ASSOCIAÇÃO DE POLITÉCNICOS DO NORTE **(APNOR)**

INSTITUTO POLITÉCNICO DE BRAGANÇA

"Complementarity between Corporate Social Responsibility and Financial Performance in Multinational Enterprises having their brand presence in India and Europe"

Moses Pinto

Final Dissertation submitted to *Instituto Politécnico de Bragança*

To obtain the Master Degree in Management, Specialisation in Business Management

Supervisor:

Prof. Doutora Ana Paula Monte

***Bragança*, March,2018.**

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Abstract

This master's dissertation analyses the interactions between various dimensions of corporate social responsibility (CSR) that mediate the relationship between CSR and financial performance. In the research it has been hypothesized that the absence of consensus in the empirical literature on the CSR–financial performance relationship may be explained by the existence of synergies (Complementarities) between the different CSR components.

Upon investigation about whether such relationships exist, a final unbalanced panel sample of 433 observations taken from 53 Multi National Enterprises per year from four countries namely: Portugal, Spain, France and India over the 2009–2017 period has been analyzed. The data analysis draws from the original research methodology employed by Cavaco and Crifo (2014) wherein system Generalized Method of Moments (GMM) had been used to detect the relation between the CSR and Financial Performance parameters.

The study yielded mixed results. The model employing Return on Assets (ROA) as an indicator of financial performance had been validated. The CSR dimension 'Environment' demonstrated a positive and significant correlation to the 'ROA'. Whereas, the model used for the Tobin's Q could not be statistically validated.

The results showed no statistical significance in order to validate the hypothesis of Complementarity between 'Environment' and the other CSR dimensions, although the interactions indicate that there might be prevalence of negative signals.

The results demand further investigation as to whether institutional pressures, rather than strategic analysis of social issues and stakeholders, would guide decision-making with respect to CSR activities.

Keywords: CSR; financial performance; complementarity; substitutability; stakeholders

Resumo

Esta dissertação de mestrado analisa as interações entre as várias dimensões da responsabilidade social corporativa (RSC) que medeiam a relação entre RSC e desempenho financeiro. Na pesquisa, supõe-se que a ausência de consenso na literatura empírica sobre o desempenho financeiro da RSC pode ser explicada pela existência de sinergias (Complementaridades) entre os diferentes componentes da RSC.

Após investigação sobre se tais relacionamentos existem, foi analisada uma amostra de painel final não balanceada com 433 observações relativas a 53 empresas multinacionais, por ano, de quatro países, nomeadamente: Portugal, Espanha, França e Índia, durante o período de 2009-2017. A análise dos dados baseia-se na metodologia empregada por Cavaco e Crifo (2014), na qual o Método Generalizado de Momentos (GMM) foi usado para detetar a relação entre os parâmetros de RSC e Desempenho Financeiro.

O estudo produziu resultados mistos. O modelo que utiliza a rendibilidade dos ativos (ROA) como indicador de desempenho financeiro foi validado. A dimensão de RSC 'Ambiente' demonstrou uma correlação positiva e significativa com o 'ROA'. Considerando que, o modelo que considerava o Tobin's Q não pode ser estatisticamente validado.

Os resultados não mostraram significância estatística para validar a hipótese de Complementaridade entre 'Ambiente' e as demais dimensões da RSC, embora as interações indiquem que pode haver prevalência de sinais negativos.

Os resultados exigem uma investigação mais aprofundada sobre se as pressões institucionais, em vez da análise estratégica de questões sociais e partes interessadas, orientariam a tomada de decisões com relação às atividades de RSC.

Palavras-chave: Responsabilidade Social Corporativa; Desempenho Financeiro; Complementaridade; Substituibilidade; Partes Interessadas

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Of course, the author shall remain responsible for all residual errors or omissions.

Abbreviations:

MNE: Multi National Enterprise

CSR: Corporate Social Responsibility

CFP: Corporate Financial Performance

ROA: Return on Assets

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Introduction

This study has been carried out to delineate and ascertain the dynamic relationship between the Corporate Social Responsibility ratings and the Corporate Financial Performance indicators prevalent among the top performing Multinational Enterprises (MNE) in operation globally.

The MNEs nowadays have spread their tentacles and branched out all over the various continents and their respective countries. Modern commerce has facilitated global trade at a greater magnitude than ever before. MNEs have drawn upon this opportunity and have taken advantage of the resources be it the environment, the human resources or the relaxation in compliance to regulatory governance that some Special Industrial Zones offer to theses MNEs.

This has led to most of the MNE's planning operations in such a strategic manner that the raw materials and natural resources are sourced from one country (usually a developing country), the processing and finishing of goods is done in a tax haven (usually a Special Economic Zone) and the final end product is made available in a socio-economically stable market (usually a developed country). This kind of operations strategy is well in keeping with today globalization.

Have the CSR activities of an MNE been directed towards value creation for the firm while at least having worked towards replenishing the resources that they have exploited in the host country. On the other hand, could it be observed in the reverse, that MNE's would adopt complementary Corporate Social Performance measures to boost their financial performance.

The important consideration here is to ascertain whether moment conditions occur in the financial behaviour of MNEs while analysing them in comparison to the CSR Ratings that they have been awarded based on their past social performance. For achieving this purpose, the statistical techniques used include Pearson Correlation, OLS regression and dynamic panel data analysis using System Generalized Method of Moments (GMM) for time series data.

The American Heritage dictionary has defined a synergy as "the interaction of two or more agents or forces so that their combined effect is greater than the sum of their individual effects" (American Heritage Dictionary, 2015. p. 1786). "Complementarity," as the term has been in use, could be considered as a near synonym for "synergy," but set in a decision-making context (Brynjolfsson & Milgrom, 2012, p. 1).

Therefore, main proposition of this dissertation would lie in investigating the interactions between the multiple dimensions of CSR that mediate the relationship between CSR and financial performance and analyze how this mediation operates through synergies (complementarity) between each pair of CSR practices.

The remainder of the Dissertation is organized as follows. In Section I, a derivation of the theoretical rationale to support the hypotheses on the existence of a relationship between the CSR-CFP indicators in MNEs has been carried out. The data and variables have been presented in Section II and the empirical strategy has been discussed as well. In Section III the results have been collected and presented with a brief commentary and then the dissertation concludes.

1. Literature Review

1.1. Corporate Social Responsibility: brief analysis of the evolution of the concept and its dimensions

Corporate social responsibility (CSR) has changed the role of doing business in the society, from simple exhortation of no social duties for business to the understanding of being socially responsible. Around the globe, various scholars, reporting agencies and institutions have already started to explore the multiple aspects of this concept both theoretically and empirically.

The basic understanding of widening the responsibility of corporate from shareholder perspective to its all stakeholder approach leads business to play different roles for its different players. In simple terms, CSR can be understood from the three words the phrase contains: “Corporate” which covers the large spectrum of businesses, “Social” refers to the local community with which they interact and finally by incorporating “Responsibilities” that are intrinsic on both sides of these relationships. Hence, CSR is nothing but corporate in its widest sense and on many levels, to include all stakeholders and constituent groups that maintain an ongoing interest in the organization’s operations along with the society within which it operates.

1.1.1. Origin and Evolution of Corporate Social Responsibility

The central theme of the concept of corporate social responsibility is that the social responsibilities are the social forces operating in every society making corporate institutions to act in a certain way. This is true regardless of whether it is a capitalist or a socialist society as the social forces are always there.

The core perception of business has some social responsibilities has emerged for the past three hundred years ago from a renowned Scottish philosopher and economist, Adam Smith, in The Wealth of Nations (Smith,1904), he describes the support for market interactions that are freely participated in by individuals and organizations, saying that they could serve the needs of the society. Further, people engage in commerce or business out of selfish (Invisible Hand) reasons, or for their personal benefits, but in one way or other this would also benefit the society as a whole with positive or negative externalities. This implies that the corporations should also enhance the welfare of the society by protecting and nurturing the interests of the society. Recently, scholars like Brown and Forster (2013) have further substantiated Adam Smith's idea of corporate social responsibility.

The concept of business ethics or corporate philanthropy has its roots way back in 1920s through concepts of public service in "The Theory of Moral Sentiments", which was Adam Smith's first book, published in early 1759 (Smith, 1759), and trusteeship in which Economist J. H. Clark, in an influential book of the time (Clark,1939), distrusted management efforts toward self-regulation and suggested a social accounting system to control business externally. Bowen (1953) has further formally introduced the concept of Businessmen's social responsibilities, which have provided the much-needed foundation for the development of the modern concept of CSR. By bringing in the concept of "stewardship", Friedman (1970) has further enhanced Adam Smith's view on CSR. Carroll (1979, 1999) further formalized Bowen's arguments to build elaborate models on the escalating concept of CSR.

Many authors, such as Cochran and Wood (1984), Aupperle, Carroll and Hatfield (1985), Waddock and Graves (1997) extensively explored the interrelationship between the Corporate Social Responsibility (CSP) and firm performance and profitability.

Since the beginning of the 1980s the concept of the CSR has evolved in terms of the Stakeholder theory (Freeman, 1984) which has formed the base for understanding the relationship between CSR and Sustainable Development during 1990s. It was around this time, that nations around the world started framing guidelines, regulations and principles for adopting CSR as a best practice by Corporations. This practice has further brought a new dimension called the Triple Bottom Line during the 2000s, which had initially initiated the modern concepts of CSR as Corporate Citizenship, Corporate Stakeholder Responsibility and Political CSR. Mohan (2003) and Gond and Moon (2011) have summarized the escalating concept of CSR since 1920s, which has depicted the roadmap of the evolution of the concept of CSR till date.

1.1.2. Corporate Social Responsibility in the 1950s

Howard Bowen in his seminal work in 1953 titled as the "Social Responsibilities of the Businessman" had introduced for the first time the concept of Social Responsibility in the field academic research (Bowen, 1953). Specifically, he (Bowen) had enquired, "What responsibilities to society may businessmen reasonably be expected to assume?" (Bowen, 1953, p.xi) and had thereby provided

the initial definition of the social responsibility as "(…) it refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of action which are desirable in terms of the objectives and values of our society" (p.6).

Bowen's (1953) work had proceeded from the belief that the several hundred largest businesses at the time had been vital centers of power and decision making and that the actions of these firms would have touched the lives of citizens in many ways and has also been observed by Carroll (2006). Subsequently, in another influential contribution to the early definitions of social responsibility which had been made by Frederick (1960). Frederick (1960, p.60) has specified that "social responsibility in the final analysis implies a public posture toward society's economic and human resources and a willingness to see that those resources are utilized for broad social ends and not simply for the narrowly circumscribed interests of private persons and firm".

Frederick (1960) had pointed out three core ideas of trusteeship and corporate philanthropy:

1. Corporate managers as public trustees,

2. Balance of competing claims to corporate resources and,

3. The acceptance of philanthropy as a manifestation of business support of good causes.

Murphy (1978) had also classified the growth of CSR in four eras in which he had described the 1950s as the 'philanthropic' era during which companies would primarily donate to charities.

1.1.3. Corporate Social Responsibility as Philanthropy in 1960s

Davis (1960) had defined corporate social responsibility as: "Businessmen's decisions and actions taken for reasons at least partially beyond the firm's direct economic or technical interest" (p.70). Walton (1967) had also addressed many facets of CSR, and had proposed a new concept of social responsibility by having emphasized that these interactions would need to be considered by all the stakeholders while in pursuit of their respective goals.

Friedman (1962) had further conceptualized CSR as a social responsibility of business to make use of its resources and then to engage in activities, which were designed to increase its profits so long as it stayed within the rules of the game, which is particularly to have engaged in open and free competition without any deception or fraud.

The term "corporate social responsibility" had come into common use in the late 1960s and early 1970s after many multinational corporations had formed the term stakeholder, meaning those on whom an organization's activities would have an impact. It had been used to describe corporate owners beyond the shareholders (Freeman, 1984).

1.1.4. Period of Rapid Growth in the Concept of CSR During 1970s

The decade of 1970s had witnessed a significant growth in the concept of CSR by having brought to light new concepts such as corporate social responsiveness (Ackerman 1973; Ackerman & Bauer, 1976), corporate social performance (CSP), and social responsibility.

In the beginning of 1970s, Friedman (1970) argued that the social responsibility of a business was to increase its profits thereby meeting the shareholder value maximization approach, which has been referred to as capitalism. He had further extended the capitalism argument to have accounted for social responsibility as "there is one and only one social responsibility of business—to use its resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud" (Friedman, 1970, p.126).

The scholars from psychology and philosophy have continued to provide refined concepts of CSR. For example, Johnson (1971) has described CSR as a conventional wisdom wherein "a socially responsible firm is one whose managerial staffs would have to balance a multiplicity of interests. Instead of having to only strive for larger profits for its stockholders, a responsible enterprise would also take into account the employees, suppliers, dealers, local communities, and the nation" (p.50).

Sethi (1975) has distinguished between CSP, CSR and corporate behaviors by having conceptualized the 'dimensions of corporate social performance', 'social obligation', 'social responsibility', and 'social responsiveness' respectively. He has further argued that the social responsibility implied a synchronizing of the corporate behavior with prevailing social norms, values, and expectations of performance.

Using a sample of major U.S. corporations who had been engaged into some form of the activities that can be described in the area of social responsibility, Eilbirt and Parket (1973), Parket and Eilbirt (1975) found that company size was positively related to the social responsibility efforts and the usual activities that were undertaken by most of the firms had been related to the contribution to education and arts. The corporations which were involved in activities which they considered socially responsible were interested in making these activities widely known as well.

Hay and Gray (1974) had conceptually divided the notion of social responsibility into three historical phases: "Phase I, the profit maximizer style; Phase II, the trusteeship style; and Phase III, the quality of life style. Phase III values will become more accepted by business managers of the future" (p.143).

Carroll (1979) has made a landmark contribution in the development of CSR concepts as he had proposed a four-part definition of corporate social responsibility, which had been embedded in a conceptual model of corporate social performance (CSP). The definition of CSR as proposed by Carroll can be stated as: "the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time" (Carroll, 1979, p. 500).

The four part framework of CSR as had been proposed by Carroll (1979) was widely accepted during this period and it fully addressed the entire range of obligations business had towards society: economic, legal, ethical, and discretionary. These four basic expectations categorized the social responsibilities of businesses in a more exhaustive manner. He had further emphasized that each responsibility was one part of the total social responsibility of a business, therefore giving a definition that completely reflected the societal expectation from the business.

The first and foremost social responsibility, the "economic responsibility", of business would be to produce goods and services that society wanted and to then sell these at a profit. While having pursued the economic responsibilities, the society expected businesses to fulfill its legal responsibilities i.e. operating its activities within the framework of legal requirements. Although the economic and legal responsibilities involved certain ethical formal norms, there were additional behaviors and activities that were not necessarily imposed by law but nonetheless were expected of business by the members of society. These voluntary actions had been guided only by a business' desire to engage in social roles and not necessarily having been governed by the law. Finally, "discretionary responsibilities" are the most convoluted ones and were left to individual judgment and choices.

Friedman (1970) had attempted to find how a company was established and for what goal it operated and found that the main objective is profit. As profit was the most important thing, then the objective of business was merely to be responsible for the increase in shareholders' wealth.

1.1.5. Stakeholder Theory and Business Ethics as CSR in 1980s

In the 1980s, the focus was placed on developing new or refined definitions of CSR and this aspect dominated the academic research on CSR. This decade had been mainly marked by the stakeholder theory, which had been further developed into a more holistic approach in 2000s so as to having completely described the concepts of CSR. Jones (1980) has argued that it would be very difficult to reach consensus as to what constituted socially responsible behavior and therefore, CSR would have to be seen as a defined process and not as a set of outcomes.

Two very important 'alternative themes' of CSR that were developed during the 1980s' were stakeholder theory and business ethics mostly from the contributions of Freeman (1984) and Wartick and Cochran (1985). As had been observed by Freeman (1984, p.5): "Our current theories are inconsistent with both the quantity and kinds of change that are occurring in the business environment of the 1980s…A new conceptual framework is needed". Wartick and Cochran (1985) had examined the social issues management as a dimension of corporate social performance and they concluded that the corporate social performance model was invaluable for the study of business and society.

For certain organizations frameworks like The Global Sullivan Principles and UN Global Compact universal rights were considered as CSR since they viewed CSR to be framed upon basic human rights, labor rights and respect for the environment that a company ought to possess. Achieving human development and having consideration for the present and future generations as sustainable development are mainly highlighted as CSR by the World Commission on Environment and Development in their publication titled: Our Common Future which was published in 1987 (WCED, 1987).

Several authors have then referred to this stakeholder theory (Freeman 1984) and have created some new CSR models. These were the Sustainable Development (Visser, 2010 a, b), Stewardship Theory (Davis, Schoorman & Donaldson, 1997; Aras & Crowther, 2009), Triple Bottom Line (Elkington, 1998), DNA of CSR 2.0 Model (Visser, 2010 a, b), Practitioner-based model of societal responsibilities, value creation model of CSR and consumer drive corporate responsibility (Pedersen, 2010), respectively.

In order to have met a long-term perspective, Stakeholder Theory had been further developed as Sustainable Development Theory which was defined by World Commission on Economic and Development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". This definition has emphasized the concept in the balance between present and future dimensions (WCED, 1987). Hawken (1993) has aligned this theory with his argument that a business could harm the environment, but on the other hand, business was also crucial in order to solve sustainability problem of environment.

1.1.6. CSR in Business Practice During 1990s

Carroll (1991) had revisited his 1979 framework in order to provide a more specific definition of the discretionary component as philanthropic and suggesting that it embraced "corporate citizenship." He had succinctly put forth his argument as thus: "For CSR to be accepted by the conscientious business person, it should be framed in such a way that the entire range of business responsibilities is embraced. It is suggested here that four kinds of social responsibilities constitute total CSR: economic, legal, ethical and philanthropic" (Carroll, 1991, p.48).

During the late 1980s and into the 1990s, corporate philanthropy had expanded considerably beginning with the pyramid model depicted by Carroll (1991) which had further inspired some new novel models, such as the Triple Bottom Line (Elkington, 1998), Value Creation Model of CSR (Gholami, 2011) and The Model of Consumer Driven Corporate Responsibility (Claydon, 2011). Muirhead (1999) had characterized this period of corporate contributions as the period of 'diversification and globalization'.

Around this time Davis, Schoorman and Donaldson (1997) had integrated the agency theory so as to provide a definition to the concept of stewardship, which had further influenced the evolution of

the concepts of CSR in the future. The stewardship theory viewed managers as “stewards” of corporate assets, satisfying shareholders, and stakeholders. In contrast to the agency theory that had argued maximisation of shareholders interest would require a separation of board chair and CEO, stewardship theory argued that shareholder value maximisation was achieved by shared positions of the board chair and CEO (Donaldson & Davis, 1991). Stewardship Theory has further led to some new CSR models in the 21st century such as the Sustainable Development Model (Visser, 2010 a, b) and The Model of Consumer Driven Corporate Responsibility (Claydon, 2011).

Elkington (1998) had by then formulated a concept of “triple bottom line” (TBL) by using stakeholder theory in order to be able to measure and manage the impact of CSR that was reflected in economic, social and environmental performance. In the traditional business accounting and common usage, the "bottom line" refers to either the "profit" or "loss", which is usually recorded at the very bottom line on a statement of revenue and expenses. Over the last 50 years, environmentalists and social justice advocates have struggled to bring a broader definition of bottom line into public consciousness by introducing full cost accounting. The triple bottom line adds two more "bottom lines": social and environmental (ecological) concerns (Goethe-Institut, March 2008).

More global companies have appeared in the world economy, and management positions dedicated to corporate giving had begun proliferating on the organization charts of major companies and corporate social performance had thus emerged as a more encompassing measure of performance. In 1992, a non-profit organisation called Business for Social Responsibility (BSR) had been established in order to provide representation to the initiatives and professionals having responsibility for CSR in their companies (Carroll, 2008, p.19). BSR had expanded the definition of CSR by having encompassed various topics such as business ethics, community investment, environment, governance and accountability, human rights, marketplace and workplace. Further, BSR had also argued that terms such as ‘corporate citizenship’, ‘business ethics’, ‘corporate accountability’ and ‘sustainability’ could be used interchangeably to indicate CSR (Carroll, 2008, p.19).

1.1.7. Research on CSR in the 21st Century

Griffin (2000) had argued that existing research in the related disciplines like marketing, human relations, psychology etc., could help to broaden our understanding of Corporate Social Performance. Schwartz and Carroll (2003) had by then refined the three-domain approach to CSR as previously defined by Carroll (1979) by having reduced the four categories of CSR into three as economic, legal, and ethical. Stormer (2003) had suggested moving beyond the stakeholder model of the firm towards an inter-systems model of business, which would require modifying the view of corporations as autonomous or independent entities towards having viewed the firms as a part of the communities that created them.

The twenty-first century had also witnessed the attention of global organisations to have articulated the best practices in CSR. For example, Organization for Economic Co-operation and Development

(OECD) had released the guidelines in corporate social responsibilities (OECD, 2001). OECD released its first guidelines on CSR in 2001 for its member countries with voluntary initiatives. The report noted that there were significant divergences of commitment and management practices, even in narrow areas of application such as labour standards, environment, human rights, and fighting bribery.

Perrini (2005) had by then analysed non-financial disclosure on CSR from corporate social, environmental and sustainability reports for ninety European companies and had found that a firms' disclosure was related to its operational efficiency, maximum safety, environmental protection, quality and innovation, open dialogue, skill development, and responsible citizenship respectively. Habisch, Jonker, Wegner and Schmidpeter (2005) had documented the perspectives of CSR developments across Europe and they argued that CSR was one of the most important topics for discussion for business people, politicians, trade unionists, consumers, nongovernmental organizations (NGOs), and researchers.

"In a specific study for UK, Moon (2004) had presented on how CSR had evolved as part of societal governance in the country, which had influenced the overall development of CSR in the European Union. As compared to the US, the notion of CSR in Europe had been closely related to stakeholder responsibility (Elms, 2006). For example, Lyndenberg (2005) had observed that the development of CSR in Europe could be described as driven by "a long-term re-evaluation of the role of corporations in society" (Bhaduri & Selarka, 2016, p.22).

These theories and concepts until the 21st century could be integrated as Sustainable Development theory, which then further augmented the existing concepts of CSR and TBL. Aras and Crowther (2009) had integrated the concept of Stewardship Theory into Triple Bottom Line in order to develop a sustainable development model for having to demonstrate the synergy and stewardship of financial, social and environmental resources so as to ensure sustainability. More specifically, the authors focused on internal and external interests of a company by having asserted the below mentioned four aspects of CSR as follows (Aras & Crowther, 2009):

- Economic aspect, to be the reason of the company's existence;
- Social aspect, to eradicate poverty and safeguard human rights;
- Environment, to preserve the nature for future generations;
- Organizational culture, to align the corporate and social values with individual values.

Gholami (2011) has then developed the Value Creation Model from the Stakeholder theory that described the value creation for an organization and society that resulted from the mutual dependence between them due to the linkage between CSR and corporate performance including financial and non-financial performance. Gholami (2011) had further built upon Carroll's (1991) Pyramid Model in which the economic, legal, ethical and philanthropic responsibilities would have to be delivered by a company to create value for organization and society.

In addition to the concept of measurable indicators for each of the themes of the pyramid has been explained under the Value Creation Model, which was proposed by Gholami (2011). Specifically, personal saving rate, business saving rate, inflation rate and manufacturing lead-time were the indicators of economic dimension according to Value Creation Model. Indicators of legal aspects proposed by Gholami (2011) were anti-trust law, labour training law, taxation law and human rights. Ethical aspect dealt with codes of conduct, corruption and money laundering matters.

Gholami (2011) further suggested donor acquisition, donor attrition, stewardship calls and gift processing time as the key indicators relevant for the philanthropic aspect. In the Value Creation Model, economic, legal, ethical and philanthropic aspects were considered as independent variables; organizational dimensions of culture, technology, centralization and training were considered as control variables; and traditional measures of corporate performance, such as return on investment (ROI), return on equity (ROE), Return on Asset (ROA), Operating Income (OI) and non-financial corporate performance including access of capital, business value, business savings, social value were considered as the dependent variables respectively.

The Model of Consumer Driven Corporate Responsibility, which had been coined by Claydon (2011). Similar to Value Creation Model, this model was also influenced by Carroll's Pyramid Model as economic approach was inevitably the main aspect of a company. The model has been further amalgamated into the concept of sustainability from the Sustainable Development Theory arguing that a company must remain profitable to be sustainable. Having considered consumers as the most important stakeholders, this model has argued that sustainable profitability could be achieved by ethical and responsible behaviour to its consumers. This model had corroborated that CSR could be adopted to achieve a competitive advantage by a company where the customer base was not well established as well as to maintain a profitable situation wherein the customer base was already established as the existing customers would continue demanding CSR from the company. Therefore, the company would have to respond to meet the CSR demand in order to remain reputable and profitable.

This model has shown a cycle that CSR when adopted by a company will lead to the increased customer base, which in turn means profitability (Claydon, 2011). The profitability from CSR would further lead to a greater reputation, which could increase customer base. The increased customer base would lead to the increased consumer demand for CSR and then it would increase CSR practices adopted by the company.

1.2. Indicators of Corporate Social Responsibility and its measures

The CSRHub database that had been used to measure CSR performance which combines more than 136 million pieces of data on sustainability and CSR performance into a consistent set of ratings. Their site has enabled users to learn about and compare company sustainability and CSR behavior.

It has provided access to employee, environmental, community and governance ratings on most major companies in North America, Europe and Asia. They were the first company to combine data from nine of the premier socially responsible investment (SRI) analysis firms (also known as Environment, Social, Governance - ESG), and over 265 NGOs, government agencies, news feeds, social networking groups, smaller for-profit organizations, and publishers ("Frequently Asked Questions", 2017).

It has been opined by Cavaco and Crifo (2014) that it would be important to place reliance on the industry-adjusted CSR ratings instead of CSR scores because these ratings would allow for comparisons across sectors and across various CSR dimensions. Therefore, in order to obtain standardized CSR ratings across all the industrial sectors, it was found that CSRHub would be an impartial source, which could provide consistent ratings of Corporate Social Responsibility (CSR) performance for as broad a range of companies as possible.

CSRHub's ratings have been given at the parent level of a company. CSRHub's rating system has attempted to remove most common sources of bias and inconsistency. The CSR Categories demarcated in Table 1 below have been based upon the CSR ratings awarded to the MNEs under observation. These categories have been broadly divided into Community, Employees, Environment and Governance. Stringent criteria have been specified by CSRHub in the Column 'Description' in Table 1 to describe the design of each of the categories based upon which a transparent rating has been affixed to the relevant CSR activity of the MNE.

Table1. CSRHub Data Schema

Category/Subcategory	Description
COMMUNITY	It covers the company's commitment and effectiveness within the local, national and global community in which it does business. It reflects a company's citizenship, charitable giving, and volunteerism. This category covers the company's human rights record and treatment of its supply chain. It also covers the environmental and social impacts of the company's products and services, and the development of sustainable products, processes and technologies.
EMPLOYEES	It includes disclosure of policies, programs, and performance in diversity, labor relations and labor rights, compensation, benefits, and employee training, health and safety. The evaluation focuses on the quality of policies and programs, compliance with national laws and regulations, and proactive management initiatives. The category includes evaluation of inclusive diversity policies, fair treatment of all employees, robust diversity (EEO-1) programs and training, disclosure of workforce diversity data, strong labor codes (addressing the core ILO standards), comprehensive benefits, demonstrated training and development opportunities, employee health and safety policies, basic and industry-specific safety training, demonstrated safety management systems, and a positive safety performance record.
ENVIRONMENT	It covers a company's interactions with the environment at large, including use of natural resources, and a company's impact on the Earth's ecosystems. The category evaluates corporate environmental performance, compliance with environmental regulations, mitigation of environmental footprint, leadership in addressing climate change through appropriate policies and strategies, energy-efficient operations, and the development of renewable energy and other alternative environmental technologies, disclosure of sources of environmental risk and liability and actions to minimize exposure to future risk, implementation of natural resource conservation and efficiency programs, pollution prevention programs, demonstration of a strategy toward sustainable development, integration of environmental sustainability and responsiveness with management and the board, and programs to measure and engage stakeholders for environmental improvement.
GOVERNANCE	It covers disclosure of policies and procedures, board independence and diversity, executive compensation, attention to stakeholder concerns, and evaluation of a company's culture of ethical leadership and compliance. Corporate governance refers to leadership structure and the values that determine corporate direction, ethics and performance. This category rates factors such as: are corporate policies and practices aligned with sustainability goals; is the management of the corporation transparent to stakeholders; are employees appropriately engaged in the management of the company; are sustainability principles integrated from the top down into the day-to-day operations of the company. Governance focuses on how management is committed to sustainability and corporate responsibility at all levels.

Source: "CSRHub Data Schema", 2017.

1.3. The performance of companies: the financial performance and its indicators

Traditionally, financial performance had been measured by accounting or by market-based indicators. Both types of measures would represent different perspectives on the value of financial performance. Accounting measures, such as return on assets, return on equity or return on sales, capture the historical aspects of financial performance and have therefore, been considered backward-looking. The accounting measure, which has been employed here, is the return on assets (ROA) (McGuire, Sundgren, & Schneeweis, 1988, p.856).

The Tobin's Q has been relied upon as a market performance measure. The Tobin's Q which has been considered a measure of return based on the stock market (market value of a company's stock compared to the value of a company's equity book value). The Tobin's Q, here would represent the investors' evaluation of the ability of a firm to generate future economic earnings; it has therefore been considered as a proxy for growth opportunities and has demonstrated to be forward-looking (Saunders, Lewis & Thornhill, 2009, p. 272).

Guidance was taken from the Cavaco and Crifo (2014) research paper in choosing the most optimal Financial Performance indicators. In their opinion "Accounting measures, such as return on assets, return on equity or return on sales, capture the historical aspects of financial performance and are therefore backward-looking." whereas "The Tobin's Q represents the investors' evaluation of the ability of a firm to generate future economic earnings; it is therefore forward-looking and can be considered as a proxy for growth opportunities" (Cavaco & Crifo, 2014, p. 3327).

Certain other variables would also serve to better understand the financial performance of firms and the same have been adapted as per the logic set out in the Cavaco and Crifo (2014) paper. These include: Research and Development (R&D) intensity indicator and an Advertising ratio.

Cochran and Wood (1984) has noted that there has been no real consensus in the researching community when it has come to selecting which parameter ought to be used as an indicator of financial performance. ROA has been applied previously by several researchers when the relationship between CSR and financial performance has been examined (Aupperle et al., 1985; Russo & Fouts, 1997; Tang, Hull & Rothenberg, 2012; Moon, Bae & Jeong, 2014).

A measure that has been commonly utilized when estimating a firm's economic performance and profitability is the Return on assets (ROA) (Belu & Manescu, 2013). Compared to the market based measure such as the Tobin's Q, ROA has been considered as a measure, which represents the financial performance within the firm (Guenster, Derwall & Koedijk, 2011).

Russo and Fouts (1997) have made use of ROA as a measure in order to see if environmental performance had been positively related with a firm's financial performance. In another research made by Moon et al. (2014), ROA had been utilized to see if companies participating in voluntary

environmental programs were experiencing a positive effect on their financial performance. The formula which had been used for calculating ROA has been inspired by Hackston and Milne (1996) who had calculated a firm's ROA as the firm's net profit divided by total asset, as in Equation (21):

$$ROA = \frac{NetProfit}{Total\ Assets} \quad (1)$$

(Additionally, one market based measure has been utilized in the form of Tobin's Q. Tobin's Q has been proven to be a measurement of market based performance which also has been employed by several researchers previously in researching the relationship between CSR and market based performance (Dowell, Hart & Yeung, 2000; Guenster et al., 2011; Nishitani & Kobuku, 2012). The basic principle of Tobin's Q involves calculating a firm's market value plus loans divided by its total assets. If the result is equal to 1, it means that a firm's market value exactly reflects the replacement cost of its assets. If the result is higher than 1, it implies that the market value exceeds the replacement cost of the firm's assets which would indicate that the company is overvalued. Conversely, a value less than 1 would indicate that the replacement cost of a company's assets is lower than its market value and thus the company is undervalued (Wang, Li & Gao, 2014).

The formula for Tobin's Q utilized in this study is as presented in Equation (2):

$$Approximation\ of\ Tobin's\ Q\ = \frac{(MVE + PS + DEBT)}{TA} \quad (2)$$

Where,

MVE= Market value of equity calculated as the firm's share price multiplied by its common stock shares outstanding;

PS= the firm's liquidating value of outstanding preferred stock;

$DEBT$= the firm's short term liabilities and net of short term assets plus the value of the long term debts;

TA= the firm's total assets.

Both, ROA and Tobin's Q had been utilized by Guenster et al. (2011) as indicators of financial performance in order to examine whether eco-efficient firm's achieved greater profitability (ROA) and market value (Tobin's Q).

1.4. The state of art relating to financial performance and Corporate Social Responsibility

1.4.1. Background

It has been established that no consensus has emerged so far on whether CSR leads to superior financial performance (for a survey see e.g. Margolis & Walsh, 2003).The Academic field concurs that much research would be needed before this relationship can be fully understood (see e.g. Rowley & Berman, 2000; Surroca, Tribo & Waddock, 2010).

Another problem would lie in the direction and mechanisms of causation. Whether CSR would lead to superior financial performance or whether financial performance is rather a necessary condition for CSR has been tackled by few papers as a major issue (notable exceptions are Waddock & Graves, 1997; Lioui & Sharma, 2012; Belu & Manescu, 2013).

As has been defined by McWilliams and Siegel (2000), being socially responsible means that firms would go beyond legal constraints and commit on a voluntary basis to bear the cost of more ethical behavior in a variety of practices. This has been exemplified in the providence of improved employment conditions and/or having put a ban on child labor in countries that do not respect human rights, having protected the environment and having invested in abatement equipment to have reduced the carbon footprint, having developed partnerships with NGOs, or having provided funds to charity (European Commission, 2001). In the opinion of Cavaco & Crifo (2014), it would be justified to disentangle the different dimensions of CSR while considering them, since firms could do well in some dimensions and poorly in others.

The instrumental stakeholder theory is formed from two theories, and suggests there is a positive relationship between CSP and CFP (Jones, 1995, p. 430). First, the instrumental theory is an economic theory that predicts what results will occur as a result of management decisions (Jones, 1995). The second theory, the stakeholder theory, is an ethical theory that proposes managers have a duty to put stakeholders' needs first in order to increase the value of the firm (Jones, 1995). The instrumental stakeholder theory, then, asserts that stakeholder satisfaction influences financial performance (Jones, 1995).

Moreover, this theory asserted that corporate executives could increase the efficiency of their organizations by having aligned the business to meet the desires of stakeholders. Even the past empirical evidence has emphasized that stakeholders as a whole tend to find some value in CSR programs. Therefore, the instrumental stakeholder theory has suggested that CSR programs would increase stakeholder satisfaction and ultimately, financial performance (Palmer & Harmony, 2012, p.18).

The majority of recent empirical and theoretical studies on CSP and CFP indicate that these variables may be positively associated. The most comprehensive study conducted with positive results was a

meta-analysis by Orlitzky, Schmidt and Rynes (2003). Meta-analysis proves to be a strong method of research because of its ability to weigh in on the parameters of individual studies, as opposed to having aggregated the studies. The specific meta-analysis discussed here has examined 52 studies with a 33,878 sample size over a 30-year span. Orlitzky et al. (2003) was able to conclude that not only does CSP have a positive influence on CFP, but vice versa as well, thus hinting that a bidirectional relationship could exist between the two variables. This conclusion would also support the instrumental stakeholder theory because managers frequently reap financial benefits by meeting the needs of stakeholders. And because of the reciprocal benefits of the relationship between stakeholders and the organization, this study (meta-analysis) supports the position that CSR programs can be associated with multiple tangible financial benefits while in the long-run (Palmer & Harmony, 2012, p.19).

1.4.2. Complementarity between the indicators of CSR and Financial Performance

According to Milgrom and Roberts (1995), a firms activities could be considered as complementary, if doing (more of) any one of them would increase the returns to doing (more of) the others. Complementarity has been a matter of order – i.e. 'doing more of one thing increases the returns to doing more of another' (Milgrom &Roberts, 1995, p. 181). In the opinion of authors, the comparisons and predictions that one would typically seek in economic analysis would also be a matter of order – one would seek to show that the higher level of an exogenous variable could lead to a higher (or lower) level of the endogenous variable.

The above mentioned opinion has been the subject of a branch of mathematics known as lattice theory, and the concept that has been elucidated here carries over to general lattices. In order to avoid any kind of unfamiliarity of the concepts, it would be necessary to largely limit one's attention in the present study to the Euclidean lattice R^N and its relevant subsets (Milgrom and Roberts, 1995, p.181).

Here it has to be noted that in the findings by the authors on the efficacy of limited search, it can be taken to mean that the Managers providing the strategic direction need not have detailed knowledge of the complementary function in order to be able to help the individual units in an MNE to coordinate on an effective improvement: The Managers at the local country level of the MNE would literally need only identify the relevant complementarity structure in order to recommend a fruitful 'direction' for coordinated search of complementary CSR practices aimed at improving financial performance (Milgrom & Roberts, 1995).

If one were to read the literature on complementarity more liberally, the observations made in the paper (Milgrom & Roberts, 1995) would also suggest a reason why change in a predetermined system such as that of an MNE which is characterized as being marked by strong and widespread complementarities may be difficult and why it would be considered necessary to implement centrally

directed change for carrying out alteration of an MNE systems. By effecting change on only a few of an MNEs system elements at a time, their optimal values of Corporate Financial Performance (CFP) indicators might not come at all close to having achieved all the benefits that would be available through a fully coordinated move, and might even exhibit a negative effect on the CFP. Nevertheless, if the Managers at the Headquarters of the relevant MNE entrusted with making the choices have failed to recognize all the dimensions across which the complementarities operate, then they might fail to make the full range of necessary adaptations, demonstrated with unfortunate results reflected in the CFP.

In most cases, managers would be consciously trying to maximize, or at least try to enhance performance, so when two practices are actually complementary, those managers shall seek to adopt them together and simultaneously. If the managers were equipped with perfect foresight and full control over both of the choice variables, then in the absence of other exogenous forces, the complementary variables shall always be adopted together (Brynjolfsson & Milgrom, 2012, p. 40). In this case, all the observations about complementary CSR practices would be either (0,0) or (1,1) speaking in binary algebra wherein '1' represents the presence of a synergistic practice and '0' denotes the absence of any synergy ; and in this case there would be no off-diagonal observations in the data. As a result, we cannot estimate the correlation econometrically (Brynjolfsson & Milgrom, 2012, p. 41).

Similarly, the market competition might reduce or even stand to eliminate the population of firms, which had attempted to implement inefficient combinations of practices. As with conscious choice by the managers, this would reduce the share of off-diagonal observations. Of course, in either of these cases, the very fact that the practices are correlated provides evidence of complementarities (Brynjolfsson & Milgrom, 2012, p. 41).

By having measured the correlation or "clustering" of practices is perhaps the most common approach to testing for complementarities. It has the virtue that it does not require performance metrics, only observability of the practices themselves (Brynjolfsson & Milgrom, 2012, p. 42).

2. Research Methodology

2.1. Objective of the study and Research Hypotheses

The objectives of the present study are as follows:

1. To compare the content, extent, nature, quality and location of disclosures regarding the corporate social responsibility by Indian and European companies, namely the MNEs that are involved in the trade of popular brands in both regions, using as a benchmark for CSR disclosures standardized Corporate Social Performance (CSP) indicators.

2. To analyse the synergies and trade-offs of the four main dimensions of CSR practices for the companies in the sample using similar methodology as Cavaco and Crifo (2014).

3. To find out the association between the CSR Ratings and Corporate financial performance.

To achieve these objectives it is intended to follow the methodology suggested by Cavaco and Crifo (2014). A significant number of researchers have generated results in which it has not been possible to determine whether the association between CSR and financial performance is positive or negative or if there is an association between the variables at all (Lee, Faff & Langfield, 2009; Peng & Yang, 2014).

The most widely accepted theoretical framework treating the existence and nature of the relationship between CSR and firm performance is to be found in the work of Preston and O'Bannon (1997). They establish six possible relationships between the two variables. Preston and O'Bannon (1997) firstly present the hypothesis of social impact (higher or lower levels of CSR lead to higher or lower levels of corporate performance). Stakeholder theory supports this positive association (Freeman, 1984) because CSR allows various stakeholders to be satisfied, which in turn leads to an improvement in

the external reputation of the firm, and, thus, in its performance. Investment in CSR may also produce greater client loyalty, new market opportunities, and the development of new capacities, etc., which may also result in improvements to firm performance (Peloza, 2009). These results have also been supported by recent meta-analyses which are in support of the idea that the adoption of CSR practices while responding to shareholders expectations have produced a completive advantage and hence, improvement in the firm's results (Orlitzky et al., 2003).

Preston and O'Bannon's (1997) second hypotheses which has been made use of in this study has demonstrated positive synergy. The hypothesis has suggested that a virtuous circle is in existence, which would be responsible for relating the variables involved, i.e. more CSR would lead to better results, which in turn would lead to better management and communication of CSR.

In light of the foregoing, the following hypotheses have been proposed:

Hypothesis 1: There is a positive interaction between the combined overall Corporate Social Performance Rating (CSR Global) and the accounting based financial performance of the MNEs (represented by ROA).

Hypothesis 2: There is a positive interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the accounting based financial performance of the MNEs (represented by ROA).

Hypothesis 3: There is a positive interaction between the combined overall Corporate Social Performance Rating (CSR Global) and the market based financial evaluation of the MNEs (represented by Tobin’s Q).

Hypothesis 4: There is a positive interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the market based financial evaluation of the MNEs (represented by Tobin’s Q).

The negative synergy hypothesis emphasizes the existence of a negative, interactive relationship between CSR and firm performance. More CSR related activities would lead to a poor firm performance, which could in turn lead to a scenario wherein the managers might feel encouraged to invest more efforts into CSR. Investment in CSR is shown to produce costs that are traditionally a source of competitive disadvantage to the firm when placed in comparison with other firms that did not have to spend in the same way (Waddock & Graves, 1997). Another determining factor relevant here would be the opportunity costs which would arise from the missed opportunities that could have enabled the firm to spend the same money on more profitable activities.

There exist few studies that support the negative synergy hypothesis. Among the most noteworthy are the studies of Vance (1975), Aupperle et al (1985), and Patten (2002). In light of the foregoing, the following hypotheses have been proposed:

Hypothesis 5: There is a negative interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the accounting based financial performance of the MNEs (represented by ROA).

Hypothesis 6: There is a negative interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the market based financial evaluation of the MNEs (represented by Tobin's Q).

Looking into the hypothesis of moderating variables it could be inferred that there exists no clear and significant relationship between CSR and firm performance, and that the other variables such as Research and Development (R&D) expenses, Advertising, Long Term Debt might moderate this link and thereby account for the fact that some studies have not found any conclusive relationships between the variable mentioned herein above. On this basis and that of results obtained previously (Aupperle et al., 1985, Waddock & Graves, 1997) the following hypothesis has been proposed.

Hypothesis 7: There is simply no relationship between corporate social responsibility and financial performance.

2.2. Sample and data collection methods

The World's Biggest Public Companies List has been published, ranked and updated by Forbes annually which provides the listing of 2000 MNE's that have been publicly listed. Of the 2000 Companies, there have been only a limited number of MNEs that had been incorporated and they were having operations simultaneously in Portugal, Spain, France and India. Therefore, after having applied these criteria, the relevant number of Companies from the list of 2000 Companies has been further reduced to about 1/10th of the original 2000 Companies mentioned in the Forbes directory.

In the final unbalanced panel sample of 53 MNEs operating simultaneously from three European countries (Portugal, Spain & France) and one south Asian country (India) served as an useful complement to existing studies, which often focus on US companies based for instance on KLD's (Kinder, Lydenberg & Domini) Environmental, Social and Governance (ESG) data. The type of CSR measure that was available in the accessed dataset consisted of standardized ratings, which had been attributed over four broad CSR domains: Environment, Employees, Community and Governance. Another consideration that was relevant at the time would be to include MNEs having their brand presence in all the four countries under observation. For instance, the Global Restaurant Chain McDonald's could be found in all the four countries under observation. However, for most of these MNEs, it would not be uncommon to have a flagship of two or more global brands being marketed simultaneously i.e. at the same time in the four countries that were under observation.

Criteria for the Data Set 1:

The sample selection was based on the consideration that only the MNEs which were the best performers in the field of CSR activities would only be considered. Hence, only those MNEs were selected which were rated as the “20 Most sustainable MNC’s Worldwide” and the “Multinational Companies which were the best places to work” were considered for the sample. Incidentally, these MNE’s happened to perform well financially. A list of 25 MNEs formed the sample of the first data set.

Criteria for the Data Set 2:

The sample selection for this list involved more stringent criterion. These MNEs were selected based on their high CSR performance in any single CSR related aspect such as Environment and Sustainability or Corporate Governance and Transparency in Compliance. Moreover, their Company size and annual revenues was observed to be in very stark contrast to each other. Some of the MNEs which were selected had a huge number of employees owing to their labour intensive processes while certain other MNEs were relatively small in size owing to the highly technical job profiles required for their Company’s operations. The annual revenue of the smaller MNEs was under One Billion (USD) while the revenue for a larger MNE was recorded to be around two hundred and sixty Billion (USD). For instance, the MNE: National Instruments had an annual turnover of 1.22 Billion (USD) while the Deutsch MNE: Volkswagen Group had posted an annual turnover of 240.46 Billion (USD). These 29 MNEs which had formed the sample in data set 2, either had operations in the four countries simultaneously or their brands were being marketed in the four countries. However, both these criteria did exist together for certain companies. For instance, Toyota has manufacturing/ assembly operations in Portugal, France and India only while it had marketed its products in Portugal, Spain, France and India simultaneously.

Combination of Data Set 1 and Data Set 2: Both the data sets were combined and analysed collectively to provide for an adequate representation of the different kinds of MNEs having operations in different sectors.

The Data was collected from secondary sources. The data collected was mainly quantitative data pertaining to the Corporate Financial Performance of MNEs and the CSR Ratings gathered from the respective online databases.

2.3. The empirical model and variables

The approach in the methodology of Cavaco and Crifo (2014, p. 3329), has relied upon an original two step approach in order to test how the complementarity between the different CSR performance indicators (environment, community, employee and governance) affects the relationship between CSR and financial performance (measured by ROA and Tobin’s Q).

The first step estimates the impact of CSR scores on financial performance, by employing the system GMM technique in order to exploit the time series dimension of the combined data set.

The second step, tests for which CSR dimensions would appear to be complementary across the various industrial sectors and whether these findings would represent a generalized phenomenon, which can be demonstrated statistically and finally, there is also an apprehension raised as to whether the various CSR practices bear no relation to corporate financial performance (CFP).

The empirical methodology shall allow coping with certain issues. Initially, having exploited the dynamic structure of the data, it could therefore be observed whether past financial performance may explain current financial performance (Surroca et al., 2010) and might also account for current CSR performance in MNEs.

Additionally, the methodology has helped to take into account the fact that current financial performance would likely be correlated with both observable and unobservable factors which would also account for the various CSR decisions. It could therefore, be postulated here that firms that would tend to rely on high quality processes and products shall tend to have higher CSR commitments such as Microsoft and Apple, etc. (Cavaco & Crifo, 2014).

Thus, the empirical model to be used in this research is expressed in the equation (3):

$$\Pi_{it} = \alpha + \beta.\Pi_{it-1} + \gamma.CSR_{it} + \delta.X_{it} + \mu_i + \varepsilon_{it} \quad (3)$$

Where,

Π_{it} = is the corporate financial performance (ROA or Tobin's Q) for company *i*, at the moment *t*;

Π_{it-1} = is the lagged corporate financial performance;

CSR_{it} = is the CSR variablesfor company *i*, at the moment *t*;

X_{it} = is a set of firm-level control variables for company *i*, at the moment *t*;

$\alpha, \beta, \gamma, \delta$ = are the estimators;

μ_i andε_{it} = are unobserved firmspecificfixed effects and the error term, respectively.

The CSR variables are those variables that are proxies for CSR performance, described on section 1.2 (see The CSRHub database that had been used to measure CSR performance which combines more than 136 million pieces of data on sustainability and CSR performance into a consistent set of ratings. Their site has enabled users to learn about and compare company sustainability and CSR behavior. It has provided access to employee, environmental, community and governance ratings on most major companies in North America, Europe and Asia. They were the first company to combine data from nine of the premier socially responsible investment (SRI) analysis firms (also known as Environment, Social, Governance - ESG), and over 265 NGOs, government agencies,

news feeds, social networking groups, smaller for-profit organizations, and publishers ("Frequently Asked Questions", 2017).

It has been opined by Cavaco and Crifo (2014) that it would be important to place reliance on the industry-adjusted CSR ratings instead of CSR scores because these ratings would allow for comparisons across sectors and across various CSR dimensions. Therefore, in order to obtain standardized CSR ratings across all the industrial sectors, it was found that CSRHub would be an impartial source, which could provide consistent ratings of Corporate Social Responsibility (CSR) performance for as broad a range of companies as possible.

CSRHub's ratings have been given at the parent level of a company. CSRHub's rating system has attempted to remove most common sources of bias and inconsistency. The CSR Categories demarcated in Table 1 below have been based upon the CSR ratings awarded to the MNEs under observation. These categories have been broadly divided into Community, Employees, Environment and Governance. Stringent criteria have been specified by CSRHub in the Column 'Description' in Table 1 to describe the design of each of the categories based upon which a transparent rating has been affixed to the relevant CSR activity of the MNE.

Table1): CSR Global Rating and CSR categories Environment, Employee, Community and Governance.

The firm specific variables are control variables and include the Long-term Debt to Assets ratio (LTDAR), obtained dividing Total Long-term Debt by total assets; the R & D expenses to Sales Ratio (RDESR), obtained by Total R & D Expenses divided by Total Sales/ Revenue; and Intangible to Sales Ratio (ISR), also known as advertising ratio, that divides Intangible assets by total sales/revenues.

Three types of sources of endogeneity may arise when the equation (3) is estimated (Cavaco & Crifo, 2014, p. 3329): unobservable heterogeneity (when unobservable factors affect both the dependent and explanatory variables), simultaneity (when the independent variables are a function of the dependent variable or the expected values of the dependent variable) and current values of CSR depending on past financial performance (a source of endogeneity that is often ignored). Therefore, to overcome this problem a dynamic model is used (see equation) that estimate the effect of CSR on financial performance using a system of equations taking into account all the CSR dimensions that accounts for a dynamic endogeneity process. This is the system GMM, which estimates a system of both first-difference equations and level equations with a wider set of instruments, as represented by equation

$$\Delta \Pi_{it} = \alpha + \beta . \Delta \Pi_{it-1} + \gamma . \Delta CSR_{it} + \delta . \Delta X_{it} + \Delta \varepsilon_{it} \quad (4)$$

Where,

$\Delta\Pi_{it}$ = is the first difference in corporate financial performance (ROA or Tobin's Q) for company *i*, at the moment *t*;

$\Delta\Pi_{it-1}$ = is the first difference in lagged corporate financial performance;

ΔCSR_{it} = is the first difference in CSR variablesfor company *i*, at the moment *t*;

ΔX_{it} = is the first difference in a set of firm-level control variables for company *i*, at the moment *t*;

$\alpha, \beta, \gamma, \delta$ = are the estimators.

2.4. Description of Data Analysis Techniques

Since the main proposition of this dissertation has been to investigate the interactions between the multiple dimensions of CSR that would stand to mediate the relationship between CSR activities and MNE's financial performance and to visualize this, how this mediation operates through complementarities shall be analyzed individually as well as collectively between each pair of the four

CSR practices discussed in the literature. To effectively achieve this, an internationally matched CSR - firm performance database provided by the extra-financial agency CSRHub over the 2009 – 2017 period was obtained with the help of a limited 14-day trial/ student membership. In the final unbalanced panel sample of 53 MNEs operating simultaneously from three European countries (Portugal, Spain & France) and one south Asian country (India) served as an useful complement to existing studies, which often focus on US companies based for instance on KLD's (Kinder, Lydenberg & Domini) Environmental, Social and Governance (ESG) data. The type of CSR measure that was available in the accessed dataset consisted of standardized ratings, which had been attributed over four broad CSR domains: Environment, Employees, Community and Governance.

On the methodological side, an original two-step approach had been applied whereby, first, by having exploited the dynamic dimension of the data set through the system GMM (generalized method of moments) technique and, second, by having investigated for the existence of complementarity between the Environment, Employees, Community and Governance dimensions.

The concept of complementarity has been well established in econometrics. Complementarity has been based on the idea that the marginal value of one CSR dimension would be increasing in the level of another CSR dimension (Milgrom & Roberts, 1995).

The mathematical concepts have been further explored in the coming paragraphs of this sub-chapter in order to gauge the relationships that form the basis for the main discussion of this dissertation.

2.4.1. Pearson Correlation, OLS regression and Dynamic Panel data analysis

The Pearson correlation coefficient, which has also been, referred to as Pearson's ***r***, the Pearson product-moment correlation coefficient (PPMCC) or the bivariate correlation, can be described as a measure of the linear correlation between two variables X and Y. It usually has a value between +1 and –1, wherein 1 is total positive linear correlation, 0 is no linear correlation, and –1 is total negative linear correlation. It had been developed by Karl Pearson emerging from a related idea introduced by Francis Galton in the 1880s (Pearson, 1895).

A linear multiple regression, also known as Ordinary Least Squares (OLS) regression, would be an appropriate analysis when the research problem includes one metrically scaled variable that has been presumed related to two or more metric independent variables (for more details see: Hair, Babin, Black, Anderson & Tatham, 2006). Whereas in the classical linear model, the number of observations would be fixed, in OLS the number of observations has been allowed to grow to infinity.

A multivariate pooled OLS regression (Beck & Katz, 1995) has been deemed to be appropriate for cross-sectional data (e.g. Baucells, Weber & Welfens, 2011). That would imply that the dependent

variable would be based on several observations of different fixed unit groups at a given point in time. These kinds of data sets might have group effects or within-subject effects (White, 1980).

So far, regression analysis had been the most widely used dependence technique, as it was applicable in several domains of business decision-making (Hair et al., 2010). Regressions have been designed to come to exact inferences. More specifically, regressions have been able to measure the probability that an inference ought to be solid and it could effectively predict changes in the dependent variable in response to changes in several independent variables (independent variables equals to predictor, relative explanatory power of the dependent variable) (Stommel, 2013, p. 71).

When one has to deal with panel data, consisting of more than one observation per panel, it would usually be the case that the observations in the data set might not all be independent. This could be because the traits of the panel that have not been represented by the other variables would typically have caused some within-panel correlation (or, in some special circumstances a negative correlation). In the case of such an instance, the standard errors (and tests based on them) calculated in a pooled regression model would be incorrect (Cameron & Trivedi, 2005, p. 166).

Therefore, in general, if one had to work with panel data, then it would be of much relevance to make use of a panel regression model. Pooled analysis is most suitable when each of the observations would be independent of any other (Cameron & Trivedi, 2005, p. 170).

Sometimes when a panel regression is performed, one could find that the actual extent of within-panel correlation of observations is negligibly small. In that case, if one prefers, then he/she could go back and just use a pooled regression model for that purpose. Also, if within-panel relationships is not of interest, and one just wants to understand the relationships between a panel's mean outcome and the mean values of the panel's predictor variables, then those means could be calculated, thereby having reduced the panel data set to one observation per panel, and then a pooled regression could be done (Cameron & Trivedi, 2010).

2.4.2. Generalized Method of Moments (GMM) System

Generalized Method of Moments (GMM) is an econometric technique that accounts for dynamic endogeneity process (Cavaco & Crifo, 2014). As Cavaco and Crifo (2014) pointed out “The system GMM estimator extends the GMM indifferences (Arellano & Bond, 1991) by estimating a system of both first-difference equations and level equations with a wider set of instruments” (p. 3329).

Properties of Generalized Method of Moments (GMM) estimators for panel data, which had become very popular in the empirical economic growth literature, were not well known when the number of individuals was small (Soto, 2009). It had been found that, provided that some persistency was present in the series, the system GMM estimator had a lower bias and higher efficiency than all the other estimators that were analyzed, including the standard first-differences GMM estimator (Soto,

2009). The validity of their results when the number of individuals would be small continues to be largely unknown.

Understanding better the properties of these estimators when 'n' is small has been considered to be important given the popularity that this method of estimation has been getting in the empirical growth studies. That is, "the number of countries that would be typically available in panel – a small number of individuals would not seem to have important effects on the properties previously outlined–studies about the system GMM estimator" (Soto, 2009, p. 10). Namely, when series are moderately or highly persistent, this estimator had presented the lowest bias and highest precision.

Moreover, the properties of this estimator were not hindered when '*n'* is so small that it is not possible to exploit the full set of linear moment conditions. This would also be an important finding since the earlier Monte Carlo simulations had been carried out by using the full set of instruments, whereas in practical work this might not be always feasible, especially in the context of country growth studies. Overall the system GMM estimator had displayed the best features in terms of small sample bias and precision (Soto, 2009).

There are certain conditions required for the estimators to be consistent (Arellano & Bond, 1991). "The first one would be a test of second-order serial correlation. In order to control for the dynamic aspects of the empirical relationship, any historical value of financial performance is a potentially valid instrument, since it would be exogenous to current financial performance shocks. If this assumption was considered as valid, by construction, the residuals in first differences (AR (1)) should be correlated, but there should not be serial correlation in second differences (AR (2)). The second test would be a Hansen test of over-identification, which shall yield a J-statistic distributed under the null hypothesis of the validity of the specified instruments" (Cavaco & Crifo, 2014, p. 3330). Since the system GMM estimator makes use of multiple lags as instruments, their validity would have to be guaranteed (Cavaco & Crifo, 2014).

3. Presentation and Analysis of Results

The analysis of the results has been based on the application of an original two-step approach whereby, firstly, by having exploited the dynamic dimension of the data set and analyzing it through the system GMM technique and, second, by having investigated for the existence of complementarity between the Environment, Employees, Community and Governance dimensions.

In other words, initially, direct evidence of the dynamic relationship between CSR scores and financial performance (ROA and Tobin's Q) has been provided; and thereafter, inferences have been drawn about the existence of complementarity between the different CSR measures that have been directly tested so as to ascertain whether such relationships actually exist across all the industrial sectors under observation within the gathered data.

Measuring the correlation or "clustering" of practices is perhaps the most common approach to testing for complementarities. It has the virtue that it does not require performance metrics, only observability of the practices themselves (Brynjolfsson & Milgrom, 2012). Estimations were carried out using the Stata module Xtabond2 developed by Roodman (2006).

The Analysis is grouped into two divisions, which are Data Set 1 (best CSR Performance) and Data Set 2 (best Financial Performance) MNEs. The preliminary analysis consists of describing the profile of data for each dataset and for the overall data set as well.

3.1. Sample Characterization Profile

A total of 433 (four hundred and thirty three) observations had been collected from the 53 MNEs under observation. For every MNE, the CSR Ratings and Corporate Financial Performance (CFP) indicators were gathered from CSRHub and YCharts databases respectively. The data was collected for the time horizon spanning from the auditing periods 2009 – 2010 upon to 2016 – 2017.

On an average, the number of observations collected per MNE has been documented in Table A. **1** in the *Appendix* in order to correctly understand the influence each MNE would have on the outcome of the entire study. Here, one observation could be deemed to include the following variables: CSR Global Rating, Environment, Employee, Community, Governance, ROA, Tobin's Q, Long Term Debt, Total Assets, Intangible Assets, Revenue and R&D Expenses. Moreover, the representative percentage of the observations has been reduced into percentage. The respective count of observations per MNE is around 7 to 9 observations and the percentage with which the frequency of observations occurs in the data in order to influence the overall study is mostly approximated at around 1.6% to 2.1%.

Table 2 shows the descriptive statistics of each of the variables involved in the study. The table is divided into three categories: Financial variables; CSR variables and Financial Performance of the firm variables.

Table 2. Descriptive Statistics of Variables involved

	n	Minimum	Maximum	Mean	Std. Deviation
Long Term Debt[1]	379	33,000	171,330,000,000	23,022,365,500	33,708,859,430
Total Assets[1]	391	813,030,000	447,860,000,000	78,059,771,640	92,569,977,150
R&D Expenses: NIL[1, 2]	188	103,800,000	16,080,000,000	3,558,681,064	3,790,668,581
Total Sales/ Revenue[1]	392	356,000,000	484,490,000,000	50,590,065,840	67,159,785,430
Intangibles[1]	358	108,170,000	112,590,000,000	17,660,211,790	21,510,049,810
Global CSR	319	42	71	61	5.20
Community	320	36	74	58.62	6.41
Employees	320	40	82	66.29	7.23
Environment	320	41	74	61.43	6.41
Governance	320	39	76	57.76	5.93
Tobin's Q	365	-	6.96	1.72	1.18
ROA[3]	390	-0.21	0.47	0.08	0.07
LTDAR[4]	379	-	0.84	0.27	0.15
RDESR[5]	188	-	0.66	0.11	0.11
ISR[6]	358	0.01	3.39	0.48	0.44

Notes: [1]Values in Billions (USD); [2]NIL(financial data not applicable to the respective MNE); [3] ROA: Return on Assets; [4] LTDAR: Long-term Debt to Assets ratio; [5]RDESR: R & D expenses to Sales Ratio; [6] ISR: Intangible to Sales Ratio or advertising ratio.

Analyzing the data presented on Table 2, the first group of variables would be the financial variables, which pertain to the firms' characteristics in terms of operational and financial structure such as Long Term Debt with a minimum of 33,000 and a maximum 171.33 Billion (USD). Overall, the mean Long Term Debt is 23.02 Billion (USD).With respect to Total Assets, the overall mean is 78.06 Billion (USD) where some companies have as little as 813 Million and there are companies with as big as 447.86 Billion. As for the R&D Expenses, the overall mean is 3.6 Million with a minimum of 103.8 Million and a maximum of 16.08 Billion (USD). As for Total Sales/Revenue, the overall mean is 50.6 Billion (USD) with a minimum of 356 Million and a maximum of 484.5 Billion (USD). Intangibles were seen to have a mean of 17.7 Billion (USD) with a minimum of 108.17 Million and a maximum of 112.59 Billion (USD). It would be pertinent to note here that certain MNEs such as Marriotts (SIC: MAR) do not report R&D Expenses owing to their industry sector being the Hospitality industry in which no Research and Development expense is incurred.

The next category is the Corporate Social Responsibility variables, which consists of Global CSR rating with a minimum of 42 and a maximum of 71 with an overall mean of 61. The CSR dimension Community with an overall mean of 58.62 ranging from 36 to 74 in its rating. Employees variable with an overall mean of 66.29 from a minimum of 41 to a maximum of 74. The Environment variable with a minimum of 41 to a maximum of 74 with an overall mean of 61.43. Moreover, the Governance variable with a mean of 57.76 ranging from 39 to 76.

The last category is the Financial Performance of the Firm. Variables such as Tobin's Q with a mean of 0.27. The ROA consisted of an overall mean of 0.08 with values ranging from -0.21 to 0.47. Long Term Debt to Assets Ratio with an overall mean of 0.27. R&D Expenses to Sales Ratio with an overall mean of 0.11. In addition, the Intangibles to Sales Ratio with an overall mean of 0.48 with values ranging from 0.01 to 3.39. The ratio of total intangible assets to total sales has been included in order to capture a proxy for advertising.

Table 3 shows the descriptive statistics for the CSR variables and Financial Performance by dataset. This table confirms that dataset 1 has better performance on CSR, and dataset 2 has better financial performance. The mean scores for the Tobin's Q are 1.4 for Data 1 (best CSR performers) and 1.95 for Data 2 (best financial performers). The return on assets (ROA) is higher on average for data 2 than on data 1. These results indicate that dataset 2 has better performance internally as compared to external performance which has been measured by ROA and Tobin's Q, respectively.

Table 3. Descriptive Statistics for CSR variables and Financial Performance by Dataset

	Data 1			Data 2		
	Mean (SD)	Min - Max	n	Mean (SD)	Min - Max	n
Tobin's Q	1.4 (0.88)	0 - 4	182	1.95 (1.3)	0.17 - 6.96	183
ROA[1]	0.07 (0.05)	-0.21 - 0.24	195	0.1 (0.08)	-0.08 - 0.47	195
LTDAR[2]	0.22 (0.13)	0.01 - 0.84	189	0.3 (0.16)	0 - 0.69	190
RDESR[3]	0.09 (0.06)	0 - 0.21	94	0.14 (0.15)	0.01 - 0.66	94
ISR[4]	0.36 (0.29)	0.01 - 1.31	179	0.56 (0.51)	0.01 - 3.39	179
Global CSR	61.55 (5.23)	47 - 71	159	60.51 (5.13)	42 - 70	160
Community	58.64 (6.57)	41 - 73	160	58.6 (6.28)	36 - 74	160
Employees	66.26 (7.04)	46 - 79	160	66.32 (7.41)	40 - 82	160
Environment	62.57 (6.55)	43 - 74	160	60.42 (6.14)	41 - 71	160
Governance	58.77 (5.5)	45 - 76	160	56.88 (6.16)	39 - 71	160

Notes: [1] ROA: Return on Assets; [2] LTDAR: Long-term Debt to Assets ratio; [3] RDESR: R& D expenses to Sales Ratio; 4 ISR: Intangible to Sales Ratio or advertising ratio.

Long Term Debt to Assets Ratio is shown to have a mean score of 0.22 for Data 1 while Data 2 has an average mean of 0.3, which would indicate that the MNEs comprising of data set 2 were far more leveraged than those in data set 1 (see Table 3).

Intangibles to Sales Ratio is shown to have a mean score of 0.36 and 0.56 respectively for Data 1 and Data 2, which would indicate that on an average the MNEs from data set 2 have considered spending more on Advertising or that the industrial sectors comprising of MNEs in Data 2 would have to rely more on advertising efforts to promote their business activities.

CSR variables such as Community and Employees have almost similar mean scores for both Data 1 and Data 2. Other CSR rating variables displayed some discrepancy of around 2 points. For instance, the mean scores for Environment CSR scores were observed at 62.57 and 60.42 respectively for Data 1 and Data 2. The mean scores for Governance were shown to be 58.77 for Data 1 and 56.88 for Data 2 respectively.

3.2. Correlation Results

Pearson's Correlation was used to determine significant correlation between the CSR variables and the Financial Performance variables. Table 4 shows the summary of the Correlation Coefficients. The results show that Tobin's Q has a negative significant correlation with the interaction between Employee and Environment (EmXEnv). The coefficient is shown to have a low but negatively significant correlation with each other indicating that though it is significant, the correlation is not that strong.

The results show that ROA has a positive significant correlation with the interaction between Employee and Community (EmXComm). No significant results were seen for all CSR variables and their respective interactions when determining its correlation with R&D Expenses to Sales Ratio. The Long Term Debt to Assets ratio was shown to have a significant negative correlation with the interaction between Employee and Community (EmXComm), Employee and Governance (EmXGov), Community, and Governance (CommXGov) .The coefficients have shown that the correlation was not that strong however significant it may have been.

Positive significant correlation was seen between Intangibles to Sales Ratio for CSR variable pairings, which are Employee and Environment (EmXEnv), Employee and Governance (EmXGov), and Employee and Community (EmXComm). The coefficients were shown to have weak strength in terms of correlation except for the correlation between the Intangibles to Sales Ratio and the interaction between Employee and Community (EmXComm).

Table 4. Summary of (Pearson) Correlation

	Tobin's Q		**ROA[1]**		**LTDAR[2]**		**RDESR[3]**		**ISR[4]**	
	PC[11]	p-value	PC[11]	p-value	PC[11]	p-value	PC[11]	p-value	PC[11]	p-value
EmxEnv[5]	-.139*	0.023	0.039	0.514	-0.098	0.105	-0.069	0.418	.139*	0.025
EnvxComm[6]	-0.058	0.345	0.08	0.18	-0.081	0.182	-0.074	0.386	0.111	0.075
CommxGov[7]	-0.018	0.771	0.103	0.084	-.121*	0.045	-0.076	0.371	0.101	0.104
EmxGov[8]	-0.098	0.114	0.059	0.326	-.139*	0.022	-0.065	0.449	.127*	0.041
EmxComm[9]	-0.044	0.476	.141*	0.018	-.152*	0.012	-0.028	0.747	.193**	0.002
EnvxGov[10]	-0.12	0.052	-0.015	0.804	-0.054	0.371	-0.118	0.167	0.015	0.812

Notes: [1]ROA: Return on Assets; [2]LTDAR: Long-term Debt to Assets ratio; [3]RDESR: R & D expenses to Sales Ratio; [4]ISR: Intangible to Sales Ratio or advertising ratio; [5]EmxEnv: Employee and Environment dimensions; [6]EnvxComm:Environment and Community; [7]CommxGov: Community and Governance; [8]EmxGov: Employee and Governance; [9]EmxComm: Employee and Community; [10]EnvxGov: Environment and Governance; [11]PC:Pearson Correlation.

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The estimation of unconditional correlations between the four CSR ratings (see Table 5.) shows that Community, Employees, Environment and Governance ratings are positively correlated. However, since correlations might be induced by unobserved factors, the existence of complementarities from these types of results cannot be concluded and they must be explicitly tested to gauge for the existence of such kind of relationships.

Table 5. Pairwise Correlations between CSR Scores

	Community	Employees	Environment	Governance
Community	1	.696**	.992**	.990**
Employees	.696**	1	.592**	.458**
Environment	.992**	.592**	1	.991**
Governance	.990**	.458**	.991**	1

Notes: ** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 5 shows the Pearson Correlations between CSR dimensions scores. The results indicated a significant positive correlation between each of the CSR ratings. This could be taken to mean that each of the CSR ratings would have an influence over the other where if one were to increase the other one would also increase and when one decreased the other one would also decrease. The correlation coefficients have shown moderate to high values indicating a strong correlation between the CSR scores.

3.3. Corporate Social Responsibility – Corporate Financial Performance relationship

In the next step, it is presented the results of static and dynamic OLS model based on the general model (equation (3)) mentioned on chapter 2.3. This is the first step of Cavaco and Crifo (2014) methodology that intends to provide direct evidence of the dynamic relationship between CSR scores and financial performance (ROA and Tobin's Q).

Table 6 shows the static and dynamic OLS models, pooled OLS and fixed effects models and System GMM estimates for Tobin's Q. Overall CSR ratings and their aggregates were used to determine significant predictors for Tobin's Q. The analysis has ignored heterogeneity and therefore, the misspecification tests were validated using the AR (2) test and the Hansen test. This would enable us to determine if system GMM would be an appropriate model for this study.

Table 6. CSR scores and financial performance (Tobin's Q)

Variables	Static		Dynamic		
	Pooled OLS	**Fixed Effects**	**Pooled OLS**	**System GMM**	**System GMM**
Tobin's Q (t - 1)			0.9437***	1.0514***	0.8617***
			(0.034)	(0.147)	(0.077)
EmxEnv	0.0005	0.0007	0.0016	0.001	
	(0.001)	(0.001)	(0.001)	(0.006)	
EnvxComm	-0.0009	-0.001	-0.002	-0.0004	
	(0.001)	(0.001)	(0.001)	(0.004)	
CommxGov	0.001	0.0011	0	-0.0018	
	(0.001)	(0.001)	(0.001)	(0.006)	
EmxGov	-0.0007	-0.0006	-0.0004	-0.0024	
	(0.001)	(0.001)	(0.001)	(0.006)	
EmxComm	0.0008	0.0009	-0.0001	-0.0023	
	(0.001)	(0.001)	(0.001)	(0.003)	
EnvxGov	-0.001	-0.0009	-0.0013	0.0004	
	(0.001)	(0.001)	(0.001)	(0.006)	
Global CSR	-0.0421	-0.0513			-0.0286
	(0.09)	(0.088)			(0.02)
Community	-0.0548	-0.0774	0.1413	0.2574	
	(0.085)	(0.082)	(0.094)	(0.41)	
Employees	0.0829	0.0775	-0.0797	0.2302	
	(0.064)	(0.061)	(0.095)	(0.502)	
Environment	0.0232	0.0032	0.0788	-0.0948	
	(0.074)	(0.071)	(0.075)	(0.405)	
Governance	1.0771**	1.6257***	0.112	0.2263	
	(0.503)	(0.521)	(0.081)	(0.463)	
LTDAR	-0.0006	0.0005	-0.3241	-0.2714	0.1508
	(0.001)	(0.001)	(0.265)	(0.969)	(0.68)
RDESR	-0.1284	-0.0932	-0.0006	-0.0005	-0.0011*
	(0.12)	(0.119)	(0.001)	(0.001)	(0.001)
ISR	2.1916	3.7763	-0.1656*	-0.1336	-0.2495
	(4.594)	(4.539)	(0.085)	(0.253)	(0.16)
R^2	0.0039	0.0057	0.9016		
AR1				p <0.001	p <0.001
AR2				p = 0.002	p <0.001
Hansen				p = 0.988	p = 0.563

Notes: EmxEnv: Employee and Environment dimensions; EnvxComm: Environment and Community; CommxGov: Community and Governance; EmxGov: Employee and Governance; EmxComm: Employee and Community; EnvxGov: Environment and Governance; LTDAR:Long Term Debt to Assets Ratio; RDESR: R&D Expenses to Sales Ratio; ISR: Intangibles to Sales Ratio.
Standard errors (SEs) in parentheses.
***p < 0.01; **p < 0.05; *p < 0.10.

The results show positive and significant coefficients of the lagged dependent variable for the Tobin's Q, which has confirmed that the financial performance is persistent, that is it depends substantially on its own past realizations (see Table 6).This could have indicated that a high Long Term Debt to Assets Ratio would lead to a decrease in the Tobin's Q while a high R&D Expenses to Sales Ratio would also lead to a decrease in the Tobin's Q. The results could also display that high CSR scores for Governance would lead to an increase in the variable Tobin's Q. Governance could therefore be shown as a significant positive predictor for Tobin's Q.

However, since the p-values of the test on AR (2) were less than 0.05 the model was not validated. The Hansen Test validated the null hypothesis, H0: the instruments were valid, that is they were not correlated with error terms – but the model was validated. Given that the previous test of Second Order correlation AR (2) had not been validated, the results were considered as lacking robustness, and hence the conclusions could not be relied upon.

Table 7 has shown the static and dynamic OLS models, fixed effects models and the system GMM estimates for ROA. The overall CSR ratings and their aggregates had been used to determine significant predictors for ROA. The analysis had ignored heterogeneity therefore the misspecification tests were validated using the AR (2) test and the Hansen test. This step had enabled the determination as to whether the System GMM could be considered as an appropriate model for this study.

Long Term Debt to Assets Ratio, R&D Expenses to Sales Ratio, and Intangibles to Sales Ratio were shown to be negatively significant for ROA. The Beta Coefficient values indicated a low influence on the ROA (see Table 7).

The results presented on Table 7 had also shown that there was a negative significant relationship with ROA and that the interaction of Employee and Environment for the Dynamic System GMM, and the interaction of Environment and Governance with a significance level at 0.10, which can be considered as significantly low. Moreover, high values for Long Term Debt to Assets Ratio, R&D Expenses to Sales Ratio and Intangibles to Sales Ratio would also lead to a decrease in the ROA.

The CSR Dimension Environment has been shown to be positively significant for ROA for the Dynamic Pooled and System GMM model. This would indicate that a high score on the CSR Rating Environment would lead to higher ROA while a low Environment CSR rating would inversely lead to a low ROA.

Table 7. CSR scores and financial performance (ROA)

Variables	Static		Dynamic		
	Pooled OLS	**Fixed Effects**	**Pooled OLS**	**System GMM**	**System GMM**
ROA (t - 1)			0.5912***	0.0666	0.1009
			(0.056)	(0.227)	(0.154)
EmxEn	-0.0001	-0.0002	0	-0.0011**	
	(0)	(0)	(0)	(0.001)	
EnvxComm	-0.0002	-0.0001	-0.0003**	0.0004	
	(0)	(0)	(0)	(0)	
CommxGov	-0.0003	-0.0003	-0.0001	0.0001	
	(0)	(0)	(0)	(0.001)	
EmxGov	0.0001	0.0001	0	0.0005	
	(0)	(0)	(0)	(0.001)	
EmxComm	0.0001	0.0001	0.0002	0.0002	
	(0)	(0)	(0)	(0)	
EnvxGov	0.0001	0.0002	0.0001	-0.0002	
	(0)	(0)	(0)	(0.001)	
Global					-0.0007
					(0.002)
Community	0.0207*	0.0166	0.0134	-0.0424	
	(0.011)	(0.012)	(0.011)	(0.045)	
Employees	-0.0053	-0.003	-0.0106	0.0263	
	(0.01)	(0.011)	(0.009)	(0.033)	
Environment	0.0114	0.0093	0.0149*	0.0591*	
	(0.008)	(0.009)	(0.008)	(0.032)	
Governance	0.0023	-0.0019	0.0022	-0.0292	
	(0.009)	(0.01)	(0.009)	(0.038)	
LTDAR	-0.1351***	-0.184**	-0.0555**	0.0557	0.0266
	(0.049)	(0.077)	(0.028)	(0.098)	(0.071)
RDESR	-0.0002**	-0.0002	-0.0001*	-0.0001	-0.0002***
	(0)	(0)	(0)	(0)	(0)
ISR	-0.0193	-0.0131	-0.0174**	-0.0318	-0.0269*
	(0.012)	(0.015)	(0.009)	(0.021)	(0.015)
R^2	0.2058	0.1732	0.4958		
AR1				p = 0.011	p = 0.002
AR2				p = 0.258	p = 0.564
Hansen				p = 0.333	p = 0.173

Notes: EmxEnv: Employee and Environment dimensions; EnvxComm: Environment and Community; CommxGov: Community and Governance; EmxGov: Employee and Governance; EmxComm: Employee and Community; EnvxGov: Environment and Governance; LTDAR: Long Term Debt to Assets Ratio; RDESR: R&D Expenses to Sales Ratio; ISR: Intangibles to Sales Ratio.
Standard errors (SEs) in parentheses.
***p < 0.01; **p < 0.05; *p < 0.10.

The following table (see Table 8) is related to the second step of Cavaco & Crifo (2014) methodology that intends to test the complementarity or synergies among CSR dimensions and the corporate financial performance (ROA or Tobin's Q). Therefore, in Table 8, the combined dataset 1 and 2 (overall data) were used and thirteen dummy variables were defined as CSR States in order to identify when a firm has obtained a rating above sectoral average on one or more of the CSR dimensions. By having followed the convention of binary algebra: the CSR variables were indicated to be equal to 1 when an MNE had obtained a rating above the sectoral average on one, two, three or four of the four CSR dimensions and zero otherwise.

Table 8. CSR states and financial performance: system GMM (dynamic panel data)

Variables	ROA	Tobin's Q
ROA (t-1)	0.825***	
	(0.054)	
Tobin's Q (t-1)		0.954***
		(0.065)
States		
State0000	Ref	Ref
State0001 (GOV)	-0.006	-0.002
	(0.021)	(0.293)
State0010 (ENV)	0.014	-0.171
	(0.02)	(0.3)
State0011 (ENV & GOV)	0.012	-0.254
	(0.019)	(0.393)
State0100 (EMP)	0.008	-0.608**
	(0.02)	(0.298)
State0101 (EMP & GOV)	0.000(0.02	0.517
	8)	(0.414)
State0110 (EMP & ENV)	0.033	-0.056
	(0.026)	(0.403)
State0111 (EMP & ENV & GOV)	0.007	-0.315
	(0.03)	(0.433)
State1000 (COMM)	0.02	0.168
	(0.022)	(0.348)
State1001 (COMM & GOV)	0.021	0.141
	(0.033)	(0.495)
State1010 (COMM & ENV)	0.022	0.206
	(0.035)	(0.528)
State1011 (COMM & ENV & GOV)	0.039	0.202
	(0.031)	(0.429)
State1100 (COMM & EMP)	0.021	-0.352
	(0.018)	(0.264)
State1101 (COMM & EMP & GOV)	0.034**	0.191
	(0.015)	(0.23)
State1110 (COMM & EMP & ENV)	0.025***	-0.125
	(0.013)	(0.204)
State1111 (COMM & EMP & ENV & GOV)	0.013	-0.204
	(0.012)	(0.176)
LTDAR	0.002	0.214
	(0.045)	(0.71)
RDESR	0.038	0.579
	(0.069)	(1.186)
ISR	-0.017***	-0.082
	(0.009)	(0.135)
AR1	p = 0.130	p <0.001
AR2	p = 0.009	p = 0.001
Hansen	p = 0.011	p = 0.807

Notes: Gov: Governance dimension; Env: Environment dimension; Em: Employee dimension; Comm: Community dimension; LTDAR: Long Term Debt to Assets Ratio; RDESR: R&D Expenses to Sales Ratio; ISR: Intangibles to Sales Ratio.

Standard errors (SEs) in parentheses.

***p < 0.01; **p < 0.05; *p < 0.10.

The state 0000 is the state reference (see Table 8), that is a state dummy states considering all CSR ratings below sectoral average. The regression analysis has shown that there exists a highly significant positive relationship of the ROA with its lag value and when the state of the firm was high for Community, Employee, and Governance (State1101), Community, Employment, and Environment (1110). The Beta Coefficients have shown very low values indicating a low influence on ROA. The Arellano and Bond test has shown no first order autocorrelation while no further autocorrelation was found in the second order AR(2). The Hansen test has shown that it does not support the consistency of the GMM instrument for ROA.

Regression Analysis for Tobin's Q has shown a positive significant relationship with its lag value indicating that it was highly persistent and dependent on previous Tobin's Q. A negative significant relationship was observed for Tobin's Q with the State Employee (State0100) and when all the States (State1111) which would mean that when all CS scores were high on all dimensions, the Tobin's Q value would decrease. Arellano and Bond tests has shown no first and second order autocorrelation indicating that the model may not be valid. The Hansen test supported the consistency of the GMM instrument for the Tobin's Q only.

3.4. Results discussion and research hypotheses tests

The results shown on previous tables are mixed and inconsistent, particularly because the statistical models could not be validated for the Tobin's Q, as Arellano and Bond tests has shown no first and second order autocorrelation indicating that the model may not be valid (although the Hansen test supported the consistency of the GMM instrument). However, the ROA and its interaction with the CSR Dimensions provided some interesting insights that were properly validated.

Since a significant number of researchers had generated results, in which it had not been possible to have determined whether the association between CSR and financial performance was positive or negative or if there was any association between the variables at all. The objective while testing the hypothesis was clear: find out whether the interaction was positive, negative, significant or insignificant. Moreover, given that the most widely accepted theoretical framework for treating the existence and nature of the relationship between CSR and firm performance has been reportedly found in the work of Preston and O'Bannon (1997). Six possible relationships between the two variables were hypothesized.

Among these, were the hypothesis of social impact (higher or lower levels of CSR lead to higher or lower levels of corporate performance). After having gone through the literature, it was clear that the stakeholder theory supported the positive association (Freeman, 1984) because CSR would allow for various stakeholders to be satisfied, which in turn could lead to an improvement in the external reputation of the firm, and consequently, in its performance.

It may also be true to suggest that investment in CSR could also produce greater client loyalty, unfurl new market opportunities, and bring about the development of new capacities, etc., which are all designed to result in improvements to an MNEs performance.

The negative synergy hypothesis has emphasized the existence of a negative, interactive relationship between CSR and firm performance. More CSR related activities would have led to a poor firm performance. Investment in CSR was shown to produce costs that have traditionally been a source of competitive disadvantage to the firm when placed in comparison with other firms that did not have to spend in the same way as was suggested by Waddock & Graves, 1997. Another factor relevant here would be the opportunity costs which would have arisen from the missed opportunities that could have enabled the firm to spend the same money on more profitable activities.

It could be inferred that there never existed any clear and significant relationship between CSR and firm performance, and the other variables such as R&D, Advertising and Long Term Debt might moderate this link and thereby account for the fact that some studies have not found any conclusive relationships between the CSR and CFP variables.

It would also be essential to observe that the pressures for CSR responsiveness at the central level might not correspond to pressures for integration in the product market. It could even be expected that no relationship existed between the strategic importance given to global or local CSR issues and the organizational strategy of the firm in the product market. A firm that handled CSR strategically would thus have to examine global and local CSR issues independent of the product-market pressures and would have to respond to those CSR issues while trying to meet the demands for responsiveness and integration by local and global NGOs, host and home country governments, and the local market structure (Husted & Allen, 2006).

Hypothesis 1: There is a positive interaction between the combined overall Corporate Social Performance Rating (CSR Global) and the accounting based financial performance of the MNEs (represented by ROA).

The validity of the hypothesis has been proved. However, no positive interaction was observed in the results.

Interestingly, the findings are in consonance with the results reported in the Cavaco & Crifo (2014) paper. They reported: “the aggregate measure of CSR (CSR global) has a negative impact on both the ROA and the ....” (Cavaco & Crifo, 2014, p. 3330).

In the results obtained herein, the CSR dimension ‘Global’ has been shown to have a weak and insignificant negative correlation with the financial performance measure ROA, while observing the System GMM model.

Hypothesis 2: There is a positive interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the accounting based financial performance of the MNEs (represented by ROA).

The validity of the hypothesis has been proved. The CSR dimension 'Environment' has been shown to be positively correlated with ROA. The CSR Dimension 'Environment' has been observed to be significant for the ROA while observing the findings of Dynamic Pooled and System GMM models. This would indicate that high CSR Rating for 'Environment' would lead to higher ROA while a low CSR Rating would inversely lead to a low ROA estimation.

In Cavaco & Crifo (2014), the results indicated that: "environmental responsibility (ENV score) enhances only the ROA" (Cavaco & Crifo, 2014, p. 3330). This would indicate that the current findings observed at Table 7 are in agreement to the results reported in the 2014 study.

Hypothesis 3: There is a positive interaction between the combined overall Corporate Social Performance Rating (CSR Global) and the market based financial evaluation of the MNEs (represented by Tobin's Q).

The hypothesis could not be validated due the p-values of the test of AR (2) on Table 6, which were less than 0.05. Hence, the model was not validated. The Hansen Test validated the null hypothesis, H0: the instruments were valid, that is they were not correlated with error terms – but the model was validated. Given that the previous test of Second Order correlation AR (2) had not been validated, the results were considered as lacking robustness, and hence the conclusions could not be relied upon.

In the Cavaco & Crifo (2014) results, it had been observed that: "the aggregate measure of CSR (CSR global) has a negative impact on both the ROA and the Tobin's Q." Interestingly, the CSR dimension 'Global' in Table 6 was observed to have a weak and insignificant negative correlation with the market based financial performance measure i.e. the Tobin's Q while observing the Pooled OLS, Fixed Effects and System GMM models. Regrettably, the hypothesis could not be completely validated although the findings were in consonance to the Cavaco & Crifo (2014) study.

Hypothesis 4: There is a positive interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the market based financial evaluation of the MNEs (represented by Tobin's Q).

The hypothesis could not be validated due the p-values of the test of AR (2) on Table 6 which were less than 0.05. Hence, the model was not validated. The Hansen Test validated the null hypothesis, H0: the instruments were valid, that is they were not correlated with error terms – but the model was validated. Given that the previous test of Second Order correlation AR (2) had not been validated, the results were considered as lacking robustness, and hence the conclusions could not be relied upon. If the results would have been validated, then it could be understood that the CSR dimension 'Governance' was shown to be a significant positive predictor for Tobin's Q.

Hypothesis 5: There is a negative interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the accounting based financial performance of the MNEs (represented by ROA).

The validity of the hypothesis has been proved. The CSR Rating 'Governance' demonstrated a negative interaction to the ROA although no significant correlation of the CSR dimension with the accounting based performance measure ROA was observed. The negative interaction was seen for the Fixed Effects model on the Static side and the System GMM model on the Dynamic side of the empirical analysis.

In the Cavaco and Crifo (2014) paper, the CSR dimension Human Resources (HR) (which is akin to the CSR dimension Employees in the present study), has demonstrated a negative interaction to the ROA which was found weakly significant for the System GMM model (p. 3331).

Hypothesis 6: There is a negative interaction between only some of the Corporate Social Performance Ratings (Environment/ Employee/ Community/ Governance) and the market based financial evaluation of the MNEs (represented by Tobin's Q).

The hypothesis could not be validated due the p-values of the test of AR (2) on Table 6 which were less than 0.05. Hence, the model was not validated. The Hansen Test validated the null hypothesis, H0: the instruments were valid, that is they were not correlated with error terms – but the model was validated. Given that the previous test of Second Order correlation AR (2) had not been validated, the results were considered as lacking robustness, and hence the conclusions could not be relied upon.

There has been observed a negative interaction of the Tobin's Q with the CSR dimension 'Environment' although not very significantly correlated. Moreover, the negative interaction was only observed with the System GMM model while the other models did not record any negative interaction but they were rather indicative of a positive interaction.

In the Cavaco and Crifo (2014) paper, such an inconsistency of interaction between the CSR dimension Human Resources (HR) was observed for the Tobin's Q, whereby the Pooled OLS and Fixed Effects models carried a negative and moderately correlated interaction while the System GMM model carried a positive and highly significant interaction between the variables (p. 3332).

Hypothesis 7: There is simply no relationship between corporate social responsibility and financial performance.

The validity of the hypothesis has been proved. It has been demonstrated that a limited and significantly correlated interaction exists between the CSR dimension 'Environment' in relation to the ROA at Table 7. Therefore, the role of CSR activities in influencing Corporate Financial Performance cannot be undermined.

Conclusions, Limitations and Future Research Lines

It has been believed by many researchers that by having investigated the social– financial performance link, a researcher would need to examine not only whether firms make social investments, but also whether these investments and projects would have been designed strategically to enhance profits (Husted & Salazar, 2006).

Because CSR is multi-dimensional and because the signals have been cumulative, firms may find it beneficial to engage in multiple CSR initiatives. Yet, no consensus has been reached so far on whether or not CSR leads to higher financial performance (Cavaco & Crifo, 2014).

It has been put forward by Tang et al. (2012), that it would be better to achieve specialization in one area of CSR at a time than to have pursued all of them at once. The study shall affirm the observations made in the existing literature since it has been shown that the nature of correlation i.e. positive or negative between the different CSR practices matter in the CSR – Financial performance relationship in MNEs.

The results proved to be mixed and inconsistent, particularly because the statistical models could not be validated for the Tobin's Q. However, the ROA and its interaction with the four CSR Dimensions were properly validated and these interactions provided some interesting insights. It was found that the CSR dimension 'Environment' was shown to be positively and significantly correlated to the financial performance variable: 'ROA'.

Preliminary observations about whether the CSR Dimension 'Environment' was complementary to any of the other dimensions did not yield any statistically significant results, although the interactions between the dimension Environment and the other dimensions indicated a negative interaction signalling the absence of complementarities between the other CSR dimensions.

For negatively correlated components, firms could pursue only one CSR dimension at a time, and for positively correlated ones, firms should pursue both of them at the same time in order to exploit synergies and reduced agency costs, thereby improving financial performance.

Given the lack of robustness of the results of the empirical analysis, and owing to the lack of time on the part of the author, the study is hindered by the limitations of certain statistical tests, which could not be validated entirely. Therefore, the empirical analysis has been left for want of future research at a more appropriate stage of the authors' academic career.

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APPENDIX

Table A. 1. Distribution of companies in the overall dataset

Company	Frequency	Percent	Company	Frequency	Percent
3M	9	2.1	**McCormick Foods**	7	1.6
Accenture PLC	9	2.1	**McDonalds**	7	1.6
Accor Hotels	9	2.1	**Medtronic**	9	2.1
Air France KLM	7	1.6	**Microsoft**	7	1.6
Alphabet Inc.	7	1.6	**Mondelez International Inc.**	9	2.1
Amazon.com	9	2.1	**National Instruments**	9	2.1
American Express	9	2.1	**Nestle SA**	9	2.1
BMW AG	7	1.6	**NetApp Data Storage**	7	1.6
CISCO Systems	7	1.6	**Nokia Telecommunications**	7	1.6
Coca Cola	8	1.8	**Novo Nordisk**	9	2.1
Colgate Palmolive	9	2.1	**Pearson Educational**	7	1.6
Danone SA	9	2.1	**Pepsico**	9	2.1
Dassault Systemes	7	1.6	**POSCO Korea Steel Manufacturer**	6	1.4
Diageo	9	2.1	**Procter & Gamble**	9	2.1
DSM Pharmaceuticals	7	1.6	**Roche Holdings AG**	9	2.1
FedEx Worldwide	7	1.6	**Royal Dutch Shell**	7	1.6
Ford Motor Corp	9	2.1	**Royal Philips**	7	1.6
GlaxoSmithKline Plc.	9	2.1	**Schneider Electric**	7	1.6
Heineken International	9	2.1	**Siemens AG**	7	1.6
Henkel	7	1.6	**Starbucks**	9	2.1
Hilton Worldwide Holdings	8	1.8	**Syngenta AG**	7	1.6
Intel Corporation	9	2.1	**Toyota Motors**	9	2.1
InterContinental Hotels	9	2.1	**Unilever**	7	1.6
Johnson and Johnson	7	1.6	**Vodafone Group**	9	2.1
Kimberly-Clark	9	2.1	**Volkswagen AG**	9	2.1
L'Oreal	7	1.6	**Wyndham Worldwide**	9	2.1
Marks and Spencer	7	1.6	Total	433	100
Marriott	7	1.6			