939)		(0.0956)
	(0.00262)	(0.00264)	(0.00264)			
INDET_perc		0.00284	0.00470		0.00354	0.00479
		(0.0184)	(0.0187)		(0.0184)	(0.0187)
				(0.00311)		
					(0.00313)	
						(0.00313)
Constant	0.0964*	0.0911*	0.0931*	0.105*	0.102*	0.103*
	(0.0505)	(0.0520)	(0.0522)	(0.0545)	(0.0560)	(0.0562)
Observations	147	147	147	151	151	151
Number of firm_num	40	40	40	41	41	41
log_sales	No	No	No	0.000439	0.000308	0.000386
log_asset	0.00125	0.00118	0.00125	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 22: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA
PT_perc	-0.0304		-0.0313	-0.0383		-0.0391
	(0.0607)		(0.0619)	(0.0601)		(0.0613)
	(0.00187)	(0.00187)	(0.00187)			
INDET_perc		-0.000375	0.000644		-0.000814	0.000509
		(0.0124)	(0.0126)		(0.0123)	(0.0125)
				(0.00212)		
					(0.00212)	
						(0.00213)
Constant	0.0344	0.0342	0.0338	0.0125	0.0130	0.0119
	(0.0303)	(0.0317)	(0.0317)	(0.0329)	(0.0342)	(0.0342)
Observations	148	148	148	150	150	150
Number of firm_num	40	40	40	41	41	41
log_sales	No	No	No	0.00269	0.00255	0.00271
log_asset	0.00119	0.00111	0.00120	No	No	No
Dummy_industry	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 23: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS
PT_perc	-0.0666		-0.0710	-0.0467		-0.0506
	(0.100)		(0.102)	(0.0933)		(0.0950)
	(0.00262)	(0.00264)	(0.00264)			
INDET_perc		0.00285	0.00491		0.00337	0.00480
		(0.0184)	(0.0187)		(0.0184)	(0.0186)
				(0.00310)		
					(0.00312)	
						(0.00312)
Constant	0.105**	0.100**	0.101**	0.115**	0.112**	0.112**
	(0.0481)	(0.0499)	(0.0500)	(0.0525)	(0.0542)	(0.0543)
Observations	147	147	147	151	151	151
Number of firm_num	40	40	40	41	41	41
log_sales	No	No	No	0.000516	0.000378	0.000463
log_asset	0.00133	0.00127	0.00133	No	No	No
Dummy_industry	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 24: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA
F_perc	0.0831***		0.149***	0.0814***		0.150***
	(0.0304)		(0.0415)	(0.0302)		(0.0411)
	(0.00186)	(0.00203)	(0.00196)			
Fcda_perc		0.0122	0.0225		0.0158	0.0282
		(0.0443)	(0.0423)		(0.0425)	(0.0404)
				(0.00209)		
					(0.00259)	
						(0.00244)
Constant	0.0138	0.0630*	0.0121	0.00192	0.0505	0.0109
	(0.0315)	(0.0348)	(0.0367)	(0.0334)	(0.0414)	(0.0405)
Observations	148	91	91	150	93	93
Number of firm_num	40	31	31	41	32	32
log_sales	No	No	No	0.00191	-1.42e-05	-0.000980
log_asset	0.00111	-0.000701	-0.000822	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 25: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS
F_perc	0.0297		-0.0661	0.0316		-0.0636
	(0.0524)		(0.141)	(0.0466)		(0.136)
	(0.00262)	(0.00379)	(0.00379)			
Fcda_perc		0.00982	0.0101		0.0155	0.0152
		(0.0851)	(0.0853)		(0.0838)	(0.0840)
				(0.00310)		
					(0.00517)	
						(0.00519)
Constant	0.0837	0.114	0.137	0.0936*	0.150*	0.169*
	(0.0530)	(0.0699)	(0.0852)	(0.0560)	(0.0854)	(0.0957)
Observations	147	91	91	151	93	93
Number of firm_num	40	31	31	41	32	32
log_sales	No	No	No	0.000361	-0.00242	-0.00225
log_asset	0.00119	0.000258	0.000206	No	No	No
Dummy_industry	Yes	Yes	Yes	Yes	Yes	Yes
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 26: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROA	(4) ROA	(5) ROA	(6) ROA
F_perc	0.0885***		0.140***	0.0866***		0.141***
	(0.0294)		(0.0397)	(0.0291)		(0.0392)
	(0.00185)	(0.00201)	(0.00195)			
Fcda_perc		0.0113	0.0241		0.0148	0.0307
		(0.0440)	(0.0422)		(0.0421)	(0.0402)
				(0.00208)		
					(0.00257)	
						(0.00242)
Constant	0.0116	0.0630*	0.0159	-0.000283	0.0504	0.0145
	(0.0312)	(0.0346)	(0.0363)	(0.0330)	(0.0411)	(0.0401)
Observations	148	91	91	150	93	93
Number of firm_num	40	31	31	41	32	32
log_sales	No	No	No	0.00177	-7.11e-05	-0.000818
log_asset	0.000947	-0.000765	-0.000682	No	No	No
Dummy_industry	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 27: Panel regressions results

VARIABLES	(1) ROS	(2) ROS	(3) ROS	(4) ROS	(5) ROS	(6) ROS
F_perc	0.0249		-0.0794	0.0271		-0.0803
	(0.0519)		(0.134)	(0.0462)		(0.130)
	(0.00262)	(0.00378)	(0.00379)			
Fcda_perc		0.0115	0.0110		0.0189	0.0174
		(0.0850)	(0.0851)		(0.0835)	(0.0836)
				(0.00310)		
					(0.00516)	
						(0.00517)
Constant	0.0952*	0.121*	0.147*	0.106**	0.157*	0.180*
	(0.0502)	(0.0684)	(0.0808)	(0.0537)	(0.0844)	(0.0926)
Observations	147	91	91	151	93	93
Number of firm_num	40	31	31	41	32	32
log_sales	No	No	No	0.000433	-0.00231	-0.00217
log_asset	0.00128	0.000376	0.000280	No	No	No
Dummy_industry	No	No	No	No	No	No
Dummy_firm	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 28: Panel regressions results

VARIABLES	(1) ROA	(2) ROA	(3) ROS	(4) ROS	(5) ROA	(6) ROA	(7) ROS	(8) ROS
F_perc	0.171***	0.171***	-0.0721	-0.0691	0.166***	0.166***	-0.0850	-0.0854
	(0.0427)	(0.0419)	(0.144)	(0.139)	(0.0412)	(0.0404)	(0.138)	(0.134)
PT_perc	-0.139	-0.145*	0.0442	0.0456	-0.146*	-0.153*	0.0363	0.0346
	(0.0869)	(0.0860)	(0.208)	(0.206)	(0.0854)	(0.0844)	(0.206)	(0.204)
Fcda_perc	0.0193	0.0229	0.00794	0.0130	0.0199	0.0241	0.00934	0.0159
	(0.0420)	(0.0401)	(0.0864)	(0.0850)	(0.0419)	(0.0399)	(0.0861)	(0.0845)
	(0.00200)							
		(0.00249)						
			(0.00382)					
				(0.00526)				
					(0.00198)			
						(0.00246)		
							(0.00381)	
								(0.00523)
Constant	0.00469	0.000417	0.138	0.170*	0.00692	0.00229	0.148*	0.181*
	(0.0366)	(0.0404)	(0.0859)	(0.0964)	(0.0363)	(0.0401)	(0.0815)	(0.0935)
Observations	91	93	91	93	91	93	91	93
Number of firm_num	31	32	31	32	31	32	31	32
log_sales	No	4.91e-05	No	-0.00241	No	0.000219	No	-0.00226
Dummy_industry	Yes	Yes	Yes	Yes	No	No	No	No
log_asset	-0.000133	No	0.000131	No	8.30e-06	No	0.000218	No

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Framework 2: CSR performance

Table 29: Correlations matrix

	ROA	ROS	log_ donations	log_ scope1	log_ scope2	log_ scope3	F_perc	Fcda_ perc	PT_perc	INDET _perc	log_asset	log_ sales	Dummy_ industry
ROA	1												
ROS	0.0420	1											
log_donations	0.0498	-0.234	1										
log_scope1	-0.288	-0.332	0.685**	1									
log_scope2	-0.157	-0.441	0.827***	0.683**	1								
log_scope3	-0.256	-0.348	0.622*	0.720**	0.660**	1							
F_perc	0.519*	-0.352	-0.274	-0.664**	-0.207	-0.503*	1						
Fcda_perc	0.0302	-0.0295	-0.100	0.287	0.0295	0.0530	-0.383	1					
PT_perc	-0.175	-0.190	-0.235	-0.126	0.00786	-0.0753	0.337	-0.605*	1				
INDET_perc	-0.519*	0.132	-0.150	0.441	0.0475	0.307	-0.677**	0.368	0.121	1			
log_asset	-0.231	-0.367	0.440	0.420	0.555*	0.303	0.0638	-0.557*	0.741**	0.0286	1		
log_sales	-0.0800	-0.750***	0.265	0.262	0.485	0.279	0.401	-0.437	0.718**	-0.136	0.847***	1	
Dummy_industry	-0.254	-0.353	0.543*	0.963***	0.538*	0.654**	-0.678**	0.460	-0.263	0.494	0.210	0.129	1

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Conclusion

The starting point of this research has been the contrasting views on the need, for companies, to implement Corporate Social Responsibility: on the one hand in the past several authors have asserted that CSR is a duty for companies; others, first of all Milton Freidman, have stated that the only purpose a firm must perceive is to make profits, separating CSR from business needs for profit. Porter and Kramer have been the chain ring between them, by considering CSR and business strategy as interdependent.

To investigate on this topic and to confirm the existence of a positive relationship between CSR and CFP, as it results from our literature empirical analysis, through this research we have selected some variables for CSR by indicators provided by the GRI and constructed a model to assess this relationship. Results have shown that part of this variables are significantly related to financial performance, confirming the evidence of a relationship between CSR and CFP and confirming Porter's view for some aspects of CSR. But the purpose of this research was also to investigate in detail which aspects of CSR among those selected are more incline to affect CFP.

Therefore, we can affirm that firms should consider CSR within their business strategy and include it in their activities and operations, on the one hand to ensure better results in terms of profits, but also, on the other hand, as a moral duty to protect and sustain our future. For this reason, CSR and sustainability are having an always major importance, which is exponentially increased in the last years also due to a strong position of national and international institutions.

To conclude, I would like to report the words of Larry Fink, CEO of BlackRock, Inc., taken from Larry Fink's annual letter to CEOs, which perfectly ends this work describing in few sentences the importance of this topic and its outcomes in nowadays business world.

"Without a sense of purpose, no company, either public or private, can achieve its full potential. It will ultimately lose the license to operate from key stakeholders. It will succumb to short-term pressures to distribute earnings, and, in the process, sacrifice investments in employee development, innovation, and capital expenditures that are necessary for long-term growth. It will remain exposed to activist campaigns that articulate a clearer goal, even if that goal serves only the shortest and narrowest of objectives. And ultimately, that company will provide subpar returns to the investors who depend on it to finance their retirement, home purchases, or higher

education. […] Your company's strategy must articulate a path to achieve financial performance. To sustain that performance, however, you must also understand the societal impact of your business as well as the ways that broad, structural trends – from slow wage growth to rising automation to climate change – affect your potential for growth" (Fink, 2018).

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