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# Understanding and use of sustainable performance measures in small and medium firms : the impact of family involvement

Pedro Mamede

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Pedro Mamede. Understanding and use of sustainable performance measures in small and medium firms : the impact of family involvement. Business administration. Université Panthéon-Sorbonne - Paris I, 2019. English. NNT : 2019PA01E043 . tel-02614256

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**UNDERSTANDING AND USE OF  
SUSTAINABLE PERFORMANCE  
MEASURES IN SMALL & MEDIUM FIRMS:  
THE IMPACT OF FAMILY INVOLVEMENT**

THESE  
présentée et soutenue publiquement le **04 Novembre 2019**  
en vue de l'obtention du  
**DOCTORAT EN SCIENCES DE GESTION**  
par

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## **ACKNOWLEDGEMENTS**

This dissertation was a long quest full of psychic and physical challenges, and which would not be possible without the unconditional support of several people to whom I am grateful.

I would like to acknowledge and express my sincere gratitude to my supervisor Professor José Allouche. Firstly, for the acceptance of my thesis project and my condition as worker and student a few years ago. Secondly, for his constant guidance, support, motivation and knowledge sharing to my doctoral research. He encouraged me to work and increased my work whenever I needed. Finally, for his tenacity, flexibility and constant recall during these years. Without his constant support and suggestions, this dissertation would never have been completed.

I would like to thank Professor Bruno Amann, Professor Jacques Jaussaud, Professor, Geraldine Schmidt and Professor Gérard Hirigoyen for accepting to be part of my dissertation committee and taking the time to read this dissertation. I am sure their feedback will be extremely valuable and contribute deeply to my future research. My special thanks for the valuable advices in pre-soutenance phase to Professor Bruno Amann and Professor Jacques Jaussaud. I am also very grateful to Professor Nuno Rosa Reis for his useful advice in Bibliometric methodology and Bibexcel<sup>®</sup> software use and Harris Jusufbegovic for his useful linguistic advices.

The completion of this dissertation will be not possible without the support of my company (Elevate Global Limited), namely the comprehensive attitude of my Europe coordinator Daniele Giomi. Also, the linguistic and critical analysis promote by my good friend Leonildo Munguambe so far but always available.

My doctoral research impacted my whole family lives, without them my work will be not complete. Firstly, I'm grateful to my wife Ana Paula who support me with her kindness and patience. Then, to my lovely daughters Ana & Sofia who surely are relieved to have more time with their father, but who have always been proud and support me with their unconditional love. I hope this work inspires them.

Finally, I would like to thank my parents, António & Alice and my loved sister, Dora, who always encourage and support my aims and goals.

*This dissertation is dedicated to my wife Ana Paula, my beautiful daughters Ana & Sofia, and to my parents & sister.*

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## **LIST OF ABBREVIATIONS**

APA:	Agência Portuguesa do Ambiente
BSC:	Balanced Scorecard
CEO:	Chief Executive Officer
CFP:	Corporate Financial Performance
CS :	Corporate Sustainability
CSP.	Corporate Sustainability Performance
CSR :	Corporate Social Responsibility
EU:	European Union
EMS:	Environmental Management System
FB:	Family Business
IES:	Informação Empresarial Simplificada
INE:	Instituto Nacional de Estatística
GDP:	Gross Domestic Product
GEP:	Gabinete de Estratégia e Planeamento
GRI:	Global reporting Initiative
KPI:	Key Performance Indicators
NFB:	Non-Family Business
NGO:	Non-Governmental Organization
RBV:	Resource-Based View
SEW:	Socioemotional Wealth
SIC:	Standard Industrial Classification
SME:	Small and Medium Enterprise
SPMS:	Sustainability Performance Management System
SD:	Sustainable Development
TBL:	Triple Bottom Line
UN:	United Nations
UNEP:	United Nations Environment Programme
WCED:	World Commission Environment and Development
WBCSD:	World Business Council of Sustainable Development

## **ABSTRACT**

From a corporate sustainability performance lens, the purpose of this thesis is to investigate the implications of family involvement in the understanding and use of sustainable performance measures in SMEs with an emphasis in Portuguese family firms. First, a bibliometric study has been used to map the relevant knowledge network on sustainability performance measures and measurement field, retrieving 1271 articles from 1987 to 2015. Second, a bibliometric and abstract lexical analysis were used on 63 SMEs article. Corporate sustainability performance studies showed specificities of core theoretical knowledge and the greater operational SMEs focus. Third, using matched paired methodology and multivariate approach, we focus 65 Portuguese SMEs from 2012 and 2016. The main findings show a consistent pattern that corporate family involvement influence financial performance but have a mixed effect on environmental and social performance. It was also be provide evidence of positive link between social and financial performance. Fourth, a case study of a sustainable oriented family owned SME shows that a restricted socioemotional view is dominant in top managers discourses and in their managerial actions, privileging primary stakeholders' engagement. Finally, it was provided evidence of positive link between environmental and financial performance in a dual managed context.

### **Keywords:**

Sustainability, performance, corporate sustainability, family business, Portuguese SME, stakeholder theory, socio-emotional wealth (SEW), Dual Board effect, bibliometric analysis, lexical study, matched pair analysis, content analysis, case study.



## **1. CHAPTER 1 – INTRODUCTION**

---

# 1. CORPORATE AND SUSTAINABLE DEVELOPMENT

## 1.1 Sustainable development a theoretical overview

Over the last decades, a great evolution of sustainable strategies and performance implementations has been perceived in the businesses research field (Bonacchi & Rinaldi 2007; Searcy 2012). Indeed, companies face new challenges resulting from various economic, social, environmental and technological phenomena. Different pressures from internal and external stakeholders pushed managers to reflect and adapt their management to a consistent implementation of sustainable actions (Sirgy, 2002; Harrison and Freeman, 1999). In this sense, businesses integrating pressures and expectations have found answers in the concept of sustainable development (Schaltegger et al., 2003; Hubbard, 2009).

The foundation of the sustainable development concept can be found on multiple theological reflections on the place of humankind in the world (Mebratu, 1998). However, the first structured roots of the problem of sustainable development are found in Robert Thomas Malthus's "*Essay on the Principle of Population and its Effect on the Future Development of Societies*" in 1798 (Barkemeyer et al., 2011). This theory of population enclosed the environmental limits with an impact on economic development (Mebratu, 1998).

The Club of Rome performed the first multi-stakeholder panel focusing on eco-development. This organization, which was established in 1968 to examine the complexity of humanity challenges stimulated the studies of environmental degradation (Araújo, 2006). Thus, the book "*The Limits to Growth*" (Meadows et al., 1972), on the initiative of this club, begins the debate on the impact of pollution and human productive activity on future generations.

This publication concluded that only concerted and united action could achieve the necessary state of equilibrium for human survival (Araújo, 2006). On the same sense, Schumacher (1973) published "*Small is beautiful, Economics as if People Mattered*" updating a new post-industrial governance highlighting the heavy degradation of natural resources based on an oversized and exaggerated consumption pattern. The economy is seen as over organized to destroy the planet (Mebratu, 1998).

In 1972, the first United Nations Conference on the Human Environment was held in Stockholm. Then, a process of awareness and global mobilization in defence of environmental issues began. The debate focused on the establishment of a program to contain and prevent industrial pollution within a framework of balancing priorities between economic development and essential environmental protection. This conference resulted in the creation of the United Nations Environment Programme (UNEP), whose mission is to promote partnerships for environmental conservation, informing and empowering nations to improve quality of life without compromising future generations (insert reference).

In 1987, from the World Commission on Environment and Development chaired by Gro Harlem Brundtland, an effective determination emerges to address the challenges between development and the environment. Consolidating the commission's conclusions, the Brundtland Report (1987) became a key document as a guideline for future strategies for economic growth and human development. The environmental degradation is understood as a result of industrial development and it becomes an issue intrinsically associated with the economic and ecological decline (Daly, 1991; Barkemeyer et al., 2011). For the first time, the world assumes that it is no longer makes sense to disassociate environmental protection policies from the necessary integration with the development of populations, thus social inclusion (Blasco, 2006). The growth limitation recommendations advocated by ‘The Limits to Growth’ (Meadows et al., 1972) have been replaced by the concept of "sustainable development".

With the Rio Summit, also known as the 1992 Earth Summit, global awareness of the need to establish a truly sustainable global development policy was consolidated, which should be based on three pillars (Blasco, 2006):

- Social Equity,
- Environmental Protection and,
- Economic Prosperity.

In Johannesburg (Rio +10) and Rio 2012 (Rio +20), it was explicit the need for integration of companies as agents for sustainable development, namely through accountability and best sustainable operational practice. Even the private sector started in early 90's to be aware and active on sustainability level (for example World Business Council for Sustainable Development Foundation), private business actions on this field still raise academic debates.

**Figure 1.1 – Sustainable Development initiatives**

Intergovernmental initiatives	Private initiatives
<p><b>1972-</b> “Limits to Growth” publication (Meadows et al., 1972)</p> <p><b>1972-</b> 1<sup>st</sup> United Nations Conference on the Human Environment (<b>Stockholm</b>) and UNEP Foundation</p> <p><b>1979-</b> 1<sup>st</sup> World Climate Conference (<b>Geneva</b>)</p> <p><b>1983-</b> World Commission on Environment and Development (WCED) Foundation</p> <p><b>1987-</b> “<i>Our Common Future</i>” (Brundtland Report) publication</p> <p><b>1990-</b> 2<sup>nd</sup> World Climate Conference (<b>Geneva</b>)</p> <p><b>1992-</b> United Nations Conference on Environment and Development (UNCED) (<b>Rio de Janeiro</b>)</p> <p><b>1995-</b> 1<sup>st</sup> United Nations Climate Change Conferences (UNFCCC) (<b>Berlin</b>)</p> <p><b>2002-</b> World Summit on Sustainable Development (<b>Joanesburgo</b>)</p> <p><b>2012-</b> United Nations Conference on Sustainable Development (<b>Rio de Janeiro</b>)</p>	<p><b>1992-</b> World Business Council for Sustainable Development (WBCSD)</p> <p><b>1997-</b> SA 8000 and the Global Reporting Initiative (GRI) publication</p> <p><b>1999-</b> Dow Jones Sustainability World foundation and ISO 14001 publication</p> <p><b>2000-</b> Global Compact publicaton</p> <p><b>2001-</b> FTSE4Good Index series foundation</p> <p><b>2004-</b> Ethibel Sustainability Index (ESI) foundation</p> <p><b>2010-</b> ISO 26000 publication</p>

Thus, the concept of sustainable development, far from being consensual, is marked by political and scientific opposition (Barkemeyer et al., 2011). The concept resulting from political consensus has matured over the years, but doubts remain about its applicability and the logic of the concept (Scheffer, 2012).

Sustainable development enclosed a degree of contradiction and ideologic debate, which leads to a diversity of interpretation (Barbier, 1987). A great number of definitions have been raised in the last decades creating energetic discussions about definitions and interpretations, including different degrees of ecocentric and anthropocentric perspectives and change needed (Ciegis et al., 2009; Imran et al., 2014; Duran et al., 2015).

For Barbier (1987), sustainable economic development underlines criteria that differ from conventional economic consensus, new analytical approach is needed. In this sense, four criteria to define sustainable development are highlighted by this author:

1. Sustainable economic development is intrinsically coupled with the development of society and cannot be separated from the social, cultural or ecological changes;
2. The concept has a quantitative dimension associated with increases of physical and social well-being;
3. Qualitative dimension is linked to the long-term ecological, social and cultural structure to supported economic activity;
4. Finally, performance measurement under the concept is not easy to design and fully capture, since the economic gain is no more unique criteria.

For Daly (1991), sustainable development face quantitative and qualitative challenges. From a quantitative angle, population and consumption growth pressed natural capital to limits of non-renew. In another angle, the communitarian concept of wealth in a full world scope (developed and undeveloped countries) is based on the neo-classical vision of economic growth. The economic capital must remain the same to guarantee a hypothetical equal standard to the future generations as proposed by the Brundtland Report (1987). Considering the population rate increase, Daly (1991) states that the qualitative concept needs e rethink in order to erase the psychologic link between the economic growth and sustainable development. In fact, the semantics tends to link development to conventional economic growth and consumptions, associated with social welfare (Lélé, 1991). Sustainable development appears controversial due to the broad scope of the term, but also because it put at the same level three apparently opposite dimensions.

Gladwin et al. (1995) observe that new paradigms tend to emerge from entirely new fundamentals without clear standards and definition. However, for these authors, the main components of sustainable development focus is a process of “*achieving human development in an inclusive, connected, equitable, prudent, and secure manner*” (Gladwin et al., 1995, p. 878).

**Table 1.1 – Main structural components of Sustainable Development concept**

<b>Components</b>	<b>Definitions</b>
<b>Inclusiveness</b>	Implies human development over time and space.
<b>Connectivity</b>	Entails an embrace of ecological, social, and economic interdependence.
<b>Equity</b>	Suggests inter- generational, intragenerational, and interspecies fairness.
<b>Prudence</b>	Connotes duties of care and prevention: technologically, scientifically, and politically.
<b>Security</b>	Demands safety from chronic threats and protection from harmful disruption.

Source: Gladwin, T. N., Kennelly, J. J., & Krause, T. S. (1995)

Institutional involvement, as exposed in table 1.2, in the last decades had ensured an effective definition of the social, economic, and environmental objectives set by the society. In this sense, a great work to develop global assessment methods and metrics for sustainability is in implementation, extending challenges to the private sector (Ukko et al., 2018).

**Table 1.2 –Institutional Sustainable Development definitions**

<b>Institutions</b>	<b>Definitions</b>
WECD (1987)	<i>“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (WECD, 1987, p. 54)</i>
UNESCO <i><a href="https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd">https://en.unesco.org/themes/education-sustainable-development/what-is-esd/sd</a></i>	<i>“There are four dimensions to sustainable development – society, environment, culture and economy – which are intertwined, not separate. Sustainability is a paradigm for thinking about the future in which environmental, societal and economic considerations are balanced in the pursuit of an improved quality of life” (accessed in 2019.02.20)</i>
World bank (1992)	<i>“Sustainable development is development that lasts” (World Development Report, 1992, p 332)</i>
The Food and Agriculture Organization of the United Nations (FAO) <i><a href="http://www.fao.org/3/ai388e/AI388E05.htm">http://www.fao.org/3/ai388e/AI388E05.htm</a></i>	<i>“The management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry, and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technologically appropriate, economically viable and socially acceptable”. (Accessed in 2019.02.20)</i>
World Conservation Union (IUCN), World Wildlife Fund for Nature (WWF) & United Nations Environment Programme (UNEP) (1992)	<i>“Mean improving the quality of human life while living within the carrying capacity of supporting ecosystems.”</i>

In our study, we start from the definition of the Brundtland Report (1987), as a genesis of conceptualization. This document emphasizes the following assumptions in sustainable development operationalization:

- The balance between humanity and nature, in which one seeks to satisfy the aspirations of the present without favouring some of the parties (Gladwin et al., 1995; Barkemeyer et al., 2011);
- Inter-generational justice establishing temporal equity (Sikdar, 2003);
- The world is an interconnected and inter-communicating system (Araújo, 2006), and the responses must be global and common (Blasco, 2006);
- The interconnection between economic, environmental and social dimensions (Hubbard, 2009);
- Fundamentalism of the economic dimension as a source of development and subordination of environmental and social dimensions (Epstein, 2001; Schaltegger, 2003; Bansal, 2005).

Thus, the definition of sustainable development was influenced by the political and sciences debates and is still in evolution with new contributions in present times (Barkemeyer et al., 2011). The evolution of sustainable development and its applicability to firms raises new research questions on the business case and its applicability to a more smaller scale (van Marrewijk, 2003) through the concept of corporate sustainability.

## **1.2 From sustainable development to corporate sustainability**

At the firm level, sustainable development is associated with corporate sustainability (CS), but no widely accepted definitions exist (Searcy, 2012).

Two pillars influence CS framework. Firstly, a dominant vision that company is a system that transforms resources into products and services within an economic perspectives dominance (Baumgartne & Rauter; 2017; Hahn et al., 2018). Secondly, as a human system based, firms depend on relationships with several other entities (Gavare & Johansson, 2010). Thus, firms move in a complex set of forces that lead to more or less economically, socially or environmentally strategies focused (Alhaddi, 2015; Hahn et al., 2018).

Beyond the business case, authors find a paradox perspective marked by tensions in corporate sustainability concept (Montiel & Delgado- Ceballos, 2014; Hahn et al., 2018). Firstly, sustainability can be seen as a too high and complex objective to single firm-level (Lankoski, 2016). In another way, conflicting management dimensions appear as immobilizers and destructive of values creation (Linnenluecke & Griffiths, 2010; Hahn et al., 2018). Also, stakeholder's contradictory needs and expectations may conduct to impediments in the pursuit and implementation of corporate sustainability (Linnenluecke & Griffiths, 2010). Facing these different perspectives, several definitions appear in the academic literature based on ecological concern (Shrivastava, 1995) or as social responsibility (Carroll, 1999), or integrating corporate economic activities with environmental and social concerns (Dyllick & Hockerts, 2002; Sikdar, 2003; van Marrewijk, 2003). The theoretical evolution from technocentric and ecocentric to sustaincentric paradigm creates a growing focus on the field delimitation search (Gladwin et al., 1995). However, for Montiel & Delgado-Ceballos (2014), no standardized definitions of corporate sustainability exist. Observing discussions about corporate sustainability in the practitioner and research literature, we also find the use of “corporate social responsibility” or “corporate environmental responsibility” as synonyms of corporate sustainability (Montiel & Delgado-Ceballos 2014). This diversity can be seen as the result of debate richness and importance of the field in management science (Rego et al., 2017).



**Table 1.3 – Corporate Sustainability Definitions**

Author´s	Definitions
International Institute for Sustainable Development (1992)	<i>Adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining, and enhancing the human and natural resources that will be needed in the future” (p. 1).</i>
Dyllick and Hockerts (2002)	<i>Meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities, etc.) without compromising its ability to meet the needs of future stakeholders as well (p. 131).</i>
Szekely and Knirsch (2005)	<i>Sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer relationships, and the quality of products and services. It also means adopting and pursuing ethical business practices, creating sustainable jobs, building value for all of the company’s stakeholders, and attending to the needs of the underserved. (p. 628)</i>
Neubaum and Zahra (2006)	<i>The ability of a firm to nurture and support growth over time by effectively meeting the expectations of diverse stakeholders. (p. 121)</i>
Lo (2010)	<i>Is defined as the integration of financial benefit, environmental protection, and social responsibility into business operations and management protection, and social responsibility into business operations and management (p. 311).</i>
Strand (2014)	<i>Corporate sustainability refers to the integration of economic, environmental, and social considerations on the part of corporations (p. 688).</i>
Schaltegger & Burritt (2015)	<i>All activities which design, measure, analyse and improve environmental, social and economic activities in order to firstly create a sustainable development of the organisation itself, and secondly to enable the company to contribute to the sustainable development of the economy and society as a whole. (p.2)</i>
Schaltegger, Hansen, & Lüdeke-Freund (2016)	<i>Integrative and competitive solutions by either radically reducing negative and/or creating positive external effects for the natural environment and society (p.3)</i>

Source: Author

To clarify the origin of the concept of corporate sustainability, Wilson (2003) analysed the contribution of several frameworks applied to firms. The author concludes that the corporate sustainability definition must be understood as an evolving concept which derives from economics, ecology, social justice, moral philosophy, strategic management and business law disciplines.

**Table 1.4 – Corporate sustainability conceptual evolution**

Concept	Contribution (s)
SUSTAINABLE DEVELOPMENT	Boundaries of the subject matter and description of a common societal goal: - Define environmental, social, and economic dimensions performance. - Provides a common societal goal for corporations, governments, and civil society.
CORPORATE SOCIAL RESPONSIBILITY	Ethical arguments as to why corporations should work towards sustainability goals: - Society, in general, believes in sustainable development and corporations have an ethical obligation to help society move in that direction.
STAKEHOLDER THEORY	Business arguments as to why corporations should work towards sustainability goals - In the own best economic interest, firms should work toward sustainable development strengthening the relationship with their stakeholders.
CORPORATE ACCOUNTABILITY THEORY	Ethical arguments <sup>[1]</sup> as to why companies should report on sustainability performance - Define the nature of the relationship between corporate managers and society.

Source: Adapted from Wilson (2003)

Thus, corporate sustainability as construct has been shaped by the contributions of several disciplines and theoretical framework.

However, "Triple-Bottom-Line" approach conceptualized by Elkington (Dahlsrud, 2008; Alhaddi, 2015; Hussain et al., 2018) appears as the most consensual in the operationalization of sustainable development by companies. Thus, this triple vision supposes a balance between the three dimensions of sustainability (Labuschagne, Brent, & van Erck, 2004; Tregidga & Milne, 2006; Seuring, 2008; Nasiri et al., 2018):

- Economic, based on prosperity as a result of wealth generation, through the creation of tradable value in markets;
- Environmental, based on the preservation of biodiversity, as a result of the respect of the balance between human needs and the regenerative capacity of the environment;
- Social, based on equity, as a result of processes of inclusion of the poorest populations through access to universally accepted rights and freedoms.

This approach supports the integration of companies as fundamental agents of sustainability (Bakshi and Fiksel, 2003).

Distinct aspects concerning economic, ecological and social dimensions of sustainability may be incorporated in corporate strategic implementation (Baumgartner & Ebner, 2010).

**Table 1.5 – Sustainability aspects**

<b>Dimensions</b>	<b>Aspects</b>
Economics	Innovation and technology Collaboration / Cooperation Knowledge management Processes /Total Quality Management Product stewardship Purchase/ Supply chain management Sustainability reporting
Environmental	Emissions into the air Emissions into the water Emissions into the ground Waste and hazardous waste Biodiversity Environmental issues of the product
Social	Corporate governance Motivation and incentives Health and safety Human capital development Basic human rights

Source: Adapted from Baumgartner & Ebner, (2010)

Although, the existence of normative, strategic and operational support of several frameworks, companies still face challenges to an effective sustainability implementation and integration (Engert et al., 2016). The diversity of sustainability aspects increases complexity and uncertainty in strategic processes. Also, the lack of experience and the different level of maturity influence a successful environmental and social integration (Baumgartner & Ebner, 2010). Finally, the lack of organizational culture that still maintains economic sustainability as the unique priority (i.e., the maximization of profits, production and sales) (Linnenluecke & Griffiths, 2010).

However, sustainability practices are key to a company's performance, sustainable actions within a company's strategy are likely to become a source of competitive advantage

(Lloret, 2016). Several theories support corporate sustainability proactively namely institutionalism, resource-based view and stakeholders theories.

The resource-based view of the firm has emerged articulating the relationships among firm resources, capabilities, and competitive advantage (Barney, 1991; Hart, 1995). This position considers the company's resources and capacities when they are valuable, rare, inimitable, adaptable and decisive for positive performance. Corporate sustainability tends to provide internal benefits developing new resources and capabilities, which are related to know-how and corporate culture (Orlitzky et al., 2003; Baumgartner & Ebner, 2010) or external benefits through reputation and legitimacy (Porter & Vander Linde, 1995; Lourenço et al., 2012; Baumgartner & Rauter, 2017). Additionally, Hart (1995) argues that natural limits create new sources of competitive advantage. In this restricted access to resources, one way to obtain new competitive advantage is to develop a sustainable vision for the company (Lloret, 2016). Companies may acquire advantages by reducing consumption and waste, designing new products and technologies (Hart, 1995). Thus, a new conception of chain value associated to business process efficiency and effectiveness performance (Bastas & Liyanage, 2018).

The institutional theory indicates that the regulatory or cognitive context establishes the limits within which the companies move formally and informally. The company must have an institutional vision to be sustainable, because firms are subject to external and regulatory forces (Peng et al., 2009; Lloret, 2016).

As suggested by DiMaggio & Powell (1983), organizations are conditioned through external and internal pressures to meet strategic and operational legitimacy. The capacity to adapt to institutional conditions generates long-term strategies that generate value. These benefits are possible based on stakeholder appreciation, and valuation of resources and capabilities focused on sustainability dimensions. The centrality of stakeholders, as a source of legitimacy, is enhanced by the organizational isomorphism concept (DiMaggio & Powell, 1983). Stakeholder theory argues that various groups with interest in the company including direct and indirect or internal and external shareholders such as, employees, suppliers, government, and media create pressure on the firm to act according to their interests. Stakeholder management introduces deliberate actions to manage stakeholder concerns and simultaneously target company objectives (Freeman 2010). Stakeholder theory has a close link to corporate sustainability (Freeman, 1984; Clarkson, 1995; Donaldson & Preston, 1995; Waddock & Graves, 1997). First, works focus business in society taking a large scope of stakeholders (Freeman, 1984). Then, the managerial scope has greater embeddedness with the

ecological modernization (Mol 2002; Hörisch et al., 2014). These authors argue that a sustainability-based strategy must be based on stakeholders' needs linked to firm's products and services (e.g. green products). But also, to the intangible measures which stakeholders enjoy based on a just and fair treatment, and benefits of being affiliated to an organization. (Harrison & wicks, 2013). The value of sustainability appears as a source of mutual interest for all stakeholders with a sustainability management approach, including cooperation in more sustainable products and services (Hörisch et al., 2014).

Thus, new imperatives of sustainability between corporate environmental and social performance on the one hand and corporate competitive advantage and financial performance on the other, must be considered at the firm level research (Margolis & Walsh, 2003), in particular to SME's.

## 2. CORPORATE SUSTAINABILITY PERFORMANCE

### 2.1 Corporate performance

The increase in number and quality of studies on performance and management systems justifies the prominent relevance in the discipline of management sciences (Neely, 2005). Design and implementation of performance systems have been proposed as a balance between internal and external measures and between financial and non-financial measures (Bourne, 2000), involving new measurement dimensions. Also, performance systems tend to be closely related to the satisfaction of individuals, groups of individuals or entities with the legitimacy and power to influence business decisions and outcomes (Harrison & Freeman, 1999). In this context, the analysis of the internal and external dynamics of the construction of performance measurement systems is an understudied subject (Searcy, 2012).

It is recognized that “*performance*” is itself an ambiguous term, as it does not specify to whom the organization is delivering its ‘performance’ (Otley, 1999). Lebas & Euske (2010) find several definitions as shown in table 1.6 and conclude that performance may be defined as the action, the result of the action, and the success of the result compared to some benchmark (Lebas & Euske, 2002; Rodrigues, 2010).

**Table 1.6 – Performance definitions**

<b>Area</b>	<b>Definition</b>
Management	<i>Measurable by either a number or an expression that allows communication (e.g., performance in management is a multi-person concept); The result of an action (the value created, however, measured); The ability to accomplish or the potential for creating a result (e.g., customer satisfaction seen as a measure of the potential of the organization for future sales);</i>
Psychology	<i>A surprising result compared to expectations; Acting out</i>
Arts	<i>A show that includes both the acting or actions and the result of the actions as well as the observation of the performers by outsiders</i>
Sociology	<i>To accomplish something with a specific intention (e.g., create value); The comparison of a result with some benchmark or reference selected – or imposed – either internally or externally;</i>
Justice	<i>A judgment by comparison (the difficulty here is to define who the “judge” is, and to know on which criteria the judgment will be formed).</i>

Source: Adapted from Lebas & Euske (2002)

As a behavioural judgment, performance captures some of this complexity as it involves resources used and results obtained with the resources (Rodrigues, 2010). Thus, two relevant dimensions of performance merge “effectiveness” and “efficiency” (Neely et al. 1995). As defined by Neely et al. (1995), effectiveness refers to the extent to which performance requirements are met, while efficiency is a measure of how the firm’s resources are utilized when providing a given level expected. In this sense, performance is the result of organizational and managerial decision that guide based on the information available in a determined time range (Eccles, 2001; Gomes, 2005). In fact, performance is not static and evolve with time, information and behaviours. However, all definitions assume that an organization that is performing well is one that is successfully attaining its objectives, in other terms, one that is effectively implementing an appropriate strategy.

Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action (Neely et al., 1995). And a performance measurement system is the set of metrics used to quantify both the efficiency and effectiveness of actions (Neely et al., 1995; Chalmeta et al., 2012). Performance measurement systems have been structured taking into account criticism, for example, between financial and non-financial perspectives (Bourne et al., 2000). Thus, the development of performance measurement systems has evolved in the last decades. In fact, we can find four different phases of performance measurement systems in the research literature as described in table 1.7 (Ghalayini & Noble, 1996; Neely et al., 2003; Gomes, 2005).

**Table 1.7 – Performance measurement systems construction**

<b>Phase</b>	<b>Measurement systems</b>	<b>Descriptions</b>
Phase 1	Cost control systems	<i>Accounting systems Financial structural systems Costa focus</i>
Phase 2	Balanced measurement systems	<i>Financial measures Non-financial measures Internal perspective External perspective</i>
Phase 3	Mapping the flows and transformations	<i>Address the dynamics of value creation focusing transformations of resources Analyse of resources stocks Linked to strategic maps and flows changing</i>
Phase 4	Linking financial to non-financial	<i>Link the non-financial and intangible dimensions of organisational performance and the cash flow results Based on: - Appropriateness and adequacy of the model - Information adequacy - Organisational alignment</i>

The evolution of performance measurement systems results in several frameworks development in the last decades toward integrative visions of performance at the firm level (Chalmeta et al., 2012). Organizational perspectives have been dominant with the following objectives (Gomes, 2005):

- Performance measurement systems must cover all organization areas;
- Performance measurement systems must be intrinsically adapted and shaped to companies' characteristics;
- Performance measurement systems must have the capacity to promote benchmark.

Thus, several frameworks were designed to comply a global performance measurement perspectives including:

- *SMART Pyramid* (Cross & Lynch, 1989), this model establishes different levels of balanced objectives and measures. In the first level the corporate strategic vision is the starting point to objectives definition and the last level emphasis measures design. The second level focuses on financial and markets results. The third level is applied to operational areas taking measures at productivity, flexibility and customer satisfaction. Finally, the fourth level focus measures on quality, delivery, process time and cost. With these measures, the model focus on external effectiveness and internal efficiency.

**Figure 1.2 – SMART pyramid**

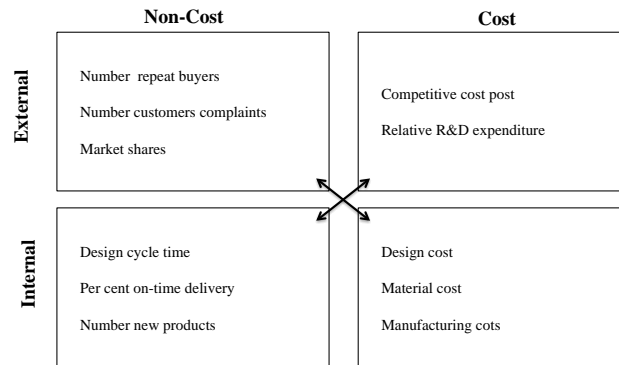


Source: Lynch & Cross (1989)



- *Performance Measurement Matrix* (Keegan et al. 1989), based on a two-by-two matrix by considering costs and internal and external perspectives. This model uses hierarchical and integrated approaches make it possible to define strategic objectives and to link with performance measures to them.

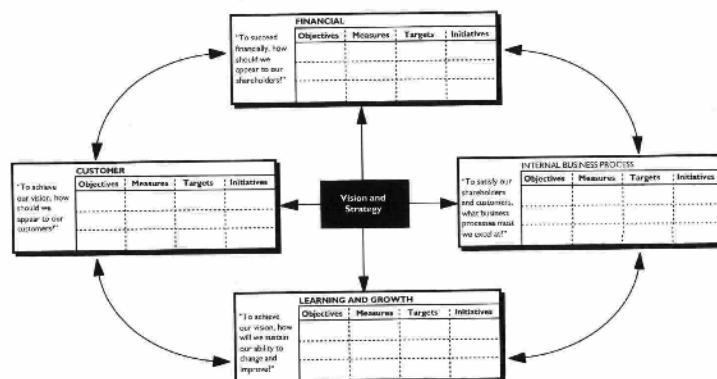
**Figure 1.3 – Performance Measurement Matrix**



Source: keegan et al. (1989)

- *Balanced Scorecard (BSC)* (Kaplan & Norton 1992), this framework aims to provide management with balanced measures based on four perspectives: financial, customers, internal processes, and learning and growth. It translates an organisation’s mission and strategy into a set of performance measures. The term ‘balanced scorecard’ reflects the balance between short and long-term objectives, financial and non-financial measures, lagging and leading indicators, and external and internal performance perspectives. This model has evolved to provide a framework for strategic measurement and management (design, formulation and implementation).

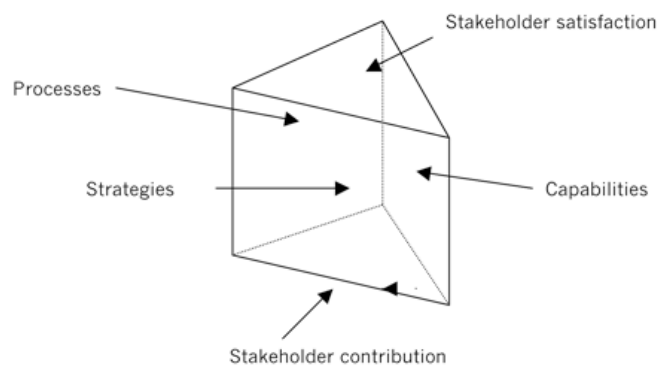
**Figure 1.4 – Balanced scorecard Matrix**



Source: Kaplan & Norton (1996)

- *Performance Prism* (Neely et al. 2002) is a three-dimensional model represented by a prism, in which the aim is to measure the total performance of the organisation. Each of the sides of the prism represents a specific area of analysis: stakeholder satisfaction, strategies, processes, capabilities and stakeholders' contribution. This model introduces stakeholders needs and satisfaction as main focus for performance measurement systems design and implementation.

**Figure 1.5 - Performance prism**



Source: Neely et al. (2002)

Bourne et al. (2000) identified three different steps to complete an implementation namely: (1) the design of the performance measures; (2) the implementation of the performance measures and (3) the use of the performance measures. Several principles for designing performance measures are listed including (Neely et al., 1995):

- The measures should be directly related to the firm's strategy;
- Non-financial measures should be adopted;
- The measures need to be adapted to different locations, departments or sites;
- The measures change as circumstances;
- The measures should be simple, easy to be retrieved and used;
- The measures need to provide fast feedback; and
- The measures need to focus on continuous improvement, not only monitoring activities.

Performance measurement system needs to be flexible and dynamic that includes mechanisms for reviewing targets and standards (Ghalayini & Noble, 1996). Sustainability introduces new dynamics to performance frameworks presenting global challenges and stakeholder's responsiveness.

## 2.2 Sustainability and performance

The introduction of sustainability drivers in the performance measurement systems challenges companies to ensure adaptation that reflects their organisational and competitive context (Searcy, 2016).

Kennerley & Neely (2003) states the existence of three phases of effective evolution, namely:

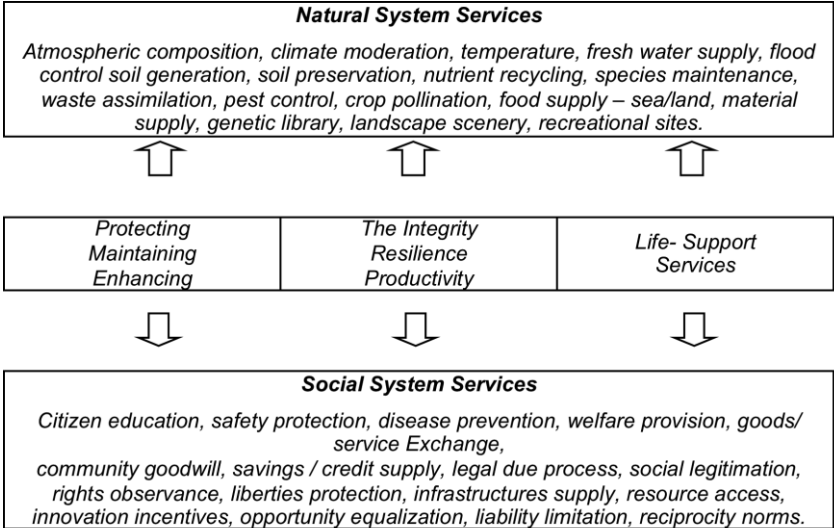
- *Reflection*, on the existing performance measurement system to identify where it is no longer appropriate and where enhancements need to be made;
- *Modification*, of the performance measurement system to ensure alignment to the organisation's new circumstances;
- *Deployment*, of the modified performance measurement system so that it can be used to manage the performance of the organisation.

Evenly change in measurement systems, may create a danger of failure and consequently measurement systems lose their relevance to strategic and operational management. Measurement systems must reflect the context and objectives of the organisation in question (Neely et al., 1995). In this sense, we find the interest in sustainable frameworks at corporate level (i.e., the measurement systems or the sustainable business indices). Firms sustainability measurement systems can be categorized into four distinct groups (Mamede & Gomes, 2014):

- Global systems - Based on global/world sustainable indicators translated into strategic and processes indicators at the enterprise level (Richards & Gladwin, 1999; Robèrt, 2000);
- Stakeholders systems – where the formulation of measures are associated with the results of the stakeholder's engagement process (Bonacchi & Rinaldi, 2007; von Geibler et al.; 2006);
- Triple Bottom Line (TBL) systems where the structure design is based on three dimensions of sustainability (Bakshi & Fiksel, 2003; Sikdar, 2003);
- Adapted systems - Based on traditional methodologies used in strategic and operational contexts originally not sustainable based (e.g., Sustainable Balanced Scorecard), integrating one or several dimensions of corporate sustainability dimensions (Bonacchi & Rinaldi, 2007; Schaltegger & Wagner, 2006; Staniškis & Arbačiauskas, 2009).

In global systems frameworks, we find the proposal from Richards & Gladwin (1999), taking global sustainability principles, as exposed in figure 1.6.

**Figure 1.6 Sustainability global model**

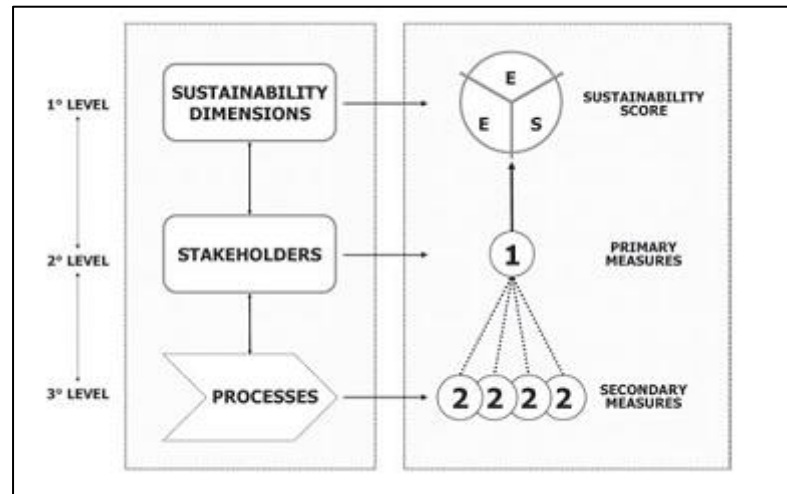


Source: Richards & Gladwin (1999)

Based on the analysis of the most used indicators in automotive, chemical, electronic and pulp and paper industries, authors verified that there is an environmental pro-active monitoring focusing direct impact on the ecosystems. On the other hand, the indicators reflect concerns in terms of eco-efficiency, integrating new concerns such as climate change and other global issues. These models tend to promote performance measurement systems on an exclusive basis of compliance, with existing sustainability performance standards. Due to the multidimensional nature of the concept itself, environmental and social concerns tend to change depending on new inputs, such as scientific discoveries or new social trends. This creates instability in the measurement systems, which are more dynamic at the firm level. On the other hand, these models may be distant from the expectations of local stakeholders and their needs.

Stakeholder models are characterized by the centrality of the engagement process. These models integrate the economic, environmental and social expectations of stakeholders in performance measurement (Tregidga & Milne, 2006; Lo, 2010).

**Figure 1.7 - Sustainable stakeholders model**



Source: Bonacchi e Rinaldi, 2007

Bonacchi and Rinaldi (2007) have emphasized the relationship between three sustainability dimensions and stakeholder's engagement. In this case authors focus three levels of metrics in their model:

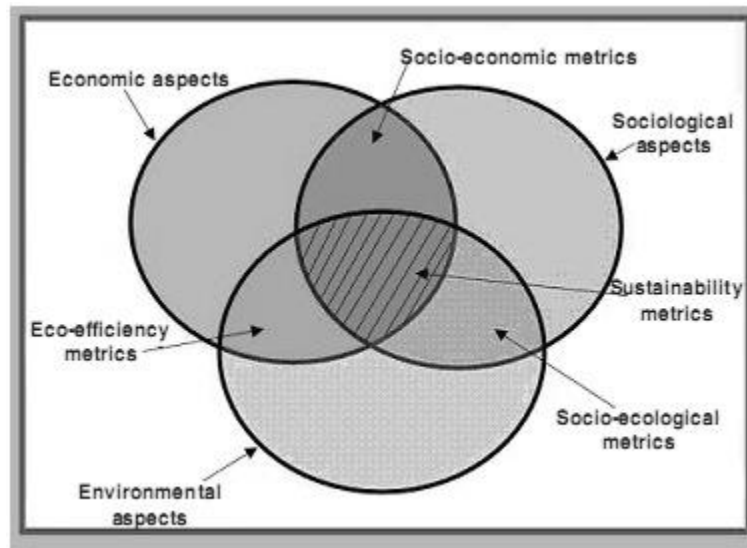
- The sustainability dimension, through the combination of results that allow the view of measurements and results for the three dimensions (Economic, Environmental and Social);
- Stakeholder satisfaction, by measuring the effectiveness and efficiency of the strategies against the needs and satisfaction of the stakeholders;
- The development of processes, centred on the procedural dimension that expresses the particularity of each company, giving the justificatory results for the fulfilment or not of the strategies.

The Triple Bottom Line models, based exclusively on the definition of sustainability dimension metrics, are not numerous in the analyzed literature. Often the three dimensions are complemented by other analysis and unfolding methodologies.

Sikdar (2003) promoted an analysis of measurement models in the British chemical industry and concluded that the measurement indicators can be divided into three groups as represented in figure 1.7:

- Group 1 (1-D): economic, ecological and sociological aspects;
- Group 2 (2-D): socioeconomic, eco-efficient and socio-ecological metrics;
- Group 3 (3-D): sustainability metrics.

Figure 1.8 - Ichem framework



Source: Sikdar, 2003

Also, Global Reporting Initiative (GRI) is included in triple bottom line models as the scope include three categories of sustainability indicators (Brown et al., 2009):

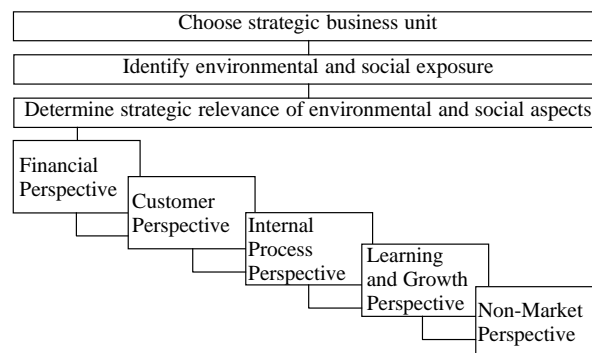
- Social performance indicators, which centre on how an organization contributes to the well-being through its labor, human rights, governance and product responsibility and safety practices;
- Economic performance indicators address the economic impacts through sales, profits, capital expenditures, debt and interest, wages, community donations, taxes, local purchasing, and brand strength;
- Environmental indicators focus environmental performance and impacts to both now and for the future generations covering resource conservation, waste prevention and management, environmental risk control and restoration, supply chain impacts, waste disposal, recycling, energy conservation, greenhouse gases, biodiversity, water and materials use; renewable energy; and wildlife conservation.

TBL models include large global issues that may affect the firm's perception of a possible full sustainable strategy (Lankoski, 2016). Thus, adapted systems may be more accessible and comprehensive as it allows transition phases between the traditional and sustainable measures to be incorporated in the medium and long term. The adapted models are based on already experienced methodologies. Thus, it may give more confidence to firms and their managers.

Figge et al. (2002) expose the balanced scorecard as an instrument for sustainability performance management. The authors state the ability of the balanced scorecard to integrate the three dimensions of sustainability offering the possibility to integrate the management of environmental and social in the long term. Three possibilities to design performance systems based on this methodology:

- Integration of environmental and social aspects in the four balanced scorecard perspectives;
- Introduction of an additional non-market perspective into the balanced scorecard or;
- Deduction of a derived environmental and social scorecard.

**Figure 1.9 - Sustainability balanced scorecard**



Source: Figge, F., Hahn, T., Schaltegger, S., & Wagner, M., 2002

Authors conclude that a sustainability balanced scorecard provides a strong tool for sustainability management. It allows a short-cut to the parallel approaches of environmental, social and economic coexisting with traditional management systems implemented in the past. At least the adaptation tends to eliminate duplication of measurement systems.

Corporate sustainability mainstream studies have mainly concentrate focus on large firms strategy and practices (Perrini, 2006; Aragon-Correa et al., 2008). Also, in Portugal, few works are available on family firm performance and even less on family owned SMEs context (Benavides-Velasco et al., 2011). Thus, to understand corporate sustainability dynamics reported in the literature, it becomes relevant to understand how SMEs interpret and implement sustainable development concept in Portugal.

### 3. SMALL AND MEDIUM ENTERPRISES IN PORTUGAL

#### 3.1 The role of Small and Medium Enterprises

Taking the definition of the European Union (European Commission, 2003), SME's universe is composed of Micro, Small and Medium businesses. Micro businesses have less than 10 employees, the annual turnover and balance sheet does not exceed 2 million euros. Small businesses have more than 9 and fewer than 50 employees, their annual turnover does not exceed 10 million Euro and the annual balance sheet total is beyond 10 million Euro. Medium businesses have more than 49 employees and less than 250 employees, their annual turnover does not exceed 50 million Euros and the annual balance sheet total is beyond 43 million Euro (European Commission, 2003; Vo, 2011). This statistical definition shows a quantitative definition which can undercover the qualitative side which explains better the weight in economy and social strength.

In Portugal, SMEs represents 99,91 %, as described in table 1.8 (INE, 2017). In a comparison five years' timeframe from 2011 to 2015, we can observe a growing number of SMEs, namely based on micro SMEs increase and traducing a "micronizing" of enterprises in Portugal.

**Table 1.8 –Evolution of SME in Portugal (2011-2015)**

	Total		SME						Large	
			Micro		Small		Medium			
	n	%	n	%	n	%	n	%	n	%
<b>2011</b>	1 136 256	100%	1 088 145	95,77%	40 815	3,59%	6 193	0,55%	1 103	0,10%
<b>2012</b>	1 086 915	100%	1 043 003	95,96%	37 118	3,41%	5 773	0,53%	1 021	0,09%
<b>2013</b>	1 119 447	100%	1 077 294	96,23%	35 446	3,17%	5 687	0,51%	1 020	0,09%
<b>2014</b>	1 147 154	100%	1 104 490	96,28%	35 870	3,13%	5 759	0,50%	1 035	0,09%
<b>2015</b>	1 181 406	100%	1 136 865	96,23%	37 515	3,18%	5 951	0,50%	1 075	0,09%

Source: Adapted from: INE/PORDATA, 2017

The SMEs effect in the Portuguese economy is relatively greater than in a European Union context, proven by the National Statistics Institute (INE) economics and social data. For example, in EU -28, Portugal is the second country in the density of the SME population, ranking with 7,6 SME per 100 inhabitants face to the EU-28 average of 4,5 per 100 habitants (European Commission, 2016). Employment provides by SME represents in Portugal 79% (table 1.9) against 67% in EU-28 or compared to 49% in the United States (Dannreuther, 2007). Studies seem to appoint that SMEs have been more conservative in job maintenance than large enterprises that rapidly reduced employees on the face of the global economic crisis



(Varum & Costa, 2013). Statistics show also that SMEs represents 57% of the value added and 56 % of overall turn-over in Portugal.

**Table 1.9 Employment in SME and Large companies in Portugal (2011-2015)**

	Total		SME		Large	
	n	%	n	%	n	%
<b>2011</b>	3 741 633	100%	2 976 970	80%	764 663	20%
<b>2012</b>	3 511 719	100%	2 791 760	80%	719 959	21%
<b>2013</b>	3 480 731	100%	2 758 702	79%	722 029	21%
<b>2014</b>	3 548 584	100%	2 805 998	79%	742 586	21%
<b>2015</b>	3 676 464	100%	2 897 135	79%	779 329	21%

Source: Adapted from: INE/PORDATA, 2017

At the same time, about 70 % - 80 % of enterprises are family businesses, which demonstrate the effective control of businesses (Mandl, 2008; Blodgett et al., 2011). The increase of studies on corporate sustainability in the last ten years in top academic journals, practitioner journals and in specialized journals (Montiel & Delgado-Ceballos, 2014) did not match with these statistics. Corporate sustainability mainstream studies have mainly focus on large firms strategy and practices (Perrini, 2006; Aragon-Correa et al., 2008). This lack of attention is due to a “*size stigma*” based on a questionable logic where SMEs have negligible effects compared to the largest companies (Tilley, 2000; Perrini, 2006). Also, in Portugal, few works are available on family firm performance and even less on family owned SMEs context (Benavides-Velasco et al., 2011). Thus, to understand corporate sustainability dynamics reported in the literature, it becomes relevant to understand how SMEs interpret and implement sustainable development concept, also, how family involvement may influence sustainability in practice as a business case.

The Portuguese economy is today characterized by a high grade of openness to the international market (Leite, 2010). However, the modern history shows that Portugal suffered from an economic restricted vision, influenced by the dictatorship period started in the early 30’s. Indeed, four main phases can be identified in the international involvement of the Portuguese economy (Simões, 1985; Neves, 1994 ):

1. Nationalism covering from 1940 to 1950 characterized by a position of mistrust and even rejection of external contact;
2. Opening to exterior covering 1960 to 1970 marked by a sensitive liberalization of government attitudes towards foreign investment;
3. Post-1974 to 1986 with openness and adherence to the market economy; and
4. European integration with a consolidation of economic structure.

Economic historical background influenced a specific managerial culture, which includes a lack of public education for entrepreneurship, strong hierarchical organization and cultural constraints to innovative practices.

For a large period until the April 1974 revolution, Portuguese micro-economy has been controlled by large groups or companies' association (grêmios) which create an institutionalised corporativism. Thus, the economic structure from “the new state” period and the successive economic crisis from 1974 to 1986, have limited managerial education and empowerment of entrepreneurship (Mendes, 2007). Consequently, the knowledge and implementation of advanced managerial practices existing in the sixties and seventies in developed countries (i.e., environmental control) have been lately integrated. With the integration in the European Union, Portugal has developed new competency in sustainability management, driven by new trends from most advanced legal and operational practices. As shown in table 1.10 and since 1987, Portugal experienced a significant evolution on sustainability initiatives.

**Table 1.10 – Sustainability initiatives evolution in Portugal**

<b>Year</b>	<b>Historic mark</b>	<b>Description</b>
1987	Environmental General Law (Law 81/1997, 1987-04-07)	<i>Establish the main principle on environmental management in Portugal, namely: (1) prevention; (2) equilibrium; (3) Participation; (4) the management and action unity; (5) International cooperation; (6) The search for the most appropriate level of action; (7) Recovery; and (8) Accountability.</i>
1992	Ratification of Earth Summit declaration	<i>Framework of Rio 1992 principles introduction in Portugal.</i>
1997	The creation of the National Councils for Sustainable Development	<i>The National Council for Environment and Sustainable Development (CNADS) was created in 1997 under Decree-Law n°. 221/97 of 20 August, although it started in April 1998</i>
	Revision of Portuguese Republic Constitution	<i>The constitution revision introduces sustainable development as an objective and duty of the Portuguese state.</i>
1998	National Plan for Economic and Social Development	<i>Strategic Lines for sustainable development: “The perspective view must necessarily include in all its components, basic principles related to the environment and sustainable development”</i>
2000	Adoption of Millennium Objectives	<i>The Portuguese State adopted the Millennium Declaration and committed itself to achieve the Millennium Development Goals</i>
2001	BCSD Portugal	<i>The Business Council for Sustainable Development (BCSD) Portugal is a non-profit association that aggregates and represents more than 90</i>

Year	Historic mark	Description
		<i>leading companies in Portugal, which are actively committed to the transition to sustainability.</i>
2002	National Strategy for Sustainable Development (ENDS 2002)	<i>Four strategic areas for the country: (1) Ensure the balanced development of the territory; (2) Improve the quality of the environment; (3) Sustainable production and consumption and (4) Towards a society of solidarity and knowledge.</i>
	Portuguese Association of Business Ethics	<i>The APEEE has the objective of promoting the development of ethics in organizations, with full integration in their management practices and, consequently, in their environment.</i>
2004	Global Reporting Initiative (Portuguese version)	<i>Launch of the Portuguese version of the GRI - 2002.</i>
2006	National Strategy for Sustainable Development (ENDS 2005- 2015)	<i>New strategic objectives: (1) Preparing Portugal for the "knowledge society"; (2) Sustained growth, competitiveness at the global scale and energy efficiency; (3) Best environment and valuation of heritage; (4) More Equity, Equal Opportunities and Social Cohesion; (5) Best International Connectivity in the Country and Valorisation Balanced from the Territory; (6) An Active Role of Portugal in European Construction and International Cooperation; (7) A More Efficient and Modernized Public Administration</i>
2008	ISO 26000 (Portuguese version- NP 4469-1)	<i>Portuguese adapted instrument for the definition and implementation of social responsibility</i>
2010	Corporate Sustainability Index	<i>Yearly diagnosis of the Corporate Sustainability Index with five areas: strategic leadership, human capital, sustainable production and consumption, energy and climate and biodiversity and ecosystem services.</i>

Source: Author

However, anaemic Portuguese growth in the new millennium and recent debt crisis awake debates on the ability of companies to carry out sustainable management practices, namely when dealing with SME's specificities. In this context, Bianci et al (2015) identified several characteristics stressing SMEs competitiveness namely: (1) a reduction in customer consumption; (2) an unscrupulous competition from emerging economies; (3) an extreme impulse toward both efficiency and cost-saving by large-sized companies; (4) a limited propensity to be funding and (5) a decreasing support from public sector bodies.

### 3.2 Small and Medium Enterprises and sustainability performance

There has been an increase interest in sustainable indices in the past few years from investors and companies (Fowler & Hope, 2007). However, sustainability is strategically and operationally challenging for companies, even more for small and medium firms (Loucks et al., 2010). Business sustainability vision and practices tend to be guided and managed by the dynamics of larges enterprises and not based on the specificities of SMEs (Loucks et al., 2010, Borga et al. 2009). SMEs, because namely of their limited financial resources, size and proximity, focus primarily on local operations far from global challenges of larges companies (Revell & Blackburn 2007; Borga et al., 2009).

Some characteristics of SMEs may limit the implementation of sustainability at the firm level, namely due to (Cezarino & Campomar, 2006; Moore & Manring, 2009; Vieira 2017):

- Low volume of capital employed;
- High birth rates and mortality;
- Great centralization of decision-making power;
- Non-distinction of the individual from the owner with the legal entity;
- Lack of formal accounting records and monitoring activity;
- Low employment of sophisticated technologies;
- Low investment in technological innovation.

In this internal context, small business may affect their sustainability commitment at a local level with a limited theme scope (Moore & Manring, 2009; Tantalo et al., 2012).

On an external perspective, Revell et al. (2010) exposed that SMEs may also be less sensitive to sustainability strategies due to low pressure from customers, supply chain and regulators. However, the fragility and lack of power of small business means that they are subject to pressure from their customers in a supply chain perspective. The development of business activities in response to stakeholder expectations often appears in the academic literature analysed, stressing supply chain (Ciliberti et al., 2009). Thus, supply chain companies and partners use three tools to extended sustainable behaviors, namely:

- Establishing written supplier requirements;
- Monitoring supplier performance to verify compliance with the requirements;

- Contributing to suppliers' awareness building and training on the company policy.

In the long run, SMEs survival depends on competitiveness, profitability and capability to satisfy social and environmental market needs (Bianchi et al. 2015).

Thus, SMEs have been relevant sustainable actors in Portugal, Santos et al. (2006) established a framework for SMEs strategies analysis. Thus, the authors observed several Portuguese case studies and have identified four different strategic models used in Portuguese SMEs. Based on extensive research in 2005, Portuguese small firms can be grouped into voluntary, preventive, obligation and reactive strategies.

**Table 1.11 – Strategic models in SMEs: Portuguese case studies**

<i>Voluntary</i>	<i>Preventive</i>
<p><b>Strategy base:</b> Innovation</p> <p><b>Stakeholders:</b> Universities, Association &amp; Companies</p> <p><b>Practices frequency:</b> Regular and integrated into strategy</p>	<p><b>Strategy base:</b> Differentiation</p> <p><b>Stakeholders:</b> Unions &amp; Communities</p> <p><b>Practices frequency:</b> Casual and integrated into strategy</p>
<p><b>Strategy base:</b> Cost</p> <p><b>Stakeholders:</b> Shareholders &amp; Public entities</p> <p><b>Practices frequency:</b> Casual and not integrated into strategy</p>	<p><b>Strategy base:</b> Focus</p> <p><b>Stakeholders:</b> Workers, Customers and Suppliers</p> <p><b>Practices frequency:</b> Regular and integrated into strategy</p>
<i>Obligation</i>	<i>Reactive</i>

Source: adapted from Santos, M., Santos, A., Pereira, E., & Silva, J. (2006)

Some characteristics of SMEs are exposed as positive sustainable drivers. Proximity and flexibility appear as powering performance factors, namely by responsiveness greater capacity. Proximity to the market allows understanding of new trends and demands from customers (Simpson et al., 2004; Amann & Jaussaud, 2017). Small businesses have cultural and behavioural proximity that allow a greater involvement with stakeholders. This intense interaction results in an alignment between stakeholders' sustainable requirements and SMEs responsible behaviour (Fuller & Tian, 2006). SMEs benefit also from a coherent identity and informal communication among their members, and thus lower coordination costs in the implementation of CSR practices.

On a flexibility perspective, small business benefit from a more coherent identity and informal communication with thus lower coordination costs and higher responsive skills in the implementation of sustainable practices (Hamman et al., 2017). Also, reactive and dynamic strategies allow greater focus on relevant innovative performance dimensions due to lower scale and direct decisional power from owners (Hudson et al., 2001). Even limited in resources (human and financial), SMEs flexibility influence innovation initiatives focus on ideas and ideation, customer and market and organizational learning tools, and organizational culture and leadership (Saunila, 2017). In this sense, new knowledge may quickly be integrated rather in large firms. Thus, innovative performance measures and systems derived from financial, social and environmental requests may be applied with quicker and more effective processes.

Sustainability performance challenges require an evolutionary learning cycle that includes those stated by Kennerley & Neely (2003) four pillars:

- *Process*: the existence of a process for reviewing, modifying and deploying measures.
- *People*: the availability of the required skills to use, reflect on, modify and deploy measures;
- *Systems*: the availability of flexible systems that enable the collection, analysis and reporting of appropriate data;
- *Culture*: the existence of a measurement culture within the organisation ensuring that the value of measurement, and the importance of maintaining relevant and appropriate measures, are appreciated.

Sustainability performance is a relevant area for a consistent strategic implementation (Santos et al., 2006). Despite the relevance of SMEs' for the Portuguese economy, corporate sustainability performance is an outstanding field of studies which deserves greater focus for understanding the management dynamics, challenges and achievements.

## **4. FAMILY FIRMS**

### **4.1 Relevance of family firms**

Family firms appear as the most prevalent form of organization, namely dominant in SMEs context. Even difficult to identify consistent statistics due to the lack of formal and consensual common definition which impact reliable statistics on FBs demography and its economic, social and environmental role.

Several authors state that FBs have effective control on the majority of businesses namely in SMEs (Blodgett et al., 2011). In Europe, about 70 % - 80 % of enterprises are family businesses with variations according to the country (Mandl, 2008; Huang et al., 2009). In Portugal, it is estimated that between 70% and 80% of national companies are FBs, absorbing 50% of the workforce and contributing to 60% of Gross Domestic Product (GDP) (Fernandes & Ussmane, 2013; Marques, 2018). In Spain, FBs represent 89% of companies operating, 57% of GDP and 67% private employment (Hernandez-Perlines, 2017). Allouche & Aman (2000) estimate that 59% of the largest French industrial companies and 75 % of medium-sized were FB's. In Germany, family businesses represent 95% of the total number of firms, including nearly 57% of employment and 42% of the turnover share (Mandl, 2008). United Kingdom's firms are family base governed in 65 % of private sector enterprises, representing 40,7 % of national GDP (Institute for Family Business, 2008).

Outside European perspective, Astrachan & Shanker (2003) estimate that family firms are responsible by 64% of GDP, employed 62% of the workforce and contributed to the general public budget with 89% of American business tax returns in 2000. Based on Kurashina (2003), 42,68% of Japanese listed companies in 2003 were FBs. Over 90 % of Australian family businesses are SMEs (Dekker & Hasso, 2016).

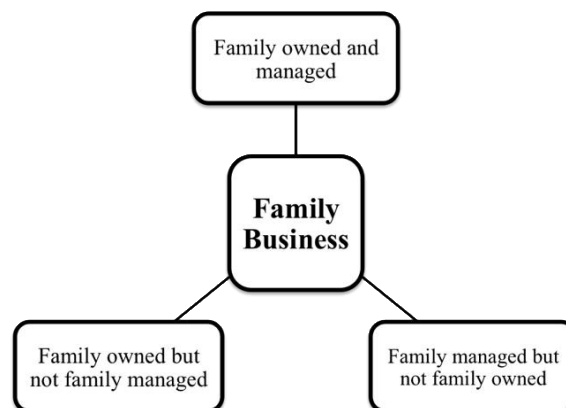
In most countries in the world, FB possess significant share of GDP, employment, tax payment or investment (Allouche et al., 2008). We can, therefore, say that these types of companies are important drivers for the growth and welfare of the economy (Astrachan & Shanker, 2003). From environmental lens, SMEs represent between 60–70 % of the total pollution in Europe (Aragón-Correa et al. 2008; Hoogendoorn et al., 2014). This economic, social and environmental relevance leads us to question the influence of family in corporate sustainability management in SMEs, namely related to performance dimensions.

## 4.2 Definition of family firms

Various definitions can be found in the literature with light differentiations of the term “family” link to differences in the legal framework, country-specific institutional or cultural concept of family and non-family firms (Astrachan et al., 2002; Harms, 2014).

The distinctions between FBs and NFBs are found in following characteristics: ownership, personalized control, organizational influence and succession intention (Allouche & Amann, 2000; Anderson & Reeb, 2003; Astrachan & Shanker, 2003; Hirigoyen, 2009; Dekker & Hasso, 2016; Molina Parra et al., 2017). Thus, three types of FB management structure derived from these four characteristics: first, family owned and family managed; second, family owned but not family managed; and finally, family managed but not family owned (Allouche et al, 1995, 2008).

**Figure 1.10 – Family firms structures**



Source: author adapted from Allouche et al, 1995, 2008

If consensus exists based on the structure, it is not clear on the characteristics which distinguish FBs from NFBs. The European Commission (2009) identified more than 90 definitions, considering many aspects, such as ownership, management, control, business as the main source of income for the family or succession. Depending on cultural or legal framework, these characteristics can be combined in synergies or totally opposed in authors’ definitions.

Thus, ownership is discussed in terms of share rate, votes or legal power (Villalonga & Amit, 2006). This vision is dominantly covered by a legal perspective. Considering different legal forms and degree of power, the FB definition may have a great variance country to



country. For example, what legal degree of shares or votes determine family or families power dominance? In the case of public shared enterprises, “golden shares” can limit overall family legal ownership but not the power and influence, promoting changes on strategic and operational decisions.

In another sense, less quantitative, control is based on the organizational position and influence the degree of family members in the firms, namely on the board position (Allouche & Amann, 2000). Control may be defined by a management angle that it includes the position of the family in strategic organizational positions. Then, we can observe that firms managed but not owned by family or families. Dyer (2006) highlight the founder management influence as an example of non-legal control. Influence may be spread on time through various generations. Chua et al. (1999) focus control in their family business definition:

*“business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families (Chua et al., 1999: p.25).”*

Astrachan & Shanker (2003) point to a multicriteria construction of FB definition. These authors have a broad perspective requiring some family participation in the business and control over management decisions. These lenses include also succession intention, i.e. the founder-owner will to pass the business on to another member of his/her family.

Multicriteria perspective applies more than one dimension to define FB, combining ownership, control and succession objectives. Thus, various definitions focus on the rate of propriety and the number of families (Allouche & Amann, 2000). In this case, we find the definitions which state a clear minimum rate of votes, for example, Villalonga & Amit (2006) point to at least 20 per cent or debt ownership. In this group of authors, we observed a debate between legal perspectives of power in firms and control capacity of owners even without a majority of vote rights (Miller et al., 2007).

*“We define a family firm as one in which multiple members of the same family are involved as major owners or managers, either contemporaneously or over time. This allows for a number of variations: in the level of ownership and voting control, in the managerial roles played by family members, and in the family generation of key family members (Miller et al., 2007: p.836).”*

Control or influence are also combined to support FB's definitional framework. Harms (2014) has identified that the control or influence are supported by a family involvement and the essence of family businesses approach combined. In this group, the family or families participation is critical to characterized firm specificities. Astrachan et al. (2002) presented a scale to explain the extent of family influence on enterprises based on Power, Experience, and Culture (F-PEC scale). These authors, with multicriteria foundations, use a continuous and evolving framework to define FB. Thus, the power scale is defined by power, governance and family participation. The experience scale is supported on the relation to succession and the number of family members who contribute to the business subdivided in generation of ownership, generation active in management, generation active on the governance board and the number of contributing family members. Finally, the culture scale considers the share of principles and values (Gallo et al., 2004). This dimension includes the overlap between family values and business values and family business commitment. Thus, FB definition includes several criteria as control, succession and family core values overlapping each other's.

The successional dimension is often used to characterize uniqueness of family firms. Intergenerational succession is one of main topics on FBs research as it is a specificity compare to NFBs (Daspit et al., 2017). Mandl (2008) underline that succession is in some European countries a fundamental statement that define FBs. Succession is not only a financial and operational transition, it's appear as a cultural, behavioural and values that cross over generations in a time continuum process (Eddleston et al., 2013). The role of intangible values is highlighted by Marques et al. (2014), who states that at organizational level it is considered being the preferences that individuals have for behaviours and outcomes in business practices. Thus, FB's values are developed and create a heterogenous environment and specificities on management practices and outputs. Founder family name influential role is present in succession perspectives lens, as values and traditions conveyor. Family name as a brand tends to represent a particular culture which determines strategic and operational management (Allouche & Amann, 2000).

FBs definitions are marked by heterogeneity of criteria linked to legal and cultural background. Taking into consideration various definitions, we take the choice based on FB Portuguese Association (APEF) interpretation (Mandl, 2009). Thus, FB will be a business with majority of votes owned and managed by the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children's direct heirs, including. At least one representative of the family or kin is involved in the management or

administration of the firm. All other businesses are defined as non-family businesses. Our definition combines ownership, control and succession chain perspectives.

### **4.3 Family involvement and effect in firm performance**

Our research is centralized on the effect of family ownership and control on business performance. In this, scope, Dyer (2006) has identified four factors that contribute to high or low performance. Thus, in a positive influence, we can find agency benefits, due to the alignment of principals –agent goals. Also, family assets as human capital, social capital, family branding and physical/financial capitals contribute to better performance.

In a negative angle, the author underlines agency factors and family liabilities, the first group is expressed on the cost associated with conflicting goals in the family and lack of monitoring activities inside the family. Liabilities are associated with family lack of skills, abilities, talent or inadequate training. Also, conflicts lead to undermining image and goodwill with stakeholders. Finally, personal use of firm assets drains resources (financial/physical) to lower profitable activities.

Several authors have highlighted that founder-CEOs have a positive effect on corporate performance and in consequence, later generations have lower performance (Anderson & Reeb, 2003; Villalonga & Amit, 2004). Moreover, authors underlined some founder characteristics that contribute to outperforming firms.

Thus, intrinsic motivations that attach great importance to firm success putting diligence and long-term vision in management orientations (Sener, 2014). In accordance with stewardship theory, stewards are driven by more than self-interest and are intrinsically motivated for organizational achievements, making contribution to the collective mission, longevity and success (Davis et al., 1997). Founders gave authority to develop strategic orientation and strengthened values (Marques et al., 2014). In this sense, retirement of the founder and succession process appears as critical events, that often influence directly firm performance (Handler, 1994; Barontini & Caprio, 2006).

Researchers link higher FB's performance to long-term strategy and commitment (Habbershon & Williams, 1999). On a financial perspective, FB appears having the capacity to invest in long-run return opportunities with less debt (Allouche & Amann, 2000; Paiva et al., 2015). FBs are significantly more customers oriented with particular concern for the

quality of their products and services, which allow sales higher performance (Vallejo Martos & Grande Torraleja, 2017).

Greater performance in social and environmental dimensions is linked to ethical standards and responsibility focus explained by transmission and succession perspectives. The family-oriented workplace may inspire employee with greater human resources performance and generate motivation and loyalties (Allouche & Amann, 2000; Habbershon & Williams, 1999). FBs have a closer and more consistent link with its surrounding community and its environmental challenges (Dyer, 2006; Hoogendoorn et al. 2014). Bingham et al. (2011) suggest that the founder play a significant role in a collectivistic stakeholder orientation of FBs. This allows the integration of larger scope of expectations from a broader range of stakeholders.

Local integration, reputation and visibility lead FBs to be environmentally focused (McGuire et al., 2012; Hoogendoorn et al., 2014). FBs tend to monitor and anticipate institutional pressures from regulatory stakeholders, (government, regulatory institutions or society), but also internal (Shareholders, employees), and market stakeholders (Customers and providers) (Huang et al., 2009). Thus, FBs by their direct management and ownership lead to direct dialogue with key stakeholders on their environmental engagement actions. This quick reaction capacity leads FBs to gain support and extend the firm's reputation (McGuire et al., 2012). Thus, FBs are more prone to give close and preventive answers (Déniz & Suarez, 2005).

FBs include resources, identified by RBV's authors, such as human capital (Sirmon & Hitt, 2003), social capital, physical and financial capital (Dyer, 2006), trust and reputation (Allouche & Amann, 2002). These different resources contribute to the uniqueness of FB translated by the "familiness concept" (Habbershon & Williams; 1999). "Familiness" is defined as the unique bundle of resources of firms supported by a system of interactions between family and enterprise in economic, management and sociological frameworks. This concept provides a unified systems perspective which supports a positive family firm performance capabilities and superior competitive advantage perspective (Habbershon & Williams, 1999).

Ownership and control can also reduce the value of the firm by family-centric strategies and actions (Kellermanns et al., 2012). Family's role creates impediments for third parties in capturing control of the firm, suggesting greater managerial entrenchment and lower firm value (Anderson & Reeb, 2003). A "Dark side" can be observed on FBs as stated by Samara et al. (2018), linked to control and power to pursue non-economic centred goals, use

of non-meritocratic considerations in employment or preserving financial resources within family hands at the expense of investments in the organizational welfare. Family-centric ownership decrease voluntarism to be responsive to stakeholders' environmental demands. High family involvement in management may prospect greater intra-family conflict probability, which may lead to a decreasing availability to spend resources to environmental social performance of family firms (Le Breton-Miller & Miller, 2016). Consequently, these behaviours may restrict FBs to pursue social and environmental activities in communities which they operate (Le Breton-Miller & Miller, 2016; Samara et al., 2018). Thus, sustainable performance management system tends to focus primary stakeholders (Clarkson, 1995; Van der Laan et al., 2007). In fact, FBs facing resources limitation may focus strategic and performance actions to a restricted number of stakeholders, given primacy to firm "blockholders". In consequence, FBs may expropriate minority shareholders, exploit employees and maintain conflict within their local communities (Kellermans et al., 2012; Kidwell et al., 2012).

In our theoretical approach, family involvement positive and negative effects are supported by agency theory, stewardship, resource-based view, institution-based view, Socioemotional wealth (SEW) and stakeholder's theory as explained in chapter 5.

## **5. OVERVIEW OF THE DISSERTATION**

This dissertation addresses Portuguese SMEs to investigate the impact of family involvement and influence on corporate sustainability performance systems. This scope is in line with Searcy (2012) research agenda and key gaps in the literature making contributions namely to:

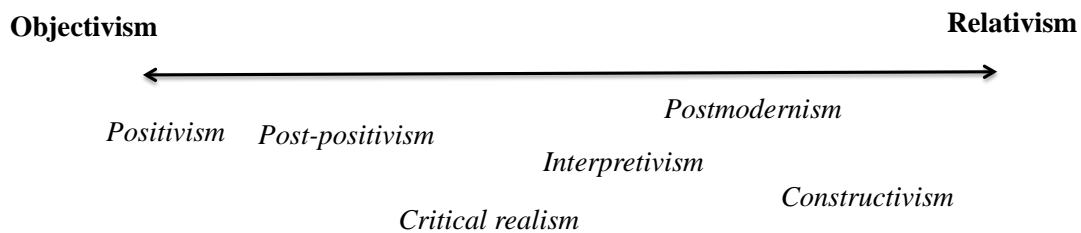
- Exploring the design of Sustainability Performance Management Systems (SPMS) that are applicable to multiple corporate levels;
- Exploring processes for integrating a SPMS with existing corporate infrastructure;
- Addressing the transitions between design, implementation, and use of a SPMS.

This dissertation consists of one introduction chapter, four essays and one conclusion chapter. The introduction reminds the relevance in management sciences of SMEs corporate sustainability performance, the relevant literature on corporate sustainability, firm performance and family owned businesses. This chapter also introduces the addressed research gaps, presents research questions and describes the characteristics of the main essay. Chapter 2 conducts a bibliometric study to understand the core theoretical base that supports corporate sustainability performance research. Chapter 3 explore SMEs' research environment, namely specificities on corporate sustainability performance and trends. Chapter 4 investigates two angles on SMEs corporate sustainability performance. In the first step, the family influence in Portuguese SMEs was examined in terms of corporate sustainability performance. In a second step, the link between corporate environmental and social performance and financial performance was investigated. Chapter 5 focuses on the influences and impacts of Socioemotional Wealth and stakeholders management on SMEs sustainability performance systems in Portugal. The last chapter summarizes the main research findings, theoretical contributions, their empirical implications and addresses their limitations. For last, it presents future avenues for research in the field.

## 5.1. Theoretical foundations and hypotheses

From objectivism to relativism, three main epistemological postures appear in literature: positivism, constructivism and interpretivism (Allard-Poesi & Perret, 2014).

Figure 1.11 – Knowledge design and epistemological paradigms



Source: author adapted from Allard-Poesi & Perret (2014)

Positivism found its roots in exact sciences, where the reality exists externally and independently from the researcher. For positivism (also post-positivism and critical realism) essentialism is the foreground of interpretation, where reality has its own essence independent from analysis and from researchers (Allard-Poesi & Perret, 2014). Thus, the researcher is able to study and understand with neutral behaviour. Also, the researcher can discover, define and understand the different forms of phenomenon (the existential reality), through the empirical observation of the facts, the causal links and the construction of universal rules. The researcher is independent of his research subject and analyse it in a completely neutral and objective way as he/she works under controlled conditions through standardized and recognized methods (Avenier & Gavard-Perret, 2012). This approach is supported on the principles of verifiability, confirmability and refutability linked to hypotheses test and causal/consequence logic. Post-Positivism introduced modifications to its applicability to the human and social sciences. Thus, post-positivism considers that reality cannot fully be understood, remaining imperfectly apprehendable by moving from a "naive" realism to a "critical" realism. From there, the results obtained will be only probably not perfectly true (Allard-Poesi & Perret, 2014).

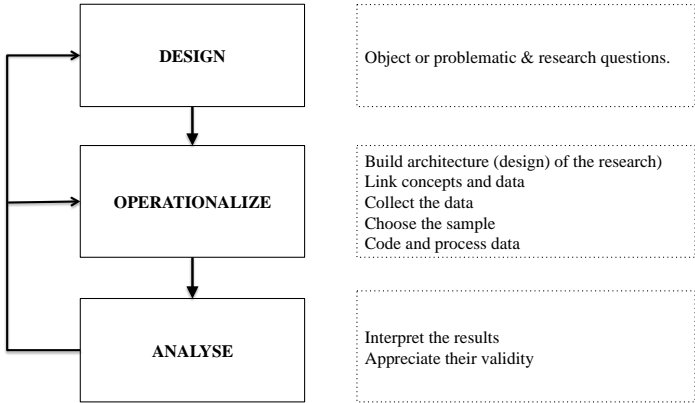
The second approach is the interpretivism, which emphasise the meaningful nature of the human character and its social and cultural membership (Elster, 2007; Chowdhury, 2014). This approach postulates that methods used by researchers translate their active position and opinion. Thus, knowledge is a social construction which did not allow the use of natural science logic and methods (Eliaeson, 2002). Knowledge production depends on the

environment, meanings and actions of individuals guided by cultural and individual intentions and goals (Girod-Séville et Perret, 1999). In the interpretivism perspective, value-free data cannot be obtained, since the researchers use their own knowledge and previous opinions to guide the investigation. Furthermore, the researcher interacts with the human subjects and the changing perceptions of both parties (Chowdhury, 2014). For Lin (1998) interpretivist researchers are able to go beyond as they are able to analyse what has occurred and how it has occurred.

The third perspective is the constructivist approach that focuses on actions based on three fundamental assumptions in opposition to positivism (Cherkaoui & Haouata, 2017). Firstly, perfect knowledge is a result of experience. Reality is defined by the researcher’s experiences and cannot be known perfectly beyond the experience (Von Glasersfeld, 2001). Secondly, the subject has a decisive role in the construction of knowledge. In fact, researchers only know the representations by which they perceive a subject. Reality is made of interpretations and consequently, the knowledge is produced in a subjective and contextual perspective. Finally, in constructivist epistemology, knowledge is characterized by the hypothesis of cognitive feasibility. Therefore, these hypothesis postulates an interaction and interdependence between the subject and the studied object (Avenier and Gavard-Perret, 2012). This perspective includes the principles of adequacy and teachability. Thus, there is an incompatibility with econometric techniques that only apply to phenomena whose analysis allows to isolate interdependencies rigorously and transparently (Maurand-Valet, 2011).

Our dissertation takes a mixed approach where positivism and constructivism contribute to the building process as described in figure 1.12. Taking Giordao & Jolibert (2012) research process design, our research is based on an object of great relevance in present management science and business in society (Freeman, 2010).

**Figure 1.12 – Building a research process**



Source: author adapted from Giordao & Jolibert (2012)



Starting from the observation of environmental degradation and growing world inequalities, great upstream questions are risen about our individual and collective behaviour . Thus, sustainable development introduces problematics to our society, namely:

- What is our position as members of organizational units (families, companies, schools, associations, etc.) facing future environmental and social challenges?
- What performance and actions should we have for a sustainable future?

Our research, as previously highlighted, focus the role of SMEs in terms of sustainable development throught our main research question:

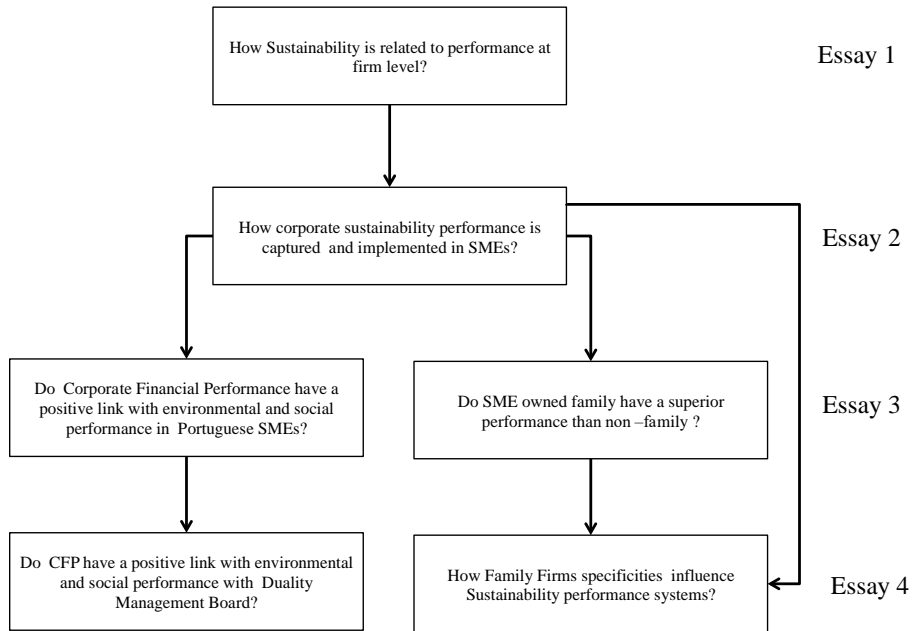
***“What is the understanding and use of sustainable performance measures at the level of Portuguese SMEs, in particular what is the impact of family involvement?”***

To understand how SMEs understand and use sustainable measures an how family influence it, our investigation have integrated six research questions:

1. How sustainability is related to performance at firm level?
2. How corporate sustainability performance is captured and implemented in SMEs?
3. Do SME owned family have a superior performance than non –family?
4. Do corporate financial performance have a positive link with environmental and social performance in Portuguese SMEs?
5. Do corporate financial performance have a positive link with environmental and social performance with duality management board?
6. How Family Firms specificities influence Sustainability performance systems?

All questions have been investigated in sequence as describe in figure 1.13.

Figure 1.13 – Research questions



Source: author

To operationalize our research, a logical architecture has been built and is composed of four essays integrating positivism and constructivism approaches as described in table 1.12.

**Table 1.12 – Dissertation epistemological position**

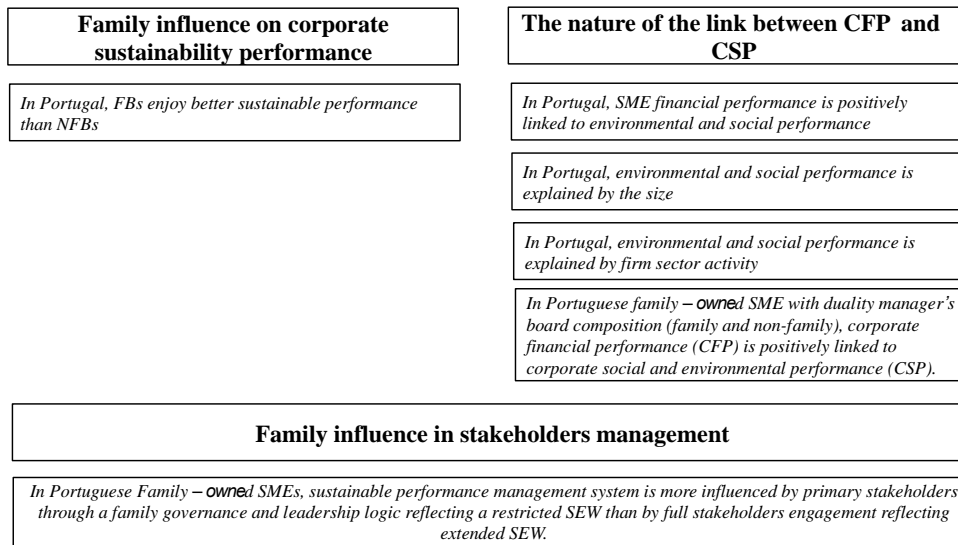
<b>Essays</b>	<b>Methodology approach</b>	<b>Methodology type</b>	<b>Epistemological position</b>
<b>Essay 1</b>	<b>Bibliometric</b> (citation, co-citation, keywords counting and keywords citations)	Quantitative	Positivism
<b>Essay 2</b>	<b>Bibliometric</b> (citation and co-citation)	Quantitative	Positivism
	<b>Lexical Analysis</b> (Word counting, Factorial analysis of correspondence, hierarchical classification descending analysis and Lexical-thematic analysis)	Qualitative	Constructivism
<b>Essay 3</b>	<b>Matched paired</b> (Means comparison)	Quantitative	Positivism
	<b>Statistical multivariate approach</b> (Correlation and linear regression)	Quantitative	Positivism
<b>Essay 4</b>	<b>Lexical Analysis based on a single case study</b> (Word counting, Factorial analysis of correspondence, hierarchical classification descending analysis and Lexical-thematic analysis)	Qualitative	Positivism
	<b>Statistical multivariate approach</b> (Correlation and linear regression)	Quantitative	Constructivism

Source: Author

Taking knowledge in the field and results obtained by essays, our dissertation includes three major fields of investigation linked and interconnected. Firstly, we focus on the family influence on sustainability corporate performance included the specificities of family-owned firms governance and management and the consequence comparing with NFBs. Secondly, starting from the role of stakeholders as influential actors on firm’s sustainable performance, it has been investigated the influence of family in a stakeholder management perspective. Finally, taking the greater debate on corporate sustainability performance field, we integrated the link nature between sustainability and financial performance.

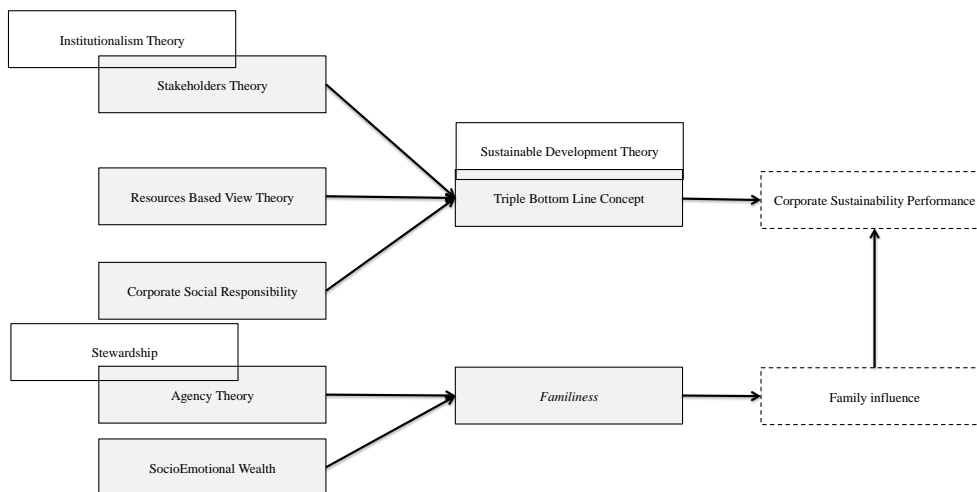
Our three themes are related to six investigation hypotheses standing in four essays in our dissertation hypotheses as described in figure 1.14. and consolidate our research operationalization.

**Figure 1.14 – Research hypotheses**



Different theoretical frameworks have been mobilized to support our investigation, as explained in figure 1.15. Based on an extensive core literature review, several theories and concepts appear as supportive of our hypothesis and conclusions.

**Figure 1.15 – Theoretical support to dissertation research questions**



Firstly, the institution-based view theory frames corporate sustainability performance academic debate. This theory reveals that organizations are conditioned by external pressures which leads them to adopt management practices because it confers a certain degree of

legitimacy through coercive isomorphism, mimetic process or normative pressures (DiMaggio & Powell 1983, Bansal 2005). Thus, firms need to meet external expectations on an institutional based view (Donaldson & Preston, 1995; Mitchell et al., 1997). Also, from the internal angle, competitiveness, legitimacy and responsibility lead firms to manage environmental and social performance expecting positive effects on financial performance. This framework supports our research on the debate between institutional pressure versus SMEs resources limitation. Also, the influence of family leadership, including the strength of family values and the environment. Consequently, this theory is closely associated with the stakeholder theory by the normative angle.

Stakeholder theory states that firms must go beyond maximizing shareholder value to consider the interests of stakeholders as a whole (Cordeiro and Tewari, 2015). This stakeholder approach states that organizations are accountable to multiple stakeholders that may affect or be affected by the operations of firms (Freeman, 1984). The pressures exerted (real or envisioned) by stakeholders are seen as a driving force for SMEs to adopt compliance with their expectations (Thorne et al., 2014). Hörisch et al. (2014) argue that sustainability-based value creation for stakeholders generates economic value. In a stakeholder theory lens, firm performance may be measured by generic value, namely by utility evaluation in terms of the tangible benefits created for stakeholders linked to products and services of the firm (e.g. green products). However, also on the intangible measures which stakeholders enjoy based on a just and fair treatment, and benefits to be affiliated with a organization (Harrison & Wicks, 2013). The value of sustainability appears as a source of mutual interest for all stakeholders with a sustainability management approach (Hörisch et al., 2014). This theory has been mobilized in our research focusing the debates on family influence on sustainability performance and on stakeholder's management practices.

Resource-based view (by the natural resource-based view perspective) has been mobilized around the debate of competitive advantages derived from the possession of resources and inimitable capacities associated to corporate sustainable commitment. Thus, sustainable strategies generate internal benefits related to know-how and corporate culture (Hart, 1995, Orlitzky et al., 2003) or external reputational benefits (Porter & Van der Linde, 1995, Lourenço et al. al., 2012). In fact, sustainability, as an instrumental concept provides a sustainable competitive advantage (Porter & Van der Linde, 1995) with valuable organizational capabilities (Hart, 1995). The resource-based view has supported debates on the nature of the link between sustainability and financial performance and specificities of

SMEs family owned ("Familianness" concept) and its influence on corporate sustainability performance.

Agency theory is greatly used in FBs studies. For our research, it supports questions on FBs influence on better performance and in stakeholders management. This theory focuses on potential cost reduction through more efficient organizational processes that retain a competitive advantage (McConaughy et al., 1998). The antagonism of power and influence between owners and managers is the source of reflection around the concept of agency relations (Allouche and Amann, 2000; Liu et al., 2012; Hoogendoorn et al., 2014). Thus, the negative and positive effects of principals' direct management are used in our analysis. We focus the agency relationship between agents (managers) who conducted by own goals may take decisions against the interest of owners (principals).

Stewardship appears as supporting agency theory main lines. In this framework, agents are motivated beyond their own interests and are intrinsically motivated by organizational achievements, contributing to the collective, long-term mission and success of the company (Davis et al. 1997). Miller et al. (2006) suggest that this behaviour is more present among family businesses due to a greater emotional linkage. Then, stewardship may be translated in a bigger financial and time investment that consequently may result in a greater performance. This theory has been mobilized around the debate on family influence and specificities on corporate sustainability performance.

Also, socioemotional wealth (SEW) support the same debates, complementing agency and stewardship theories. Thus, this theory observed that FB managers did not focus exclusively on basic financial performance but on well-being related to the company's socio-emotional link (Gómez-Mejía et al., 2011; Breton-Miller, 2014). This perspective presents positive effects, namely on long-run strategies and great embeddedness with internal and external stakeholders. This behaviour tends to improve overall financial, social and environmental performance. Nevertheless, negative aspect exists translated by the concept of "dark side", where nepotism, exploitation and expropriation of minority shareholders creates a second type of agency problems (Cruz et al., 2014; Vieira, 2017).

## 5.2. Addressed research gaps

Starting from the Sustainable Development concept and related theories, our investigation attempt to:

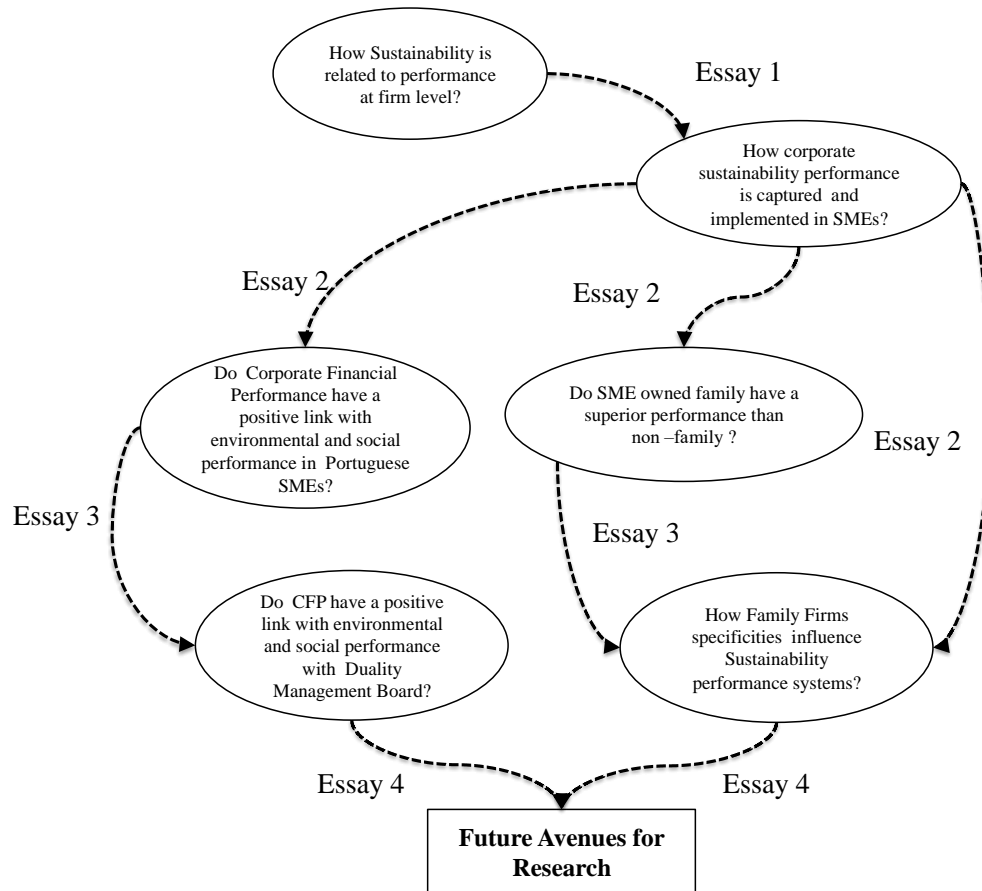
- Understand firm's engagement on sustainability practices and performance;
- Understand how SMEs interpret and apply sustainability at the performance system level;
- On the other hand, starting from the stakeholder theory (Harrison & Freeman, 1999), it analyses the internal and external influences on performance systems.

In accordance, this dissertation has six objectives to address research gaps:

- (1) Explore how sustainability is related to performance at the firm level;
- (2) Investigate how sustainability performance is captured and implemented by SMEs;
- (3) Contribute to clarify the link between financial, environmental and social performance in Portuguese SMEs;
- (4) Observe the influence of family involvement in sustainable performance;
- (5) Clarify the contribution of non-family managers in the link between financial, environmental and social performance; and
- (6) Explore the influence of family firms specificities sustainability performance systems.

Figure 1.16 shows the logical research questions sequence. To achieve these objectives, the current dissertation addresses six mains research questions in a clear sequence. Each essay gives answers to specific gap of the literature logically and interconnected. The research applies an ongoing theoretical and empirical practice on Portuguese SMEs.

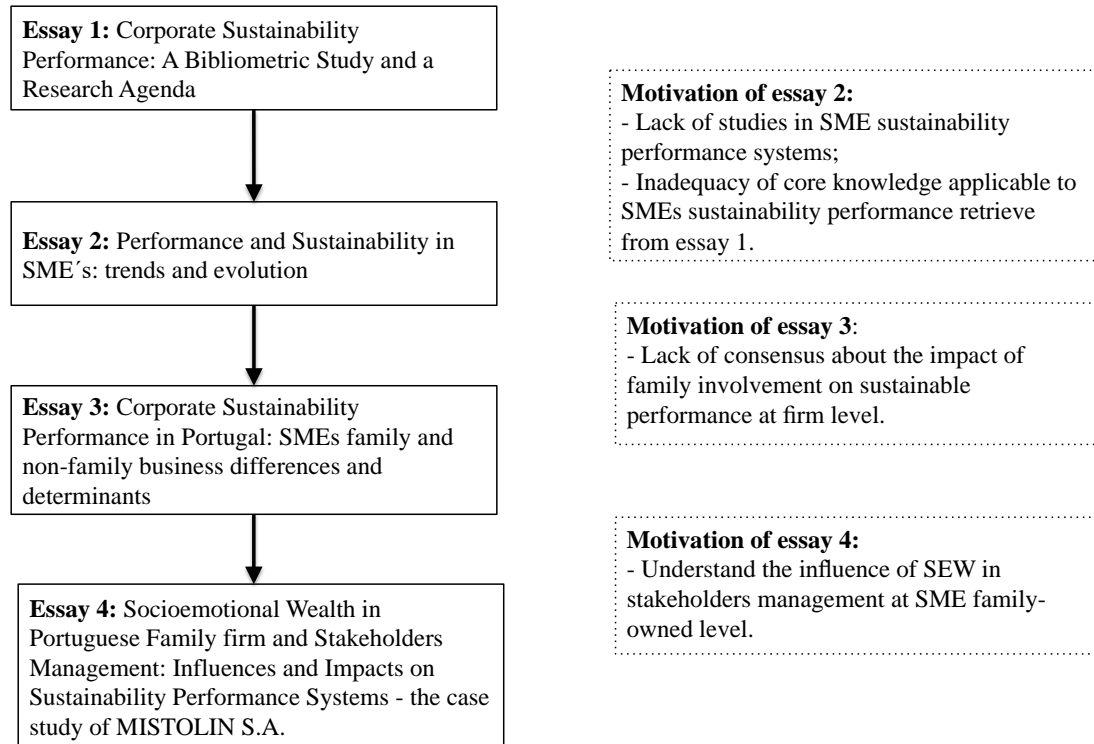
Figure 1.16 – Logical research questions sequence





## 5.2. Dissertation Structure

Figure 1.17 – Graphical structure



## 5.3 Overview of essays

### 5.3.1 Essay 1

*Main research question: How sustainability is related to performance at the firm level?*

*Supporting research questions: How does academic research capture corporate sustainability performance? How can corporate sustainability performance systems be integrated into business management field? And what are main future trends in the research field?*

The integration of the sustainable development concept at firm level results on new needs of performance assessment (Goyal et al., 2013). Research crossing corporate sustainability strategy and its performance measurement has attracted researchers to the field (Searcy, 2011; Goyal et al., 2013). Literature reviews have been performed under the integration of sustainable development at the firm level as business case (Dyllick & Hockerts, 2002; Bansal, 2005; Salzmman et al., 2005). Several lenses have been explored as supply-

chain operations (Seuring & Müller, 2008), transparency and accountability focus (Taticchi et al., 2010) or a stakeholder perspective analysis (Antolin-Lopez et al., 2016). However, literature reviews tend to be limited to catch a large and complete view of state of the art (Reis et al., 2013). Also, very few studies on sustainable measurement at the firm level proposed a consistent research agenda for the future based on the present trends.

In another hand, research tends to include traditional performance measurement field adding sustainability as a simple derivation. Then performance is analysed framed by strategic management theories.

As a Result, and based on the lack of literature review that captures a large time scale and sources, this essay maps the relevant knowledge network to synthesis research streams and gaps on sustainability performance field between 1987 and 2015. Using powerful statistical bibliometric methods, the citation, co-citation, keywords counting, and co-occurrence were analysed, correlated and submitted to social network analysis techniques. From this investigation process structuration, it was possible to understand the field of corporate sustainability performance from a sustainable development concept to a management integration perspective. A total of 1271 articles extracted from ISI Web of Knowledge with 82,980 cited references were employed in our findings research. Using an evolutionary temporal analysis, this study update trends and patterns pointing future trends in the corporate sustainability performance field.

### **5.3.2 Essay 2**

*Main research question: How corporate sustainability performance is captured and implemented in SMEs?*

*Supporting research questions: At a SME level, how does academic research capture corporate sustainability performance? And What are the main theoretical trends in SME sustainability performance at strategic and operational level?*

SMEs represent an important economic, environmental and social role in our societies. However, corporate sustainability studies have a dominant approach centralized on large companies analysis (Perrini, 2006). In this sense, literature tend to highlight mainly on strategies and operational implementation where resources and capabilities are abundant. However, SMEs have a great role in economic, environmental and social perspectives. The

impact and performance of SME in sustainable terms is important for an academic approach. In another hand, SMEs specificities determine different core knowledge of corporate sustainability performance. Classical theoretical frameworks are reviewed and adapted to small firms' reality. Using bibliometric and lexical analysis, 63 were scanned to understand theoretical and empirical literature to the design, mechanisms and results of sustainable performance measurement in SME. Findings show that main knowledge is linked to traditional management theories but also introduce new approaches adapted to small business. The lexical analysis point to main topics analysed by researchers as value chain control, governance and leadership and stakeholder and institutional pressure. SMEs face a greater challenge to put sustainability in practice.

### **5.3.3 Essay 3**

*Main research questions: Do corporate financial performance have a positive link with environmental and social performance in Portuguese SMEs?*

*Do SMEs family owned have superior performance than non - family SMEs?*

*Supporting research questions: What is the impact of family involvement on SMEs sustainability performance in Portugal? Do SME financial performance is positively linked to environmental and social performance, in Portugal?*

This essay contributes by the integration of resource-based view, institution-based view, agency theory, stakeholder theory and corporate sustainability, extending the discussion about family involvement on firm performance and the effect of sustainable strategy on financial performance in Portuguese SMEs. By using matched paired methodology and multivariate approach, we focus 65 Portuguese SMEs and 32 indicators at a financial, environmental and social level, comparing family Business (FB) and Non-Family Business (NFB). Additionally, we investigate the link between financial, environmental and social performance using correlation and regression analysis. Under an evolutionary temporal analysis, this study underscores consistent patterns pointing that corporate family involvement influence financial performance and have a mixed effect on environmental and social performance. Finally, we provide evidence of positive link between social and financial performance.

#### **5.3.4 Essay 4**

*Main research questions: Do Socio-Emotional Wealth (SEW) is present and influence sustainable performance management, in Portuguese Family – owned SME? How SEW influence stakeholder management and engagement practices? and What is the nature of link between corporate financial, environmental and social performance in SME Dual Board composition (Family and non-Family)?*

Small and Medium Enterprises, in particular FBs, enclose specificities in their governance models that influence the design and implementation of sustainable performance systems. In this sense, sustainability theoretical field has been challenged when applied to family owned SMEs, namely stakeholder theory. Socio-emotional wealth (SEW) appears in academic literature as an influential concept in theoretical interpretation applied to Family Firms. This research aims to explain the understanding and use of sustainable performance measures in small and medium family firms, providing an illustration of how FB's SEW influence corporate sustainability performance (CSP), through a single case study. Using lexical content analysis, we focus on the manager's discourses to extract SEW effects in firm performance systems. Additionally, we investigate the link between financial, environmental and social performance using correlation and regression analysis in a dual managed company context. Based on the influence of primary stakeholders this study shows that a restricted SEW view is dominant in top manager's discourses and in their managerial actions. Finally, we provide evidence of positive link between environmental and financial performance in a dual managed context.

### 5.4.1 Key characteristics of essay 1

Table 1.13 – Key characteristics of essay 1

Title	Corporate Sustainability Performance: A bibliometric study
Purpose	<p>(1) To examine the evolution of academic research related to corporate sustainability performance;</p> <p>(2) To explore the understanding and use of sustainable performance at the firm level by researchers;</p> <p>(3) To determine the core theoretical base supporting corporate sustainable performance systems.</p>
Theoretical background	---
Research question (s)	<p>How does academic research capture corporate sustainability performance?</p> <p>How corporate sustainability performance systems can be integrated into business management field?</p> <p>What are the main future trends in the research field?</p>
Methodology and sample	<p>Bibliometric analysis (citation, co-citation, keywords counting and co-occurrence):</p> <p>1271 articles with 82,980 cited references to map the relevant knowledge network on sustainability performance measures and measurement field over the period 1987 and 2015.</p>
Main findings	<p>(1) Corporate sustainability field is supported by theoretical foundations through institutionalism, resource-base view, competitive advantage and stakeholder theories;</p> <p>(2) Results show an aggregation and consolidation of core theoretical knowledge with decisive contributions of sustainable development theorization and Triple Bottom Line framework applied to corporate sustainable performance;</p> <p>(3) Corporate sustainability performance systems incorporate environmental and social dimensions linked to financial performance and on the influential role of stakeholders;</p> <p>(4) On an operational lens, stakeholders management, reporting, environmental performance and corporate social responsibility lead academic research;</p> <p>(5) New trends focus greater integration with conventional performance system including: Supply chain management, Performance systems, Corporate governance, Intellectual capital, Ethics, and Innovation management.</p>

## 5.4.2 Key characteristics of essay 2

Table 1.14 – Key characteristics of essay 2

Title	Performance and Sustainability in SME's: trends and evolution
Purpose	<p>(1) To examine the evolution of academic research related to corporate sustainability performance at SME level;</p> <p>(2) To scan and determine the core knowledge of corporate sustainability performance in SME;</p> <p>(3) To determine trends on corporate sustainable performance systems at SME level.</p>
Theoretical background	---
Research question (s)	<p>(1) At a SME level, how does academic research capture corporate sustainability performance?</p> <p>(2) What are the main theoretical trends in SME sustainability performance at the strategic and operational level?</p>
Methodology and sample	<p>Bibliometric analysis &amp; Lexical analysis:</p> <ul style="list-style-type: none"> <li>- Citation and co-citation analysis of 63 studies focusing on sustainable performance in SMEs over the period 1987 and 2015;</li> <li>- Word counting, Factorial Analysis of Correspondence, Hierarchical Classification Descending and thematic analysis of 63 abstracts focusing on sustainable performance in SMEs over the period 1987 and 2015.</li> </ul>
Main findings	<p>(1) SME sustainable performance field is supported by Resource-Based View, Stakeholders theory; Triple Bottom Line, Corporate Social Responsibility and Social Capital theories;</p> <p>(2) SMEs literature reflect sustainability in practice focusing the reflection on results and performance communication and less strategic perspective;</p> <p>(3) SMEs are stressed by internal and external influences on how to operationalize sustainable performance systems through value chain control, governance and leadership, stakeholder and institutional pressure lens;</p> <p>(4) Market-oriented and competitiveness themes dominate through CSP and CFP link debate and Resources and capabilities use on a sustainable perspective for SME.</p>

### 5.4.3 Key characteristics of essay 3

Table 1.15 – Key characteristics of essay 3

Title	Corporate Sustainability Performance in Portugal: SMEs family and non-family business differences and determinants
Purpose	<p>(1) To examine corporate sustainability performance and family influences;</p> <p>(2) To explore family involvement in the sustainable firm performance, and</p> <p>(3) To illuminate the determinants and effect of corporate environmental and social performance on financial performance in Portuguese SMEs.</p>
Theoretical background	Resource-based view, Institution-based view, Stewardship theory, Agency theory and Stakeholder theory
Research question (s)	<p>(1) What is the impact of family involvement on SMEs sustainability performance in Portugal?</p> <p>(2) Do SMEs financial performance is positively linked to environmental and social performance, in Portugal?</p>
Methodology and sample	<p>Matched Pair analysis and regression analysis:</p> <p>- 65 Portuguese SMEs and 32 indicators at financial, environmental and social level.</p>
Main findings	<p>(1) Family Businesses have a significant better financial structure including liquidity and low external dependence than Non-Family Businesses;</p> <p>(2) Family Businesses have not a stronger environmental and social performance than Non-Family Businesses;</p> <p>(3) Evidence of positive link between social and financial performance;</p> <p>(4) Environmental performance appears as negative factor to profitability of SMEs;</p> <p>(5) Size an industry did not explain greater environmental and social performance.</p>

#### 5.4.4 Key characteristics of essay 4

Table 1.16 – Key characteristics of essay 4

Title	Socioemotional Wealth in Portuguese Family Firm and Stakeholders Management: Influences and Impacts on Sustainability Performance Systems - the case study of MISTOLIN S.A.
Purpose	(1) To explain the use and understanding of sustainable performance measures in small and medium family firm; (2) To provide an illustration of how FB's Socioemotional Wealth concept influence corporate sustainability performance and stakeholder management; (3) To clarify the effect of mixed management boards (CEO Duality)
Theoretical background	Socio-Emotional Wealth (SEW) and stakeholders theory
Research question (s)	(1) Do Socio-Emotional Wealth (SEW) is present and influence sustainable performance management, in Portuguese Family – owned SMEs? (2) How SEW influence stakeholder management and engagement practices? (3) What is the nature of the link between corporate financial, environmental and social performance in SMEs Dual Board composition (Family and non-Family)?
Methodology and sample	Single Case Study: - Content analysis (words counting, Factorial Analysis of Correspondence, Hierarchical Classification Descending and thematic analysis): Six (6) interviews and documentation - Regression analysis: 11 KPI's from 2012 to 2016 retrieved from accounting, strategic plans and KPI's maps.
Main findings	(1) Confirmation that SEW dimensions (FIBER) are present in managerial discourses and in their sustainability interpretation; (2) SEW tends to reduce stakeholders influence incorporating a reduced engagement perspective to primary stakeholders; (3) Family wealth preservation limit organizational structure to an operational and organizational performance lens; (4) In family businesses managers discourses, sustainability themes did not appear in primary concerns confirming that FBs did not engage more in social and environmental activities; (5) In a duality management organization, CSP is positively linked with environmental indicators.



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### **Internet access**

FAO : <http://www.fao.org/3/ai388e/AI388E05.htm> (accessed in 2019.02.20)

**2. CHAPTER 2 – CORPORATE SUSTAINABILITY PERFORMANCE: A  
BIBLIOMETRIC STUDY**

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**Conference:**

- 2<sup>nd</sup> ARTEM ORGANIZATIONAL CREATIVITY AND SUSTAINABILITY INTERNATIONAL CONFERENCE, Nancy, September 2017, “Corporate Sustainability Performance: a bibliometric study and a research agenda”, Mamede P., Allouche J.

**Journal Submission**

This paper was submitted to the Journal of Business Ethics

*Journal of Business Ethics*

- FNEGE (2016): 2

**Acknowledgements**

We would like to thank Pr. Nuno Rosa Reis (School of Technology and Management – Polytechnic Institute of Leiria, Portugal) for his useful advice in Bibliometric methodology and Bibexcel<sup>®</sup> software use. Feedback and recommendations from participants at the 2<sup>nd</sup> ARTEM Organizational Creativity and Sustainability International Conference in Nancy are greatly appreciated.

## **ABSTRACT**

Research on corporate sustainability attracted a great number of researchers to the theme of performance and measurement. A large number of papers were published focusing on the sustainable development dynamics and challenges to corporates and its managers, creating an innovative approach to the management field. This study aims to mapping the relevant knowledge network and attempts to synthesize research streams and gaps in sustainability performance measures and measurement field between 1987 and 2015. In this context, we focus a total of 1271 articles extracted from ISI Web of Knowledge with 82,980 cited references. By using bibliometric methods, the citation, co-citation, keywords counting and co-occurrence were analysed and then mapped with correlation analysis and social network analysis techniques. The results can help researchers to gain a better understanding of the major themes, concepts, and relationships related to corporate sustainability performance research and its future direction. Under an evolutionary temporal analysis, this study underscores consistent patterns pointing that corporate sustainability performance field is in construction from legitimacy to a theoretical consolidation of concepts based on a great connection to Triple Bottom Line (TBL) concept, Resource-Based View (RBV), Neo-institutionalism, Competitive advantage and Stakeholder theories.

**Keywords:** Sustainable development, Sustainability, Performance Measurement, Organizational Performance, Bibliometric Study.

## 1. INTRODUCTION

Business organizations have been increasingly under pressure to embrace a sustainable management approach (Labuschagne et al., 2003). In this context, firms have been motivated in identifying and managing the impacts of their activities in a new environmental context (WBCSD, 2002). These new drivers forced business organizations to upgrade their performance measurement systems with new measures in order to monitor activities related to the corporate sustainability dimension. Thus, the incorporation of sustainability in management strategy results on new needs of performance assessment methodology (Goyal et al., 2013). In accordance, research on corporate sustainability strategy and its performance measurement has recently attracted scientific researcher to the field (Searcy, 2011; Goyal et al., 2013).

Several works have been performed under the integration of sustainable development at the firm level as business cases (Dyllick & Hockerts, 2002; Bansal, 2005; Salzmann et al., 2005, Allouche & Laroche, 2006), namely through a strategic lens (Engert et al., 2016), a supply-chain operations (Seuring & Müller, 2008), a transparency and accountability focus (Taticchi et al., 2010) or a stakeholder perspective analysis (Antolin-Lopez et al., 2016). However, the sustainability performance and measurement at firm level field only recently have gained interest by academics (Montiel & Delgado-Ceballos, 2014). Searcy (2011) provided a longitudinal literature review analysis, from 2000-2015, identifying future research directions for the design, implementation, use, and evolution of corporate sustainability performance measurement systems. Montiel & Delgado-Ceballos (2014) focused on the main corporate sustainable performance measures instruments that have been used to assess corporate sustainability. Goyal & Rahman (2014) have promoted a content analysis addressing the depth of literature in the field of corporate sustainability performance. Finally, Taticchi et al. (2010) using a citation and co-citation techniques performed an investigation between 2005 and 2008 in the field of performance measurement and management at the firm level and proposed a research agenda for the future. Despite the growing interest a proper classification of “*corporate sustainability performance*” core knowledge is missing.

This study aims to map the relevant knowledge network and attempts to synthesize research streams and gaps in sustainability performance field between 1987 and 2015.

Using bibliometric analyses, we provide a useful interpretation of knowledge network (Lin & Cheng, 2010) from a large number of publications, especially when traditional literature reviews are limited to produce a consistent view of state of the art (Reis et al.,

2013).

Our contribution is a quantitative identification of core knowledge and new lines in the forthcoming investigation. The results can help researchers to gain a better understanding of the major themes, concepts, and relationships related to corporate sustainability performance field supported on an extended literature review.

Our study is organized as follows. Section 2 a review of literature on the themes and bibliometrics. Section 3 contains a description of the methodology with the description of sample and procedures. Section 4 reports and discusses the results of citation, co-citation, keywords counting and co-occurrence analysis. The last section supports our main conclusion and research field trends.

## 2. LITERATURE REVIEW

### 2.1 An overview of corporate sustainability performance

According to the World Commission on Environment and Development (WCED), sustainable development configures as “*development that meets the needs and aspirations of the present without compromising the ability of future generations to meet their own* (WCED, 1987; p.54). Present world inequalities, growing expectations in the future and the limited resources access put new challenges to humanity. This scenario improves the necessity of reflections on how management by the public, private or communitarians organizations should undertake to a more balanced future. In fact, businesses have a key role in society to achieve and conduct sustainable responsiveness (Tregidga & Milne, 2006; Loucks et al., 2010; Sodhi, 2015; Mani et al., 2016). A consensus widely shared in the literature point to the need of sustainability incorporation by firms on their activities and processes, covering three sustainability dimensions (Elkington, 1997; Milne, 2006; Dyllick & Muff, 2015; Antolin-Lopez et al., 2016):

- The economic dimension, which is based on value creation in markets;
- The environmental dimension, which is based on the preservation of ecology as a result of the balance between human needs and the environment preservation;
- The social dimension, which is based on equity as a result of inclusive processes for human rights and freedoms universally accepted.

However, the debate on the application of the concept of sustainable development at the firm level is far from consensual in academic terms (Barkemeyer et al., 2011; Hahn et al., 2015b). From an academic literature review, three different approaches appear dominant in the conceptualization of sustainability and its applicability on business organizations (Mamede & Gomes, 2014; Dyllick & Muff, 2015):

- Business organizations should take only as concern the creation of value by focusing on economic sustainability and shareholders satisfaction (Friedman, 1970). In this context, businesses tend to gradually integrate environmental and social sustainability, through an evolutionary process of values, customs, and legislation integration.
- Business organizations should integrate the impacts of their activities, according to the critical global issues in terms of ecological and social systems (Richards & Gladwin, 1999; Robèrt, 2000; Landrum, 2018). Therefore, managers of business organizations should avoid the planning and control of their operations based on external pressures.

They must anticipate the changes undergoing in society and in the environment proactively (Richards & Gladwin, 1999).

- Finally, business organizations should promote their operations within a framework that meets the expectations of stakeholders (Freeman, 1984; Schaltegger et al., 2003; Schaltegger & Burritt, 2009; Skouloudis, et al., 2009; Hubbard, 2009; Hörisch et al., 2014). This approach underlines the importance of dialogue with stakeholders as a way to ensure sustainability (Wilson, 2003; Tregidga & Milne, 2006).

Highly common academic vision focus on corporate sustainability as having two characteristics: a balanced management between economic prosperity, environmental protection and social equity, and a permanent interaction and dialogue with stakeholders (Kleine & Von Hauff, 2009), it becomes relevant to analyse the influence of these dimensions and its conceptual foundations on design and implementation of the firm performance systems.

A progressive integration of the sustainability approach has been perceived in academic research (Landrum, 2018). Literature review tends to show that current corporate performance systems are characterized by operational assumptions similar to sustainability performance, namely:

- The involvement of stakeholders (Lo, 2010),
- The linkage between the needs of stakeholders and company operational activities (Blasco, 2006; Schaltegger & Wagner, 2006; Hubbard, 2009; Hubbard, 2009; Hörisch et al., 2014),
- The progressive integration of non-financial measures including environmental and social dimensions (Epstein & Roy, 2001; Schaltegger et al., 2003; Bansal, 2005; Adams & Frost, 2008; Hubbard, 2009; Kleine & von Hauff, 2009; Schaltegger & Burritt, 2009; Skouloudis et al., 2009; Maroun & Atkins, 2018).

Existing corporate sustainability performance systems can be categorized into four categories:

- Global systems - Based on global sustainable indicators translated into strategic and processes indicators at the enterprise level (Richards & Gladwin, 1999; Robèrt, 2000; Landrum, 2018)
- Stakeholders systems - Based on the identification of expectations and critical issues through dialogue with stakeholders, translated in the formulation of indicators associated with the results of the engagement process (von Geibler et al., 2006; Bonacchi & Rinaldi, 2007)

- Adapted systems - Based on traditional methodologies used in strategic and operational contexts originally not sustainable based (eg. Sustainable Balanced Scorecard), integrating one or several dimensions of corporate sustainability dimensions (Schaltegger & Wagner, 2006; Bonacchi & Rinaldi, 2007; Staniškis & Arbačiauskas, 2009)
- Triple Bottom Line (TBL) systems - Based on the methodological structure across the three dimensions of sustainability (economic, environmental, and social), including the product life cycle (Bakshi & Fiksel, 2003; Sikdar, 2003; Hubbard, 2009).

TBL merged as a dominant conceptualization for articulating corporate social, environmental, and economic performance, (Brown, et al., 2009). As a framework concept, TBL results from the previous paradigm of sustainable development based on the search for balance between the three dimensions: economics, environmental and social at the firm level (Zak, 2015). Heavily discussed under its usefulness to companies' performance measurement (Norman & MacDonald, 2003), the TBL adds new elements to the "*corporate performance*" field. First, it focuses on economic, environmental and social values generated by companies (Rogers & Hudson, 2011; Zak, 2015). Second, it highlights the relationships between the three main values and the triple-win confluence. Finally, the concept shows the complexity of tensions and trade-offs among the three elements (Sikdar, 2003; Rogers & Hudson, 2011). As a descriptive concept, the TBL aggregate the challenges of "*Corporate sustainability performance*" and its measurement in a strategic, accounting and operational level.

In another hand, "*Corporate sustainability performance*" seems commonly linked to the stakeholder theory (Schaltegger & Wagner, 2006; Hubbard, 2009) through an institutional perspective but also in a resource-based view (Lourenço et al., 2012). In fact, as explained by DiMaggio & Powell (1983), organizations are conditioned through external pressures to meet strategic and operational legitimacy. In the other hand, the resource-based view of the firm has emerged articulating the relationships among firm resources, capabilities, and competitive advantage (Barney, 1991; Hart, 1995). Corporate sustainability tends to provide internal benefits developing new resources and capabilities, which are related to know-how and corporate culture (Orlitzky et al., 2003) or external benefits through reputation (Porter & Vander Linde, 1995; Lourenço et al., 2012). These benefits are possible based on stakeholder appreciation and valuation of resources and capabilities focused on sustainability.

## 2.2 Review of the literature on bibliometrics

Traditional literature reviews tend to be short to demonstrate a reliable view of the state of the art in a field (Reis et al., 2013). In parallel, these types of studies are considered as adopting a global approach, and their findings tend to reflect the subjective view of their authors (Ramos-Rodriguez & Ruiz-Navarro, 2004). Thus, with the use of bibliometric methods, research gains a specific view of core theoretical foundations and its evolution by considering the works of a great number of researchers in the field over an extended period. The growing number of studies on the field (Goyal & Rahman, 2014) makes suitable the use of a mathematical and statistical analysis of trends and patterns related to in academic documents (Ramos-Rodriguez and Ruiz-Navarro, 2004).

Then, citation analysis represents a relatively new form of meta-analytical research or “meta-review” of the literature (Fetcherin et al., 2010), based on the premise that authors cite documents that they consider important to the development of their research. Highly cited documents are likely to have a greater influence on the research field than those that are less cited (Callon et al., 1993; Lin & Cheng, 2010). Observing cited works, it can be concluded about the impact and influence on the construction of the discipline (Ferreira et al., 2014a).

In another sense, co-citation analysis is a form of document-coupling that records the number of papers that have cited any specific pair of publications (Lin & Cheng, 2010). Presumably, two works are co-cited due to their similarity or proximity to the subject, theory or concept (Reis et al., 2013). The construction of co-citation networks allows the identification of researchers’ communities and their contributions to the development of scientific specialities or theories (Callon et al., 1993).

Content analysis allows a systematic and quantitative description of scientific domains mapping concepts (Goyal et al, 2013; Shafique, 2013). Keywords can be seen as the topics or the concentrative summary of the publications (Callon et al., 1993). In fact, authors write it due to the intrinsic aggregative nature of concepts in a particular scientific field. Keywords’ counting is based on the recognition of co-occurrences in different documents, permitting the design of intensity links between terms and concepts. Also, the method may show possible future paths of research.

Bibliometric analysis can be used as indicators of the present and past activities of scientific work (Lin & Cheng, 2010) and point futures trends. In the last years, bibliometrics has been used in large range of studies in other areas of management research. For example, Ramos-Rodriguez & Ruiz-Navarro (2004) maps the changes in the intellectual structure of



strategic management research by conducting a citation and co-citation analysis of works published, which could be considered representative of the field. Acedo et al. (2006) investigate the RBV heterogeneity by identifying the main trends or approaches developed between 1992- 2001. In the same sense, Ferreira et al. (2014a) use this technique to explore articles published in the four top international business (IB) journals to examine four cultural models and concepts used in research. This field has been also investigated by Reis et al. (2013) using bibliometric analysis to define the meaning of culture and its implications on firms' international operations. Ferreira et al. (2014b) repeated the technique to map the extent strategy and international business literature on merge and acquisitions field between 1980-2010. Shafique (2013) explored the intellectual structure of the knowledge base of innovation. Shiau and Dwivedi (2013) examined core and emerging knowledge in electronic commerce research. Lin & Cheng (2010) performed a bibliometric analysis to explore the knowledge network of strategic alliance. Finally, Neely (2005) used citation/co-citation analysis of works in the field of performance measurement to explore developments in the field globally.

However, in the corporate sustainability performance field, there is a lack of works supported by a consistent collection and quantitative analysis. Based on an extensive literature review, this research map-out the relevant knowledge network by conducting a review of the existing literature and attempts to synthesize research streams, evolution and trends on corporate sustainability performance field.

### 3. METHODOLOGY

#### 3.1 Sample

The dataset used in this paper was constructed using the ISI Web of Science database. Every publication that contained the phrase “*Corporate sustainability performance*” and “*Corporate sustainability measurement*” in its title, keywords or abstract was identified and downloaded. This search identified 1,271 papers and 82,980 cited references published in 491 different journals. To obtain a representative collection of “*Corporate sustainability performance*” and “*Corporate sustainability measurement*” research articles, a collect of all the articles published on ISI Web of Science database from January 1987 to December 2015 was performed (scope of 28 years of research). The choice of this period fits with the symbolic theoretical starting point of the *Sustainable Development* concept, appointed by the academic literature with the publishing of the landmark “*Brundtland report*” in 1987. Due to the leadership shown by the United Nations in the construction, development and dissemination of sustainable development concept, it was chosen an evolutionary analysis based on the main world conferences in last three decades dedicated to *Sustainable Development*. In this sense, as represented in table 2.1, these events mark our timeframe:

**Table 2.1 – United Nations Sustainable Development initiatives**

Year	Conference	Local	Date	Main Outputs
1992	United Nations Conference on Environment and Development (UNCED) - “Earth Summit”	Rio de Janeiro	3 <sup>rd</sup> -14 <sup>th</sup> June 1992	<p><b>Resulting outcomes:</b></p> <ul style="list-style-type: none"> <li>- Agenda 21, the Rio Declaration on Environment and Development</li> <li>- The Statement of Forest Principles</li> <li>- The United Nations Framework Convention on Climate Change</li> <li>- The United Nations Convention on Biological Diversity</li> </ul> <p><b>Follow-up mechanisms:</b></p> <ul style="list-style-type: none"> <li>- Commission on Sustainable Development</li> <li>- Inter-agency Committee on Sustainable Development</li> <li>- High-level Advisory Board on Sustainable Development</li> </ul>
2002	World Summit on Sustainable Development - “Rio’ Earth Summit +10”	Johannesburg	26 <sup>th</sup> August – 6 <sup>th</sup> September 2002	<p><b>Resulting outcomes:</b></p> <ul style="list-style-type: none"> <li>- The Johannesburg Declaration</li> <li>- Plan of Implementation of the World Summit on Sustainable Development (JPOI)</li> </ul> <p><b>follow-up mechanisms:</b></p> <ul style="list-style-type: none"> <li>- the establishment of numerous partnership initiatives (most importantly so-called Type II partnerships).</li> </ul>

Year	Conference	Local	Date	Main Outputs
2012	The United Nations Conference on Sustainable Development - "Rio+20"	Rio de Janeiro	20 <sup>th</sup> -22 <sup>nd</sup> June 2012	<b>Resulting outcomes:</b> <ul style="list-style-type: none"> <li>- Sustainable Development Goals (SDGs)</li> <li>- Sustainable development financing strategy</li> <li>- Green economy policy guidelines</li> <li>- Facilitation mechanism for technology transfer</li> <li>- Thematic areas</li> <li>- Voluntary Commitments &amp; Partnerships for sustainable development</li> </ul> <b>follow-up mechanisms:</b> <ul style="list-style-type: none"> <li>- high-level political forum for sustainable development</li> </ul>

(Source : <http://www.un.org/geninfo/bp/enviro.html> & <https://sustainabledevelopment.un.org/rio20>)

In 1987, from the World Commission on Environment and Development, headed by Gro Harlem Brundtland, comes an effective determination to address the emerging issues of balance between development and the environment. The Brundtland Report (1987) was a key document, becoming a mark for future economic growth strategies and human development. Environmental degradation has been understood as a result of industrial development. With the conclusion of the Brundtland Report (1987), these environmental issues have been linked to future economic and ecological decline (Barkemeyer *et al.*, 2011). For the first time, the United Nations concluded that it no longer makes sense to separate the environmental protection policies from the people social inclusion efforts (Blasco, 2006). The reduction or stopping of the growth, advocated by "*The Limits to Growth*" (Meadows et al., 1972), have been replaced by the concept of "*Sustainable Development*". With the completion of the Rio Conference, also known as Earth Summit (1992), it was consolidated a global awareness about the need to establish a genuinely sustainable development policy at the global level (Barkemeyer et al., 2011; Blasco, 2006).

In Johannesburg (Rio +10), ten years later, it was explicit the need to integrate companies as agents for sustainable development. After a very hard multi-states negotiation, the final declaration agrees about corporates role on sustainable development, as "*there is a need for private sector corporations to enforce corporate accountability, which should take place within a transparent and stable regulatory environment.*" (United Nations, 2002; p.4). In Rio 2012, the final document include a statement to "*encourage industry, interested governments and relevant stakeholders, with the support of the United Nations system, as appropriate, to develop models for best practice and facilitate action for the integration of sustainability reporting, taking into account experiences from already existing frameworks (...).*" (United Nations, 2012; p.9). These inclusions raise academic debates on the role of the private sector to the sustainability practices implementation.

The reasoning behind our option to divide our search into four periods can be summarized as follows:

1. “*Corporate sustainability performance*” and “*Corporate sustainability measurement*”, as a theme of Sustainable Development is closely linked to the starting point of dissemination of this concept in 1987;
2. Rio 1992, Johannesburg 2002 and Rio 2012 were the specific UN summits on sustainable development, enhanced attraction to the reflexion and debate of politics, citizens and academics on this concept (Tregidga & Milne, 2006). Consequently, this capacity of multi-stakeholders’ aggregation was important to observe the evolution of research during and after these events;
3. To understand whether there were significant shifts in the discipline, we achieved a longitudinal analysis. In fact, analysing citations data as a unique aggregate may limit our capacity to observe trends. Moreover, these changes are important because they may suggest theoretical, empirical or methodological changes in the discipline or speciality (Ferreira et al., 2014b);
4. Under the objective to achieve observation of future research trends, it was decisive to observe changes that might influenced these works and the current theoretical background.

Under these assumptions, the search was divided into four periods: 1987-1992, 1993-2002, 2003-2012 and 2013-2015. Table 2.2 presents the results and the distribution in each period. Starting with the year that the first work has been published, our analysis focuses specifically on the period from 1994 to 2015.

**Table 2.2 – Distribution of articles by periods of time (1987-2015)**

<b>Period</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>
	<b>1987-1992</b>	<b>1993-2002</b>	<b>2003-2012</b>	<b>2013-2015</b>
<i>Articles number</i>	0	23	583	665
<i>%</i>	0	1,8%	45,9%	52,3%

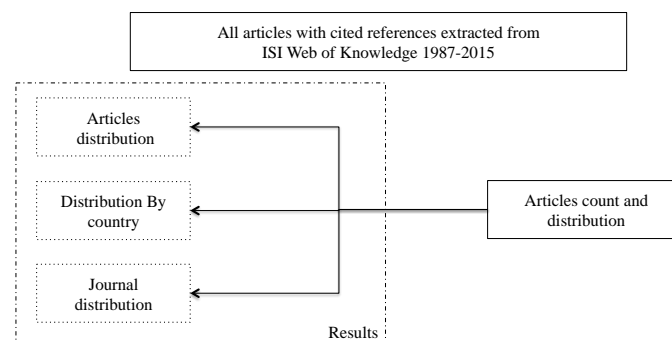
### 3.2 Method and Procedures

Our approach in this bibliometric study follows the procedures described by several authors (Callon et al., 1993, Goyal et al., 2013; 1993; Ferreira et al., 2014a; Ferreira et al., 2014b; Fetcherin et al., 2010; Lin & Cheng, 2010; Neely, 2005; Reis et al., 2013; Ramos-Rodriguez & Ruiz-Navarro, 2004; Taticchi et al., 2010; Shafique, 2013), retrieving all the relevant information from the 1,271 articles, including the journal name, title of the paper, authors, volume, issue, year, abstract, keywords and the references included in each article published between 1987 and 2015. The references were checked for errors and corrected. The corrected data was analyzed using software Bibexcel<sup>1</sup>, which permits to organize data and generate citation and co-citation matrixes. The co-citation networks were drawn using the social networks software Ucinet (Reis et al., 2013). This study proposes a four-phase structure to conduct articles distribution, citation, co-citation and keywords analysis. The details of each phase are discussed as follow.

#### *Distribution of articles*

Distribution of articles in different time periods shows quantitative trends of studies on a given field in different timeframes and allows understanding the productive dynamics (Callon et al., 1993). This classification provides the raw data for all citation analysis and helps to compare the productivity of research output among a given field of science. These simple bibliometric measures can allow us to study and discuss a broad spectrum of scientific activity namely, state of maturity of a given scientific field, the countries with greater influence or the most influential journals in the study subject.

**Figure 2.1 – Distribution of articles procedure**

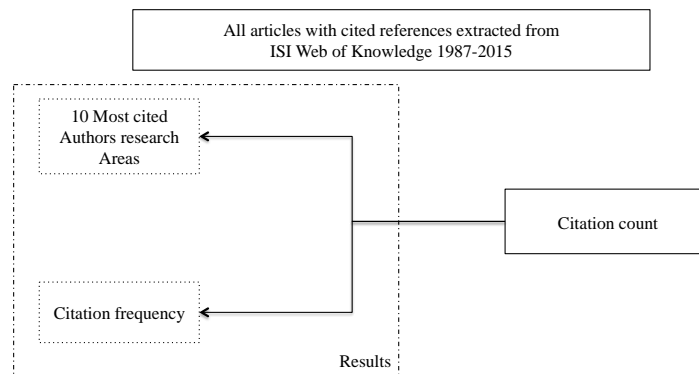


<sup>1</sup> <http://www.umu.se/inforsk/Bibexcel>.

### *Citation analysis*

Citation analysis is a relational exercise that allows the study of research networks, based on the frequency with which a certain work is cited, or used, in the discipline (Ferreira et al., 2014b). An assumption is that the more cited works are those that hold the largest impact on the field of study. This analysis allows the researcher to identify the centre of influence, research stream and theoretical background (Lin & Cheng, 2010). More than a simple citations count, this approach allows the identification and mapping of knowledge networks, which participate in the theoretical construct of the discipline (Callon et al., 1993).

**Figure 2.2 – Citation procedure**

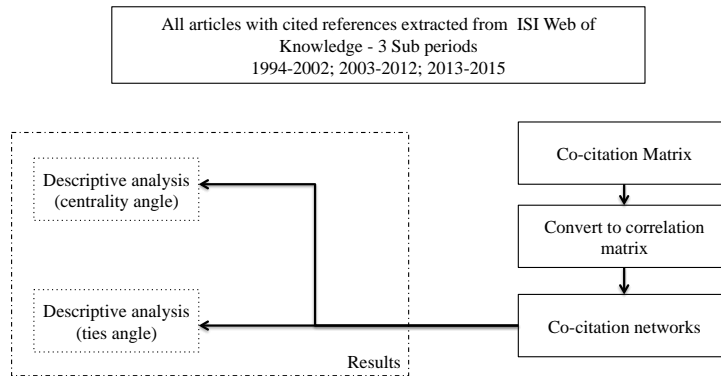


### *Co-citations analysis*

Co-citation analysis is a structuring method in bibliometrics and is based on a frequency count of two documents that are cited in pairs in the same study and can be statistically measured (Callon et al., 1993). This technique is based on the counting of the number of times that studies appear simultaneously in a third article's reference (Ferreira et al., 2014a). Presumably, two works are co-cited due to their similarity or proximity as to the subject, theory or concept (Reis et al., 2013). This approach allows the grouping of authors, topics or subjects, and consequently draws maps of complementary relation between authors' works and the predominance of given themes in the theoretical background. The procedure of co-citations analysis includes the identification of a set of highly cited source documents that represent the core studies in an area of research, and a set of citing documents that cite those core documents (Ramos-Rodriguez & Ruiz-Navarro, 2004). Co-citation analysis identifies all possible pairs of the most cited works and counts how many articles cite both documents

jointly, arranged on a square symmetrical matrix (30X30), which is used to draw the co-citation maps (Reis et al., 2013).

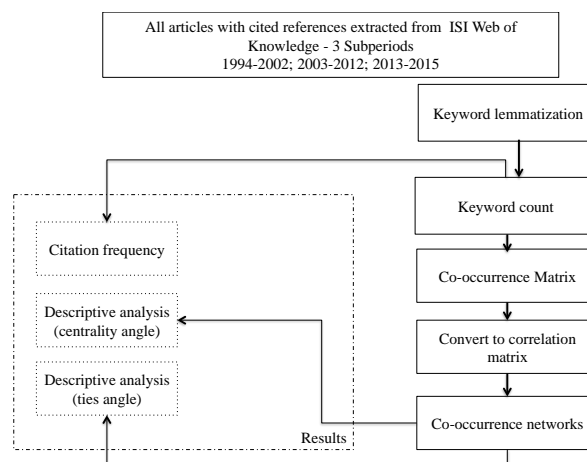
**Figure 2.3 – Co-citation procedure**



### Keywords analysis

Keywords analysis provides a concise and precise summarization of works. This technique constitutes an important feature for documents retrieval, classification or topic research. Keywords reflect the topics of individual papers and allow an overview of the development of research topics in the past. This technique identifies the relative importance of topics at the current stage, and the future evolution of research trends. In this study, we used two-step procedures. First, a counting of most cited authors keywords to frame the dominant research topics on the “*corporate sustainability performance*”. Second, we promote a co-occurrence analysis, which gives an insight into the fields of researchers’ interest and in the evolution of the “*corporate sustainability performance*” study. This technique allows an overview of the evolution of the author’s interests and identifies networks of themes and possible future fields of research (Neely, 2005; Taticchi et al., 2010).

**Figure 2.4 – Keywords procedure**



## 4. RESULTS

Advances in information technology and online data storage make possible advanced statistical studies of citation/co-citation analysis. Our dataset used in this paper was constructed using the ISI Web of Science database and was constituted by 1,271 papers published in 491 different journals. The earliest paper included in the dataset was published in 1994 and the most recent in December 2015. In the next section we discuss the overall results of the distribution of articles, citation, co-citations and keywords analysis.

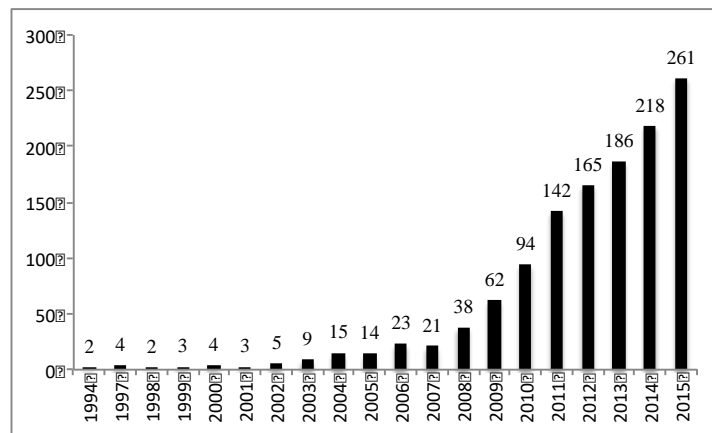
### 4.1 Distribution of Articles

Distribution of articles shows the growth of studies on “*corporate sustainability performance*”. Out of total 1,271 articles, only 23 (1.81 per cent) were published in the period between 1994 and 2002. The production increased in the next period (2003-2012) to a considerable level of 583 articles (45.87 per cent) and 665 articles (53.32 per cent) in the last three years (2013-2015). These data demonstrate a high level of growth in the last five years in publications compare to the period between 1994- 2010 on a total of 972 articles (76.48 per cent). These results find their origin in the fact that the concept of Sustainable Development at the firm-level appears in the early 90s (Dyllick & Hockerts, 2002). In fact, “*corporate sustainability performance*” as research themes follows the theoretical development of the concept of corporate sustainability. Thus, despite the consolidation of Sustainable Development concept with the 1992 “Earth Summit” in Rio, its discussion and academic debate at the corporate level has been developed in the following years. In fact, sustainability overtakes orthodox management theory of economic sustainability for an integrated concept of “triple-bottom-line” in the mid-1990’s (Elkington, 1997; Gladwin *et al.*, 1995). As observed in figure 2.5, the academic interest on the link between corporate sustainability and performance measurement has risen among researchers (Searcy, 2012). In the last five years, we can conclude that “*corporate sustainability performance*” is effectively in the core of the research production with ongoing debates related to the meaning of sustainability in a corporate context and corporate sustainability performance system design, implementation and evolution (Searcy, 2012).

Figure 2.5, on productivity data, shows the growing interest and importance of research on “*corporate sustainability performance*” field.



**Figure 2.5 – Distribution of articles in terms of time period (1994-2015)**



(Source: ISI Web of Science database)

The 1,271 selected papers are spread into 491 journals. Table 2.3 shows only the main 11, due to their representativeness (2,24 per cent out of the total). These eleven journals concentrate 31,63 per cent of the selected papers, which indicates their relevance in the diffusion of the topic and their preference by the authors.

**Table 2.3 – Distribution of articles in terms of journals (1994-2015)**

Journal Name	Number of Article	Relative Percentage
<i>JOURNAL OF BUSINESS ETHICS</i>	117	9,21 %
<i>JOURNAL OF CLEANER PRODUCTION</i>	84	6,61%
<i>BUSINESS STRATEGY AND THE ENVIRONMENT</i>	58	4,56%
<i>CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT</i>	38	2,99%
<i>INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS</i>	23	1,81%
<i>SUSTAINABILITY</i>	16	1,26%
<i>SUPPLY CHAIN MANAGEMENT-AN INTERNATIONAL JOURNAL</i>	14	1,10%
<i>MANAGEMENT DECISION</i>	13	1,02%
<i>SUSTAINABLE DEVELOPMENT</i>	13	1,02%
<i>ORGANIZATION &amp; ENVIRONMENT</i>	13	1,02%
<i>ECOLOGICAL ECONOMICS</i>	13	1,02%
<i>OTHERS JOURNALS</i>	869	68,37%
<i>TOTAL</i>	1271	100%

The listed journals confirm the “*corporate sustainability performance*” interface with Ethics, Environmental, Corporate Social Responsibility, and Business disciplines.

In table 2.4, we proceed to an evolution analysis of publication in journals to assess

changes and evolution at the epistemological level. The interest in the theme of sustainability has increased among the academic journals with the greatest impact. Based on the ABS 2015 rankings, we analyzed the top 8 journals with articles on this topic, concluding that publications ranked higher than 4 increased. From 1994 to 2015, we observe that in quarter 2 (1994-2002) only three articles have been published in ranked journals. However, in the last quarter (2013 to 2015), 106 articles were published in ranked journals. Taking the information of websites of the four journals with more publication from 2003 to 2015 (representing 23,70 per cent of articles) respectively: The Journal of Cleaner Production, The Journal of Business Ethics, Business Strategy and the Environment, and Corporate Social Responsibility and Environmental Management.

The relative increase of interest in Journal of Cleaner Production editors, in the last period (2013 to 2015), shows the operational focus on academics forum. The Journal of Cleaner Production describes its publication objectives as based on the exchange of information and research concepts, policies, and technologies designed to help progress towards making societies and regions more sustainable. It aims to encourage innovation and creativity, new and improved products, and the implementation of new, cleaner structures, systems, processes, products and services. This journal appears as a more operational focused research based.

Instead, The Journal of Business Ethics publishes from a wide variety of methodological and disciplinary perspectives concerning ethical issues related to business. It seems, that "*corporate sustainability performance*" moves in the last period from 2013 to 2015 to the operations and organizational research field. At last, analyzing it in global terms, we found that academic reflection focuses on the environment and social responsibility axes. Thus, the economic and financial dynamics did not appear as a central element of research. In fact, the Business Strategy and the Environment (BSE) journal focus the understanding of business responses to improving environmental performance. In another hand, the Corporate Social Responsibility and Environmental Management journal concentrate research on social and environmental responsibilities in the context of Sustainable Development, developing tools and case studies to improve their performance and accountability in these areas. In epistemological terms, we can conclude that there is a greater interest of management sciences on the subject and evolves from a theoretical approach to operational and organizational reflections.

**Table 2.4 – Evolution of articles in journals and ABS 2015**

1994-2002 (n = 23)		2003-2012 (n= 583)		2013-2015 (n=665)	
Journal Name (ABS 2015 Ranking)	Number of Article	Journal Name (ABS 2015 Ranking)	Number of Article	Journal Name (ABS 2015 Ranking)	Number of Article
PURE AND APPLIED CHEMISTRY - (NR)	2	JOURNAL OF BUSINESS ETHICS - (3)	64	JOURNAL OF CLEANER PRODUCTION - (NR)	57
INTERFACES - (2)	2	JOURNAL OF CLEANER PRODUCTION - (NR)	27	JOURNAL OF BUSINESS ETHICS - (3)	52
STRATEGIC MANAGEMENT JOURNAL - (4*)	2	BUSINESS STRATEGY AND THE ENVIRONMENT - (3)	26	BUSINESS STRATEGY AND THE ENVIRONMENT - (3)	32
PROCEEDINGS OF THE 23RD NATIONAL PASSIVE SOLAR CONFERENCE - (NR)	1	CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT - (NR)	18	CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL MANAGEMENT - (NR)	20
POLYMER INTERNATIONAL - (NR)	1	AFRICAN JOURNAL OF BUSINESS MANAGEMENT - (NR)	12	SUSTAINABILITY - (NR)	15
MANAGEMENT SCIENCE - (4*)	1	ECOLOGICAL ECONOMICS - (3)	11	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS - (3)	13
TWENTY FIRST IEEE/CPMT INTERNATIONAL ELECTRONICS MANUFACTURING TECHNOLOGY SYMPOSIUM - (NR)	1	INTERNATIONAL JOURNAL OF PRODUCTION ECONOMICS - (3)	10	ORGANIZATION & ENVIRONMENT - (2)	11
RESOURCES POLICY - (NR)	1	SUSTAINABLE DEVELOPMENT - (NR)	9	ENERGY ECONOMICS - (3)	9

NR: Not Ranked

**Table 2.5 – ABS 2015 Ranking interpretation**

Ranking	Interpretation
4*	A world elite journal
4	A top journal
3	A highly regarded journal
2	A well-regarded journal
1	A recognized journal

The network formed by the main authors also explains the centrality of this discipline, link to what is verified in the research areas of the top 10 authors cited, extracted from the authors' personal websites and their respective universities, described in Table 2.6. The ten authors with the highest citations are dedicated to 24 different research areas and are all connected to business schools. The topics "Business ethics", "Stakeholders Management", "Corporate Social Responsibility" and "Strategic Management" are common to several authors, which represents common interests among researchers related to "corporate sustainability performance".

**Table 2.6 – Research areas of the ten authors with highest citation (1994-2015)**

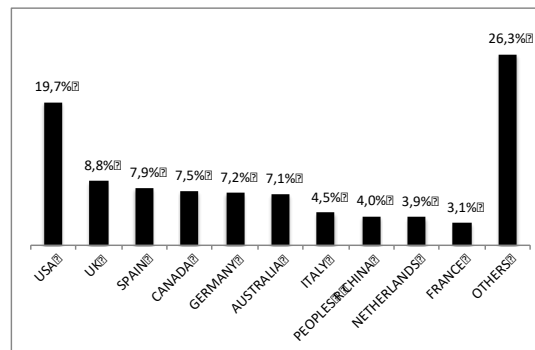
Authors	Research Areas	Institution	Author Total Citations	Number of articles cited
PORTER M.E.	<i>Competition, competitive advantage, competitive strategy, corporate strategy, economic development, strategy</i>	Harvard Business School (USA)	519	21
HART S.L.	<i>Environment and poverty for business strategy, Corporate Sustainability, Strategic Management, Sustainable Enterprise</i>	Johnson Cornell University (USA)	413	19
CARROLL A. B.	<i>Corporate Social Responsibility, Business Ethics, Stakeholder Management</i>	University of Georgia (USA)	343	18
FREEMAN R. E.	<i>Stakeholder Management, Leadership, Business Ethics, Corporate Responsibility, Business Strategy, Conscious Capitalism</i>	University of Virginia (USA)	330	19
ORLITZKY M.	<i>Corporate Social Performance, Corporate Governance and Business Ethics, Sustainability, Finance</i>	University of South Australia (AUS)	240	8
WADDOCK S.A.	<i>Management, Corporate Responsibility, Social Corporate responsibility, management education, social partnerships</i>	Boston College (USA)	226	15
MARGOLIS J.D.	<i>Ethics, leadership, organizational, behavior</i>	Harvard Business School (USA)	179	8
RUSSO M.V.	<i>Environmental Management, Corporate Strategy, Business and Public Policy</i>	University of Oregon (USA)	178	4
BARNEY J.	<i>Strategic Management, Entrepreneurship</i>	University of Utah (USA)	174	13
CLARKSON M.B.E.	<i>Business Ethic, Stakeholder theory</i>	University of Toronto (CAN)	118	4

In an overall analysis of the discipline, Porter’s works on strategy and competitive advantage lead the citation rank (519). The second author with an overall number of citations is Hart (413) and his research on the resource-based view approach and the link with environmental performance. Corporate social responsibility issues appear related to Carroll citations (343) and stakeholders’ theory approach with Freeman (330). These observations lead to the interpretation that “*corporate sustainability performance*” research found is theoretical base on Competitive advantage, Resource-based view of firms, Corporate Social Responsibility and stakeholder theory.

A country classification of literature allows classifying the research across the world (see Figure 2.6). In the study period 1994-2015 maximum number of articles related to sustainability performance are publication of authors based in USA (282 articles), UK (126 articles), Spain (113 articles), Canada (107 articles), Germany (107 articles) and Australia (101 articles) representing 58.2 percent of all works production. The USA demonstrates leadership in research related to “*corporate sustainability performance*”. In the top 10

countries, we observed five European countries (Spain, Germany, Italy, Netherlands and France) representing 26,5 per cent of all articles. Until recently, most attention to environmental concerns has been focused in the North (Hart, 1995). Wherever in last decades, the growth of economic and industrial activity in the developing world, tend to improve the discussion on corporate sustainability strategies and performance as it seems to be proved by 8<sup>th</sup> place of P.R. China (4.0 per cent).

**Figure 2.6 – Distribution of articles by institution’s countries (1994-2015)**



## 4.2 Citations Analysis

The works that are more often cited are likely to be recognized as holding the greatest impact on the theoretical background of “*corporate sustainability performance*” field (Ferreira *et al.*, 2014b). Table 2.7 shows the 30 most cited works by the 1,271 articles. The most frequently cited works were: Freeman R.E (210 citations), Hart S.L. (197 citations), Orlitzky M. *et al.* (178 citations), Russo M.V. & Fouts P.A. (148 citations) and Waddock S.A. & Graves S.B. (148 citations). These lead authors are cited in over of 10 per cent out of total works analysed.

These five most cited works are related with key issues of “*corporate sustainability performance*” academic discussion (Wilson, 2003; Searcy, 2012; Hahn *et al.*, 2015), namely:

1. Stakeholder theory contribution to corporate social performance (Freeman, 1984; Clarkson, 1995);
2. Competitive advantage and firm resources-based perspectives to sustainability (Barney, 1991; Porter, 1995a; Russo & Fouts, 1997; Porter, 2006);
3. Corporate social and environmental performance and financial performance link (Carroll, 1979; Waddock & Graves, 1997; Margolis & Walsh, 2003, Orlitzky *et al.*, 2003).

**Table 2.7 – Citation frequency authors (1994-2015)**

Rank	Author	Citation frequency	Article / Book
1	FREEMAN R. E. (1984)	210	Freeman, R. E. (1984). <i>Strategic management: A stakeholder approach</i> . Marshfield, MA: Pitman.
2	HART S.L. (1995)	197	Hart, S.L. (1995). A natural resource-based view of the firm. <i>Academy of Management Review</i> , 20, 986–1014.
3	ORLITZKY M. (2003)	178	Orlitzky M., Schmidt F.L., & Rynes S.L. (2003). Corporate Social and Financial Performance: A Meta-analysis. <i>Organization Studies</i> , 24(3), 403–441.
4	RUSSO M.V. (1997)	148	Russo M. V., & Fouts P.A (1997). A resource-based perspective on corporate environmental performance and profitability. <i>Academy of Management Journal</i> , 40, 534–559.
5	WADDOCK S.A. (1997)	148	Waddock S.A., & Graves S. B. (1997). The corporate social performance-financial performance link. <i>Strategic Management Journal</i> , 18, 303–319.
6	WCED (1987)	141	World Commission on Environment and Development (1987). <i>Our Common Future</i> . Oxford: Oxford University Press.
7	PORTER M.E. (2006)	132	Porter, M.E. (2006). The Link Between Competitive Advantage and Corporate Social Responsibility. <i>Harvard Business review</i> , December 84(12), 78-92.
8	BARNEY J. (1991)	119	Barney, J. (1991). Firm resources and sustained competitive advantage. <i>Journal of Management</i> , 17: 771–792.
9	CARROLL A. B. (1979)	118	Carroll, A. B. (1979). A three-dimensional conceptual model of corporate social performance. <i>Academy of Management Review</i> , 4, 497–506.
10	MARGOLIS J.D. (2003)	118	Margolis, J. D. & Walsh, J.P. (2003). Misery Loves Companies: Rethinking Social Initiatives by Business. <i>Administrative Science Quarterly</i> , 48, 268-305.
11	CLARKSON M.B.E. (1995)	114	Clarkson, M.B. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. <i>Academy of Management Review</i> , 20, 92–117.
12	PORTER M.E. (1995a)	114	Porter, M.E. (1995). Green and Competitive: Ending the Stalemate. <i>Harvard Business review</i> , Sept-Oct, 120-134.
13	DYLLICK T. (2002)	111	Dyllick, T. & Hockerts, K. (2002). Beyond the Business Case For Corporate Sustainability. <i>Business Strategy and the Environment</i> , 11, 130–14.
14	SEURING S. (2008)	102	Seuring, S. & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. <i>Journal of Cleaner Production</i> , 16, 1699–1710.
15	VAN MARREWIJK M., (2003)	102	Van Marrewijk, M. (2003). Concepts and definitions of CSR and corporate sustainability: Between agency and communion. <i>Journal of Business Ethics</i> , 44(2), 95–105.
16	DIMAGGIO P.J. (1983)	100	DiMaggio, P. J., & Powell, W.W. (1983).The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. <i>American Sociological Review</i> , 48, 147–160.
17	DONALDSON T. (1995)	99	Donaldson, T., & Preston, L.E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. <i>Academy of Management Review</i> , 20, 65–91.
18	WOOD D.J. (1991)	99	Wood, D.J. (1991). Corporate Social Performance Revisited. <i>Academy of Management Review</i> , Vol. 16. n°. 4, 691-718.
19	SHARMA S. (1998)	98	Sharma, S. & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. <i>Strategic Management Journal</i> , 19, 729–753.
20	MCWILLIAMS A. (2001)	96	McWilliams, A. & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. <i>Academy of Management Review</i> , 26, 117–127.
21	ELKINGTON J. (1997)	94	Elkington, J. (1997). <i>Cannibals with Forks: the Triple Bottom Line of 21st Century Business</i> . Capstone.
22	BANSAL P. (2000)	90	Bansal, P. (2000). Why Companies Go Green: <sup>117</sup> sepa model of ecological responsiveness. <i>Academy of Management Journal</i> , 43, 4, 717-736.
23	MITCHELL R.K. (1997)	88	Mitchell, R. K., Agle, B.R., and Wood D.J. (1997) "Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts". <i>Academy of Management Review</i> 22: 853–886.
24	BANSAL P. (2005)	87	Bansal, P. (2005). Evolving sustainably: a longitudinal study of corporate sustainable development. <i>Strategic Management Journal</i> , 26, 197–218.
25	SHRIVASTAVA P. (1995)	87	Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. <i>Academy of Management Review</i> , 20(4), 936-960.
26	GRAY R. (1995)	82	Gray R., Kouhy R. & Lavers S., (1995). Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure. <i>Accounting, Auditing &amp; Accountability Journal</i> , 8, 2, 47 – 77.
27	CHRISTMANN P. (2000)	78	Christmann P. (2000). Effects of "Best Practices" of environmental management on cost advantage: role of complementary assets. <i>Academy of Management Journal</i> , Aug2000, 43, 4, 663-680.
28	KLASSEN R.D. (1996)	77	Klassen, R.D. & McLaughlin, C.P. (1996). The impact of environmental management on firm performance. <i>Management Science</i> , 42, 8, 1199-1214.

Rank	Author	Citation frequency	Article / Book
29	PORTER M.E. (1995b)	77	Porter M.E. & Vander Linde C. (1995). Toward a New Conception of the Environment- Competitiveness Relationship. <i>Journal of Economic Perspectives</i> . Fall 95, 9, 4, 97-118.
30	CARROLL A. B. (1999)	74	Carroll A.B. (1999). Corporate Social Responsibility: Evolution of a Definitional Construct. <i>Business &amp; Society</i> , 38 3, September 1999, 268-295.

To understand shifts in the field and how “*corporate sustainability performance*” has been dealt and the theories employed, we conducted a longitudinal analysis by splitting the sample into three periods: 1994–2002, 2003–2012 and 2013–201015. Table 2.7 highlights the 20 most cited works in each period.

The data on table 2.7 allows some observations on the changes in the theoretical emphasis. The distinguishable pattern is the gradual move from a first step integration of the new concept of sustainability to the firm-level, with an approach in competitive advantage of environmental initiatives and focus in resource-based view (1994-2002) to built corporate sustainability theoretical field with a stakeholders theory and a three dimension framework (Economic, Environmental and Social). In the mid-period (2003-2012), we can observed the aggregation of several management frameworks and concepts as *stakeholder approach* (e.g. Freeman, 1984; Clarkson, 1995; Mitchell et al., 1997), *resource-based view theory* (e.g. Barney, 1991; Hart, 1995; Russo & Fouts, 1997), *corporate social responsibility* (e.g. Carroll, 1979; Orlitzky et al., 2003), *competitive advantage* (e.g. Porter, 1995a; Barney, 1991), *neo-institutionalism* (DiMaggio & Powell, 1983) or *social and financial performance linkage* (e.g. Carroll, 1979; Waddock & Graves, 1997; Orlitzky et al., 2003; Margolis & Walsh, 2003).

**Table 2.8 – Citation frequency per quarter (1994-2015)**

1994-2002			2003-2012			2013-2015		
n =23			n = 583			n = 665		
Rank	Author	Cit	Rank	Author	Cit	Rank	Author	Cit
1	WCED (1987)	5	1	HART S.L. (1995)	101	1	FREEMAN R. E. (1984)	117
2	SCHMIDHEINY S. (1992)	3	2	FREEMAN R. E. (1984)	92	2	ORLITZKY M. (2003)	95
3	DIERICKX I. (1989)	3	3	ORLITZKY M. (2003)	83	3	HART S.L. (1995)	94
4	WERNERFELT B. (1988)	2	4	RUSSO M.V. (1997)	75	4	PORTER M.E. (2006)	74
5	WELFORD R.J. (1997)	2	5	WADDOCK S.A. (1997)	75	5	RUSSO M.V. (1997)	73
6	WALLEY N. (1987)	2	6	WCED (1987)	70	6	WADDOCK S.A. (1997)	73
7	SEARLE S.R. (1971)	2	7	CARROLL A. B. (1979)	61	7	SEURING S. (2008)	72
8	SCHMIDHEINY S. (1996)	2	8	CLARKSON M.B.E. (1995)	58	8	WCED (1987)	71
9	SCHMALENSEE R. (1985)	2	9	PORTER M.E. (1995a)	58	9	DIMAGGIO P.J. (1983)	68
10	RUMELT R.P. (1991)	2	10	PORTER M.E. (2006)	58	10	BARNEY J. (1991)	65
11	PORTER M.E. (1980)	2	11	MARGOLIS J.D. (2003)	55	11	MARGOLIS J.D. (2003)	64
12	HART S.L. (1995)	2	12	BARNEY J. (1991)	54	12	ELKINGTON J. (1997)	60
			13	DYLLICK T. (2002)	52	13	DYLLICK T. (2002)	57
			14	WOOD D.J. (1991)	50	14	GRAY R. (1995)	57
			15	SHARMA S. (1998)	48	15	CARROLL A. B. (1979)	57
			16	MCWILLIAMS A. (2001)	46	16	PORTER M.E. (1995a)	56
			17	DONALDSON T. (1995)	45	17	CLARKSON M.B.E. (1995)	56
			18	MITCHELL R.K. (1997)	42	18	DONALDSON T. (1995)	52
			19	BANSAL P. (2005)	41	19	MCWILLIAMS A. (2001)	50
			20	BANSAL P. (2000)	40	20	SHARMA S. (1998)	50

Note: n is the number of articles

The academic debate in the period from 1994 to 2002 is marked on firm and industry effect on competitiveness (Porter, 1980; Schmalensee, 1985; Wernerfelt & Montgomery, 1988; Rumelt, 1991). From the competitive advantage and the resource-based view theories perspectives, this period focuses on the effect of sustainability on firm profitability and its competitiveness from an internal and internal lens.

The second period (2003-2012) enforces the debate under multiple theoretical contributions with the Brundtland report (WCED, 1987) as the main support to the academic research. In fact, the rationale and conclusions of this report seem to be assumed as non-questionable on “*corporate sustainability performance*” field. At this stage, the debate has



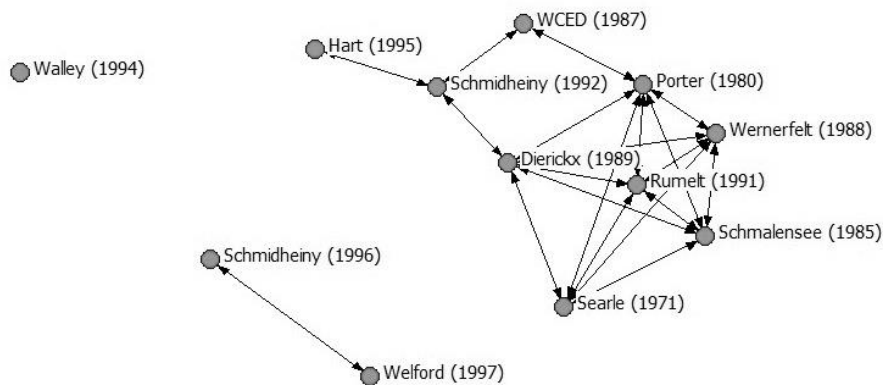
been focused on sustainability impacts on financial performance through the social or environmental lens (Albertini, 2013). Did sustainability practices have a relationship with financial performance? (Waddock & Graves, 1997; Porter, 2006). Did sustainability practice outperform or underperform companies? (Russo & Fouts, 1997; Orlitzky et al., 2003). The resource-based view theory gives outputs based on environmental management as an inimitable capability that conduct to sustained competitiveness (Hart, 1995; Russo & Fouts, 1997). The mixed conclusions about the nature of the link (positive or negative) between sustainability and financial performance seem to be solved by the multi-contribution of stakeholder's theory researchers (McWilliams & Siegel, 2001). On a normative theory angle, authors focus not directly on the final performance but on the stakeholder's satisfaction as a measure of outperforming (Freeman, 1984; Clarkson, 1995; Freeman, 2010). Companies' competitiveness is based on satisfaction of the stakeholders creating value that outperform companies' performance as a consequence (Clarkson, 1995; Donaldson & Preston, 1995; Mitchell et al., 1997).

In the last period (2013-2015), the most cited work's evolution indicates that sustainability tends to build its own pillars in multi-disciplinarily and mutually enriching theories (Gray et al., 1995). A central theoretical construct appears based on stakeholder theory, resource-based view and triple bottom line. In the last quarter, news works became more cited introducing news trends, namely the neo-institutionalism perspective (DiMaggio & Powell, 1983) and legitimacy theory analysis (Gray et al., 1995) enforced the external dimension and the stakeholder theories in research. In the other hand, Elkington (1997) and Seuring (2008) started to build sustainability conceptual frameworks and reflect crossing fields between sustainable development and its operational application at the firm level.

### 4.3 Co-citations analysis

Figure 2.7 shows the co-citation network for the 1994-2002 period and the starting point of “*corporate sustainability performance*” research.

**Figure 2.7 –Citation/co-citation analysis for most influential works (1994-2002)**



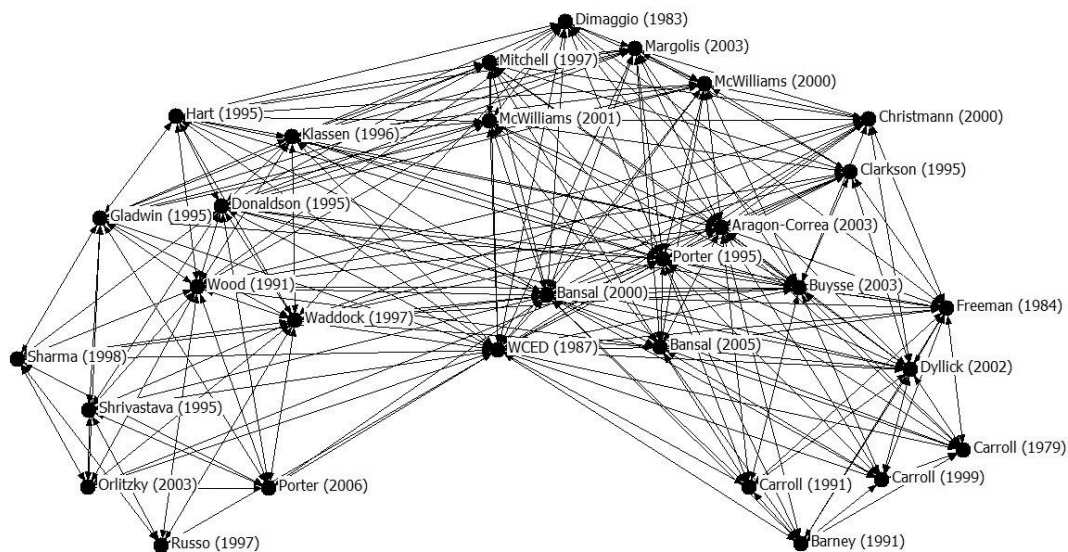
In this first period, we observed a search for a stable framework, which includes sustainable development at firm-level. This period is characterized by connections to management theories to fit with this new concept. We observed the centrality of Rumelt (1991) also linked to Wernerfelt (1988), Dierickx (1989), and Porter (1980) embedded in two theoretical perspectives: institutional theory and the resource-based view of the firm (Hahn et al., 2015). Schmalensee’s (1985) work, on the inexistence of industry effect on profitability, seems to appear due to a conceptual opposition with the resource-based view of Wenerfelt (1988) and Rumelt (1991) researches. The statistical nature of these pioneer works underlines the co-citation of Searle (1971) and its “Linear Models” book. In the other hand, we can observe a relative linkage to the landmark “Bruntland” report and to one of the first reflexions on corporate sustainability done on the book edited by Schmidheiny (1992).

It seems in a first instance that earliest articles on “*corporate sustainability performance*” find their influence in traditional management and organization theoretical frameworks. Thus, these works were linked to the classical debate of factors and variables of corporate performance and competitive advantage (Hanhn et al., 2015). In contrast Welford (1997), Walley (1987), Hart (1995) and Schmidheiny (1996) works, centred on corporate sustainability field from an environmental perspective or a resource-based view, are placed on the outer layer of the network, representing their relative marginal standing in this period.

In figure 2.8, we proceed to co-citation analysis building up the “intellectual space” of articles published from 2003 to 2012. The network has a dispersed form that can be interpreted as a lack of consensus on the theoretical bases of “*corporate sustainability performance*” or diversity of subject analysis angles. In fact, we can identify a diversity of theoretical approach as:

- Neo-institutionalism and normative stakeholders’ theory on an organizational angle (Dimaggio, 1983; Mitchell & Agle, 1997; Margolis, 2003), focuses on the legitimacy of firms to embraced sustainable strategies;
- Environmental and social performance integration at firm level (Hart, 1995; Galdwin et al., 1995; Klassen & McLaughlin, 1996; Wood, 1991; Waddock & Graves, 1997);
- Competitive advantage concept and financial, environmental and social performance linkage (Sharma & Vredenburg, 1998; Shrivastava, 1995; Russo & Fouts, 1997; Orlitzky et al., 2003; Porter, 2006);
- Corporate social responsibility and corporate sustainability theoretical integration (Carroll, 1979, 1991, 1999; Dyllick & Hockerts, 2002), and
- Empirical approach on proactive corporate sustainability strategies and practices, including the analysis on the positive link between corporate financial performance and sustainability performance (Bansal, 2000; Aragon-Correa & Sharma, 2003; Buysse & Verbeke, 2003; Bansal, 2005; Clarkson, 1995; Porter 1995a).

Figure 2.8 –Citation/co-citation analysis for most influential works (2003-2012)



As underline before, co-citation from 2003 to 2012 shows an under theoretical construction framework and at the same time an attempt to breakdown from the previous management theories. Admittedly, we observed the discussion about social and environmental issues legitimacy outside the traditional themes of the management and its financial performance. This legitimacy can be found on power to influence, legitimacy and urgency of stakeholders' claims on firms (Mitchell & Agle, 1997). The centrality of stakeholders, as a source of legitimacy, is enhanced by the organizational isomorphism concept (DiMaggio & Powell, 1983). Organizations adopt business practices because they furnish legitimacy to stakeholders through coercive isomorphism, mimetic process or normative pressures. In this point of view, new imperatives of sustainability between corporate environmental and social performance on the one hand and corporate competitive advantage and financial performance must be considered at the firm level research (Margolis & Walsh, 2003). Indeed, the correlation between corporate sustainability performance gain new interests to academic research to determine the existence of positive, neutral or negative impacts of sustainability strategies on companies' performance (McWilliams & Siegel, 2000, 2001).

In this period, an axis of research focuses on the environmental integration in the strategy and competitive advantage of organizations thought the angle of the resource-based view theory (Hart, 1995). These trends focus the strength of stakeholders and its normative nature to correlate performance and Sustainable Development principles at the firm level (Woods, 1991; Donaldson & Preston, 1995; Klassen & McLaughlin, 1996; Waddock & Graves, 1997). For Woods "*Corporate Social Performance Model*", under legitimacy, public responsibility and managerial discretion principles, lead to "*Corporate Social Responsiveness*", namely to environmental assessment, stakeholders and issues management. Thus, it contributes to "*re-establish the broken link between social responsibility and social responsiveness, thus allowing Corporate Social Performance to serve as a central organizing concept for research and theory in business and society*" (Woods, 1991; p.713). Sustainability became a field of research where "*Practical decision-support tools are needed to systematically include sustainability criteria in evaluating the design and selection of products, processes, and projects*" (Gladwin et al., 1995; p.899).

Another group of co-cited authors linked to Woods (1991) and Waddock & Graves (1997) works, highlight the link between competitive advantage concept and financial, environmental and social performance. Through empirical studies, researchers focus the positive trends of sustainability to competitive advantage, supported on corporate social responsibility and environmental responsiveness effects on business strategies, as valuables

capabilities (Shrivastava, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998; Orlitzky et al., 2003; Porter, 2006).

In a marginal place in figure 2.8, we can observe a set of works focused on the concept and theory of corporate social responsibility (Carroll, 1979; Carroll, 1999). Also, these academics focus on the link between corporate social responsibility and stakeholders' theory (Carroll, 1991).

Works focused in empirical approach on corporate sustainability strategies and practices are in the central space of figure 2.8 and includes the analysis on the positive link between corporate financial performance and sustainability performance. Between 2003-2012, "*corporate sustainability performance*" research give a great interest in correlating corporate financial performance and sustainability performance under proactive environmental and social strategies at the firm level (Aragon-Correa, 2003; Bansal, 2005). At the same time, this most influential works provide academic studies about influence factors and motivation on corporate sustainable development through three major theoretical point of view: (1) Resource-based view (Bansal, 2000; Christmann, 2000; Aragon-Correa & Sharma, 2003; Bansal, 2005), (2) stakeholder management (Buysse & Verbeke, 2003; Clarkson, 1995) and (3) competitive advantage (Porter, 1995a; Christmann, 2000). These works represent the search of empirical findings on corporate sustainability to develop and operationalize news approaches in the field of performance measurement. However, the diversity and split of intellectual space, ties schema shows links between theories scopes. Ties highlight streams research and mutually theoretical enrichment. In this period, strong links appear through neo-institutionalism and stakeholders' works (DiMaggio, 1983; Mitchell et al., 1997) linked to environmental and performance integration at the firm level. Indubitably, the impact of environment management on corporate performance (Klassen, & McLaughlin, 1996) is connected to the normative need to meet expectations on an institutional point of view (DiMaggio & Preston, 1983; Donaldson & Preston, 1995; Mitchell et al., 1997). However, sustainable performance is not only seen from ethical and legitimacy point of view, it's also open to an organizational perspective. Thus, starting from internal and external motivations of competitiveness, legitimacy and responsibility (Bansal, 2000), companies rationally based on a cost-benefit relation (McWilliams & Siegel, 2001), manage environmental and social dimensions expecting positive effects on financial performance. Finally, multiple ties appear between corporate social responsibility, corporate sustainability works (Carroll, 1979, 1991, 1999; Dyllick & Hockerts, 2002) and empirical approaches (Clarkson, 1995; Bansal, 2000; Buysse & Verbeke, 2003; Aragon-Correa & Sharma, 2003; Bansal, 2005). Sustainability is

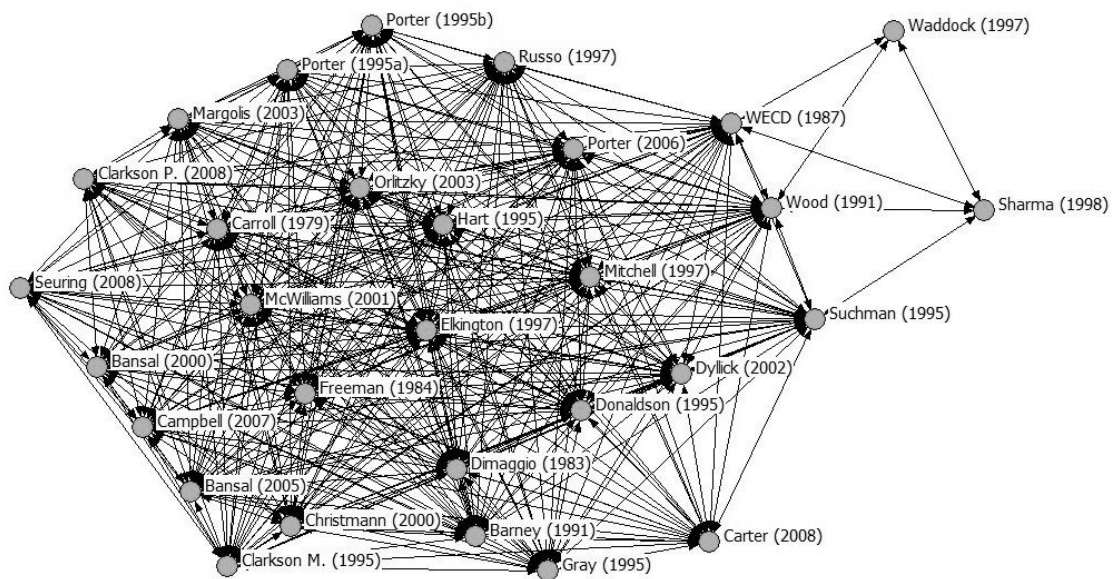
interpreted as an integrative concept where economic, natural and social capital management (Dyllick & Hockerts, 2002) is influenced by institutional and resource-based factors (Bansal, 2005).

Two other observations must be highlighted. In the first hand, the centrality of the Brundtland Report (WCED, 1987) as a landmark document. In another hand, the link intensity between three works that focus the academic debate of “*Corporate sustainability performance*” under managerial concepts of: resource-based view (Aragon-Correa & Sharma, 2003), stakeholder management (Clarkson, 1995) and competitive advantage of firms (Christmann, 2000; Porter & Vander Linde, 1995b).

We can characterize the most influential works from 2003 to 2012, as a search of the legitimacy of “*Corporate sustainability performance*” using complementary inputs of the resource-based view, neo-institutionalism and stakeholders theories linked to competitive advantage through an environmental and social performance integration at the firm level.

In figure 2.9, we performed the analysis of co-citations of 665 works (52,32 per cent of 1271 articles). We can observe a great increase of works on “*corporate sustainability performance*”, although the short timeframe (3 years). Thus, it seems to have a certain consolidation of the academic debate on the subject. Given the relatively dense network at the center of Figure 2.9, it could be argued that authors are concentrating on issues of strategy and measurement with a theoretical core based on the Triple Bottom Line concept (TBL) of Elkington (1997) and a three-dimensional sustainability framework (economic, environmental and social). Indeed, the rise of influence of this works is not due only to the triple approach, but to its specific applications to a firm level. Elkington (1997) rise the interdependency between the three dimensions and try to create a systematic view of the complexity of the sustainability concept. This analysis promotes businesses facilitation on a strategic and operational implementation (Dyllick & Hockerts, 2002). Even criticized due to some limitations of the social construct to the evolving of issues and challenges of corporate sustainability (Norman & MacDonald, 2003), this approach is recognized as valuable and influential to works in the “*corporate sustainability performance*” field.

**Figure 2.9 –Citation/co-citation analysis for most influential works (2013-2015)**



The second observation is the relative centrality and closeness to Elkington book of works based on core management theories namely:

- Resource-based view on an environmental angle (Hart, 1995),
- Stakeholder's management (Donaldson & Preston, 1995; Freeman, 1984; Mitchell *et al.*, 1997), and
- Corporate social responsibility theories (Carroll, 1979; McWilliams & Siegel, 2001; Orlitzky *et al.*, 2003).

The core ties among authors include the works of Elkington (1997), Mitchell & Preston (1997) and Freeman (1984), which are co-cited very often. These links allow the interpretation that the stakeholder's theories influence Triple Bottom Line framework through the legitimacy of measurement of social and environmental angle, besides the traditional economic focus. We observe also strong ties between Hart (1995), McWilliams & Siegel (2001) and Orlitzky *et al.* (2003) works, which should be analyzed as a higher degree of authors concern to connecting the social and environmental performance, supporting the positive link with financial performance (Allouche & Laroche, 2005). Even in a peripheral position, we must emphasize the co-citation ties between Dimaggio & Powell (1983), Donaldson & Preston (1995) and Dyllick & Hockerts (2002) as representative of a reinforcement of stakeholder theory influence on “*corporate sustainability performance*” works through a neo-institutionalism lens. Stakeholder theory became an important and inescapable supportive framework to operationalize the sustainable performance at the firm level.

The co-citations network (figure 2.9) between 2013 and 2015, shows us a more consistent and concentrated theory support of “*corporate sustainability performance*” studies. In this period, authors change research from the legitimacy of environmental and social dimensions incorporation in performance systems to the performance models structure (Hart, 1995; Elkington 1997; Dyllick & Hockerts, 2002) linked to financial performance (McWilliams & Siegel, 2001; Orlitzky, 2003) and updating the influential role of stakeholders (Freeman, 1984; Donaldson & Preston, 1995). Admittedly, this last period of academic works reinforces the stakeholder theory importance and its greater use as a supportive framework to “*Corporate sustainability performance*” research field.

#### **4.4 Keywords analysis**

The methodological approach for the keywords analysis is defining an index to measure the relative intensity of citations and co-occurrences. This methodology aims to update major themes on the field and lead to a simplified network representation. Even, some problems can be pointed as the decision of which keywords should be retained from publications is based on the subjective determination of their authors (Callon et al., 1993). Keywords reflect the main topics and allow an overview of the research development and the future evolution of research trends.

A two-step process has been performed to clarify keyword classification. In the first hand, we proceed to a lemmatization and stemming processes of keywords, which conduct us to twenty-one (21) main themes and trends. Lemmatization and stemming consist on the reduction of the inflectional and the derivational forms from a word to a common basic form, that ultimately has the same core meaning. This process allows grouping the complex words around their common lemma (Albertini, 2013) and meaning. This aggregation of words having the same roots can be realized around a significant keyword (Bolden & Moscarola, 2000) and allow a dispersion reduction in meanings. In a second step, we proceed to the co-citation of themes. For each, we analyse the citation pairs in order to get an aggregation, which allow us to overview the evolution of author’s interests, and identifies networks of themes (Neely, 2005; Taticchi et al., 2010).



**Table 2.9 – Keywords Analysis (1994-2015)**

<b>Period</b>	<b>1994-2002</b>	<b>2003-2012</b>	<b>2013-2015</b>
<i>Articles number</i>	23	583	665
<i>Number of Keywords Citation</i>	67	2494	3469
<i>Keywords Lemmatized</i>	67	697	1111
<i>% Lemmatized</i>	100%	27,9%	32,0%

In this study, we selected keywords with  $\geq 5$  authors citation, representing 1875 of 6030 (31,09 per cent). In table 2.9, we proceed to the lemmatization process of most cited keywords, showing the dominant research topics on “*corporate sustainability performance*” field in three different periods (1994-2002 / 2003-2012 / 2013-2015). In this context, we can observe the evolution of topics focus by authors.

In the first period (1994-2002), main themes of keywords cited focus mainly on operational methodology. It demonstrates the concern to determine scientific solutions / methodologies that determine objective results in a new academic field. We can also highlight the focus on sustainability and environmental management reinforced by sectorial, financial performance and strategic themes. This trend between 1994 and 2002, may demonstrate greater care for researchers in facing business challenges to include sustainability concept in internal performance mainstream. Thus, first studies focus their attention on the reality of firms and their adaptation to new conceptual themes in operations. We can conclude that the operational challenges conditioned the scientific orientations in “*corporate sustainability performance*” research. In the second period, the theme index demonstrates a significant increase in citations of keywords focusing on the sustainability and corporate social responsibility themes, revealing the close relationship between these two concepts (Montiel, 2008). In a second dimension, we find the focus on environmental management and financial/economic performance. Finally, a third group standout around supply chain management, performance, environmental performance and reporting. This index reveals the logical research linkage between the core concept of sustainable development and sustainability to corporate social responsibility. In other hand, researchers focus relations of environmental management and financial /economic performance on a company context, reflecting the debate of “does it pay to be green” (Albertini, 2013). The third groups of themes can be interpreted as interest in an enlarged view of sustainability performance to others operational domains in firms. Namely the expansive perspective of sustainability performance to the supply chain, corporate governance and accountability.

The last period (2013-2015) even the shortest in time, represents 52.32% of the total of the articles, showing the most recent themes and close future research agenda. As in the previous period, the themes of sustainability and corporate social responsibility lead to the ranking of frequency. It was observed the greater relevance of the themes of reporting and stakeholders in the research, denoting a focus of accountability in companies. We also observe a greater concern in theories-based keywords to anchor existing paradigms and legitimate the field of investigation. There is also a relevant position for environmental management and governance. Recent research has focused on the outputs of performance system implementation and results in communications. It was noted a decreased position of core topics of performance namely on a social angle. In accordance with the co-citations network, it seems the authors outline a more consistent search of sustainability dimensions integration at firm level through stakeholder theory (Freeman, 1984; Donaldson & Preston, 1995).

In an evolution lens, we can conclude that authors were concerned in the initial phase on the debate about the operational methodologies, moving to a search for wider themes in a second phase. In the last phase research works have centred their interest in a theoretical legitimation of the concept, namely through the transparency practices of the disclosure. This approach emphasizes the role and purpose of stakeholders in corporate sustainability performance.

These observations seem to place the emphasis on the triple bottom line framework, making it as a hegemonic conceptualisation which greatly influences new developments in “*corporate sustainability performance*” field. Themes analysis demonstrates that authors intend to focus more on strategic dimensions with theoretical discussions on frameworks, than in an operational and empirical dimension at the firm level.

In another point of view, we can highlight relevant topics cited that may determine news or underdeveloped research areas related to “*corporate sustainability performance*”, namely: supply chain management, performance, corporate governance, and innovation. These occurrences shed new insights into the researcher's interests include how sustainability can change companies' strategy and management in an enlarged operational scope.

**Table 2.10 – Most authors themes by keywords (1994-2002)**

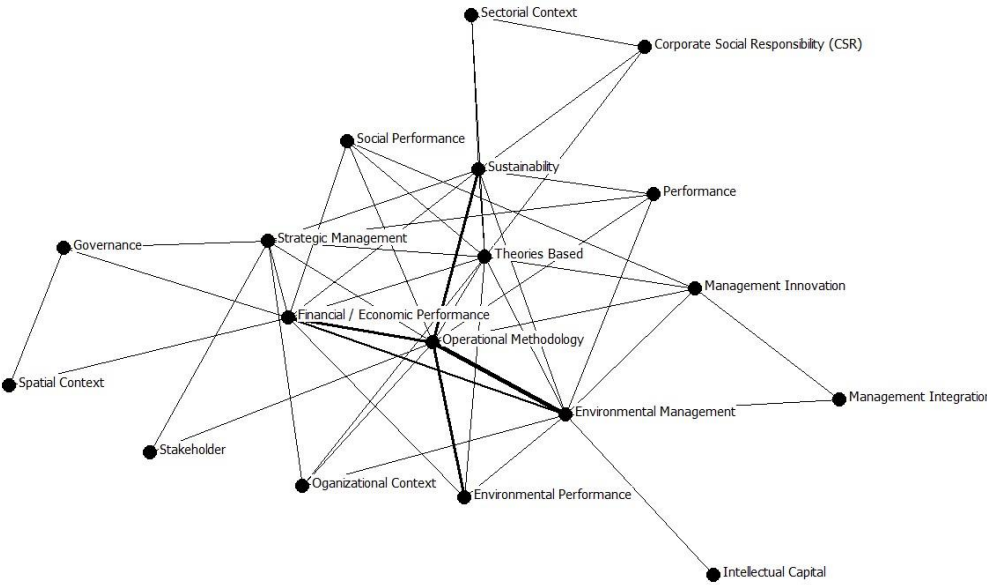
1994-2002 n= 23		2003-2012 n=583		2013-2015 n= 665	
Lemmatization	Frequency	Lemmatization	Frequency	Lemmatization	Frequency
Operational methodology	18	Sustainability	236	Sustainability	334
Sustainability	7	Corporate Social Responsibility (CSR)	158	Corporate Social Responsibility (CSR)	203
Environmental management	7	Environmental management	65	Reporting	93
Strategic management	4	Financial/Economic Performance	34	Environmental management	85
Financial/economic performance	4	Supply chain management	27	Stakeholders	65
Theories based	4	Performance	25	Theories Based	42
Organizational context	4	Environmental performance	24	Governance	42
Sectorial context	3	Reporting	23	Supply chain Management	35
Performance	3	Governance	20	Financial/Economic Performance	31
Management innovation	2	Theories Based	19	Environmental performance	29
Management integration	2	Social Performance	13	Research methodology	28
Corporate social responsibility (CSR)	2	Management innovation	11	Performance	22
Environmental performance	2	Stakeholders	10	Intellectual capital	18
Spatial context	1	Strategic management	10	Spatial context	17
Social performance	1	Ethics	6	Management Innovation	15
Governance	1	Sustainability performance	6	Operational Methodology	14
Stakeholder	1	Intellectual Capital	5	Strategic management	13
Intellectual capital	1	Operational Methodology	5	Ethics	10
				Organizational Context	5
				Social performance	5
				Sustainability Performance	5

Note: n is the number of articles

As demonstrated by the analysis of works, we intend to demonstrate the link between themes underlining the evolution of academic research and extracting potential future trends. For this purpose, we used the co-citation analysis to determine the areas studied during the study period. We proceed to the co-citation analysis of the themes after a lemmatization process, taken most cited keywords (with  $\geq 5$  authors citation), using software Bibexcel and the social networks software Ucinet (Reis et al., 2013).

In the first period (1994-2002), the co-occurrence network (Figure 2.10) shows the centrality of operational methodology. Sustainable performance as a new research theme, in management sciences, seems to focus mainly on operational issues on an environmental lens (Antolin-Lopez et al., 2016). Indeed, strong links between sustainability, financial / economic performance and environmental management / performance demonstrate the importance of the operational determination of how to respond to new sustainability gaps in traditional performance assessment models (Searcy, 2012; Antolin-Lopez et al., 2016). On another way, theories-based themes, even in a central position, do not demonstrate strong ties to a theme. At this level, corporate social responsibility themes appear in a marginal position, not associated with sustainable performance. Thus, we can conclude that the first phase of the literature based on an environmental operational approach linked to financial analysis or costs analysis was dominant.

**Figure 2.10 –Co-occurrence authors' Themes in keywords (1994-2002)**

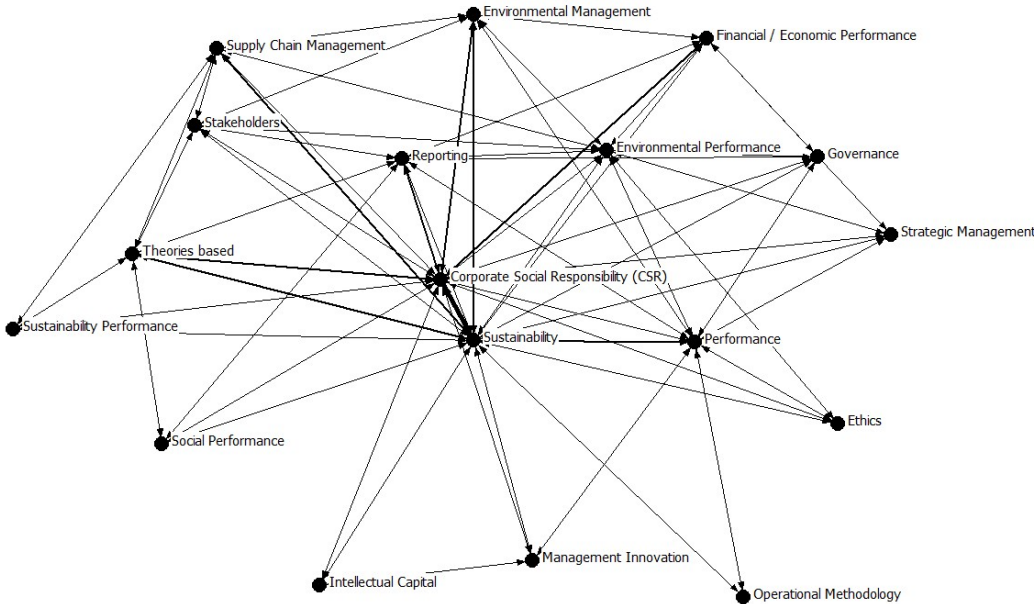


For the second period (2003-2012), the network is drawn based on the centrality of corporate social responsibility and sustainability themes. Management literature uses both terms to refer to social and environmental management issues, but there is no clear distinction between the two terms (Montiel, 2008). These two concepts are connected mainly to:

- Theories based themes,
- Reporting themes
- Environmental management
- Financial / economic performance and performance
- Supply chain management

It is also clear that new issues on the research thematic and new debates, namely a greater intensity of connections between stakeholders and theoretical based keywords, introducing the link to a dominating conceptualization of sustainable performance at the firm level. We could also observe in figure 2.11, the emergence of social performance, sustainability performance and the supply chain management, extending sustainability and corporate social responsibility to performance systems. The introduction of innovation management linked to the two core concepts is still observed. The business dimension appears capturing news realities and composing a new vision of sustainable development for companies in detriment of traditional economic and social concept.

**Figure 2.11 –Co-occurrence authors’ themes in keywords (2003-2012)**

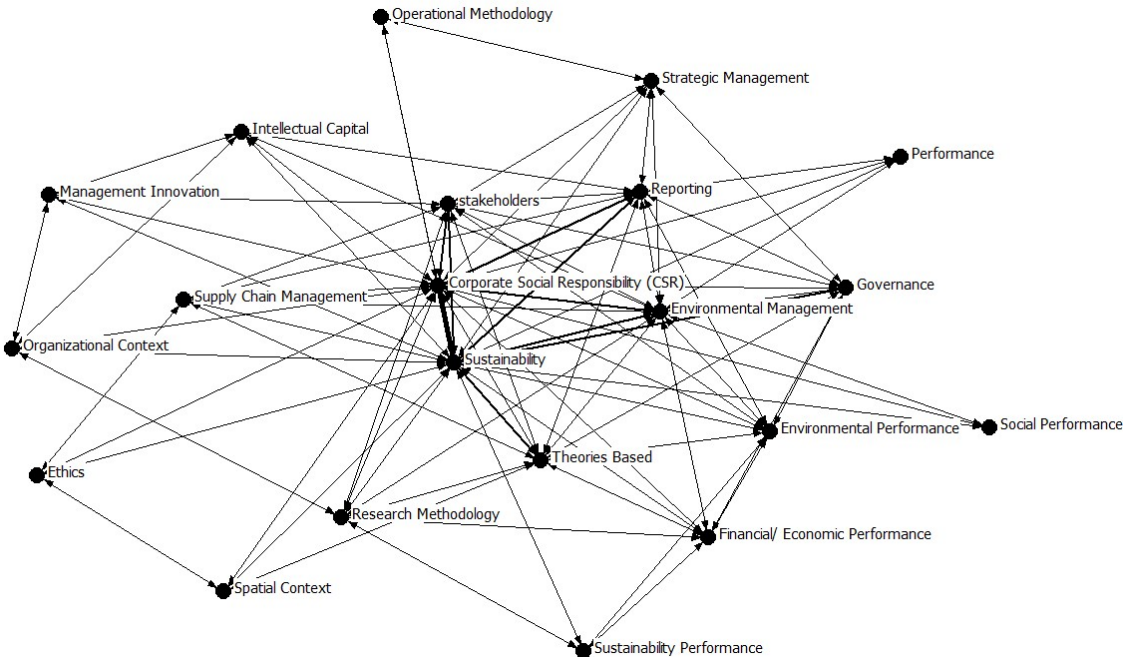


The last period (2013-2015) can be considered as the most representative of new trends to “*corporate sustainability performance*” field, given the temporal proximity. The network in figure 2.12 shows the maintenance of central attention to corporate social responsibility and sustainability themes. However, the two themes appear combined with the stakeholders’ themes. The high interaction between these three themes summarizes the core basement to field structuration. In this context, authors focus on the top management strategy of stakeholders and practice related social and environmental issues. This result is consistent with the strategic integration concern of corporate social responsibility.

Another observation is the strong ties between sustainability and corporate social responsibility to the reporting and environmental management themes. The environment remains the central concern of firms in the internal lens (e.g. cost savings) but also on an external dimension (e.g. green brands promotion) (Antolin-Lopez et al., 2016). The concern for transparency, especially linked to strategic management, has developed as a societal concern, leading to a growth of the research in this field. Thus, the reporting appears strengthened its position due to two major factors:

- The concern of positive and voluntary communication with the internal and external stakeholders; and
- Due to the ease to study the phenomenon since the results are publicly available.

**Figure 2.12 –Co-occurrence authors ’themes in keywords (2013-2015)**



The network shows “performance” topics (Performance, financial/ economic performance and environmental performance), placed on the outer layer of the network, representing their relative marginal standing in the present as the main field for authors. As Searcy (2012) explained, research on “*corporate sustainability performance*” continues to evolve and work remains in developing answers that meet the needs of the business on a practical dimension. However, these keywords have strong ties, namely with sustainability, which can be interpreted as researcher topics in progress and news trends linked to the corporate sustainability performance measurement scientific field.

New trends have been highlighted by authors to recent research agenda on corporate sustainability is linked to:

- Supply chain management,
- Performance systems,
- Corporate governance,
- Intellectual capital,
- Ethics, and
- Innovation management.

## 5. DISCUSSION AND CONCLUSION

The objective of this investigation is mapping the relevant knowledge network and attempts to synthesize research streams and gaps in sustainability performance measures and measurement field between 1987 and 2015. Providing a quantitative analysis of the extended literature on “*corporate sustainability performance*”, this study aims, also, to point future trends and research direction. This bibliometric study, relying on articles distributions, citation, co-citation and keywords analysis of the articles published from 1987 to 2015, reveals several conclusions.

First, the great improvement of studies in the field of “*corporate sustainability performance*”, namely in the last five years, which drove us to conclude that the field is on the researcher's agenda. This field is the newest investigation aggregate in the business schools with a true dynamic production, namely on industrially developed countries.

Second, in a citation and co-citation perspective, this field is strongly supported by an evolutionary trend from legitimacy to an aggregation of theoretical foundations through institutionalism, resource-based view, competitive advantage and stakeholder theories. From this angle, this field seems to complement the theoretical opposition to the traditional shareholder theory. As expected, the field collects decisive contributions of sustainable development theorization through the centrality of the TBL framework.

Third, while it is likely that strategic angle continues to play an essential role in research in “*corporate sustainability performance*” for the coming years, there is still much to understand concerning how to measure in a stakeholder-based perspective and on how it impacts on a firms' outcomes. Indeed, the theoretical construction is based on a complementary interaction between resource-based view and stakeholder theory to obtain a competitive and sustained advantage. On the other hand, there is a tendency for a limited monolithic reflection rather than an expansion of the study of performance measurement models, especially due to the lack of connection between the operations management sciences and the corporate sustainability concept.

Finally, in Keywords analysis perspective, the study highlights new potential directions for the “*corporate sustainability performance*” research, based on the centrality of Corporate Social Responsibility and Sustainability concepts. Stakeholders themes have a greater integration on the debate making it as the real theoretical pivot in the field (Antolin-Lopez et al., 2016). In an evolutionary lens, we can expect new trends on the field with impacts on performance and measures studies. It seems to be consensual that performance and



sustainability measures have been studied in a three-dimensional optics (TBL) supported in the connection with the stakeholders in search of more competitive resources. Our results reinforce this approach where performance and measures are a construct based on corporate social responsibility, sustainability concept and stakeholder responsiveness framework.

On an evolutionary point of view, the results show also that performance and measures has been structured by adding new issues such as reporting practices, supply chain management, new organizational contexts (e.g. SME). News trends appears, namely focusing on the intellectual capital and human resources role, innovation in management and core performance concepts. However, we can observe that internal and external dynamics performance measurement systems design is an understudied topic (Rowley & Berman, 2000; Searcy, 2012; Harrison & Wicks, 2013), where specific performance research remains at the threshold of interest. The lack of academic works focusing on the operational implementation of sustainable performance measures, through their understanding and use in an internal perspective to firms and in an external perspective through stakeholders lens, can be a research field opportunity.

### **5.1. Limitations and future research**

Our study has two main limitations. Firstly, we examined contributions using evolving methodologies from 1987-2015 with an unbalanced aggregate of data per quarter. A simple analysis from the overall period from 1987- 2015, may gave a more comprehensive vision taking a unique dataset sample or by a more recent data analysis (e.g. 2016, 2017 and 2018).

Secondly, only a stabilized database can provide consistent and repeatable results. Databases are updated on a progressive mode, delaying the entrance of papers and proceedings. It means that consolidate database only appears years later. In this sense, we have limited our research in an interval that ensures updated data for each year (1987 to 2015). In consequence, we did not take into consideration the following years, which could contain failure or be incomplete. This option leads us not to take in consideration years with more growing publications but not complete. Thus, an explorative analysis by journal or per year may be done to understand new tendencies. This approach could provide a different perspective on the recent evolution of indicators and offer a different way to understand possible trends.

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**APPENDIX I:**

**Table 2.11 – Themes generation**

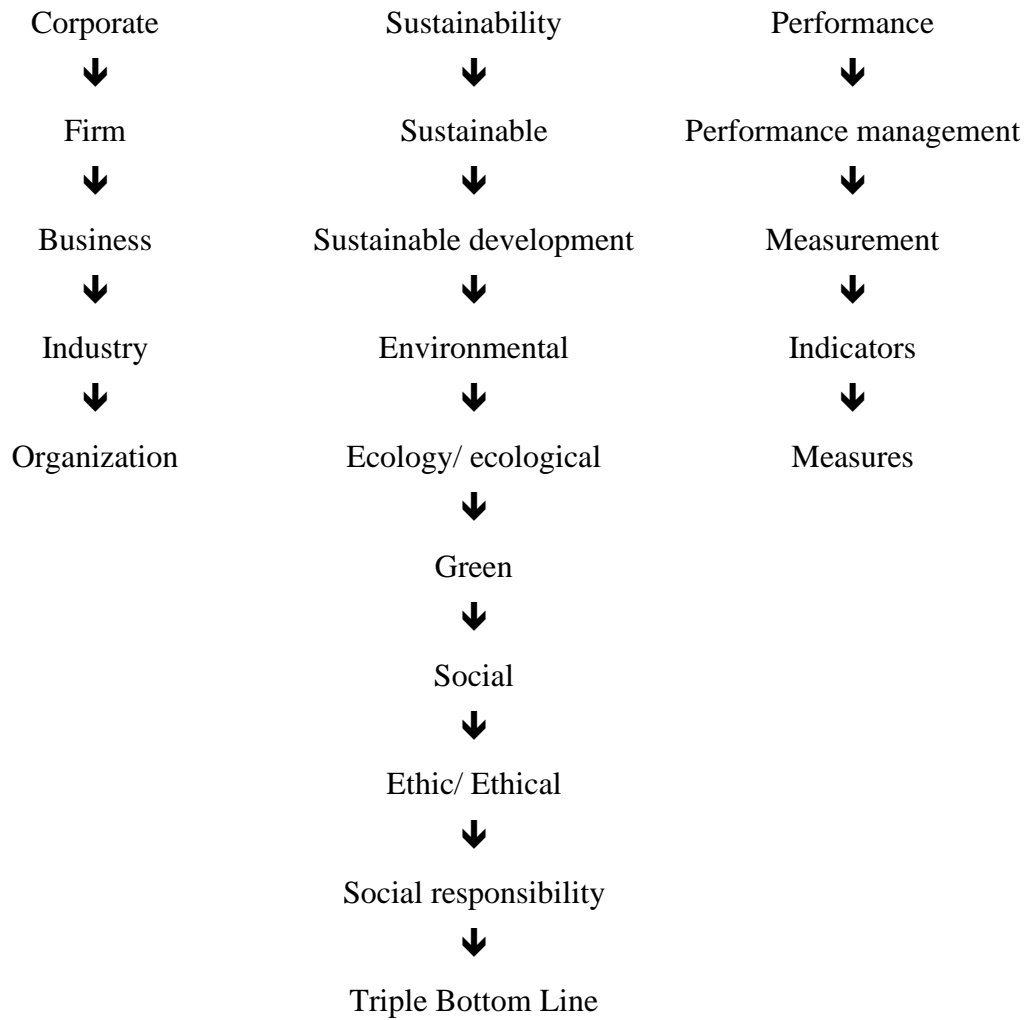
Themes (1987-2002)	Keywords (author)	Citation Number	Themes (2003-2012)	Keywords (author)	Citation Number	Themes (2013-2015)	Keywords (author)	Citation Number
Operational methodology	Product life cycle emission rights Product life cycle analysis Product stewardship Recycling law of packaging Profit components Plastic bottle recycling Life cycle assessment Recycling PET bottles Total quality management Trends Service life ISO 9000 Postconsumer solid waste Asymmetric information Briefing Biological control ISO 14009 Effectiveness Pre-consumer solid waste	18	Sustainability	Sustainability Corporate sustainability Sustainability Sustainable development Sustainable development Sustainable development	236	Sustainability	Sustainability Corporate sustainability Sustainable development Sustainability Sustainability management Sustainable development Corporate sustainability Sustainable development	334
Sustainability	Sustainability Sustainable development Sustainability Global sustainability	7	Corporate Social Responsibility (CSR)	Corporate social responsibility Corporate responsibility CSR Social responsibility Corporate social responsibility (CSR)	158	Corporate Social Responsibility (CSR)	Corporate social responsibility Corporate social responsibility (CSR) CSR Corporate responsibility Social responsibility Social	203
Environmental management	Pollution control Polyethylene terephthalate Environmental strategy Environment organizational studies Environment planning Environmental management	7	Environmental management	Environmental management Climate change Environmental sustainability Environmental Eco-efficiency Environmental management Environmental strategy	65	Reporting	Sustainability reporting Integrated reporting Reporting Assurance GRI Global Reporting Initiative Sustainability reports Sustainability reporting Environmental reporting	93
Strategic management	Corporate strategy Value Business incentives	4	Financial/Economic Performance	Financial performance Economic performance Economic Profitability Dow Jones Sustainability Index	34	Environmental management	Environmental management Environmental sustainability Environmental Environment Climate change Environmental Management Energy Environmental policy ISO 14001	85

Themes (1987-2002)	Keywords (author)	Citation Number	Themes (2003-2012)	Keywords (author)	Citation Number	Themes (2013-2015)	Keywords (author)	Citation Number
Financial/economic performance	Transaction costs Whole life cost Risk management Shareholder value	4	Supply chain management	Supply chain management Supply chain	27	stakeholders	Stakeholders Stakeholder engagement Stakeholder Reputation Corporate reputation Stakeholder management Stakeholders Stakeholder pressure	65
Theories based	Stakeholder theory Competitive advantage Coase theorem Capabilities	4	Performance	Performance Performance measurement	25	Theories Based	Stakeholder theory Institutional theory Legitimacy Triple bottom line	42
Organizational context	Corporate Business Industry effects Industry structure	4	Environmental performance	Environmental performance Environment	24	Governance	Corporate governance Board of directors Governance Management	42
Sectorial context	Mining Mines Shell	3	Reporting	Sustainability reporting Corporate sustainability Reporting Global reporting initiative	23	Supply chain Management	Supply chain Supply chain management Sustainable supply chain management	35
Performance	Performance	3	Governance	Corporate governance Governance	20	Financial/Economic Performance	Financial performance Economic performance Accountability Corporate financial performance	31
Management innovation	Property rights Continuous innovation	2	Theories Based	Triple bottom line Institutional theory Competitive advantage	19	Environmental performance	Environmental performance	29
Management integration	Stakeholder integration Integrated pest management	2	Social Performance	Corporate social performance Corporate social performance	13	Research methodology	DEA Data envelopment analysis Case study Literature review	28
Corporate social responsibility (CSR)	Corporate responsibility Corporate social responsibility	2	Management innovation	Innovation	11	Performance	Performance Firm performance	22
Environmental performance	Environmental productivity Environmental performance	2	Stakeholders	Stakeholders	10	Intellectual capital	Intellectual capital Knowledge management	18
Spatial context	US economy	1	Strategic management	Strategy	10	Spatial context	China Developing countries	17
Social performance	Social costs	1	Ethics	Ethics	6	Management Innovation	Innovation Eco-innovation	15
Governance	Corporate governance	1	Sustainability performance	Sustainability indicators	6	Operational Methodology	Life cycle assessment Balanced scorecard	14
Stakeholder	Client	1	Intellectual Capital	Knowledge management	5	Strategic management	Strategy Business strategy	13
Intellectual capital	Higher-order learning	1	Operational Methodology	Assessment	5	Ethics	Ethics Business ethics	10

<b>Themes (1987-2002)</b>	<b>Keywords (author)</b>	<b>Citation Number</b>	<b>Themes (2003-2012)</b>	<b>Keywords (author)</b>	<b>Citation Number</b>	<b>Themes (2013-2015)</b>	<b>Keywords (author)</b>	<b>Citation Number</b>
						Organizational Context	SME	5
						Social performance	Corporate social performance	5
						Sustainability Performance	Sustainability Performance	5

**Table 2.12 – Articles search methodology**

*Step 1: Words list (synonyms)*



## Step 2: Full combination search

(Main Word: Corporate)

Corporate	Sustainability	Performance
Corporate	Sustainability	Performance management
Corporate	Sustainability	Measurement
Corporate	Sustainability	Indicators
Corporate	Sustainability	Measures
Corporate	Sustainable	Performance
Corporate	Sustainable	Performance management
Corporate	Sustainable	Measurement
Corporate	Sustainable	Indicators
Corporate	Sustainable	Measures
Corporate	Sustainable development	Performance
Corporate	Sustainable development	Performance management
Corporate	Sustainable development	Measurement
Corporate	Sustainable development	Indicators
Corporate	Sustainable development	Measures
Corporate	Environmental	Performance
Corporate	Environmental	Performance management
Corporate	Environmental	Measurement
Corporate	Environmental	Indicators
Corporate	Environmental	Measures
Corporate	Ecology/ ecological	Performance
Corporate	Ecology/ ecological	Performance management
Corporate	Ecology/ ecological	Measurement
Corporate	Ecology/ ecological	Indicators
Corporate	Ecology/ ecological	Measures
Corporate	Green	Performance
Corporate	Green	Performance management
Corporate	Green	Measurement
Corporate	Green	Indicators
Corporate	Green	Measures
Corporate	Social	Performance
Corporate	Social	Performance management
Corporate	Social	Measurement
Corporate	Social	Indicators
Corporate	Social	Measures
Corporate	Ethical	Performance
Corporate	Ethical	Performance management
Corporate	Ethical	Measurement
Corporate	Ethical	Indicators
Corporate	Ethical	Measures
Corporate	Social responsibility	Performance
Corporate	Social responsibility	Performance management
Corporate	Social responsibility	Measurement
Corporate	Social responsibility	Indicators
Corporate	Social responsibility	Measures
Corporate	Triple Bottom Line	Performance
Corporate	Triple Bottom Line	Performance management
Corporate	Triple Bottom Line	Measurement
Corporate	Triple Bottom Line	Indicators
Corporate	Triple Bottom Line	Measures



(Main Word: Firm)

Firm	Sustainability	Performance
Firm	Sustainability	Performance management
Firm	Sustainability	Measurement
Firm	Sustainability	Indicators
Firm	Sustainability	Measures
Firm	Sustainable	Performance
Firm	Sustainable	Performance management
Firm	Sustainable	Measurement
Firm	Sustainable	Indicators
Firm	Sustainable	Measures
Firm	Sustainable development	Performance
Firm	Sustainable development	Performance management
Firm	Sustainable development	Measurement
Firm	Sustainable development	Indicators
Firm	Sustainable development	Measures
Firm	Environmental	Performance
Firm	Environmental	Performance management
Firm	Environmental	Measurement
Firm	Environmental	Indicators
Firm	Environmental	Measures
Firm	Ecology/ ecological	Performance
Firm	Ecology/ ecological	Performance management
Firm	Ecology/ ecological	Measurement
Firm	Ecology/ ecological	Indicators
Firm	Ecology/ ecological	Measures
Firm	Green	Performance
Firm	Green	Performance management
Firm	Green	Measurement
Firm	Green	Indicators
Firm	Green	Measures
Firm	Social	Performance
Firm	Social	Performance management
Firm	Social	Measurement
Firm	Social	Indicators
Firm	Social	Measures
Firm	Ethical	Performance
Firm	Ethical	Performance management
Firm	Ethical	Measurement
Firm	Ethical	Indicators
Firm	Ethical	Measures
Firm	Social responsibility	Performance
Firm	Social responsibility	Performance management
Firm	Social responsibility	Measurement
Firm	Social responsibility	Indicators
Firm	Social responsibility	Measures
Firm	Triple Bottom Line	Performance
Firm	Triple Bottom Line	Performance management
Firm	Triple Bottom Line	Measurement
Firm	Triple Bottom Line	Indicators
Firm	Triple Bottom Line	Measures

(Main Word: Business)

Business	Sustainability	Performance
Business	Triple Bottom Line	Performance management
Business	Triple Bottom Line	Measurement
Business	Triple Bottom Line	Indicators
Business	Triple Bottom Line	Measures
Business	Sustainable	Performance
Business	Sustainable	Performance management
Business	Sustainable	Measurement
Business	Sustainable	Indicators
Business	Sustainable	Measures
Business	Sustainable development	Performance
Business	Sustainable development	Performance management
Business	Sustainable development	Measurement
Business	Sustainable development	Indicators
Business	Sustainable development	Measures
Business	Environmental	Performance
Business	Environmental	Performance management
Business	Environmental	Measurement
Business	Environmental	Indicators
Business	Environmental	Measures
Business	Ecology/ ecological	Performance
Business	Ecology/ ecological	Performance management
Business	Ecology/ ecological	Measurement
Business	Ecology/ ecological	Indicators
Business	Ecology/ ecological	Measures
Business	Green	Performance
Business	Green	Performance management
Business	Green	Measurement
Business	Green	Indicators
Business	Green	Measures
Business	Social	Performance
Business	Social	Performance management
Business	Social	Measurement
Business	Social	Indicators
Business	Social	Measures
Business	Ethical	Performance
Business	Ethical	Performance management
Business	Ethical	Measurement
Business	Ethical	Indicators
Business	Ethical	Measures
Business	Social responsibility	Performance
Business	Social responsibility	Performance management
Business	Social responsibility	Measurement
Business	Social responsibility	Indicators
Business	Social responsibility	Measures
Business	Triple Bottom Line	Performance
Business	Triple Bottom Line	Performance management
Business	Triple Bottom Line	Measurement
Business	Triple Bottom Line	Indicators
Business	Triple Bottom Line	Measures

(Main Word: Industry)

Industry	Sustainability	Performance
Industry	Sustainability	Performance management
Industry	Sustainability	Measurement
Industry	Sustainability	Indicators
Industry	Sustainability	Measures
Industry	Sustainable	Performance
Industry	Sustainable	Performance management
Industry	Sustainable	Measurement
Industry	Sustainable	Indicators
Industry	Sustainable	Measures
Industry	Sustainable development	Performance
Industry	Sustainable development	Performance management
Industry	Sustainable development	Measurement
Industry	Sustainable development	Indicators
Industry	Sustainable development	Measures
Industry	Environmental	Performance
Industry	Environmental	Performance management
Industry	Environmental	Measurement
Industry	Environmental	Indicators
Industry	Environmental	Measures
Industry	Ecology/ ecological	Performance
Industry	Ecology/ ecological	Performance management
Industry	Ecology/ ecological	Measurement
Industry	Ecology/ ecological	Indicators
Industry	Ecology/ ecological	Measures
Industry	Green	Performance
Industry	Green	Performance management
Industry	Green	Measurement
Industry	Green	Indicators
Industry	Green	Measures
Industry	Social	Performance
Industry	Social	Performance management
Industry	Social	Measurement
Industry	Social	Indicators
Industry	Social	Measures
Industry	Ethical	Performance
Industry	Ethical	Performance management
Industry	Ethical	Measurement
Industry	Ethical	Indicators
Industry	Ethical	Measures
Industry	Social responsibility	Performance
Industry	Social responsibility	Performance management
Industry	Social responsibility	Measurement
Industry	Social responsibility	Indicators
Industry	Social responsibility	Measures
Industry	Triple Bottom Line	Performance
Industry	Triple Bottom Line	Performance management
Industry	Triple Bottom Line	Measurement
Industry	Triple Bottom Line	Indicators
Industry	Triple Bottom Line	Measures

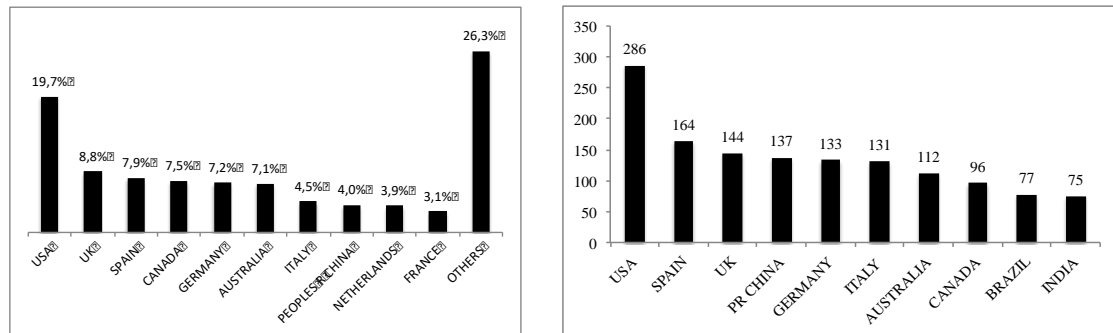
(Main Word: Organization)

Organization	Sustainability	Performance
Organization	Sustainability	Performance management
Organization	Sustainability	Measurement
Organization	Sustainability	Indicators
Organization	Sustainability	Measures
Organization	Sustainable	Performance
Organization	Sustainable	Performance management
Organization	Sustainable	Measurement
Organization	Sustainable	Indicators
Organization	Sustainable	Measures
Organization	Sustainable development	Performance
Organization	Sustainable development	Performance management
Organization	Sustainable development	Measurement
Organization	Sustainable development	Indicators
Organization	Sustainable development	Measures
Organization	Environmental	Performance
Organization	Environmental	Performance management
Organization	Environmental	Measurement
Organization	Environmental	Indicators
Organization	Environmental	Measures
Organization	Ecology/ ecological	Performance
Organization	Ecology/ ecological	Performance management
Organization	Ecology/ ecological	Measurement
Organization	Ecology/ ecological	Indicators
Organization	Ecology/ ecological	Measures
Organization	Green	Performance
Organization	Green	Performance management
Organization	Green	Measurement
Organization	Green	Indicators
Organization	Green	Measures
Organization	Social	Performance
Organization	Social	Performance management
Organization	Social	Measurement
Organization	Social	Indicators
Organization	Social	Measures
Organization	Ethical	Performance
Organization	Ethical	Performance management
Organization	Ethical	Measurement
Organization	Ethical	Indicators
Organization	Ethical	Measures
Organization	Social responsibility	Performance
Organization	Social responsibility	Performance management
Organization	Social responsibility	Measurement
Organization	Social responsibility	Indicators
Organization	Social responsibility	Measures
Organization	Triple Bottom Line	Performance
Organization	Triple Bottom Line	Performance management
Organization	Triple Bottom Line	Measurement
Organization	Triple Bottom Line	Indicators
Organization	Triple Bottom Line	Measures

## APPENDIX II:

Complementary bibliometric study period 2016 to 2018:

**Figure 2.13 – Distribution of articles by institution’s countries comparison 2013/2015 to 2016/2018**

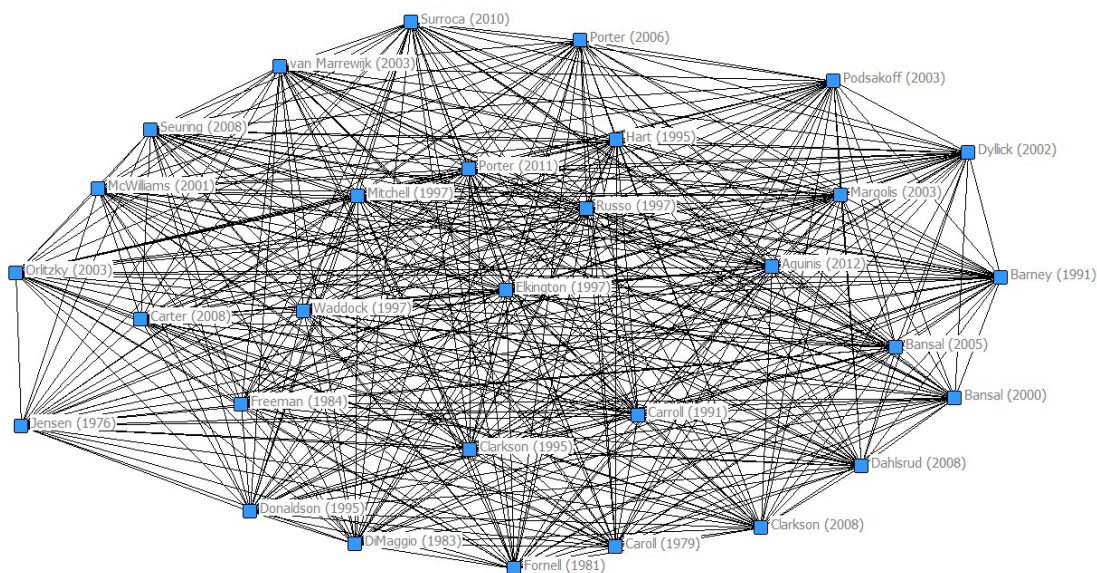


**Table 2.12 – Citation frequency comparison 2013/2015 to 2016/2018**

Rank	Author (2013-2015)	Citation frequency	Author (2016/2018)	Citation frequency
1	FREEMAN R. E. (1984)	210	FREEMAN R. E. (1984)	141
2	HART S.L. (1995)	197	ORLITZKY M. (2003)	140
3	ORLITZKY M. (2003)	178	WADDOCK S.A. (1997)	129
4	RUSSO M.V. (1997)	148	PORTER M.E. (2006)	124
5	WADDOCK S.A. (1997)	148	HART S.L. (1995)	117
6	WCED (1987)	141	CARROLL A. B. (1979)	104
7	PORTER M.E. (2006)	132	RUSSO M.V. (1997)	96
8	BARNEY J. (1991)	119	DONALDSON T. (1995)	99
9	CARROLL A. B. (1979)	118	DYLLICK T. (2002)	93
10	MARGOLIS J.D. (2003)	118	ELKINGTON J. (1997)	93
11	CLARKSON M.B.E. (1995)	114	SEURING S. (2008)	92
12	PORTER M.E. (1995a)	114	MCWILLIAMS A. (2001)	90
13	DYLLICK T. (2002)	111	CARROLL (1991)	83
14	SEURING S. (2008)	102	BARNEY (1991)	83
15	VAN MARREWIK M., (2003)	102	MARGOLIS (2003)	81
16	DIMAGGIO P.J. (1983)	100	DIMAGGIO (1983)	79
17	DONALDSON T. (1995)	99	MITCHELL (1997)	70
18	WOOD D.J. (1991)	99	CARTER (2008)	70
19	SHARMA S. (1998)	98	CLARKSON M.B.E. (1995)	69
20	MCWILLIAMS A. (2001)	96	FORNELL (1981)	69

Rank	Author (2013-2015)	Citation frequency	Author (2016/2018)	Citation frequency
21	ELKINGTON J. (1997)	94	BANSAL P. (2005)	69
22	BANSAL P. (2000)	90	JENSEN (1976)	68
23	MITCHELL R.K. (1997)	88	AGUINIS (2012)	66
24	BANSAL P. (2005)	87	CLARKSON P.M. (2008)	63
25	SHRIVASTAVA P. (1995)	87	BANSAL P. (2000)	62
26	GRAY R. (1995)	82	PORTER (2011)	62
27	CHRISTMANN P. (2000)	78	SURROCA (2010)	61
28	KLASSEN R.D. (1996)	77	VAN MARREWIJK M., (2003)	61
29	PORTER M.E. (1995b)	77	DAHLSTRUD (2008)	61
30	CARROLL A. B. (1999)	74	PODSAKOFF (2003)	61

**Figure 2.14 –Citation/co-citation analysis for most influential works (2016-2018)**



**3. CHAPTER 3 – PERFORMANCE AND SUSTAINABILITY IN SME'S:  
TRENDS AND EVOLUTION**

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**Journal Submission**

This paper was submitted to the Business & Society

*Business & Society*

- FNEGE (2016): 2

**Acknowledgements**

I would like to thank to Leonildo Munguambe and Harris Jusufbegovic for their useful linguistic advices. Also grateful for the total availability of University of Minho to access to databases as external student.



## **ABSTRACT**

Corporate Sustainability Performance (CSP) research had focused mainly on strategies and operational implementation in management systems of large companies. However, Micro, Small and Medium Enterprises (SME) represent an important economic, environmental and social role in our societies. Therefore, the impact and performance of SMEs have great relevance for sustainable development concept as well as academic approach. This study aims to scan and determine the core knowledge of CSP in SMEs using bibliometric and lexical analysis. We identified 63 studies in this field of research, scanning and categorizing the theoretical and empirical literature to understand the design, mechanisms and results of sustainable performance measurement at SMEs' level. Our findings show that main knowledge is linked to traditional management theories, as Triple Bottom Line (TBL) concept, resource-based view (RBV), competitive advantage, stakeholder and social capital theories. The lexical analysis shows us that value chain control, governance and leadership and stakeholder and institutional pressure are the main domain of research highlighting the operational management concern and the dependence of external pressure.

**Keywords:** Sustainability, Performance Measurement, Organizational Performance, SME, Bibliometric Study, Lexical study, Content analysis

## 1. INTRODUCTION

The major economic organizations and decision makers were called to answer to the challenges posed by successive conferences of the United Nations (Tregidga & Milne, 2006). Understandably due to the environmental and social impacts of large companies, the concern in Corporate Sustainability (CS) research focused on the implementation of strategies and actions in management systems (Perrini, 2006). In parallel, elaborate streams of work on performance systems growth (Neely, 2005) and organizational performance studies focused mainly on the models and case studies of large companies. CS and performance systems have found their main dissemination based on conventional approaches stating that these companies were the norm and the model to follow (Jenkins, 2006). Despite such vision, SMEs have a great economic and social relevance, particularly in the European Union (Dannreuther, 2007). The importance in employment or in wealth creation has raised questions about the role of SMEs in economic, social and environmental terms.

Corporate sustainability thematic has come to light through studies on the environmental dimension and engagement lens (Uhlener et al., 2012, Hofmann et al., 2012) or through studies on the dimension of social responsibility (Şerban & Kaufmann, 2011; Agudo et al., 2012). Sectorial or organizational analyses were also promoted to understand SMEs in a sustainable development framework context. In order to understand organizational mechanism facing sustainability challenges, researchers have observed a set of tools used by SMEs to improve the implementation of sustainable performance systems (Tencati et al., 2008; Perrini, 2007), as well as green supply chain (Seuring et al., 2008; Lintukangas et al., 2015; Mathiyazhagan et al., 2015; Karatzoglou & Spilanis, 2010), or in the field of innovation (Bos-brouwers, 2010; Paraschiv et al., 2012), or of disclosure and accountability (Ramos et al., 2013).

Understanding the scope and content of academic studies on sustainable performance systems at SMEs level is essential to clarify how this concept is applied. The SMEs' relevance and the increasing importance of sustainable performance research lead us to upload the state of art.

Thus, the aim of this study is to focus on knowledge of “*corporate sustainability performance in SMEs*”, conducting a bibliometric and lexical analysis between 1987 and 2015. This study on “*Corporate sustainability performance*” in SMEs seeks to promote an

innovative academic approach based on companies' typologies with great relevance in world economic activity. Finally, mapping knowledge will allow us to understand challenges, streams and future evolution of sustainability performance in SMEs.

As a result, our contributions expose the core theoretical architecture through the most relevant authors and works on SMEs. Through lexical analysis, we contribute to the compilation and view of the thematic around "*sustainability performance in SMEs*".

Our study is organized as follows. Section 2 a review of the literature. Section 3 contains the description of the methodology with the description of sample and procedures. Section 4 reports and discusses the results of distribution, citation and lexical analysis. The last section supports our discussion and the main conclusion.

## **2. LITERATURE REVIEW**

### **2.1 An overview of corporate sustainability**

The emergence of sustainable development (SD) at the firm level is subject to some tensions, in terms of its objectives and content (Lauriol, 2005). Definitions and key constructs on corporate sustainability (CS) and corporate social responsibility (CSR) have proliferated during the past decade (Carroll, 1999; Bansal, 2005; Montiel, 2008) and improve the lack of consensus around solid definitions (Rego et al., 2017). Tensions between CS and CSR themes appears more with the original paradigm construction than to an effective disagreement between these two concepts (Montiel, 2008). In fact, current research shows that CS and CSR are converging on a unified concept and construct (Bansal, 2005; Dashlsrud, 2008; Montiel, 2008). CSR and CS have similarities on economic, social, and environmental dimensions. Montiel (2008) point some differences based on CSR and CS analysis:

- In the 1970s, CSR researchers were more focused on social dimension in opposition to environmental researchers (Montiel, 2008);
- In CSR, the fundamental focus of businesses is economic growing either in CS economic, social and environmental responsibilities are complementary and integrated to result in a sustainable management (Montiel, 2008);
- CSR developed its own field highly linked to stakeholder theory (Allouche et al., 2004; Lauriol, 2005; Montiel, 2008) rather than CS researchers have supported their works from diversified and interconnected theoretical domains of management science (e.g. Resources-Based View, Triple Bottom Line concept, Institutionalism)

However, very strong links exist between the concepts of CS and CSR. Many definitions of CSR and CS include references to ethics and equity related to the environmental, societal, and economic management dimensions (Valiente, 2012; van Marrewijk, 2003).

CS refers the incorporation sustainable development concept, namely social inclusive equity, economic value creation and environmental preservation, into company's activities and processes (Tregidga & Milne, 2006; Loucks et al., 2010; Medel et al., 2011), going beyond economic dimension by focusing human, social and environmental capital (Perrini, 2006). The academic literature underlines that business, as an instrument of economic performance, have also integrated social and environmental impacts (Dahlsrud, 2008; Montiel, 2008). Corporate sustainability performance refers to decision-making processes and instruments to assess the level of achievement of corporate goals integrating the economic value creation,

environmental preservation and social equity (Krechovská & Procházková, 2014).

## **2.2 Corporate sustainability in SMEs Context**

Widely spread in corporate sustainability studies, the predominant approach is the centrality of large companies' analysis (Perrini, 2006). However, such research has recently elevated the academic debate to the role of SMEs as sustainable organisations (Stewart & Gapp, 2014). A large set of contradictory elements lead to evoking SMEs as out of sustainability trends, namely due to the absence of environmental impacts perception, the lack of human resources or the insignificance of external stakeholders' demand (Ramos et al., 2013).

SMEs are often unknowingly socially responsible comparing to large companies (Perrini, 2006). The difference of small business organizations face to large firms has been analysed (Jenkins, 2006; Spence, 2007). SMEs are considered less formal in sustainability procedures and codes (Bos-Brouwers, 2010, Spence, 2007; Parker et al., 2010) without a formal administrative and control systems compared to large companies (Perrini, 2006). In this way personal owner-manager motivation for CSR initiatives is more important than other management approaches such as marketing or public relations (Russo & Tencati, 2009; Spence, 2007). Thus, the ethical perspective of owner-manager influences corporate sustainability deployment (Bos-Brouwers, 2010; Fuller & Tian, 2006). SMEs informally define sustainability through orientations and choices conducted by business owner-managers vision and values (Jenkins, 2006; Russo & Tencati, 2009).

Additionally, small businesses are often part of local communities. In consequence this proximity with community and customers, supported by personal relationships, affects the commitment and approach towards sustainability in a more local dimension (Murillo & Lozano, 2006; Perrini, 2007; Perrini et al., 2007; Spence, 2007; Borga et al., 2009; Giovanna & Lucio, 2012; Tantalo et al., 2012). Employees are very important stakeholders supported by a familiar relationship that influence operational and strategic engagement to sustainable development (Borga et al., 2009; Giovanna & Lucio, 2012). The institutional context is relevant for small businesses, on the corporate sustainability interpretation and transposition in practice (Spence, 2007; Parker et al., 2010). Roxas & Coetzer (2012). Thus, it can be observed that institutional environment through regulatory, economic, social, industrial and competitive structures influences significantly the attitudes of owner-managers and the way they face sustainability challenges.

Differences between large and small business are enormous, however the assumption

that SMEs are ‘*little big companies*’ (Tilley, 2000) and corporate sustainability concept can be scaled down to SMEs, is dominant in academic debate. Nevertheless, several internal barriers to fit sustainability in the operational and strategic lens for SME’s are identified in the literature, namely:

- Limited financial resources, influence the choices or non-choices in the corporate sustainability themes (Revell & Blackburn 2007; Borga et al., 2009);
- Lack of knowledge, namely due to the low training level of the owner-managers (Simpson et al., 2004; Murillo & Lozano, 2006; Revell et al., 2010);
- An unfavourable company culture (Kehbila et al., 2009), which is highly linked to the understanding that SMEs have a low impact on environmental or social dimensions;
- Limitation on accessing resources to solve environmental and social challenges (Revell et al., 2010; Tilley, 2000; Simpson et al., 2004);
- Scepticisms about the benefits of sustainability (Revell, 2010) or profit maximization with this kind of strategies (Spence, 2007).

Additionally, external barriers include (Revell et al., 2010):

- The lack of consumer demand analysis or auscultation (Ramos et al., 2013; Revell et al., 2010);
- Low supply chain pressure (Revell et al., 2010);
- No perceived business case by regulators or society in general (Parker et al., 2010).

However, driving forces exist to influence the company decision to adopt sustainable oriented management practices as legislation, regulation, insurance costs, waste disposal costs and new pressures in the supply chain (Jenkins, 2006; Tencati et al., 2008; Lintukangas et al., 2015; Martínez-Villavicencio et al., 2015; Sroufe, 2017). Some of the drivers may involve internal forces as employees and customer satisfaction, quality or efficiency of production, access to market and focus on competitiveness (Simpson et al., 2004; Şerban & Kaufmann, 2011; Hofmann et al., 2012).

### **2.3 SME’s and sustainability management**

Some SMEs characteristics seem to determine greater preparedness to face sustainability challenges. In Simpson et al. (2004) work, it was found that SMEs have been aware of customer’s changing demands and understand new trend on corporate sustainability. In the same way, Jenkins (2006) focuses on the supply chain and the legislative pressure as great normative factors that introduce new issues, orientations and obligations on business

management. In fact, SMEs are subject to more external pressure by market and society agents (customers, regulator, NGO) to have their own evidence of sustainability good practices (e.g. Environmental third-party certification, independent social compliance audit, etc.) than large companies.

Stakeholder theory is important for the theoretical construction of the sustainability management field. Starting on the assumption that all companies can reduce the risk and improve social and environmental performance managing appropriately stakeholders (Jenkins, 2006). The involvement with stakeholders allows companies to identify important aspects to manage their sustainable performance. Some authors have observed that internal interest is strongest than external pressure. The institutional influence has been highlighted as impactful on companies' environment and social performance (Roxas & Coetzer, 2012; Tilley, 2000). Institutional pressures represent the different stakeholders needs and requirements that must be considered in SMEs context. External pressure was diverted down to the supply chain through customers or legal requirements but focused mainly on the environmental dimension (Jenkins, 2006; Revell et al., 2010).

SMEs engagement is highly based on an owner-manager personal engagement characterized by a more informal and direct relationship (Jenkins, 2006; Russo & Tencati, 2009). Personal motivation and responsible behaviour in small businesses are shaped by the leadership of owners-managers (Fuller & Tian, 2006). Thus, corporate sustainability performance in SMEs can be explored through the social capital theory lens (Perrini, 2006). Social capital is defined as the resources derived from the network of relationships, thus includes the network as the assets that can be mobilized through this network (Nahapiet & Ghoshal, 1998). Social capital includes norms and values that facilitate exchanges and motivate greater societal responsibility in the collective management of resources (Woolcock & Narayan, 2000). Intangible assets as reputation, legitimacy or consensus are components of the firm social capital that can explain the responsible behaviour associated to corporate sustainability (Spence et al., 2003; Perrini, 2006; Fuller & Tian, 2006; Russo & Tencati, 2009). Due to their spatial proximity, resources availability and competences, SMEs may have more opportunities to exploit engagement of the community, capitalizing stocks of reputation, trust, legitimacy, norms and networks to support a long-term performance (Spence et al., 2003; Perrini, 2006).

Authors summarized capabilities that increase the ability of SMEs to embrace sustainable strategy and upgrade their competitiveness (Sharma & Vredenburg, 1998). Studies suggest that organizational capabilities and competitive benefits result from environmental

responsiveness strategies adopted by these firms (Sharma & Vredenburg, 1998). In fact, corporate sustainability, as an instrumental concept, is used to achieve sustained competitive advantage (Porter & Linde, 1995) with organizational capabilities valuable (Hart, 1995).

In accordance, Aragon-Correa et al. (2008), argue that SMEs' have unique and specific capabilities as:

- Shared vision by a close interaction between owner-founder and other organizational members;
- Strategic proactivity conducted by SME innovation and initiatives; and
- Stakeholder management represented by a flexible capacity to manage internal and external relationships.

### **3. METHODOLOGY**

It is our purpose in an extend time field to emphasize and improve knowledge about “*corporate sustainability performance*” in SME using scientometrics methodologies, specifically bibliometric (Distribution of articles, Citations and Co-citations analysis) and lexical analysis (Distribution, Hierarchical Classification Descending and Factorial Analysis of Correspondence, Lexical-thematic analysis). Scientometrics is an aggregate of the advanced analytical method of data that uses other disciplines, as statistics or information technology (Garnier & Guérin-Pace, 2010).

The bibliometric and lexical analysis made part of the scientometric methodologies (Callon et al., 1993). The first technique is based on the analysis of bibliographic data, namely distribution, citation and co-citation (Reis et al., 2013). While the second method focuses on content analysis based on the counting of lexical forms and its categorization in themes. This technique allows the classification and determination of core theoretical base in the past and future trends. Both are advanced quantitative techniques useful to process a large number of data (Ganassali, 2008). During the past years, bibliometrics and lexical analysis have been used in broad range of study in other areas of management research. Goyal & Rahman (2014) promoted a bibliometric analysis of 101 works to understand the academic literature on the relation of sustainability performance and firm performance between 1992 and 2011. Other authors used this technique in management, as Neely (1995) or Taticchi et al. (2010) on performance measurement to explore developments in the field globally.

Although less usual, lexical analysis is also found in many works on management. For example, Igalens (2007) promotes a lexical analysis of the corporate social responsibility



discourse on annual sustainability reports of French CAC 40 companies. Mejri and De Wolf (2012) analysed the communication approach adopted by retailers using the discourse include in their societal commitment and their non-financial reports. Mercier (2002) used this technique to analyse 50 formal ethical statements in large companies across France. Ortiz-Martinez and Crowther (2008) focused the Shell disclosure practice applying a lexical analysis to all company publication between 1998 and 2003. Hernandez and Fiore (2015) performed a multidimensional lexical analysis, based on eleven French metropolises data to analysed territorial public organizations answer to sustainable development demands. Albertini (2013) promotes a content analysis of 82 abstracts between 1992 and 2012 on Environmental performance domain. Finally, Soulez & Guillot-Soulez (2006) used this technique to study scientific production in marketing using articles published by the French academic journal *Recherche et Applications en Marketing (RAM)* between 1986 and 2004.

### **3.1 Procedures**

In the search of the knowledge of SMEs and their sustainable performance, a quantitative analysis of bibliographical data on “*corporate sustainability performance*” between 1987 and 2015 was employed. For this study we chose two different branches of this scientific approach: The bibliometric and the lexical analysis.

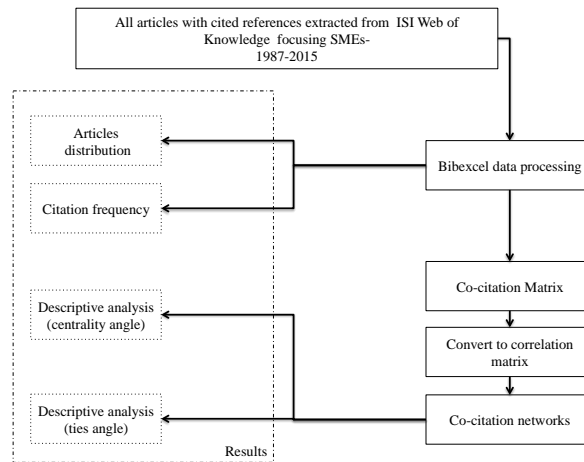
This option allows us to:

- Observe the theoretical core that supports the study of SME and corporate sustainability performance;
- Extract the main axes of different use of language, making visible tendencies, gap and conjunctions of thematic, giving an overview of the field evolution.

Bibliometric is focused on publication activity expressed in the number of articles/works published in a given period of time (Callon et al., 1993; Benavides-Velasco et al., 2013). Following this method, we can observe the quantitative evolution of the literature from 2004 to 2015. The analysis of citations and co-citation, based on the identification of more relevant works allows the delineating representations and the relations between works/authors, highlighting the different theoretical focus. In this study we applied the techniques of distribution, citation and co-citation in a specific timeframe. The use of bibliometrics in the management sciences is today extensive and with some technical maturity, including environmental and social responsibility management field. In this study,

we proceed by an articles distribution base on the simple publication per year to observe the evolution of “*corporate sustainability performance*” in SMEs context. Additionally, the citation analysis is based on observing the frequency with which each work is cited, or used, in the discipline (Ferreira et al., 2014). To complete the bibliometric analysis, we identify co-citation symmetrical matrix and draw a co-citation network (Reis et al., 2013).

**Figure 3.1 – Distribution of articles (2004-2015)**

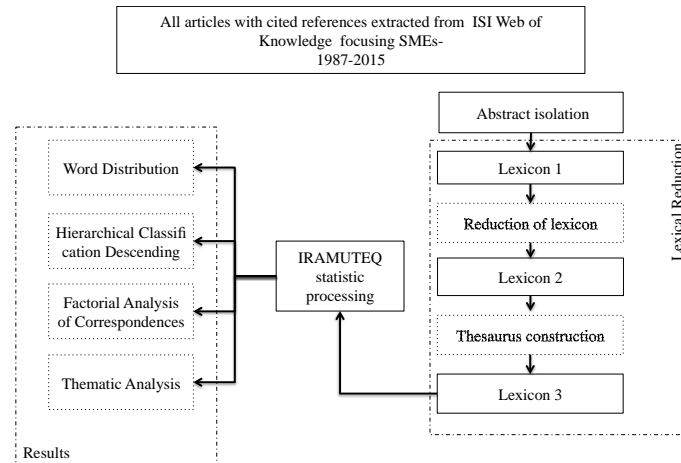


In a second step we used lexical analysis methodology focusing on texts content in order to extract authors main meanings. Under this methodology, we performed a word frequency distribution, a Hierarchical Classification Descending analysis and Factorial Analysis of Correspondence. As highlighted by several authors, lexical analysis allows the investigation without any intervention by the researcher, as no code or encryption is made during the process (Garnier & Guérin-Pace, 2010, Hernandez & Fiore, 2015). Our objective is to understand the core content of “*corporate sustainability performance*” in SME taking the authors point of view. As recommended by several authors we performed a lexical reduction (Ganassali, 2008; Garnier & Guérin-Pace, 2010; Hernandez & Fiore, 2015) and used a three-step process as follow:

- First, works’ abstracts focusing “*corporate sustainability performance*” in SMEs context were retrieved and prepared to be processed by IRAMUTEQ software;
- Secondly, we promote a lexical clearance with IRAMUTEQ focusing on the words with means and ignoring the grammatical "tool words" with the exception of adverbs resulting in the lexicon number two;

- Finally taking the lexicon, it was analysed individually and grouped by lemmas and meanings, allowing the construction of the final dictionary (thesaurus) and a thematic categorization.

**Figure 3.2 – Distribution of articles (2004-2015)**



The lexical reduction technique allowed us the construction of a final thesaurus with 235 meaning lexical forms (12.76% of the total vocabulary), which represent a total of 6584 word's occurrences (48.09% of the total occurrences) as demonstrated in table 3.1.

**Table 3.1 – Lexical reduction statistics (2011-2015)**

	<b>Initial extraction</b>	<b>Reduction lexical</b>	<b>Thesaurus</b>
	Lexicon 1	Lexicon 2	Lexicon 3
Words counting	13690	12272	6584
%	100%	89,64%	48,09%
Forms frequency	1841	1427	235
%	100%	77,51%	12,76%

Finally, to complete the statistic processing and analysis, we replace all forms by the final thesaurus lexical forms to aggregate in a more reliable and easy way to understand.

### **3.2 Sample**

Focusing works related to “*Corporate sustainability performance*”, we performed a literature search in the ISI Web of Science database, searching in title, keywords or abstract from 1987 to 2015. 1,271 papers published in 491 different journals constituted our initial sample. A second scan step was performed checking individually works focusing SMEs context. 63 articles from 2004 to 2015, including 3847 citations, constitute the final sample for bibliometric. For lexical analysis, it were extracted from the works 63 abstracts, including 13,690 words and 1.841 lexical forms.

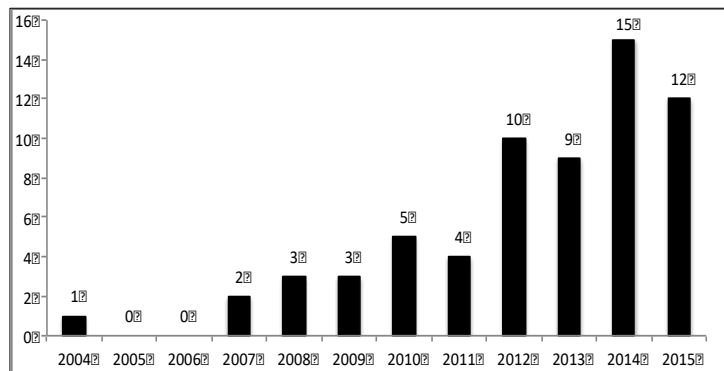
## **4. RESULTS**

### **4.1 Distribution of Articles**

Distribution of articles analysis intends to obtain an overview of works evolution related to “*corporate sustainability performance*” in SMEs, demonstrating the main tendencies and interest of this specific field for academics (Callon et al., 1993).

Focusing “*corporate sustainability performance*” field, SMEs studies only represents 4,96 % of the total scientific production of ISI Web of Science search. The first article dealing with “*corporate sustainability performance*” in the SME context appears in 2004, as describe in figure 3.3. It was possible to observe the growing number of works produced from 2004 to 2015. Finally, the publication statistics show that more than 73,02 % of papers have been released in the last four years analysed (2012-2015) with 46 articles out of 63. Based on these three observations, we can conclude that “*corporate sustainability performance*” in SME is a recent subject for researchers with a growing interest, but yet with a smaller production. In overall, this evolutionary analysis leads us to conclude about an under-attention to sustainability performance apply to SMEs.

**Figure 3.3 – Distribution of articles (2004-2015)**



## 4.2 Citations Analysis

The citations analysis assumes that a highly cited article is very important and influential on the theoretical framework (Callon et al., 1993, Ferreira et al., 2014). Table 3.3 shows the top 28 works cited in a total of 3288 referenced works (0,85% of the total). These top papers represent 178 citations in a universe out of 3847 (4,63 % of all citations). Two observations should be emphasized based on the bibliographic dispersion found. Firstly, it is noticed that the number of citations and works is very close (3288 works generated 3847 citations). Secondly, we observed a high level of unique citations works, i.e. papers cited only once, representing 2956 out of 3847 (76,80 %). These findings lead to the conclusion that the theoretical nucleus is under construction, confirming that the subject is recent and with inceptive analysis by the researchers. In this undeveloped context, 6 most cited works, representing 32,58% of 28 most cited works, are Jenkins (2006) with 12 citations, Barney (1991), Revell (2010) with 9 citations and Aragon-Correa (2008), Murillo (2006), Tilley (2000) with 8 citations each.

The citation frequency results show that SMEs debate on sustainable performance is mainly articulated by RBV theory (Barney, 1991; Sharma, 1998; Aragon-Correa et al., 2008). RBV researchers highlight that competitive advantage is linked to companies' resources and capabilities (Barney, 1991). In this perspective, corporate sustainability actions have a positive effect on corporate performance (Aragon-Correa et al., 2008; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). The RBV theory states the primacy of ownership of unique and inimitable resources, as an environmental strategy that can provide external loyalty from customers and save cost in internal dimension. Despite this positive effect, resources

generation may be doubtful due to their own characteristic and lack of capabilities, like size or poor management skills (Simpson et al., 2004).

Stakeholder theory appears represented by Freeman (1984) and Clarkson (1995), advocating that the competitiveness of firms is linked to value creation beyond the unique shareholder perspective. The stakeholder approach states that organizations are accountable to multiple stakeholders that can affect or are affected by organization's operations (Freeman, 1984). The stakeholder's pressures are perceived as a driving force to SMEs to embrace sustainability process (Thorne et al., 2014). This interaction is a part of the responsible behaviour construction by SMEs (Fuller & Tian, 2006) and appears as a powerful force to lead to competitive advantage through customer satisfaction (Simpson et al., 2004). The stakeholders' theory includes strong relations with Triple-Bottom Line (TBL) conceptualization, rise by Elkington (1997) and its business in society perspective (Spence & Rutherford, 2003; Freeman, 2010). Corporate social responsibility as part of corporate sustainability framework appears linked to works of Carroll (1979), Dahlsrud (2008) and Russo (2009). Another theoretical line associated to with the SMEs corporate sustainability performance is the social capital theory (SCT) including Fuller (2006) and Perrini (2006) works.

Beyond the theoretical dimension based on quotes and authors citation, others works sustain the debate of effect of size on sustainability practices and concepts integration (Tilley, 2000; Jenkins, 2006; Murillo & Lozano, 2006; Revell et al., 2010). In fact, the research on performance drivers is influenced by the size effect or from the perspective of financial and resources constraints comparing large to small companies (Simpson et al., 2004; Spence, 2007). Citations statistic also support the central question of the positive effect of sustainability on financial performance (Allouche & Laroche, 2006). This theme and its effect have been largely investigated with different discussions and conclusions (Ullmann, 1985; Waddock & Graves, 1997; McWilliams & Siegel, 1998; Melnyk et al., 2003; Orlitzky et al., 2003). The last research results show a trend based on the role of innovation in the sustainability strategies in SMEs (Bos-Brouwers, 2010). This field opens a large scope of new concepts namely creative and technological effects on SMEs Performance.

**Table 3.2 – Citation frequency 2004-2015 (n=63)**

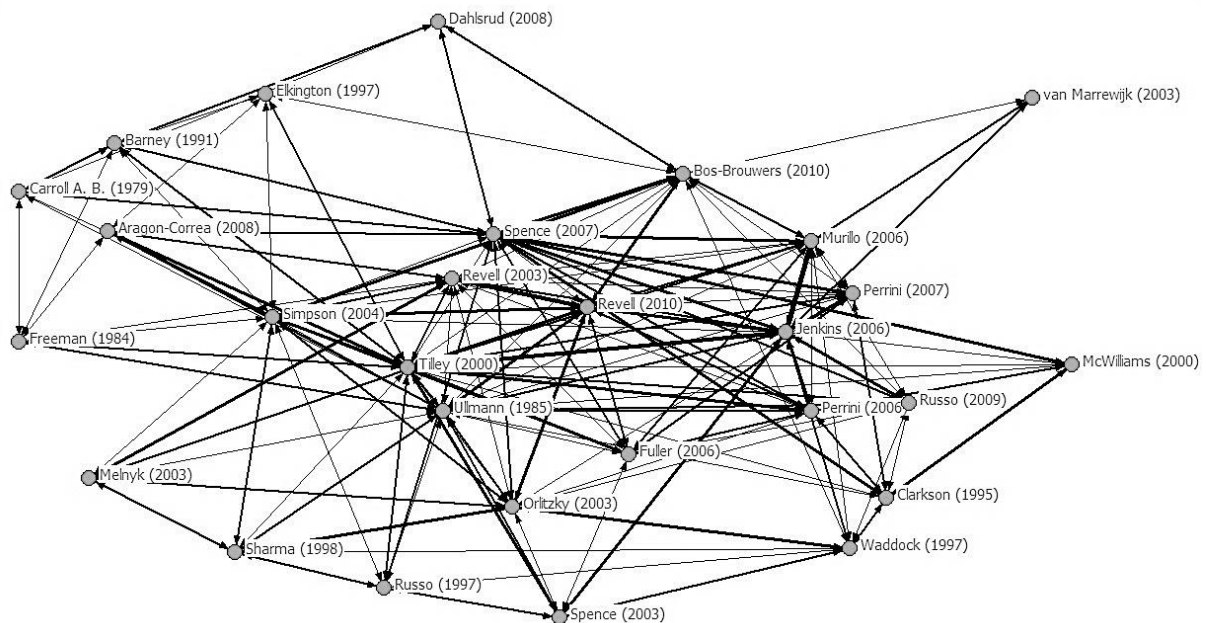
Rank	Author	Citation frequency	Article / Book
1	Jenkins (2006)	12	Jenkins, H. (2006). Small business champions for corporate social responsibility. <i>Journal of Business Ethics</i> , 67(3), 241-256.
2	Barney (1991)	9	Barney, J. (1991). Firm resources and sustained competitive advantage. <i>Journal of Management</i> , 17: 771–792.
3	Revell (2010)	9	Revell, A., Stokes, D., & Chen, H. (2010). Small businesses and the environment: turning over a new leaf?. <i>Business strategy and the environment</i> , 19(5), 273-288.
4	Aragon-Correa (2008)	8	Aragón-Correa, J. A., Hurtado-Torres, N., Sharma, S., & García-Morales, V. J. (2008). Environmental strategy and performance in small firms: A resource-based perspective. <i>Journal of environmental management</i> , 86(1), 88-103.
5	Murillo (2006)	8	Murillo, D., & Lozano, J. M. (2006). SMEs and CSR: An approach to CSR in their own words. <i>Journal of Business Ethics</i> , 67(3), 227-240.
6	Tilley (2000)	8	Tilley, F. (2000). Small firm environmental ethics: how deep do they go?. <i>Business Ethics: A European Review</i> , 9(1), 31-41.
7	Simpson (2004)	7	Simpson, M., Taylor, N., & Barker, K. (2004). Environmental responsibility in SMEs: does it deliver competitive advantage?. <i>Business strategy and the environment</i> , 13(3), 156-171.
8	Revell (2003)	7	Revell, A., & Rutherford, R. (2003). UK environmental policy and the small firm: broadening the focus. <i>Business Strategy and the Environment</i> , 12(1), 26.
9	Spence (2007)	7	Spence, L. J. (2007). CSR and small business in a European policy context: the five “C” s of CSR and small business research agenda 2007. <i>Business and society review</i> , 112(4), 533-552.
10	Bos-Brouwers (2010)	7	Bos-Brouwers, H. E. J. (2010). Corporate sustainability and innovation in SMEs: Evidence of themes and activities in practice. <i>Business Strategy and the Environment</i> , 19, (7), 417–435.
11	Freeman (1984)	6	Freeman, R. E. (1984). <i>Strategic management: A stakeholder approach</i> . Marshfield, MA: Pitman.
12	Waddock (1997)	6	Waddock S.A., & Graves S. B. (1997). The corporate social performance-financial performance link. <i>Strategic Management Journal</i> , 18, 303–319.
13	Russo (2009)	6	Russo, A., & Tencati, A. (2009). Formal vs. informal CSR strategies: Evidence from Italian micro, small, medium-sized, and large firms. <i>Journal of Business Ethics</i> , 85(2), 339-353.
14	Orlitzky (2003)	6	Orlitzky M., Schmidt F.L., & Rynes S.L. (2003). Corporate Social and Financial Performance: A Meta-analysis. <i>Organization Studies</i> , 24(3), 403–441.
15	Russo (1997)	6	Russo M. V., & Fouts P.A (1997). A resource-based perspective on corporate environmental performance and profitability. <i>Academy of Management Journal</i> , 40, 534–559.
16	Melnyk (2003)	6	Melnyk, S. A., Sroufe, R. P., & Calantone, R. (2003). Assessing the impact of environmental management systems on corporate and environmental performance. <i>Journal of Operations Management</i> , 21(3), 329-351.
17	Clarkson (1995)	5	Clarkson, M.B. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. <i>Academy of Management Review</i> , 20, 92–117.
18	Perrini (2006)	5	Perrini, F. (2006). SMEs and CSR theory: Evidence and implications from an Italian perspective. <i>Journal of business ethics</i> , 67(3), 305-316.
19	Perrini (2007)	5	Perrini, F., Russo, A., & Tencati, A. (2007). CSR strategies of SMEs and large firms. Evidence from Italy. <i>Journal of business ethics</i> , 74(3), 285-300.
20	Elkington (1997)	5	Elkington, J. (1997). <i>Cannibals with Forks: The Triple Bottom Line of 21st Century Business</i> . Capstone.
21	Carroll (1979)	5	Carroll, A. B. (1979). A three-dimensional conceptual model of corporate social performance. <i>Academy of Management Review</i> , 4, 497–506. <a href="http://dx.doi.org/10.5465/AMR.1979.4498296">http://dx.doi.org/10.5465/AMR.1979.4498296</a>
22	Spence (2003)	5	Spence, L. J., & Rutherford, R. (2003). Small business and empirical perspectives in business ethics: Editorial. <i>Journal of Business Ethics</i> , 47(1), 1-5.
23	Fuller (2006)	5	Fuller, T., & Tian, Y. (2006). Social and symbolic capital and responsible entrepreneurship: an empirical investigation of SME narratives. <i>Journal of business ethics</i> , 67(3), 287-304.
24	van Marrewijk (2003)	5	Van Marrewijk, M. (2003). Concepts and definitions of CSR and corporate sustainability: Between agency and communion. <i>Journal of business ethics</i> , 44(2-3), 95-105.

Rank	Author	Citation frequency	Article / Book
25	McWilliams (2000)	5	McWilliams, A. & Siegel, D. (2000). Corporate social responsibility and financial performance: correlation or misspecification? <i>Strategic Management Journal</i> , 21, 5. 603-609.
26	Sharma (1998)	5	Sharma, S. & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. <i>Strategic Management Journal</i> , 19, 729-753.
27	Dahlsrud (2008)	5	Dahlsrud, A. (2008). How corporate social responsibility is defined: an analysis of 37 definitions. <i>Corporate social responsibility and environmental management</i> , 15(1), 1-13.
28	Ullmann (1985)	5	Ullmann, A. A. (1985). Data in search of a theory: A critical examination of the relationships among social performance, social disclosure, and economic performance of US firms. <i>Academy of management review</i> , 10(3), 540-557.

### 4.3 Co-citations analysis

In order to stand-up theoretical map of “*corporate sustainability performance*” in SMEs, we proceed in figure 3.4 with a co-citation analysis. This technique allows mapping influences in works and dynamics between theories and concepts in a certain field. We use two analytic dimensions: the centrality and the proximity between co-cited works. Centrality represents the importance of works in the field, presumably the influence in the theoretical construction (Callon et al., 1993; Reis et al., 2013). Proximity shows close relations between works, which improve and consolidate in time the conceptual field either with complementary or contradictory contributions (Acedo et al., 2006).

**Figure 3.4 – Co-citation analysis and data mapping 2004-2015 (n=63)**





Centrality analysis of co-citations show that Spence (2007), Revell (2003, 2010), Tilley (2000) and Ulmann (1985) are central works in “*corporate sustainability performance*” in SMEs context. These works can be characterized as literature review or explorative research in CSR and environmental fields. Spence (2007) and Tilley (2000) search to understand SMEs relation with business ethics and social responsibility, focusing barriers and the agenda in the SME’s CSR field and public policy needs namely, to improve SME managers awareness. Revell’s (2003, 2010) works appears as pioneers’ works on environmental performance research in small business, exploring drivers, barriers and enhance to support public policy. Finally, Ulmann (1985) reflects on the relationships between social performance, social disclosure, and economic performance in the U.S.A. SME’s sustainability performance field is clearly influenced by works focusing on the specificities of small compared to a large company and the debate on the effects of CSP in CFP.

Figure 3.4 show three groups of centralities with different approach and influence. The network has a dispersed form that can be interpreted as an initial framework and undefined core theoretical base. In this network we may identify three kinds of influence:

- Explorative research on SMEs as sustainable organizations and governmental public action in this field (Ulmann, 1985; Tilley, 2000; Revell & Rutherford, 2003; Spence, 2007; Revell et al., 2010);
- Influences based on RBV, competitive advantage, stakeholders and CSR theories research (Carroll, 1979; Freeman, 1984; Barney, 1991; Elkington, 1997; Simpson et al., 2004; Aragon-Correa et al., 2008);
- SME’s CSR pioneer’s research (Jenkins, 2006; Murillo, 2006 & Lozano; Perrini, 2006; Perrini et al., 2007; Russo & Tencati, 2009).

Explorative studies focused on SMEs’ specificities, drivers and barriers (Scagnelli et al., 2013; Tsalis et al., 2013). This angle of research tries to understand how SMEs can design and implement performance systems taking the traditional academic theories of corporate sustainability field, namely linked to CSR (Spence, 2007) or environmental dimensions (Revell & Rutherford, 2003; Revell et al., 2010). Main management theories contribute to corporate sustainability in SMEs angle. In this sense, we can find works as Barney (1991) and Aragon- Correa et al. (2008) supporting works based on RBV theory, complemented by Simpson et al. (2004) and their work on competitive advantage. Stakeholders theory lens (Freeman, 1984) even in outside position appears as supportive of researches in sustainability performance in SMEs. Elkington (1997) and Carroll (1979) are in the networks supporting the

integration of social responsibility and environment dimensions in corporate performance systems. In parallel, the influential networks show the centrality of SME's CSR pioneer's research. Jenkins (2006), Murillo & Lozano (2006) and Perrini (2006), focus an internal dimension of SME awareness on CSR definitions and pioneer CSR initiative implementation. Perrini et al. (2007) and Russo et al. (2009) focused on CSR strategies. In overall the works on SMEs sustainability performance are based on "traditional" management theories works and pioneer's explorative works in firm context focusing sustainability integration.

Observing the relationship between works translated by large ties, we can interpret the scope and direction of research. The first observation is that groups of researchers have strong ties, which may be explained by the youth of the sustainable performance field. Academics still anchor their works in a small universe of concepts, empiric cases or theories exposed by other authors. Secondly, central works are linked to corporate sustainability articles on a peripheral place in the network. Works focusing on SMEs context are coupled with consolidated corporate sustainability works. For example, Simpson et al. (2004) is coupled with Aragon-Corrêa et al. (2008) and Sharma & Vredenburg (1998), which are important works on environmental RBV lens. These associations reveal that works are strongly linked to traditional corporate sustainability literature, which is dominated by a large-firm point of view. These two observations lead us to consider that the "*corporate sustainability performance*" in SMEs is a field under construction based on a limited although consolidated group of works in the corporate sustainability scope. We can also conclude that the authors anchor their research on pioneer results in SMEs studies, matching consolidate theoretical works with newest conceptual works.

#### **4.4 Lexical analysis**

The lexical analysis aims to enhance the interpretative force of contents through a statistical and quantitative process that result in a precise screen of the research field. The lexical analysis represents a rational and efficient process to capture the discourse of certain field studies aggregating a large quantity of information and knowledge (Mejri & De Wolf, 2012). Our focus was to retrieve all research works on "*corporate sustainability performance*" in SMEs context between 1987 and 2015. The works search was based on ISI Web of Science database and it occurs in a two-step process. A search of all works associated to "*Corporate*

*sustainability performance*” and “*Corporate sustainability measurement*” between 1987-2015, which result 1,271 papers. Thus, we proceed to a second filter, by a one to one analysis work, retrieving works that focus SMEs. At the end of this process, our research extracted 63 works abstracts from 2004 to 2015 including 13,690 words and 1.841 different lexical forms. Our interest on abstracts is justified because it represents authors writing and thoughts transmitted to readers resuming the main topics and conclusions (Albertini, 2013). The abstracts analysis allows a complete overview of large range of studies and its conclusions on its own authors lens.

In order to observe the evolution of sustainability research trends, we proceed to a division into three identical periods in table 3.3. In the first period (2004-2008), the results show that the first works on sustainable performance of SMEs focus on three dimensions of words, which can be classified as Management (Corporate\_45; Management systems\_22; SME\_19; Supply Chain\_14 & Execution\_14); Research methodologies (Conceptualizing\_19, Modeling\_19 & Determination\_16) and sustainability and social responsibility (Sustainability\_22 & CSR\_15). Thus, the initial work indicates the awakening of the field with words associated with traditional management themes and particular attention to the research methods. The second period (2009- 2012), shows a greater importance of the words associated with sustainability’s thematic (Sustainability, Environment & Social), firm management (Corporate\_96, SME\_76, Management\_38, Performance\_29), research methodologies (Conceptualizing\_58; Determination\_52; Paper\_30; Modelling\_29). Thus, the second period can be characterized as the central consolidation of the sustainability themes applied to the model of small and medium businesses and management systems. In this period, it is important to emphasize that performance words take a prominent place, targeting the main theme with words as performance\_29, impact\_23 or improvement\_22. The last period (2012-2015) representing 54.56% of the occurrences, maintains and reinforces the internal trend focusing SME management (Corporate\_187; SME\_123; Performance\_65; Management\_60; Execution 81), sustainability’s thematic (Environment\_102 & Sustainability\_102) and research focus (Conceptualizing\_107, Statistics\_93, Determination\_88, Theory\_51).

**Table 3.3 – Word frequency (2004-2015)**

<b>2004-2008 (n=6)</b>	<b>Freq.</b>	<b>2009-2012 (n=22)</b>	<b>Freq.</b>	<b>2013-2015 (n=35)</b>	<b>Freq.</b>
Corporate	45	Corporate	96	Corporate	187
Management systems	22	Sustainability	81	SME	123
Sustainability	22	SME	76	Conceptualizing	107
Conceptualizing	19	Environment	62	Environment	102
SME	19	Conceptualizing	58	Sustainability	102
Modelling	19	Determination	52	Statistics	93
Determination	16	Management	38	Determination	88
CSR/ Corporate Social Responsibility	15	Social	30	Execution	81
Supply Chain	14	Paper	30	Performance	65
Management	14	Modelling	29	Management	60
Execution	14	Performance	29	Theory	51
Environment	13	Organizational	27	CSR	50
Intellectual capital	12	Statistics	24	Impact	46
Social	12	Impact	23	Modelling	45
Production	12	Implementation	23	Implementation	40
Emphasis	12	Execution	23	Finance	39
Report	12	Management Systems	22	Orientation	39
Improvement	12	Improvement	22	Social	38
Other geography	11	Community	20	Development	38
Scheme	11	Study	19	Paper	37
Leadership vision	11	CSR	19		
Supply	11				
Responsibility	11				
Organizational	11				

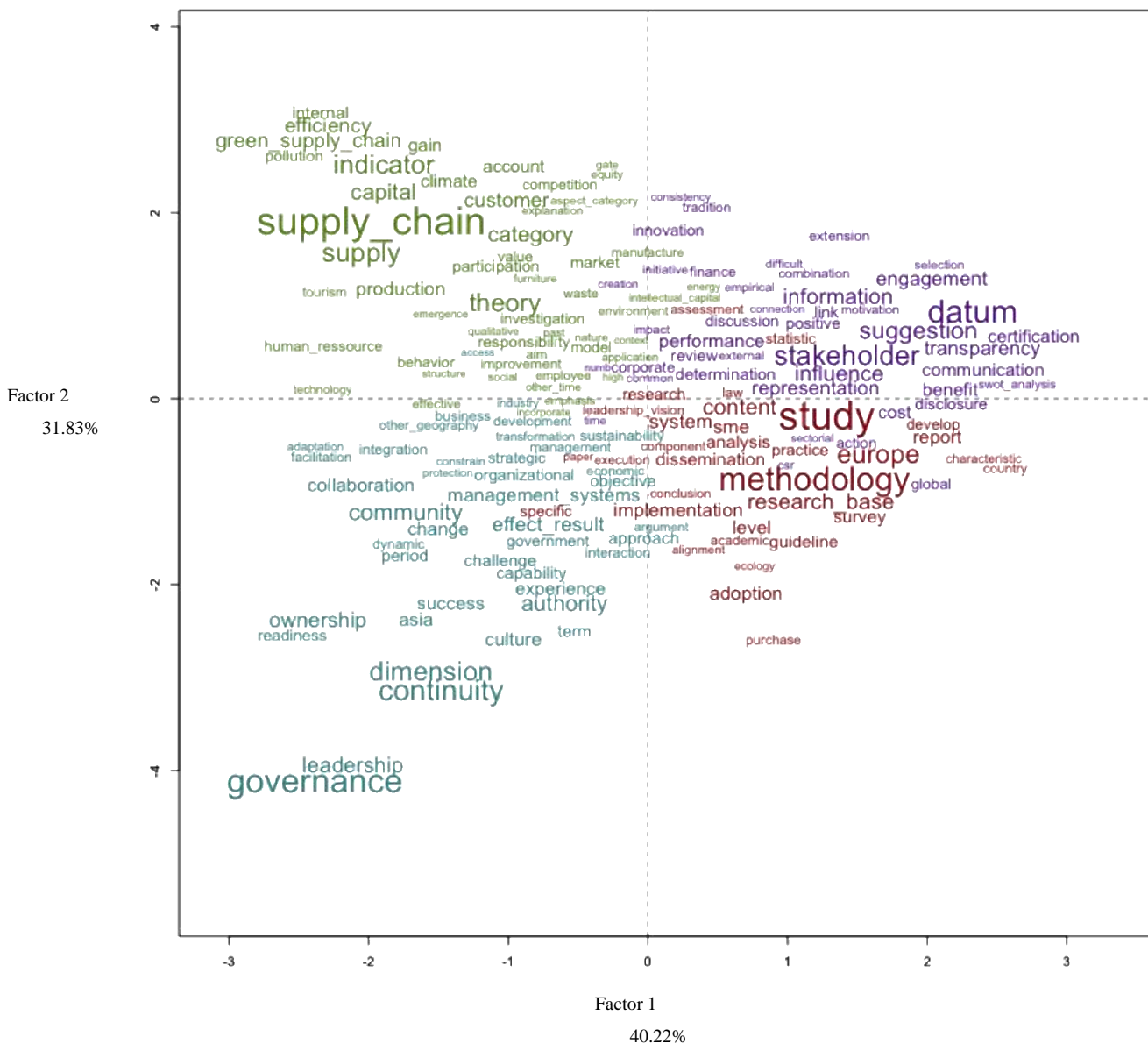
Multidimensional analysis allows to give words relation, grouping by proximities or extracting antagonisms between works (Bolden & Moscarola, 2000). Thus, we proceed with a Hierarchical Classification Descending and a Factorial Analysis of Correspondence for the lexicon from 2004 to 2015.

Factorial Analysis of Correspondence allows us to verify correlations between groups, as to visualize the relationships of attraction and distance between the elements of the representational field about a given object. Factor map in which the strength of a relationship is proportional to the distance between words coordinates, allow us to visualize the lexical environment, themes and trends in the research field (Gavard-Perret & Moscarola, 1996;

Bolden & Moscarola, 2000). Also, the centrality of words shows a common and influent use of lexical forms by authors in the field, which can give us information about core consensus in the field (Gavard-Perret, & Moscarola, 1996). Figure 3.5 represents the factorial plan of words between 2004 e 2015. In this period, we found two factors accounting for 72,05% of the variance. We also observed the relative contribution of the first factor (40,22%), however close to the second factor (31,83%) confirming a certain degree of concentration in research dimensions. The two factors have a fairly explanatory meaning. Factor 1 translates reflections around sustainable performance management instruments, opposing words associated with strategic and operational management (i.e. sustainability in practice) and words associated with the study, reflection on results and communication of performance. Factor 2 corresponds to the internal and external operationalization of sustainable performance. Thus, this axis opposes words associated with the reflection and study of the organizational adaptation to the concept of sustainability. These results include a reflection on management practices, strategic leadership and management change. In opposition, we find an external dimension of company management and operational changes, influenced by institutional pressures and engagement with the outside world.

Taking words centrality analysis technique as presented by Gavard-Perret, & Moscarola (1996), we observed a set of words that show consensus within authors. Thus, we find three groups of central words that demonstrate some common interest among works under analysis. The first group may be called “*research themes*” with words as research, determination, content, review or analysis. This occurrence is common to other lexical research highlighting the nature of works (Hernandez & Fiore, 2017). The second group focuses on “*business management field*” with corporate, SME, management, leadership vision, system, sustainability. Finally, the third group focuses on the subject of “*operational changes*” induced by the words as development, transformation, incorporate, improvement or application. These observations translate the multiple themes addressed translated by the lexicon used. The first is the scientific focus in the use of techniques and methods to extract new knowledge. This approach can be considered usual in academic works for grounding and legitimizing future results. Second, papers analysed focus on the main theme of sustainability management in SMEs, focusing on the role of leadership and strategic vision. Finally, we find the theme associated to change and the transformation management challenges at the firm level when facing new sustainable requirements.

Figure 3.5 – Word Factorial Analysis of Correspondence 2004-2015 (n=63)



The main purpose of Hierarchical Classification Descending Analysis is to group objects into homogeneous classes. Based on statistical frequency calculations, it is determined that those within the same class are very similar against other classes. From our abstract analysis four significant and homogeneous classes emerged:

- Class 1: “*Research focus*”- representing 21,16% forms, this class include mainly research techniques and methods. This group of lexical forms are more centred in the factorial plan, so more common between works;
- Class 2: “*Value chain control*”- with 31,12% of forms, this class is the most representative of vocabulary used in abstracts. This class focus on an operational point of view for the control of the value chain.

- Class 3: “*Governance & leadership*”- with 21,16% of lexical forms, this class represents management challenges in a strategic and organizational angle.
- Class 4: “*Stakeholder and Institutional pressure*” - representing 26,56% of forms, the last class scope is the management of external interactions are pressures or cooperation.

By grouping lexical forms, classes represent the different scope of interest in the SME’s “*corporate sustainability performance*” field. For each class, our analysis focuses on the tendencies considering an analysis the most representatives’ lexical forms and articles in the period of 2004 -2015. Using a chi-square (Chi2) test of association, the hierarchical classification descending analysis provides a set of words and variables with significant statistical association with the class. Only the results from IRAMUTEQ that reached statistical significance are presented, i.e. when Chi2 values were higher than 3.84 ( $p \leq .05$ ). Thus, the results of lexical forms and abstracts are presented in the decreasing order of chi2 of the most significant to the smallest.

### **Class 1: Research focus**

**Table 3.4 – Lexical forms associated to the class 1 by decreased Chi2 (2004-2015)**

<b>Number of words</b>	<b>Main words</b>	<b>Other words with sense</b>
39	Study Methodology Europe Content Research base	system, SME, implementation, adoption, level, report, survey, analysis, dissemination, guideline, operation, research, practice, specific, develop, statistic, determination, law, assessment, academic.

Class 1 is characterized by research techniques and methods vocabulary. A large number of words of this group cannot be interpreted outside of science or methodological scope. Words with meaning as *study, methodology, content, research base, survey, analysis* or *academic* are included in the justification of the scientific demarche, including not only methodological legitimation and results but also the construction of a core theoretical framework. It is also important to note the presence of the word *Europe*, sensing the dominance of studies in European countries and their scientific influence on formatting the field. In the second range of analysis we observed a lexical scope more concentrated on operational contents with words as *system, implementation, adoption, operation, practice, guideline* or *assessment* seem to show focus on management systems development and

sustainable frameworks, including reporting applied to SME. The most representative works of this class include Parker et al. (2012) who developed and applied a framework for reporting taking SME websites. Scagnelli et al. (2013) investigate the activity of SMEs' reporting and variables influencing the choice of the guidelines for sustainable disclosure. This work main conclusion is that SMEs include yet a lack of disclosure and reporting compared to larger companies. Maas & Reniers (2014) proposed a framework based on ISO 26000 to apply on the SME context. Using linguistic variables Doukas et al. (2014) aims to present a methodological framework for assessing SME. Paraschiv et al. (2010) paper present the main drivers of corporate sustainability linked namely with organizational culture and organizational change in an operational point of view. In this class, the researchers tend to reflect on management systems implementation and proposed frameworks to put sustainability in practice in SMEs context.

**Table 3.5 – Main abstracts associated to the class 1 by decreased Chi2 (2004-2015)**

<b>Abstract Reference</b>	<b>Authors</b>	<b>Article / Book</b>
35	Parker, Xutshi, Fraunholz & Crofts (2012)	Parker, Craig M., Zutshi, Ambika, Fraunholz, Bardo and Crofts, Merete R. 2011, A method for examining corporate social responsibility descriptions on SME websites, in <i>PACIS 2011 : Proceedings of the 15th Pacific Asia Conference on Information Systems, University of Queensland, Brisbane, Qld.</i> , pp. 1-13.
37	Scagnelli, Corazza & Cisi (2013)	Scagnelli, S. D., Corazza, L., & Cisi, M. (2013). How SMEs disclose their sustainability performance. Which variables influence the choice of reporting guidelines. <i>Studies in Managerial and Financial Accounting</i> , 26, 77-114.
23	Maas & Reniers (2014)	Maas, S., & Reniers, G. (2014). Development of a CSR model for practice: connecting five inherent areas of sustainable business. <i>Journal of Cleaner Production</i> , 64, 104-114.
22	Doukas, Tsiouisi, Marinakis & Psarras (2014)	Doukas, H., Tsiouisi, A., Marinakis, V., & Psarras, J. (2014). Linguistic multi-criteria decision making for energy and environmental corporate policy. <i>Information Sciences</i> , 258, 328-338.
44	Paraschiv, Nemoianu, Langa & Voicu-Dorobantu (2012)	Paraschiv, D. M., Nemoianu, E.L., Langa C. A. & Voicu-Dorobantu, R. (2012). Measuring Eco-Innovation and Corporate Sustainability Performance: Examples from Romania. In <i>Proceedings of the European Conference on Innovation &amp; Entrepreneurship (2)</i> , p.539.



## Class 2: Sustainable Value Chain Control

Table 3.6 – Lexical forms associated to the class 2 by decreased Chi2 (2004-2015)

Number of words	Main words	Other words with sense
37	Supply chain Supply Indicator Theory Capital Category	efficiency, green supply chain, customer, production, climate, gain, account, internal, participation, market, responsibility, pollution, investigation, model, value, behaviour, human resource, competition, improvement

The second class is characterized by a focus on firm sustainable value chain control themes. In this group we find lexical forms which place emphasis on the interpretation of the value chain as *supply chain*, *supply*, *green supply chain*, *customer*, *production*, *market*. In another hand, this class also focuses on control performance with interpretative words as *indicator*, *capital*, *category*, *efficiency*, *gain*, *account*, *internal*, *participation*, *responsibility*, *investigation*, *model*, *value*, *competition* or *improvement*. Finally, in smaller but meaningful amplitude, we find in this aggregate a component of the environmental dimension translate by words as *green supply chain*, *climate* and *pollution*. These lexical forms reflect value chain research from the supply organization to the customer. Sustainability and performance are analysed in a longitudinal perspective following the product life cycle and processes control systems (Lu et al., 2007; Charmondusit et al., 2014). An emphasis is done to the environmental dimension namely to two global aspect *climate* and *pollution*. These observations are in accordance with a more concentrate lens on environmental performance in line with ecological modernization theory (Moll, 2002; Albertini, 2013). This theory highlights the ecological and environmental processes of changes in practices and institutions of modern society spelt into the academic literature in the eighties and nineties (Moll, 2002). Thus, this environmental perspective induced new point of views to corporate research. Also, SMEs performance is focused in supply chain lens since small enterprises appear as more dependent of large companies to access to market and less able to manage risks by their own means (Lu et al., 2007). SMEs are considered as influenced by higher requirements namely coming from public institutions and bigger companies that have more resources to interpret and implement sustainable challenges (Seuring et al., 2008).

The most representative works of this class include Charmondusit et al. (2014), which develops an aggregate of eco-efficiency indicators for quantitative measurement of the wooden toy industry, including the supply chain. These works represent the different angle of

this class, including performance control in an environmental lens applied in toy wood supply chain. Also, Lu et al. (2007) focused specifically supply chain defining a method to evaluate the effectiveness of projects that support the green supply chain. This work concludes that growing environmental issues increase changes and adaptation in organizational structures in the supply chain. Seuring et al. (2008) abstract appear as an introduction to a special issue on “Sustainability and Supply Chain Management” concluding about the SMEs importance to the supply chains in collaboration with larger organizations. The intrinsic dialogue between performance and global aspects of the environment characterizes also this class. Thus, Boasson et al. (2013) establish the connection between corporate sustainability initiatives for climate change on stock returns and firm value.

In the same way, Savino & Batbaatar (2015) focus integrated management systems and potential improvement in SME’s operational performance. These authors link environment global aspects to corporate operations management. Tee et al. (2012) work on focus *behaviour & human resource*. These authors study learning organizations to develop organizational sustainability. Focusing knowledge management, human resources management practices and innovation as element for increasing organization’s capabilities and competitiveness.

**Table 3.7 – Main abstracts associated to the class 2 by decreased Chi2 (2004-2015)**

<b>Abstract Reference</b>	<b>Authors</b>	<b>Article / Book</b>
20	Charmondusit, Phatarachaisakul & Prasertpong (2014)	Charmondusit, K., Phatarachaisakul, S., & Prasertpong, P. (2014). The quantitative eco-efficiency measurement for small and medium enterprise: a case study of wooden toy industry. <i>Clean Technologies and Environmental Policy</i> , 16(5), 935-945.
65	Lu, Wu, & Kuo (2007)	Lu, L. Y. Y.; Wu, C. H.; Kuo, T.-C. (2007). Environmental principles applicable to green supplier evaluation by using multi-objective decision analysis. <i>International Journal of Production Research</i> , 45 (18-19), 4317-4331.
63	Seuring, Sarkis, Mueller & Rao, (2008)	Seuring, S., Sarkis, J., Mueller, M. & Rao, P. (2008). Sustainability and supply chain management - An introduction to the special issue. <i>Journal of Cleaner Production</i> , 16, (15), 1545–1551.
33	Boasson V., Boasson E. & Mitchell (2013)	Boasson, V., Boasson, E. & Mitchell, J. (2013). Corporate Sustainability and Stock Returns. <i>In proceedings 21th IBIMA Conference</i> .
46	Tee, Oon, Kuek & Chua (2012)	Tee, C., Oon, K., Kuek, T., & Chua, B. (2012). Investigating the Relationship among Knowledge Management, Human Resources Management Practises and Innovation: A Conceptual Study of Malaysia SMEs. <i>In Knowledge Management International Conference</i> (Vol. 2012, pp. 4-6).
5	Savino & Batbaatar (2015)	Savino, M. M., & Batbaatar, E. (2015). Investigating the resources for Integrated Management Systems within resource-based and contingency perspective in manufacturing firms. <i>Journal of Cleaner Production</i> , 104, 392-402.

### Class 3: Governance & leadership of change

**Table 3.8 – Lexical forms associated to the class 3 by decreased Chi2 (2004-2015)**

Number of words	Main words	Others words with sense
40	Governance Continuity Dimension Community Authority Leadership	ownership, effect result, management systems, collaboration, Asia, success, culture, change, experience, approach, term, period, capability, challenge, objective, organizational, readiness, government, strategic, adoption, sustainability, integration, interaction, business, dynamic, management, development, facilitation, economic.

Representing 21,16% of lexical forms classified, class three is the group with the larger number of lexical forms with significant chi2. The themes involve the governance and leadership problematic facing sustainability challenges. Management leadership is the centre of this group with words as *governance, authority, leadership, ownership, management systems or Management*. The *change* semantic is strongly present, highlighting the organizational effort to adapt to new forms of decision making, with words as *effect, result, change, organizational, adoption, integration or development*. Collaboration appears as indispensable in the companies' transformation facing the path of sustainability. Thus, words like *collaboration, culture, experience, approach, interaction, dynamic, business or facilitation* support the discourse of academics around the change of culture, leadership and dynamics that supports sustainable business management systems. Then, sustainability appears associated with objectives and competitive success on a pioneer strategic angle. Lexical forms as *continuity, dimension, term, period, challenge, objective, readiness, strategic, sustainability or economic* convey us to the concept of strategic integration for SMEs' competitiveness. This class internalize the academic researches on the sustainability implications in the SMEs management systems, namely on the specificity of owner leadership. It also reflects change processes in SMEs, especially in a collaborative angle. Ghosh et al. (2014) work appears as characterizing this class. Based on a case study of SMEs, authors focus the challenges and relations between organizational and sustainability project highlighting drivers of changes. Zang et al. (2014) raise also the changing angle related with CSR implementation in Chinese firms. These authors, taking in account the significance and evolution of sustainability concept, argues that a full implementation needs the manager's ethical awareness and change of institutional framework. Krechovská & Procházková (2014) observe sustainability in a governance point of view. These authors state that sustainability must integrate strategic management and corporate planning. However, change and

integration will take a great effort to align the new governance requirements with external pressure in an ethical, social and environmental term.

Tencati et al. (2008) go further by focusing on the difficulties to change to SMEs in peripheral countries. These researchers emphasize the need for a collaborative and evolving approach to integrating new sustainable requirements in SMEs in underdeveloped regions. Hatak et al. (2015) propose a framework to SMEs implementing sustainable organisational change. As previously, authors are focused on the impact, challenges and methods of change in organizational governance. Recognizing the difficulties for companies to integrate sustainable actions and performance in traditional management practices. The focus on *leadership, ownership, collaboration* or *transformation* translates the innovation needed in corporate governance. This class characterized the great debate around the *continuity* versus *change*, integrating more than financial but also, ethics, social and environmental inputs into corporate's strategic vision.

**Table 3.9 – Main abstracts associated to the class 3 by decreased Chi2 (2004-2015)**

Abstract Reference	Authors	Article / Book
21	Ghosh, Buckler, Skibniewski, Negahban & Kwak (2014).	Ghosh, S., Buckler, L., Skibniewski, M. J., Negahban, S., & Kwak, Y. H. (2014). Organizational governance to integrate sustainability projects: a case study. <i>Technological and Economic Development of Economy</i> , 20(1), 1-24.
16	Zhang, D., Morse, S., Kambhampati, U., & Li, (2014).	Zhang, D., Morse, S., Kambhampati, U., & Li, B. (2014). Evolving corporate social responsibility in China. <i>Sustainability</i> , 6(11), 7646-7665.
27	Krechovská & Procházková (2014)	Krechovská, M., & Procházková, P. T. (2014). Sustainability and its integration into corporate governance focusing on corporate performance management and reporting. <i>Procedia Engineering</i> , 69, 1144-1151.
61	Tencati, Russo & Quaglia (2008)	Tencati, A. Russo, A. & Quaglia, V. (2008). How does CSR affect developing countries? The case of CSR in Viet Nam. <i>In Proceedings of the Nineteenth Annual Meeting of the International Association for Business and Society-ISSN : 9780976326441</i>
11	Hatak, I., Floh, A., & Zauner, A. (2015)	Hatak, I., Floh, A., & Zauner, A. (2015). Working on a dream: sustainable organisational change in SMEs using the example of the Austrian wine industry. <i>Review of managerial science</i> , 9(2), 285-315

#### **Class 4: Stakeholder and Institutional pressure**

**Table 3.10 – Lexical forms associated to the class 4 by decreased Chi2 (2004-2015)**

Number of words	Main words	Other words with sense
47	datum stakeholder suggestion information influence	transparency, engagement, representation, performance, benefit, communication, certification, cost, determination, review, disclosure, positive, link, discussion, innovation, action, corporate, global, direct, finance, extension, alternative, statistic, orientation, case study, awareness, tradition.

Class four is composed mainly by words centred on response to stakeholders and institutional pressures as *Stakeholders, suggestion, influence, representation, certification, determination, orientation, tradition*. Thus, this group translates contributions of the neo-institutional theory and institutional pressures lens, such as coercive, normative and mimetic (Dimaggio & Powell, 1983; Hernandez & Fiore, 2017). These words are also representative of works focused on the theoretical perspective of stakeholders (Freeman, 1984; Clarkson, 1995). Intrinsically linked to this two theory-base view, transparency and dialogue appear as a basic action to answer to institutional pressure. In this context, the needs of stakeholders appear as a requirement to positive success through *information, engagement, communication, disclosure or awareness*. In class one we found the report as an instrument of performance dissemination, meanwhile in class four we discuss the concept of transparency. We focus the root and nature of involvement and communication as a concept or technique and not as a simple instrument. In this group the logic is centred to conceptually identifying which actions can positively satisfy the institutional pressures and lead to the best performance of corporate. This linkage is represented by *performance, benefit, cost, positive, link, action, corporate, global, innovation or finance*. As represented in figure 3.5, this class near to class 1, contain research methodological lexical forms as *datum, discussion, determination, review, statistic, or case study*. Performance is a central concept in this class and works analysis confirm it in two ways: innovation and financial lens. Sáez-Martínez *et al.* (2014) conclude that environmental awareness and stakeholder pressure lead young SMEs to have an environmental orientation in their innovative activities. Innovation for these authors represents a driver that conduct to better performance to SMEs. This idea is enforced by Bos-Brouwers (2010) who conclude that many sustainable strategies conduct directly to improve technological processes and downgrade costs of production. This author also links innovation to stakeholder cooperation on a market-oriented view and an incremental process to better the firm's performances. The financial angle of performance is also extremely relevant in SMEs sustainability performance research field. Wang *et al.* (2015) performed a large study about the environmental labelling and its influence on financial results. These authors states, for small and unlisted firms, environmental labelling increases sales and have a clear positive effect. Cheng *et al.* (2014) also confirmed that firms with better CSR performance have lower capital constraints. These authors hypothesize on the positive effect of stakeholder engagement and transparency. However, Linder *et al.* (2014) performing a study on the environmental orientation effect on profit margin, have an inverse conclusion describing a negative effect. This class is characterized by works focusing the linkage between

performance, stakeholder and institutional pressure considering the action of firms to be highly competitive, namely through innovation or transparency processes.

**Table 3.12 – Main abstracts associated to the class 4 by decreased Chi2 (2004-2015)**

<b>Abstract Reference</b>	<b>Authors</b>	<b>Article / Book</b>
19	Sáez-Martínez, Díaz-García & González-Moreno (2014).	Sáez-Martínez, F. J., Díaz-García, C., & González-Moreno, A. (2014). Environmental orientation as a determinant of innovation performance in young SMEs. <i>International Journal of Environmental Research</i> , 8(3), 635-642.
6	Wang, L., Cui, Z., & Liang, X. (2015).	Wang, L., Cui, Z., & Liang, X. (2015). Does it pay to be green? Financial benefits of environmental labelling among Chinese firms, 2000–2005. <i>Management and Organization Review</i> , 11(03), 493-519.
53	Bos-Brouwers (2010)	Bos-Brouwers, H. E. J. (2010). Corporate sustainability and innovation in SMEs: Evidence of themes and activities in practice. <i>Business Strategy and the Environment</i> , 19, (7), 417–435.
18	Linder, Björkdahl & Ljungberg (2014)	Linder, M., Björkdahl, J., & Ljungberg, D. (2014). Environmental Orientation and Economic Performance: a Quasi-experimental Study of Small Swedish Firms. <i>Business Strategy and the Environment</i> , 23(5), 333-348.
29	Cheng, Ioannou, & Serafeim (2014)	Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. <i>Strategic Management Journal</i> , 35(1), 1-23.

#### 4.5 Lexical-thematic analysis

Thematic analysis is an intellectual construction elaborated by the researcher based on repetitive textual elements. This categorization must be stable and adequate based on contextual and theoretical knowledge (Fallery & Rodhain, 2007). The researcher must link adequately the theme and the rheme. The theme represents elements related to the previous text or environment characteristics in which the speech occurs. The rheme expresses additional information in relation to what has already written (Hutchins, 1977). In other words, linking the topic and what is being said about a topic. To improve the quality and stability, we performed a double categorization process. Inspired in Soulez & Guillot-Soulez (2006) work methodology, each of the authors carried out their own categorization of words by themes. Following, the two lists were compared and a final list adopted. 157 out of 235 lexical forms have been selected, taking lexical forms with a frequency up to 10 (Soulez & Guillot-Soulez, 2006). At the end, we had categorized 15 thematic groups. Simple word counting may limit content understanding. Thus, we opted by this analysis that allows the aggregation of a high number of words. Table 3.13 lists an adequate lens in 63 works on SMEs’ “Corporate sustainability performance” and a large number of lexical forms (Fallery & Rodhain, 2007).

Research themes are highly represented with an average weight of 34,51%. In line with previous finding and class 1, this thematic is based on the researchers care on methods

and quality justification of their works. We divided this group into four different themes (*Results, activity, design and context*). This division shows that the design of academics is most important and growing against lexical forms derived from the activity of research or results scopes. Research results found their academic legitimation in the consistency of methodologies design.

The second group of themes, representing 35,22% of lexical forms, focuses Organizational Management topics, composed by *Corporate, Operational management, Management, Organizational change* and *Audit & control* themes. *Corporate* themes have a stable weight through the time representing an average of 9,46%, in line with the main scope of studies. *Operational management* theme has been descending since 2004, going from 11,63% to 8,63%, demonstrating a lower interest in the observation or construction of sustainable operational models in SME's context. *Organizational change* in last quarter represents 6,74% with a growing evolution associated to the highest interest on change mechanisms in line with findings of class 3 previously analysed. *Management* and *audit & control* show a slight decrease in their relative weight. These two themes add vocabulary of control and compliance with management tenets, demonstrating the stress between traditional acts and change.

A third group concentrate an average of 16,48% of lexical forms in *sustainability* and *performance* themes. Sustainability is the second-ranked theme representing an average of 12,55% behind academic design theme. Sustainability, as a core theme of our investigation, presents a decreasing evolution in the author's vocabulary. We can argue this diminution match with authors' lower need to define or frame sustainability in SMEs in their works, due to a large knowledge of sustainability definitions.

The fourth group that stands out is constituted by themes of *stakeholder management*, representing on average 7,07% of the lexical forms in line with class 4. *Stakeholders* and *disclosure* themes compose this group, representing an average of 4,22% and 2,85% respectively. We can observe two different tendencies for each theme: the decreasing weight of words related to stakeholders and a rising of disclosure scope. Stakeholders direct reference is a logical tendency in accordance with greater recognition of the role of stakeholders and of their legitimacy influence. Thus, the authors introduce a reflection of direct actions more often without reference to the direct subject. Taking the perspective of the performance research, studies of the disclosure are an easier manner to obtain data. We observed in the last quarter a greater analysis of performance through the information provided by SMEs. The use of lexical forms associated with the information or transparency in an external lens represents

the growing interest in performance. Then, this research approach privileges an output perspective more than an input and internal angle more difficult to retrieve.

The last group focused on *market-oriented* and *competitiveness* themes perspective is the smaller in weight with an average of 6,72%. However, these two themes have a significant growth in last quarter, focusing the academic reflection between the resources use and competitiveness of the sustainable strategies in SMEs. These themes reflect namely CFP/CSP linkage, sustainable resources management or the role of human capital in corporate sustainability framed with class 2 previously analysed.

**Table 3.12 – Themes weight evolution**

Themes	2004-2008 (n=6)		2009-2012 (n= 22)		2013-2015 (n=35)	
	Frequency	%	Frequency	%	Frequency	%
Academic /Results	42	5,43%	114	6,09%	236	6,57%
Academic/Activity	61	7,88%	186	9,94%	307	8,55%
Academic/design	91	11,76%	251	13,41%	580	16,15%
Sustainability	88	11,37%	262	14,00%	441	12,28%
Corporate	71	9,17%	184	9,83%	337	9,38%
Operational Management	90	11,63%	167	8,92%	293	8,16%
Management	57	7,36%	141	7,53%	248	6,90%
Organizational change	42	5,43%	126	6,73%	242	6,74%
Context	57	7,36%	99	5,29%	184	5,12%
Stakeholders	35	4,52%	84	4,49%	131	3,65%
Market	41	5,30%	58	3,10%	124	3,45%
Performance	24	3,10%	79	4,22%	161	4,48%
Resources	22	2,84%	38	2,03%	124	3,45%
Audit & control	22	2,84%	46	2,46%	92	2,56%
Disclosure	31	4,01%	37	1,98%	92	2,56%
<b>Total</b>	<b>774</b>	<b>100%</b>	<b>1872</b>	<b>100%</b>	<b>3592</b>	<b>100%</b>



## 5. DISCUSSION AND CONCLUSIONS

SMEs have an important role in economic, environmental and social domain in our societies. Some form of exclusion or subjugation of these small companies from a sustainable development perspective are questionable. The light put on the published studies on sustainable performance, allowed us to understand the intrinsic and specific characteristics of SMEs. This work provides a comprehensive overview and evolution of research related to SMEs' sustainable performance. Firstly, this field awaken research interest very recently with the first publication in 2004. However, the field has a growing movement in last year with 46 out of 63 works published since 2012. The specific characteristics of SMEs as size, lack of resources or capabilities seem to conduct academics to under evaluate the interest of SMEs in sustainable management and performance systems (Simpson et al., 2004).

From the citation analysis, the 63 works are based on "traditional" management theories showing an articulation with the RBV theory (Barney, 1991; Sharma, 1998; Aragon-Correa et al., 2008), the stakeholders theory (Freeman, 1984; Clarkson, 1995) Triple Bottom Line (Elkington, 1997) and the CSR theory (Carroll, 1979; Dahslrud, 2008; Russo, 2009). Social capital theory (SCT) appears as a distinctive theoretical linkage compared to large companies' literature, but still not relevant in a quantitative lens (Fuller & Tian, 2006; Perrini, 2006).

Co-citation results show three main influences namely, explorative research in sustainable SMEs works, traditional management theories studies and SMEs' CSR research. "*Corporate sustainability performance*" in SMEs is still a young field, where author's anchor their research on pioneer results on SMEs studies associated to management oldest theories, as for example RBV and stakeholder theories.

The bibliometric analysis focuses the external influence of publication but lexical analysis update deeper the author's abstracts content. This technique was applied in an evolutionary perspective through time in our work. Factorial Analysis of Correspondence shows that mainstream researches reflect firstly the performance management instruments, opposing strategic and operational management (i.e. sustainability in practice) and the study, reflection on results and performance communication. A second debate exists between internal and external influences on the operationalization of sustainable performance. With the Hierarchical Classification Descending analysis we found four main interests in "*Corporate sustainability performance*" research: Research focus, Value chain control, Governance and leadership and Stakeholder and institutional pressure. This categorization of

content has been confirmed with the evolutionary analysis promote with lexical –thematic analysis. However, above all, it clarifies some trends in research namely the growing interest in organizational change and the impact of sustainability performance mechanisms, including innovation in SMEs. Also, Market-oriented and competitiveness themes have been highlighted, showing the awareness and the concern in the link between CSP and CFP, Resources and capabilities use and competitive advantage on a sustainable perspective for SMEs. SMEs have a great operational management concern to answer to change pressure and perspective. How to be sustainable and measure it? Two big axes appear showing the internal forces to the change and the external pressure to normalized. SMEs have their own characteristics and context of the action that influence the interpretation, design and implementation of sustainable measurement systems. Finally, our works show that sustainable performance on SMEs context need new research efforts to enlarge academic debate.

### **5.1. Limitations and future research**

Our study also has limitations that may help to guide further research. Firstly, the sample includes all contributions of sciences since 1987 because our goal was to support a global overview. Further research studies may aim to examine time closer sample (for example last 10 years) given a filtered view of present academic's challenges.

Secondly, only a stabilized database can provide consistent and repeatable results. In fact, databases are updated on a progressive mode, delaying the entrance of papers and proceedings. It means that consolidate database only appears years later. In this sense, we have limited our research in an interval that ensures updated data for each year (1987 to 2015). In consequence, we did not take in consideration following years which could contain failure or be incomplete. This option led us to not take in consideration years with more growing publication. New studies may take a more recent contributions angle assuming the risk of incomplete databases.

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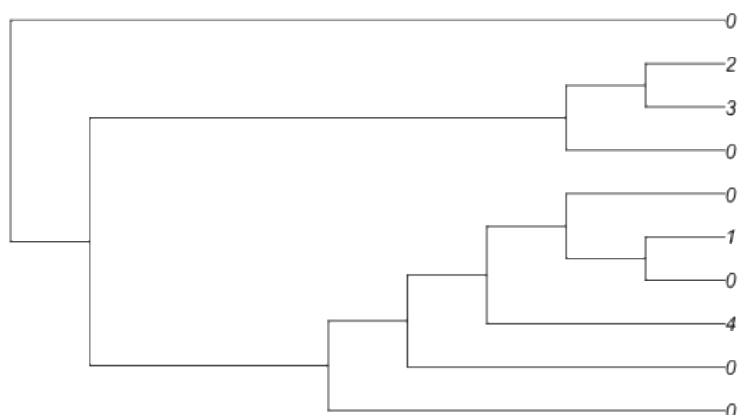
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**APPENDIX:**

**Figure 3.6- Hierarchical Classification Descending Dendrogram**



**Table 3.13 - Lexical forms associated to the class 4 by decreased Chi2 (2004-2015)**

Classe 1/4				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
24	42	57.14	39.47	study
13	18	72.22	30.40	methodology
15	27	55.56	21.56	europe
15	31	48.39	15.81	content
10	17	58.82	15.55	research_base
9	16	56.25	12.65	system
29	88	32.95	11.55	sme
17	42	40.48	11.37	implementation
14	32	43.75	11.28	adoption
9	17	52.94	11.07	level
10	20	50.00	10.87	report
9	18	50.00	9.70	survey
9	18	50.00	9.70	analysis
9	18	50.00	9.70	dissemination
7	13	53.85	8.80	guideline
5	8	62.50	8.48	operation
13	33	39.39	7.62	research

13	33	39.39	7.62	practice
10	24	41.67	6.72	specific
6	12	50.00	6.30	develop
21	66	31.82	6.19	statistic
26	89	29.21	5.48	determination
3	5	60.00	4.62	law
12	35	34.29	4.23	assessment
5	11	45.45	4.08	academic

### 3.14 -Lexical forms associated to the class 2 by decreased Chi2 (2004-2015)

Classe 2/4				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
24	30	80.00	38.19	supply_chain
15	19	78.95	22.01	supply
11	12	91.67	21.60	indicator
30	53	56.60	20.58	theory
10	12	83.33	16.06	capital
16	24	66.67	15.71	category
6	6	100.00	13.62	efficiency
6	6	100.00	13.62	green_supply_chain
13	19	68.42	13.39	customer
12	18	66.67	11.47	production
6	7	85.71	10.02	climate
6	7	85.71	10.02	gain
8	11	72.73	9.31	account
4	4	100.00	9.00	internal
8	12	66.67	7.44	participation
17	33	51.52	7.42	market
20	41	48.78	7.19	responsibility
3	3	100.00	6.72	pollution
12	22	54.55	6.20	investigation
27	62	43.55	6.01	model
8	13	61.54	5.93	value
11	20	55.00	5.80	behavior
6	9	66.67	5.51	human_ressource
5	7	71.43	5.46	competition
20	45	44.44	4.58	improvement

### 3.15 -Lexical forms associated to the class 2 by decreased Chi2 (2004-2015)

Classe 3/4				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
8	8	100.00	30.83	governance
9	11	81.82	25.42	continuity
9	12	75.00	21.94	dimension
13	24	54.17	17.40	community
13	25	52.00	15.90	authority
4	4	100.00	15.15	leadership
6	8	75.00	14.38	ownership
13	27	48.15	13.27	effect_result
19	49	38.78	11.44	management_systems
9	17	52.94	11.07	collaboration
5	7	71.43	10.92	asia
5	7	71.43	10.92	success
5	7	71.43	10.92	culture
11	23	47.83	10.84	change
7	12	58.33	10.46	experience
9	19	47.37	8.49	approach
5	8	62.50	8.48	term
5	8	62.50	8.48	period
5	8	62.50	8.48	capability
5	8	62.50	8.48	challenge
13	32	40.62	8.38	objective
14	37	37.84	7.29	organizational
3	4	75.00	7.07	readiness
5	9	55.56	6.63	government
11	28	39.29	6.24	strategic
12	32	37.50	5.90	adoption
28	98	28.57	5.44	sustainability
8	19	42.11	5.42	integration
9	23	39.13	4.92	interaction
12	34	35.29	4.74	business
3	5	60.00	4.62	dynamic
18	58	31.03	4.46	management
13	39	33.33	4.13	development
4	8	50.00	4.12	facilitation
8	21	38.10	3.95	economic

### 3.16- Lexical forms associated to the class 3 by decreased Chi2 (2004-2015)

Classe 4/4				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
15	19	78.95	29.03	datum
13	17	76.47	23.36	stakeholder
8	9	88.89	18.62	suggestion
11	16	68.75	15.64	information
11	16	68.75	15.64	influence
7	9	77.78	12.58	transparency
7	9	77.78	12.58	engagement
12	20	60.00	12.51	representation
28	67	41.79	11.04	performance
8	12	66.67	10.42	benefit
5	6	83.33	10.17	communication
7	10	70.00	10.10	certification
6	8	75.00	9.96	cost
33	89	37.08	8.01	determination
12	24	50.00	7.51	review
5	7	71.43	7.44	disclosure
5	7	71.43	7.44	positive
5	7	71.43	7.44	link
16	36	44.44	6.94	discussion
11	22	50.00	6.82	innovation
14	31	45.16	6.31	action
45	138	32.61	6.07	corporate
8	15	53.33	5.88	global
5	8	62.50	5.48	direct
13	30	43.33	4.95	finance
3	4	75.00	4.89	extension
6	11	54.55	4.63	alternative
24	66	36.36	4.48	statistic
10	22	45.45	4.43	orientation
12	28	42.86	4.32	case_study
7	14	50.00	4.19	awareness
5	9	55.56	4.03	tradition

### 3.17 - Main abstracts associated to classes by decreased Chi2 (2004-2015)

Classe 1					
Eff.s.t.	Eff. Total	Percentage	Chi2	Reference	Article
3	3	100.00	11.32	*abstract_35	Fraunholz & Crofts (2012)
6	11	54.55	7.70	*abstract_37	Scagnelli, Corazza & Cisi (2013)
2	2	100.00	7.51	*abstract_23	Maas & Reniers (2014)
2	2	100.00	7.51	*abstract_22	Doukas, Tsiousi, Marinakis & Psarras (2014)
4	7	57.14	5.59	*abstract_44	Paraschiv, Nemoianu, Langa & Voicu-Dorobantu (2012)
Classe 2					
Eff.s.t.	Eff. Total	Percentage	Chi2	Reference	Article
5	5	100.00	11.30	*abstract_20	Charmondusit, Phatarachaisakul & Prasertpong (2014).
7	9	77.78	9.49	*abstract_65	Lu, Wu, & Kuo (2007)
4	4	100.00	9.00	*abstract_63	Seuring, Sarkis, Mueller & Rao, (2008)
6	8	75.00	7.43	*abstract_33	Boasson V., Boasson E. & Mitchell 2013
3	3	100.00	6.72	*abstract_46	Tee , Oon, Kuek & Chua (2012).
4	5	80.00	5.69	*abstract_5	Savino & Batbaatar (2015).
Classe 3					
Eff.s.t.	Eff. Total	Percentage	Chi2	Reference	Article
5	5	100.00	19.02	*abstract_21	Ghosh, S., Buckler, L., Skibniewski, M. J., Negahban, S., & Kwak, Y. H. (2014).
5	6	83.33	14.26	*abstract_16	Zhang, D., Morse, S., Kambhamptati, U., & Li, (2014).
4	5	80.00	10.60	*abstract_27	Krechovská & Procházková (2014)
2	2	100.00	7.51	*abstract_61	Tencati Russo & Quaglia (2008)
4	7	57.14	5.59	*abstract_11	Hatak, I., Floh, A., & Zauner, A. (2015).
Classe 4					
Eff.s.t.	Eff. Total	Percentage	Chi2	Reference	Article
5	5	100.00	14.12	*abstract_19	Sáez-Martínez, F. J., Díaz-García, C., & González-Moreno, A. (2014).
4	4	100.00	11.25	*abstract_6	Wang, L., Cui, Z., & Liang, X. (2015).
3	3	100.00	8.40	*abstract_53	Bos-Brouwers (2010)
2	2	100.00	5.58	*abstract_18	Marcus, Björkdahl & Ljungberg (2014)
2	2	100.00	5.58	*abstract_29	Cheng, Ioannou, & Serafeim (2014)



### 3.18 – Themes and Lexical forms (2004-2015)

Themes	2004-2008		2009-2012		2013-2015	
	Frequency	%	Frequency	%	Frequency	%
<b>Academic /Results</b>	<b>42</b>	<b>5,43%</b>	<b>114</b>	<b>6,09%</b>	<b>236</b>	<b>6,57%</b>
Findings	2	0,26%	7	0,37%	23	0,64%
Positive	0	0,00%	5	0,27%	7	0,19%
High	4	0,52%	16	0,85%	31	0,86%
Number	2	0,26%	4	0,21%	6	0,17%
Determination	16	2,07%	52	2,78%	88	2,45%
Effect result	5	0,65%	8	0,43%	33	0,92%
Specific	5	0,65%	12	0,64%	14	0,39%
Limitation	5	0,65%	6	0,32%	30	0,84%
Conclusion	3	0,39%	4	0,21%	4	0,11%
<b>Academic/Activity</b>	<b>61</b>	<b>7,88%</b>	<b>186</b>	<b>9,94%</b>	<b>307</b>	<b>8,55%</b>
Study	7	0,90%	19	1,01%	29	0,81%
Discussion	2	0,26%	13	0,69%	32	0,89%
Paper	7	0,90%	30	1,60%	37	1,03%
Research	7	0,90%	16	0,85%	33	0,92%
Investigation	9	1,16%	10	0,53%	34	0,95%
Demonstration	4	0,52%	13	0,69%	28	0,78%
Emphasis	12	1,55%	16	0,85%	27	0,75%
Objective	4	0,52%	16	0,85%	21	0,58%
Aim	2	0,26%	7	0,37%	4	0,11%
Analysis	4	0,52%	13	0,69%	22	0,61%
Academic	1	0,13%	6	0,32%	8	0,22%
Characteristic	0	0,00%	9	0,48%	5	0,14%
Objection	0	0,00%	5	0,27%	10	0,28%
Research base	2	0,26%	13	0,69%	17	0,47%
<b>Academic/design</b>	<b>91</b>	<b>11,76%</b>	<b>251</b>	<b>13,41%</b>	<b>580</b>	<b>16,15%</b>
Experience	2	0,26%	4	0,21%	10	0,28%
Survey	1	0,13%	14	0,75%	31	0,86%
Suggestion	0	0,00%	4	0,21%	6	0,17%
Methodology	5	0,65%	3	0,16%	14	0,39%
Data	1	0,13%	9	0,48%	17	0,47%
Category	2	0,26%	9	0,48%	34	0,95%
Conceptualizing	19	2,45%	58	3,10%	107	2,98%
Content	7	0,90%	11	0,59%	26	0,72%
Theory	9	1,16%	17	0,91%	51	1,42%

Case study	5	0,65%	12	0,64%	26	0,72%
Review	2	0,26%	12	0,64%	21	0,58%
Identification	0	0,00%	5	0,27%	9	0,25%
Approach	0	0,00%	8	0,43%	17	0,47%
Modelling	19	2,45%	29	1,55%	45	1,25%
Context	1	0,13%	10	0,53%	14	0,39%
Empirical	2	0,26%	6	0,32%	12	0,33%
Combination	0	0,00%	2	0,11%	8	0,22%
Tradition	3	0,39%	2	0,11%	9	0,25%
Quantitative	3	0,39%	8	0,43%	24	0,67%
Extension	0	0,00%	4	0,21%	6	0,17%
Statistics	10	1,29%	24	1,28%	93	2,59%
<b>Sustainability</b>	<b>88</b>	<b>11,37%</b>	<b>262</b>	<b>14,00%</b>	<b>441</b>	<b>12,28%</b>
Social	12	1,55%	30	1,60%	38	1,06%
Environment	13	1,68%	62	3,31%	102	2,84%
CSR	15	1,94%	19	1,01%	50	1,39%
Sustainability	22	2,84%	81	4,33%	102	2,84%
Nature	4	0,52%	7	0,37%	24	0,67%
Climate	0	0,00%	1	0,05%	18	0,50%
Responsibility	11	1,42%	18	0,96%	30	0,84%
Development	8	1,03%	22	1,18%	47	1,31%
Economic	1	0,13%	12	0,64%	28	0,78%
Ecology	2	0,26%	10	0,53%	2	0,06%
<b>Corporate</b>	<b>71</b>	<b>9,17%</b>	<b>184</b>	<b>9,83%</b>	<b>337</b>	<b>9,38%</b>
SME	19	2,45%	76	4,06%	123	3,42%
Corporate	45	5,81%	96	5,13%	187	5,21%
Business	7	0,90%	12	0,64%	27	0,75%
<b>Operational Management</b>	<b>90</b>	<b>11,63%</b>	<b>167</b>	<b>8,92%</b>	<b>293</b>	<b>8,16%</b>
Management systems	22	2,84%	22	1,18%	31	0,86%
Component	2	0,26%	7	0,37%	15	0,42%
Action	7	0,90%	17	0,91%	14	0,39%
Practice	2	0,26%	25	1,34%	7	0,19%
Framework	5	0,65%	9	0,48%	20	0,56%
Operation	0	0,00%	3	0,16%	7	0,19%
System	1	0,13%	1	0,05%	14	0,39%
Scheme	11	1,42%	4	0,21%	9	0,25%
Implementation	3	0,39%	23	1,23%	40	1,11%
Improvement	12	1,55%	22	1,18%	35	0,97%
Execution	14	1,81%	23	1,23%	81	2,26%

Integration	10	1,29%	7	0,37%	12	0,33%
Structure	1	0,13%	4	0,21%	8	0,22%
<b>Management</b>	<b>57</b>	<b>7,36%</b>	<b>141</b>	<b>7,53%</b>	<b>248</b>	<b>6,90%</b>
Management	14	1,81%	38	2,03%	60	1,67%
Leadership vision	11	1,42%	10	0,53%	32	0,89%
Leadership	0	0,00%	3	0,16%	9	0,25%
Global	1	0,13%	7	0,37%	10	0,28%
Strategic	3	0,39%	10	0,53%	31	0,86%
Continuity	1	0,13%	6	0,32%	6	0,17%
Culture	2	0,26%	4	0,21%	5	0,14%
Efficiency	1	0,13%	2	0,11%	8	0,22%
Effective	7	0,90%	7	0,37%	9	0,25%
Behaviour	4	0,52%	11	0,59%	9	0,25%
Orientation	2	0,26%	13	0,69%	39	1,09%
Creation	0	0,00%	3	0,16%	7	0,19%
Organizational	11	1,42%	27	1,44%	23	0,64%
<b>Organizational change</b>	<b>42</b>	<b>5,43%</b>	<b>126</b>	<b>6,73%</b>	<b>242</b>	<b>6,74%</b>
Level	2	0,26%	9	0,48%	19	0,53%
Initiatives	3	0,39%	5	0,27%	10	0,28%
Interaction	3	0,39%	9	0,48%	15	0,42%
Facilitation	1	0,13%	5	0,27%	6	0,17%
Collaboration	4	0,52%	5	0,27%	13	0,36%
Dimension	2	0,26%	10	0,53%	15	0,42%
Incorporate	6	0,78%	13	0,69%	25	0,70%
Common	1	0,13%	6	0,32%	3	0,08%
Connection	1	0,13%	2	0,11%	12	0,33%
Addition	3	0,39%	13	0,69%	17	0,47%
Alternative	1	0,13%	2	0,11%	12	0,33%
Adoption	2	0,26%	10	0,53%	27	0,75%
Transformation	5	0,65%	4	0,21%	8	0,22%
Participation	4	0,52%	3	0,16%	8	0,22%
Support	1	0,13%	12	0,64%	11	0,31%
Change	1	0,13%	10	0,53%	23	0,64%
Difficult	1	0,13%	2	0,11%	8	0,22%
Influence	1	0,13%	6	0,32%	10	0,28%
<b>Context</b>	<b>57</b>	<b>7,36%</b>	<b>99</b>	<b>5,29%</b>	<b>184</b>	<b>5,12%</b>
Other time	5	0,65%	8	0,43%	29	0,81%
Other geography	11	1,42%	18	0,96%	29	0,81%
Production	12	1,55%	9	0,48%	15	0,42%

Sectorial	3	0,39%	5	0,27%	8	0,22%
Europe	9	1,16%	15	0,80%	30	0,84%
Period	1	0,13%	3	0,16%	9	0,25%
Catering	2	0,26%	15	0,80%	1	0,03%
Present	2	0,26%	9	0,48%	13	0,36%
Industry	2	0,26%	7	0,37%	9	0,25%
Manufacture	2	0,26%	3	0,16%	11	0,31%
Construction	0	0,00%	1	0,05%	10	0,28%
Time	3	0,39%	3	0,16%	10	0,28%
Asia	5	0,65%	3	0,16%	10	0,28%
<b>Stakeholders</b>	<b>35</b>	<b>4,52%</b>	<b>84</b>	<b>4,49%</b>	<b>131</b>	<b>3,65%</b>
Customer	2	0,26%	6	0,32%	15	0,42%
Representation	4	0,52%	8	0,43%	21	0,58%
Employee	1	0,13%	13	0,69%	28	0,78%
Community	10	1,29%	20	1,07%	13	0,36%
Ownership	3	0,39%	4	0,21%	5	0,14%
Stakeholders	5	0,65%	11	0,59%	10	0,28%
Government	6	0,78%	7	0,37%	16	0,45%
Engagement	0	0,00%	5	0,27%	7	0,19%
Authority	4	0,52%	10	0,53%	16	0,45%
<b>Market</b>	<b>41</b>	<b>5,30%</b>	<b>58</b>	<b>3,10%</b>	<b>124</b>	<b>3,45%</b>
Market	2	0,26%	7	0,37%	33	0,92%
Supply chain	14	1,81%	8	0,43%	20	0,56%
Purchase	2	0,26%	5	0,27%	3	0,08%
Supply	11	1,42%	5	0,27%	18	0,50%
Need	3	0,39%	4	0,21%	6	0,17%
Differentiation	4	0,52%	9	0,48%	19	0,53%
Success	3	0,39%	3	0,16%	6	0,17%
Innovation	2	0,26%	17	0,91%	19	0,53%
<b>Performance</b>	<b>24</b>	<b>3,10%</b>	<b>79</b>	<b>4,22%</b>	<b>161</b>	<b>4,48%</b>
Measures	0	0,00%	10	0,53%	17	0,47%
Consistency	1	0,13%	4	0,21%	5	0,14%
Indicators	3	0,39%	6	0,32%	14	0,39%
Waste	3	0,39%	0	0,00%	7	0,19%
Impact	6	0,78%	23	1,23%	46	1,28%
Value	1	0,13%	7	0,37%	7	0,19%
Performance	10	1,29%	29	1,55%	65	1,81%
<b>Resources</b>	<b>22</b>	<b>2,84%</b>	<b>38</b>	<b>2,03%</b>	<b>124</b>	<b>3,45%</b>
Intellectual capital	12	1,55%	10	0,53%	14	0,39%

Cost	1	0,13%	5	0,27%	13	0,36%
Capital	1	0,13%	2	0,11%	12	0,33%
Finance	4	0,52%	3	0,16%	62	1,73%
Gain	3	0,39%	0	0,00%	7	0,19%
Human resource	1	0,13%	13	0,69%	3	0,08%
Accounting	0	0,00%	5	0,27%	13	0,36%
<b>Audit &amp; control</b>	<b>22</b>	<b>2,84%</b>	<b>46</b>	<b>2,46%</b>	<b>92</b>	<b>2,56%</b>
Guidelines	0	0,00%	2	0,11%	10	0,28%
Compliance	7	0,90%	14	0,75%	23	0,64%
Assessment	10	1,29%	15	0,80%	35	0,97%
Standard	0	0,00%	8	0,43%	4	0,11%
Certification	1	0,13%	2	0,11%	8	0,22%
Application	4	0,52%	5	0,27%	12	0,33%
<b>Disclosure</b>	<b>31</b>	<b>4,01%</b>	<b>37</b>	<b>1,98%</b>	<b>92</b>	<b>2,56%</b>
Transparency	2	0,26%	4	0,21%	13	0,36%
Information	5	0,65%	5	0,27%	13	0,36%
Awareness	3	0,39%	5	0,27%	10	0,28%
Report	12	1,55%	11	0,59%	31	0,86%
Disclosure	3	0,39%	2	0,11%	9	0,25%
Dissemination	6	0,78%	10	0,53%	16	0,45%
<b>Total</b>	<b>774</b>	<b>100%</b>	<b>1872</b>	<b>100%</b>	<b>3592</b>	<b>100%</b>

**Table 3.19 - Articles included in our study**

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
van der Woerd & van den Brink (2004)	Netherland, Italy	Based on European Corporate Sustainability Framework (ECSF) program conducting tests to assess the practical applicability of a Responsive Business Scorecard in Dutch tourist industry and to the Italian food industry	Case study (theory testing and development)	Business Balanced Scorecard European Corporate Sustainability Framework (ECSF) Responsive business Scorecard	Journal of Business Ethics	ABST _66
Lu, Wu, & Kuo (2007)	Taiwan	Case study measuring and evaluating suppliers' performance based on an analytical hierarchy process (AHP) decision-making method.	Case study (case and empirical analysis)	Green supply chain (GSC) Life cycle analysis (LCA) Design for recycling (DFR) Multi-objective decision analysis (AHP)	International Journal of Production Research	ABST _65
Quaak, Aalbers & Goedee (2007)	Netherlands	Analysis of the driving factors influencing CSR and Sustainability Reporting in seven breweries in the Netherlands	Case study (survey & interview) & Literature study	Corporate Social Responsibility Stakeholder theory Triple Bottom line (TBL) / Triple P theory	Journal of Business Ethics	ABST _64
Seuring, Sarkis, Mueller & Rao, (2008)	----	Paper introduces the special issue of the Journal of Cleaner Production on "Sustainability and Supply Chain Management".	Literature review	Sustainable Supply Chain	Journal of Cleaner Production	ABST _63
Daud & Wan Fadzilah (2008)	Malaysia	Implementation of knowledge management processes in daily business activities and analysis of the relationship between knowledge management processes and organizational performance in small and medium enterprises to ensure their competitiveness and sustainability of performance.	Questionnaire-based survey	Knowledge management processes	IBIMA Proceedings	ABST _62
A. Tencati; Russo & Quaglia (2008)	Viet-Nam	This paper investigates the influence of the increasingly sustainable sourcing policies of many multinational companies on suppliers located in developing countries. Involving 25 Vietnamese enterprises. The results reveal, on the one hand, how CSR makes business sense even in a developing country and, on the other hand, the difficulties of maintaining sustainability as products move from northern consumers to Vietnamese suppliers.	Case study (case and empirical analysis)	Sustainable Supply Chain Corporate Social Responsibility	In Proceedings of the Nineteenth Annual Meeting of the International Association for Business and Society.	ABST _61
Wiedmann, Lenzen, & Barrett (2009)	United Kingdom	This paper describe the TBL-extended EIO accounting framework as an input-output based approach for calculating the TBL performance of a company, including the carbon footprint and ecological footprint and analyse a case study results of a TBL analysis applied to a UK company in the recreational services sector.	Case study (case and empirical analysis)	Life cycle analysis (LCA) Corporate environmental reporting Economic input-output analysis Triple bottom line (TBL) Ecological footprint Supply chain management	Journal of Industrial Ecology	ABST _59

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Borga, Citterio, Noci & Pizzurno (2009)	Italy	This paper explores the contents of a SME-oriented sustainability report. The paper aims to design guidelines able to meet with SMEs requirements, completed by seven case studies, on Italian furniture small enterprises.	Case study (theory testing and development)	Corporate Social Responsibility Stakeholder theory Triple Bottom line (TBL) / Triple P theory	Strategy and the Environment	ABST _60
Kehbila, Ertel, & Brent (2009)	South Africa	This paper provides an insight into the behavioural patterns (drivers, barriers and benefits) of SMEs and larger South African automotive companies in their quest to engage in environmental change and determine if these patterns are similar to previous studies.	Questionnaire-based survey	Environmental management systems (ISO 14001)	Corporate Social Responsibility and Environmental Management	ABST _58
Bos-Brouwers (2010)	Netherland	This paper promotes a qualitative research study based on semi-structured interview focus on the translation of sustainable innovation within SMEs, combining insights from innovation theory, corporate sustainability and SME characteristics.	Questionnaire-based survey	Stakeholder theory Triple Bottom line (TBL) / Triple P theory Sustainable Innovation concept	Business Strategy and the Environment	ABST _53
Karatzoglou & Spilanis, (2010)	Greece	Based on the adaptive resource management paradigm, this paper suggests a methodology for the development of a management tool that can provide information on the environmental impact of critical corporate activities.	Case study (theory testing and development)	Adaptive resource management paradigm Environmental management accounting Activity-based costing & management (ABC/M)	Business Strategy and the Environment	ABST _56
Kehbila, Ertel, & Brent (2010).	South Africa	Based on a questionnaire survey on the state of corporate sustainability, this paper focused the meaning and relevance of sustainability to South African automotive companies, and their use of different approaches to implement sustainability in corporate practice.	Questionnaire-based survey	Environmental management systems (ISO 14001)	Business Strategy and the Environment	ABST _54
Gelbmann, U. (2010).	Austria	This paper presents a case from Austria, the development of an official CSR Quality Seal directed at SMEs to help them communicate their sustainability performance effectively and display a visible sign for their stakeholders	Case study (Pilot Audits)	CSR Quality Seal	Sustainable Development	ABST _50
Parker, Zutshi, & Fraunholz, (2010).	Australia	This paper develops and applies a framework to report on the results of an exploratory content analysis of 33 Australian SME websites in the Information Media/Telecommunications and Accommodation/ Food Services sectors which communicate CSR initiatives online	Content analysis	Corporate Social Responsibility Stakeholder theory eBusiness	<i>In Proceedings of the 23rd Bled eConference : eTrust : implications for the individual, enterprises and society</i>	ABST _55
Carrigan, Moraes & Leek (2011).	United Kingdom	This article examines whether small organizations can foster societal change toward more sustainable modes of living. Consumption is analysed as intertwined with social relations and norms, thus making individual behavioral change toward sustainability a matter of facilitating change in individual behavior, as well as in social norms and relations between organizations and consumers.	Case study (case and empirical analysis)	Corporate social responsibility Ethical consumption Community social marketing Diffusion of innovation	Journal of Business Ethics,	ABST _51

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Kocmanová & Dočekalová (2011).	Czech Republic	The paper promotes an empirical analysis of the environmental, social and corporate governance performance in small and medium enterprises in the Czech Republic through a questionnaire based survey to 280 companies. Empirical research was focused on companies that have implemented ISO 14000.	Questionnaire-based survey	Sustainability performance management Triple Bottom line (TBL) / Triple P theory Environmental management systems (ISO 14001)	<i>In proceedings Liberec Economic Forum</i>	ABST _52
Şerban, & Kaufmann (2011)	Germany	Based on three case studies thorough documentation and interviews as data collection methods this study aim to gain a better understanding of how Corporate Social Responsibility is incorporated in medium sized enterprise operations by focusing on how German companies describe, integrate and monitor Corporate Social Responsibility and how they allocate financial resources for it	Case study (interview and empirical analysis)	Corporate Social Responsibility Business Ethics Stakeholder theory	Amfiteatru Economic	ABST _67
Medel, García, Enriquez & Anido, (2011)	---	The objective of this paper is to present a new approach to handle the integration SBSC and GRI, allowing organizations to better manage strategies, provide communication with stakeholders, and made clear by the case of Small and Medium Sized Enterprises,	Case study (Theory testing and development)	Stakeholder theory Sustainability Balanced Scorecard Global Reporting Initiative (Corporate reporting) Triple Bottom line (TBL) / Triple P theory Sustainability Balanced Scorecard	Information technologies in environmental engineering	ABST _49
Hofmann, Theyel, & Wood (2012)	United States	Based on dynamic capabilities literature, this study identifies the adoption of advanced technology, experiences with inter-firm relations and capacity for product innovation as three capabilities that support firms' efforts to become 'greener' among 294 small and medium-sized manufacturers from the United States. Based on regression analysis, the authors provide evidence for a relationship between the underlying capabilities and environmental management practices.	Case study (case and Regression analysis)	Stakeholder theory Dynamic capabilities Product Innovation Environmental management	Business Strategy and the Environment	ABST _40
Uhlener, Berent-Braun, Jeurissen & de Wit (2012)	Netherland	Based on a random sample of 689 SMEs, this study focuses on the prediction of the engagement in environmental management practices. In addition to empirical research on SMEs' environmental behavior, this article draws on the ecological modernization literature as well as the theory of planned behavior.	Questionnaire-based survey	Corporate social responsibility Ecological Modernization Environmental behaviour Environmental Management practices Innovation orientation & Diffusion models Sustainability Triple Bottom line (TBL) theory Theory of planned behaviour Resource-based view	Journal of Business Ethics	ABST _42



Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Paraschiv, Nemoianu, Langa, & Szabó (2012)	Romania	This paper present the main drivers of corporate sustainability, illustrating the link between corporate sustainability, eco-innovation, responsible leadership, organizational culture and organizational change through literature review and an overview of organizations active in Romania in terms of sustainability practices, and the ecological component of sustainable development by presenting the results of an exploratory questionnaire-based research.	Questionnaire-based survey	Corporate sustainability Responsible leadership Organizational culture Organizational change	Journal of Business Ethics	ABST _43
Valiente, Ayerbe & Figueras (2012)	Spain	This paper develops an empirical procedure for measuring Corporate Social Performance (CSP) in firms, from the opinions of a group of firm managers concerning their perception of the importance of different aspects of appropriate business management from a CSR perspective.	Questionnaire-based survey	Corporate Social Responsibility Stakeholder theory	Journal of Cleaner Production	ABST _41
Lehtinen (2012)	Finland	The paper explains the characteristics of local food chains and the concept of sustainability based on a literature review and a case study which outlines the stages of the food procurement process in public food catering in Finland, focussing on the delivery of potatoes from a local producer to a public caterer providing school meals under a sustainable analysis.	Case study (case and empirical analysis)	Triple Bottom line (TBL) Sustainable Supply Chain Sustainable procurement Sustainable food	British Food Journal	ABST _47
Tantalo, Caroli & Vanevenhoven, (2012)	Italy	This paper focuses the phenomenon Corporate social responsibility (CSR) inside the small and medium sized firms following an empirical approach based on direct interviews to the CEOs of Italian small and medium sized enterprises (SMEs) which developed successful CSR strategies.	Case study (interview and empirical analysis)	Corporate social responsibility (CSR) Stakeholder theory Competitive advantage theory Resource-Based View theory (RBV)	International Journal of Technology Management	ABST _48
Paraschiv, Nemoianu, Langa & Voicu-Dorobantu (2012)	Romania	This paper outlines the current requirements regarding eco-innovation to be considered in the decision-making process (DMP) of SMEs. In order to achieve the objective of determining the perception of eco-innovation in Romanian SMEs, the qualitative research has started from a sample of Romanian managers of SMEs (20, across industries) who were asked to answer an in-depth questionnaire on their current DMP and the way it may be affected by eco-innovation, seen as requirement, not part of a Corporate Social Responsibility strategy. Their answers were compared to the answers of 10 managers of multinationals, in order to determine the isolation hypothesis.	Questionnaire-based survey	Eco-Innovation	In Proceedings of the European Conference on Innovation & Entrepreneurship	ABST _44
Campopiano, De Massis & Cassia (2012)	Italy	This study analyses CSR in small- and medium-sized family vs. non-family firms. The results from an explorative survey on 19 SMEs, show that they are generally unaware of the concept of CSR, do not report their initiatives, but are still engaged in social actions towards their closest stakeholders.	Questionnaire-based survey	Corporate social responsibility (CSR) Stakeholder theory Social capital theory	Procedia - Social and Behavioral Sciences	ABST _45

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Tee, Oon, Kuek & Chua (2012).	Malaysia	this paper aim to investigate the relationship among knowledge management (KM) and human resources management (HRM) practices which significantly contribute to corporate innovation in the context of small- and medium sized enterprises (SMEs) in Malaysia.	Literature review	Learning organizations Knowledge management processes Human resources management processes Corporate innovation Competitive advantage theory	In proceedings of Knowledge Management International Conference (KMICe)	ABST _46
Roxas & Coetzer (2012).	Philippines	This study examines the direct impact of three dimensions of the institutional environment on managerial attitudes toward the natural environment and the direct influence of the latter on the environmental sustainability orientation (ESO) of small firms.	Questionnaire-based survey	Institutional environment Sustainable development	Journal of business ethics	ABST _39
Dixon-Fowler, Slater, Johnson, Ellstrand & Romi (2013)	---	a meta-analytic review of CEP-CFP literature in which we identify potential moderators to the CEP-CFP relationship including environmental performance type (e.g., reactive vs. proactive performance), firm characteristics (e.g., large vs. small firms), and methodological issues (e.g., self-report measures). By analyzing these contingencies, this study attempts to provide a basis on which to draw conclusions regarding some inconsistencies and debates in the CEP-CFP research. compare the results of studies using reactive environmental strategy measures (e.g., pollution control) to studies using proactive environmental strategy measures (e.g., process redesign), as well as studies using measures reflecting both, in regard to their influence on CFP.	Meta-Analysis review	Stakeholder theory Competitive advantage theory Resource-Based View theory (RBV)	Journal of business ethics	ABST _36
Nikolaou, Evangelinos & Verigou (2013).	Greece	This paper examines some of these factors through a case study research methodology on two Greek manufacturing SMEs with significant local environmental impacts and protests from the local community. The main findings indicate that these manufacturers have adopted a limited number of environmental management practices due to the limited knowledge of managers on their environmental regulation responsibilities and inadequate help from local authorities regarding environmental matters.	Case –study	Corporate Sustainability, Environmental Management, Sustainable Development	Environmental Engineering & Management Journal	ABST _31
Ramos, Cecilio, Douglas & Caeiro (2013).	Portugal	This paper focus how sustainability-reporting practices have been adopted in organizations which operate in Portugal, and how those practices are related with environmental management and evaluation systems. A questionnaire survey was carried out in 2006, involving a statistical population of 69 firms. The six Portuguese Small and Medium Enterprises analysed show a poor environmental management and environmental performance evaluation and sustainability reporting profile.	Questionnaire-based survey	Environmental management systems (ISO 14001) Environmental performance	Journal of Cleaner Production,	ABST _32

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Tsalis, Nikolaou, Grigoroudis & Tsagarakis (2013).	Greece	This paper is an empirical work in relation to the barriers and challenges that small- and medium-sized enterprises (SMEs) face in their efforts to adopt a S-BSC. To contribute to this field, this paper provides a framework, based on SWOT (strengths, weaknesses, opportunities, and threats) analysis, to facilitate the investigation of managers' and owners' opinions of 82 Greek SMEs regarding S-BSC implementation.	Questionnaire-based survey	SWOT analysis Balanced Scorecard Triple-bottom-line approach	Journal of Integrative Environmental Sciences	ABST _30
Boasson, V., Boasson, E. & Mitchell (2013).	United States	This paper examines the effects of corporate sustainability initiatives for climate change on stock returns and firm value.	Case study (case and Regression analysis)	Corporate sustainability, environmental protection, climate change, corporate governance, corporate social responsibility asset pricing, stock returns, firm value	In proceedings 21th IBIMA Conference.	ABST _33
Zborkova, & Hinke (2013).	Czech Republic	The paper will present the results of research on financial reporting of environmental and social aspects of the business environment in the Czech Republic.	Questionnaire survey	Corporate sustainability, Reporting	In proceedings of the 22th International Scientific Conference	ABST _34
Parker, C. M., Zutshi, A., Fraunholz & Crofts (2012)	Australia	This chapter contributes to green ICT/IS research by presenting a content analysis method for analysing the environmental sustainability descriptions on small and medium enterprise (SME) websites.	Content analysis	Corporate social responsibility,	Proceedings of the 15th Pacific Asia Conference on Information Systems	ABST _35
Scagnelli, Corazza & Cisi (2013)	Italy	The aim of our study is to shed light on the activity of SMEs' sustainability reporting and disclosure, specifically	Case study (case and empirical analysis)	Legitimacy theory approach Global Reporting Initiative (Corporate reporting) Triple Bottom line (TBL)	Studies in Managerial and Financial Accounting	ABST _37
Orth & Kohl (2013)	Germany	The study focuses the development and use of intellectual capital (IC) to the implementation of sustainability management and how it affects the performance of the three sustainability dimensions equally.	Content analysis	Intellectual capital Corporate sustainability	Proceedings 5th European Conference on Intellectual Capital	ABST _38
Cheng, Ioannou, & Serafeim (2014)	Multi-countries	Paper focus that better access to finance can be attributed to reduced agency costs due to enhanced stakeholder engagement and reduced informational asymmetry due to increased transparency. Using a large cross-section of firms, the article concluded that firms with better CSR performance face significantly lower capital constraints and both better stakeholder engagement and transparency around CSR performance are important in reducing capital constraints	Case study (case and empirical analysis)	Corporate Social Responsibility Triple Bottom line (TBL) Stakeholder theory	Strategic Management Journal	ABST _29

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Maas & Reniers (2014)	Belgium	This study proposes a conceptual CSR framework, mainly on the basis of the recently published umbrella guideline ISO 26000. The framework has been named 'Sus5', as it connects five inherent features of sustainable business (management knowledge & commitment, stakeholder knowledge & commitment, strategic planning, knowledge & commitment on the work floor, and operational execution & monitoring). Empirical study, which has been executed within 12 Flemish companies, reflects on the average Flemish as-is attention for each independent proposed building block, thereby aiming to retrieve in which extent the attention areas of the average company are aligned with the ones of Sus5 as the basis for drawing conclusions on the general feasibility level of applying Sus5.	Case study (case and empirical analysis)	Corporate Social Responsibility Triple Bottom line (TBL) Stakeholder theory ISO 26000 Total Quality Management	Journal of Cleaner Production,	ABST _23
Doukas, Tsiouli, Marinakis & Psarras (2014).	Greece, U.S, Great Britain, Australia	This paper focus SMEs that integrates systematic environmental practices, beyond the required legislation, achieve high overall performance. These SMEs come mainly from countries with essential implementation of Corporate Social Responsibility (CSR) concepts.	Case study (Theory testing and development)	Corporate Social Responsibility Triple Bottom line (TBL)	Information Sciences	ABST _22
Krechovská & Procházková (2014)	Czech Republic	This paper discusses the level of integration of sustainability into corporate governance. The approach of enterprises to sustainability and were examined by the author's empirical research conducted among enterprises in the Czech Republic in 2012. Many enterprises do not work with sustainability within corporate strategy and management, and neither do they include sustainability in performance measurement and management.	Questionnaire-based survey	Sustainability Triple Bottom line (TBL) Corporate Social Responsibility	Procedia Engineering	ABST _27
Stewart & Gapp (2014).	Australia	This initial investigation highlights the relationship between learning, the development of organisational values that underpin CSR and improved business performance within an SME, using case study based on interviews, observations, and memorandums to investigate an SME	Case study (interview and empirical analysis)	Sustainability Triple Bottom line (TBL) Stakeholder theory Corporate Social Responsibility	Corporate Social Responsibility and Environmental Management	ABST _28
Rizzi, Frey, Testa, & Appolloni (2014)	Italy	This study analysed Green Public Procurement (GPP), in particular, presents valuable characteristics in terms of directionality, volumes and measurability. An inductive analysis of direct observations and theoretical contributions suggests the potential for the so-called "Abilene paradox" to hamper GPP opportunities for Small and Medium Enterprises.	Case study (interview and empirical analysis)	Green Public Procurement Sustainable Supply chain	Journal of Cleaner Production	ABST _14
Halme & Korpela (2014).	Denmark Norway Sweden Finland Iceland.	This study investigates environmentally and socially responsible innovations of SMEs from a resource perspective, based on empirical data from 13 Nordic SMEs. The findings indicate that SMEs can create responsible innovations with very different resource combinations. The most common resource combination comprises equity, research and development cooperation, networks, industry knowledge and reputation.	Case study (case and empirical analysis)	Responsible innovation and resources Corporate responsibility (CR) Innovation concept Resource based view (RBV)	Business Strategy and the Environment	ABST _15

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Sáez-Martínez, Díaz-García, & González-Moreno (2014).	Multi-Countries	This paper focus on a sample of 1337 start-up SMEs less than 10 years old, from which it was obtained information regarding their innovation activities. Findings show that in comparison to cost-oriented innovations, environmental orientation in the development of innovations increases performance.	Case study (case and empirical analysis)	Innovation concept Environmental performance	International Journal of Environmental Research	ABST _19
Charmondusit, Phatarachaisakul, & Prasertpong (2014).	Thailand	This research presents the development of eco-efficiency indicators for quantitative measurement of the wooden toy industry, as well as the raw material suppliers who are a part of the supply chain. The eco-efficiency of the wooden toy industry was measured by using the key indicators of the three axes of sustainable development, which are (i) economic indicator: net sale and gross margin, (ii) environmental indicator: material, energy, water consumption, waste disposal, and (iii) social indicator: frequency rate of accidents, local employment, and corporate social responsibility.	Case study (case and empirical analysis)	ISO 14001 Eco-efficiency	Clean Technologies and Environmental Policy	ABST _20
Thorne, Mahoney and Manetti (2014) .	Canada	This paper provides insight into the companies' motivations to issue or not issue voluntary standalone corporate social responsibility (CSR) reports in the Canadian context.	Questionnaire-based survey	Corporate Social Responsibility Voluntary disclosure theory Legitimacy theory Stakeholder theory, Institutional theory Signalling theory Assurance theory	Accounting, Auditing & Accountability Journal	ABST _26
Zhang, Morse, Kambhampati & Li (2014).	China	This paper aims to explore how CSR has given way to economic growth in China since the start of economic transition and its cultural, historical and political background, and how this has affected or been affected by the economic performance of firms. The results indicate that implementation of CSR in China needs both the manager's ethical awareness and the change of institutional framework. The results also raise the question as to whether CSR is a universal concept with a desired means of implementation across the developed and developing world.	Case study (case and empirical analysis)	Corporate Social Responsibility Moral Manager Model Moral Market Model	Sustainability	ABST _16
Thongplew, van Koppen & Spaargaren (2014)	Thailand	Focusing Thailand, this article shows how corporate strategies aimed at greening consumption have become visible because of an increase in sustainable products, environmental information flows, and green narratives and images. In the dairy industry, green products and environmental product information are mainly found among small producers for niche markets. Larger producers have only recently started adopting consumer-oriented environmental strategies.	Case study (interview and empirical analysis)	Consumer-oriented strategies Corporate Social Green provisions (Sustainable Supply Chain) Responsibility (CSR)	Journal of Cleaner Production	ABST _17

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Linder, Björkdahl & Ljungberg (2014)	Sweden	This paper investigates the relationship between the environmental orientation and economic performance on Swedish small firms. Through a quantitative analysis on a sample of 299 environmentally oriented small companies, it focuses negative effect of environmental orientation on profit margin. This work employed a quasi-experimental design in which it was create a control group of non-environmentally oriented firms that are very similar to their environmentally oriented counterparts.	Case study (case and empirical analysis)	Natural resource-based view Pollution-as-waste perspective Institutional perspective Reversed causality thesis Social dilemma perspective	Business Strategy and the Environment	ABST _18
Ghosh, Buckler, Skibniewski, Negahban, & Kwak, (2014).	USA	This paper addresses to identify an organization's shortcomings in undertaking a sustainable project, and to identify means for improving organizational readiness to cope with governance of sustainable projects. Based on case study with a Small-to-Mid-Size-Construction-Organization to understand activities, resource availability, and how to improve organization readiness to undertake projects related to sustainability is discussed. A conceptual framework is presented for the adoptive project governance process to ensure resource constrained organizations like SSMCO's can align better to govern such projects.	Case study (Theory testing and development)	Triple Bottom line (TBL) Resource-based view Integration and change management Stakeholder theory,	Technological and Economic Development of Economy	ABST _21
Nagypál (2014)	Hungary	The results and conclusions of a questionnaire survey among Hungarian SMEs with good environmental practices are presented, discussing their motivating factors and the challenges they face, the main stakeholders influencing their CSR performance including their MNE customers	Questionnaire-based survey and analysis	Corporate Social Responsibility Stakeholder theory	Journal for East European Management Studies	ABST _25
Altmann (2015).	Germany	This paper focuses the impact of customers' requirements regarding the environmental performance of a product on strategic supply chain design decisions of the manufacturer of the product. Through a case study the improve of environmental performance of the products affect the customer demand positively by designing an environmentally conscious supply chain.	Case study	Sustainability-oriented supply chain	International Journal of Production Research	ABST _3
Wang, Cui & Liang, (2015).	China	This paper focus on economic, sociological, and strategic perspectives and using data of a large sample of 936 Chinese manufacturing firms in the period from 2000 to 2005 to examine how environmental labelling may affect a firm's financial performance.	Regression analysis	Corporate Sustainability, Environmental Management, Organizational legitimacy	Management and Organization Review	ABST _6
de Silva & Paris (2015)	United Kingdom	This paper will be of particular interest to client organisations responsible for national infrastructure but also provides valuable information for designers and construction professionals. The paper starts by providing a brief description of the scope of the project then describes how sustainability has been built into the delivery of the project, the governance structure and how performance is measured. Examples are provided of	Case study (case and empirical analysis)	Sustainable Supply Chain Sustainability reporting Innovation	Proceedings of the Institution of Civil Engineers-Engineering Sustainability	ABST _9
Panwar, Nybakk, Pinkse & Hansen (2015).	United States	Using data gathered from 478 small firms representing multiple manufacturing sectors in the US through a survey. This paper examines the effects of a decline in a firm's financial resources on its ongoing sustainability initiatives. It was demonstrated that a decline in a firm's financial performance is associated with a higher decline of peripheral initiatives than of core initiatives.	Questionnaire-based survey and analysis	Corporate Sustainability, Sustainability-oriented behavior	Organization & Environment	ABST _10

Author (s) /Year	Country	Scope of study	Research methodology	Main theoretical background and development	Journal	Ref. (txt.)
Mathiyazhagan, Diabat, Al-Refaie & Xu (2015).	India	This study is to investigate the pressures for GSCM adoption and to rank the pressures based on experts' opinion through an Analytical Hierarchy Process (AHP) technique in the mining and mineral industry context.	Analytical Hierarchy Process	Green Supply Chain Management, Institution-based view	Journal of Cleaner Production	ABST _2
Lintukangas, Hallikas & Kähkönen (2015).	Finland	This paper examines if supply risks, supplier relationship management capability, and end-customer orientation of supply management function are connected to the green supply management practices of a firm. These connections are studied using a survey data of 165 firms collected in Finland.	Regression analysis	Green Supply Chain Management	Corporate Social Responsibility and Environmental Management	ABST _4
Savino & Batbaatar (2015).	Italy	This paper is focused on the context of Integrated Management Systems. It aims to provide indications for firms on which tangible and intangible resources can make an Integrated Management Systems a strategic asset. And to investigate how the pattern of core resources may vary within the contingency perspective of firms' size, in terms of total number of employees and workers.	Regression analysis	Resource-Based View	Journal of Cleaner Production	ABST _5
Touboulic & Walker (2015).		This paper investigates the collaborative paradigm in Sustainable Supply Chain Management (SSCM). It was explored collaboration in SSCs through a qualitative study of a large multinational in the food sector working with small agricultural suppliers.	Case study	Sustainable Supply Chain Management, relational theory	Journal of Purchasing and Supply Management	ABST _7
Hatak, I., Floh, A., & Zauner (2015).	Austria	This paper aims to understand how ecopreneurs discover, develop and realise sustainability related opportunities in their organisations. It analysed how this qualitative change process associated with a shift to sustainable development in small and medium-sized wineries in Austria.	Delphi study	Sustainable development, Ecopreneurship	Review of managerial science	ABST _11
Martinez-Villavicencio, Brenes-Sanchez, Araneda-Fornachiari & Jaubert-Solano (2015).	Costa Rica	This article aims to identify the driving factors of CSR, which are, specifically, consumers, suppliers, community, environment, competitiveness and financing, to formulate management models and measurement indicators that could be used to influence and ease the responsible task of a company.	Case study	Corporate Social Responsibility	Tec Empresarial	ABST _12
Bevan & Yung (2015).	Australia	This Study investigates the implementation of corporate social responsibility (CSR) related activities in small to medium sized construction enterprises within Australia. Findings show that SMEs in the construction industry implement ethical and economic aspect of CSR, however implementation across environmental and social issues is limited.	Quantitative and qualitative company level data	Corporate Social Responsibility Stakeholder theory	Engineering, Construction and Architectural Management	ABST _13

**4. CHAPTER 4 – CORPORATE SUSTAINABILITY PERFORMANCE IN  
PORTUGAL: SMEs FAMILY AND NON-FAMILY BUSINESS DIFFERENCES AND  
DETERMINANTS**

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**Conferences:**

- 35<sup>th</sup> INTERNATIONAL SCIENTIFIC CONFERENCE ON ECONOMIC AND SOCIAL DEVELOPMENT - "SUSTAINABILITY FROM AN ECONOMIC AND SOCIAL PERSPECTIVE". Lisbon, November 2018, "Corporate Sustainability Performance in Portugal: SME family and non-family business differences and determinants", Mamede P., Allouche J.

This paper has been submitted and accepted to

- 16<sup>eme</sup> CONGRÈS DE L'ADERSE – " ETHIQUE, GOUVERNANCE ET RSE". Aix-en-Provence, Mars 2019, "Corporate sustainability and financial performance in portuguese SMEs", Mamede P.

**Journal Submission**

The target journal for this paper is Journal of Small Business Management

*Journal of Small Business Management*

- FNEGE (2016): 2

**Acknowledgements**

I'm grateful to participants of the 35<sup>th</sup> ESD Conference on Sustainability from an Economic and Social perspective for helpful comments.

## **ABSTRACT**

This work aims to examine corporate sustainability performance and family influences. In a theoretical angle, it aims to contribute by integration of resource-based view (RBV), institution-based view, agency theory, stakeholder theory and corporate sustainability, extending the discussion about family involvement on firm performance and the effect of sustainable strategy on financial performance in Portuguese SMEs. By using matched paired methodology and multivariate approach, we focus 65 Portuguese SMEs and 32 indicators at financial, environmental and social level, comparing family business (FB) and non-family business (NFB). Additionally, we investigate the link between financial, environmental and social performance using correlation and regression analysis. Under an evolutionary temporal analysis, this study underscores consistent patterns pointing that corporate family involvement influences financial performance and has a mixed effect on environmental and social performance. Finally, we provide evidence of a positive link between social and financial performance.

**Keywords:** Corporate Financial Performance, Corporate Social Performance, Portuguese SME, Family business, Family-owned business enterprises.

## 1. INTRODUCTION

Small and Medium Enterprises (including micro) in European Union (EU) represents 99,8% of the companies and 57% of value added of European employment (European Commission 2016). At the same time, about 70 % - 80 % of enterprises are family businesses (Mandl, 2008; Huang, 2009; Blodgett et al., 2011). Families have an effective control on most businesses namely in SMEs (Blodgett et al., 2011). The weight of SMEs and family businesses in employment or in wealth creation has raised questions about the role and massive impact of SMEs in economic, social and environmental terms (Allouche & Amann, 2002; Astrachan & Shanker, 2003; Revell et al., 2010; Blodgett et al., 2011).

In recent years contributions have been added focusing environmental (Huang, 2009; Hoogendoorn et al., 2014) and social engagement in family business context (Niehm et al., 2008; Fitzgerald et al., 2010; Blodgett et al., 2011; Fassin et al., 2011; Amann et al., 2012; McGuire et al., 2012; Marques et al., 2014; van Gils et al., 2014; Hernandez-Perlines, 2017; Nekhili et al., 2017). The range of studies focusing performance in family firms analysed mainly owner / founder role (Anderson & Reeb, 2003; Barontini & Caprio, 2006; O'Boyle et al., 2010), Family control and governance effect (McConaughy et al., 1998; Villalonga et al., 2006; Miller & Breton-miller, 2006; El Ghouli, 2016), culture and values assumption (Poza et al., 1997; Astrachan & Shanker, 2003; Harms, 2014), resources and capabilities stock management (Habbershon & Williams, 1999; Sirmon & Hitt, 2003; Chrisman et al., 2009), stakeholder and institutional influence (Bingham et al., 2011; Mitchell et al., 2011; Miller & Breton-miller, 2017). Another dominant angle of research is the comprehension of differences in performance between family firms (FB) and non-family (NFB) (Jorissen et al., 2005; Allouche et al., 1995, 2007, 2008; Amann et al., 2011; Amann et al., 2012).

Researchers have used multiple theoretical lines that support academic discussion, like agency theory, stewardship theory, RBV, socio-emotional wealth (SEW), institutional and stakeholder theory (Poza, 1997; Allouche et al., 1995, 2007, 2008; Chrisman et al., 2010; Paiva et al., 2015; Miller et al., 2017). Corporate sustainability performance (CSP) in family SMEs is a relevant field but under-explored by researchers comparing to large companies (Perrini, 2006). In fact, starting from the assumption that due to lack of financial resources, knowledge and culture, small firms are considered underperforming organizations, on a social and environmental level (Hoogendoorn et al., 2015). Also, the operational difficulty in

obtaining relevant data from SMEs limit access to knowledge, namely their lack of openness to participation in academics studies. The heterogeneity of SMEs and their different modulations in the economy structure create a difficult field to frame.

Taking family SMEs (FB) sustainability performance, we aim with our investigation to integrate and link main questions on the sustainable performance scope in Portuguese context. Thus, we aim to understand the use of performance management system based on integrated economic, environmental and social measures and comparing to NFB, through a matched paired investigation.

With this study, we contribute to extend discussion on corporate sustainability performance in SME's and the benefits or costs of family influence in Portugal. Consistently with previous studies, we find that FBs have a better financial structure, particularly in terms of liquidity and a low external dependency, compared to NFB's. These findings rise new dimension on FBs research which point in an environmental and social performance perspective no significant difference was found.

Importantly, we contribute to the debate about the link nature between financial performance and social performance. Our findings show a significant positive link between financial and social dimension

Our study is organized as follows. Section 2 a brief review of literature providing our support to an innovative hypotheses' development. Section 3 contains the description of methodology with the description of sample and procedures. Section 4 reports and discusses the results of means and multivariate analyses. The last section supports our main conclusions.

## 2. LITERATURE REVIEW & HYPOTHESES

### 2.1 Family firm's definition

FB research has experienced a great interest by management researchers, who have faced the challenge to define a unified definition of a heterogeneous reality (Hirigoyen, 2009; Chrisman et al., 2010; Sener, 2014). Various definitions are reported in the literature with light differentiations of the term “family” due to different legal framework, country-specific institutional or cultural concept of family and non-family firms (Astrachan et al., 2002; Harms, 2014). Three types of FB management structure exist, first family owned, and family managed, second family owned but not family managed; and finally, family managed but not family owned (Allouche et al, 1995, 2008; Chua et al., 1999; Allouche & Aman, 2000;). In general, prior studies have used different ways to define the “family business” concept, including: ownership traduced by the highest percentage of the property in the hands of a family (Déniz-Déniz & Suárez, 2005; Fitzgerald et al., 2010), Control by the participation in top management of members of the family that owns it (Allouche & Amann, 2000), influence by the direct or indirect action of family through a cultural governance and perpetual management mainstream (Allouche et al, 1995, 2008; Harms, 2014) and succession by generational transfer effectiveness or intention (Chua et al., 1999; Molina Parra et al., 2017; Mandl, 2018). Summarizing main criteria to define FB's:

- **Ownership:** FB, if the founding family has a fractional equity ownership (Anderson & Reeb, 2003);
- **Control:** FB, if family have an effective strategic control with or without the majority of the capital or not, but no other group of shareholders can have a greater weight in the face of family shareholders. (Allouche & Amann, 2000);
- **Influence:** FB, if the family can effectively influence governance, management through ownership or culture or charisma of family (Astrachan & Shanker, 2003);
- **Succession:** FB, if transmission or the intention to transmit exist (Molina Parra et al., 2017).

Heterogeneity is also a consequence of definition of “family” which can differs under legal and cultural reasons. Mandl (2008) identify in Europe several “families” from to the “direct family line” to the “family unit”, which can include blood, marriage but also “modern” ways of living than the traditional family in terms of married couples with children. Several

examples from the literature serve to illustrate how different authors in different contexts have different definitions.

**Table 4.1 – Sample of family definitions**

Authors	Definitions
Sharma, P., Chrisman, J. J., & Chua, J. H. (1997).	A FB is a business governed and/or managed on a sustainable, potentially cross-generational, basis to shape and perhaps pursue the formal or implicit vision of the business held by members of the same family or a small number of families.
Villalonga, B., & Amit, R. (2006).	FB when the family is the largest vote-holder, has at least 20 percent of the votes, has family officers and family directors, and is in the second or later generation
Miller et al. (2007)	FB as one in which multiple members of the same family are involved as major owners or managers, either contemporaneously or over time.
European Commission (2009)	<p>A firm, of any size, is a family business, if:</p> <ol style="list-style-type: none"> <li>1. The majority of decision-making rights is in the possession of the natural person(s) who established the firm, or in the possession of the natural person(s) who has/have acquired the share capital of the firm, or in the possession of their spouses, parents, child or children’s direct heirs.</li> <li>2. The majority of decision-making rights are indirect or direct.</li> <li>3. At least one representative of the family or kin is formally involved in the governance of the firm.</li> <li>4. Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families or descendants possess 25 per cent of the decision-making rights mandated by their share capital.</li> </ol>
Liu et al. (2010)	A firm is defined as a family firm if it is controlled by the founders, or by the founders’ families and heirs.
Zachary (2011)	A company is considered a family business when it has been closely identified with at least two generations of a family and when this link has had a mutual influence on company policy and on the interests and objectives of the family.

In this study using a multicriteria lens, a FB will be a business that:

*“A firm if it so wishes to be considered and if:*

1. *The majority of votes is in possession of the natural person(s) who established the firm, in possession of the natural person(s) who has/have acquired the share capital of the firm, or in possession of their spouses, parents, child or child’s direct heirs.*
2. *The majority of the votes may be indirect or direct.*
3. *At one point in the firm’s existence, at least two representatives of the family or kin of different generations have been involved in the management or administration of the firm, either simultaneously or in succession.*
4. *Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families possess 25 percent of the right to vote mandated by their share capital.” (Coimbra, 2008: pag. 3).*

Scholars describe several characteristics for FB “uniqueness” that influence strategic and organizational performance. Negative characteristics and challenges are often pointed for the performance and even for its survival. For example, family firms’ conservative behaviour, which influence the attitude front of market risk and innovation (Llach & Nordqvist, 2006), lack of professionalism based on nepotism rather than meritocratic system (Miller et al., 2006). Exploitation and expropriation of minority shareholders wealth for benefit of family (Vieira, 2015). Absence of strategically planned succession pressing survival (Miller et al., 2006; Molina Parra et al., 2017).

## **2.2 SMEs and Corporate sustainability performance**

Current literature suggests that SMEs have different characteristics when compared to large company. Hudson et al. (2008) identified main SMEs singular attributes:

- Personalised management;
- Resource limitations in terms of management, human resource and finance;
- Reliance on a small number of customers;
- Operation in limited markets;
- Flat and flexible structures;
- High innovatory potential;

- Reactive and fire-fighting mentality;
- Informal and dynamic strategies.

Even some characteristics of SMEs may limit an implementation of strategic sustainability at firm level namely of their limited financial resources, size and proximity or primarily focus on local operations far from global challenges of large companies (Cezarino & Campomar, 2006; Revell & Blackburn 2007; Will, 2008; Borga et al., 2009; Morre & Manring, 2009; Vieira 2017).

SMEs are described as positive sustainable actors. Their proximity and flexibility appear as powering performance factors, namely by responsiveness greater capacity. Proximity to market allow to understand new trends and demands from customers (Simpson et al., 2004; Amann & Jaussaud, 2017). Proximity allow greater interaction which results in a alignment between stakeholders sustainable requirements and SMEs responsible behaviour (Fuller & Tian, 2006). SMEs benefit also from a coherent identity and informal communication among their members, and thus lower coordination costs in the implementation of CSR practices

SMEs have a coherent identity and informal communication with lower practices implementation costs (Hamman et al., 2017). Their reactive and dynamic strategies allow an greater innovative performance due to lower scale and direct decisional line (Hudson et al., 2001). Thus, innovative performance measures and systems derived from financial, social and environmental request may be applied with quicker and more effective processes.

Sustainability performance is a relevant area for a consistent strategic implementation (Santos et al., 2005). Corporate sustainability performance (CSP) field collects decisive contributions of sustainable development theorization. Thus, the Triple Bottom Line (TBL) framework and its three linked and interconnected dimensions (economic, social and environmental) are central. The performance definition is an ambiguous concept depending on the resources used, but also based on the results of the resources mixt.

A definition of measures or indicators is not unanimous when performance measurement system is created (Gomes, 2005; Rodrigues, 2010). Performance measurement is defined as the process to quantifying the efficiency and effectiveness of action, integrating a set of metrics designated performance measurement systems (Bourne, 2003; Neely 2005). Performance measurement system operates in a specific internal and external environment, focusing organization's culture (Neely, 2005). Design and implementation of performance systems have been proposed as a balance between internal and external measures and between financial and non-financial measures (Bourne, 2000). Most companies use targets and



performance indicators based on internal financial standards, on contrary external and non-financial targets are not widely used (Neely, 2005; Sharma, 2004).

Family SMEs sustainability performance system may integrates the three dimensions of TBL concept (Hubbard, 2009; Sroufe & Gopalakrishna-Remani, 2018). Research on FB performance have evolve with debates on comparison with non-family business (NFB) (Anderson & Reeb, 2003; Miller et al., 2007; Allouche et al. 1995, 2007, 2008, Chrisman et al., 2009; Blodgett et al., 2011; Amann et al., 2012; Lunardi et al., 2017), integration of institutionalism and stakeholders perspectives (Poza et al., 1997; Mitchell et al., 2012; Liu et al., 2012) social responsibility integration (Déniz & Suarez, 2005; Niehm, 2008; Fassin et al., 2010; Bingham et al., 2011; Fitzgerald et al., 2012; McGuire et al., 2012; Cruz et al., 2014; Marques et al., 2014; Campopiano & de Massis, 2015; Nehkili, 2017; Perpilines 2017; Popowska, 2017), environmental integration (Huang et al., 2009; Marques Gou et al., 2012; Hoogendoorn et al., 2014) family and owner involvement effect (Allouche & Amman, 2002; Barontoni & caprio, 2005; Dyer, 2006; O'Boyle et al., 2012 ; Ducassy & Montandrau, 2014; el Goul et al., 2016).

### **2.3 Family involvement in firm theory and hypothesis**

A greater performance is pointed to FB, because family objectives and business strategies appears as inseparable, creating a long-term strategy and commitment (Habbershon & Williams, 1999).

Logically, on a financial perspective, FB appears having the capacity to invest in long-run return opportunities with less debt (Allouche & Amann, 2000, Paiva et al., 2015). Family owners provide a closer management monitoring with greater knowledge and with lower costs of agency. FBs are significantly more customers oriented with particular concern for the quality of their products and services (Vallejo Martos & Grande Torraleja, 2017).

A greater ethical standards and responsibility, justified by transmission and succession perspectives, allow a family-oriented workplace which inspires employee with greater human resources performance and generate motivation and loyalties (Habbershon & Williams, 1999; Allouche & Amann, 2000). Also, on an external point of view, family SMEs have a more close and consistent link with its surrounding community including (Dyer, 2006). Finally, owner-manager direct control of resources and awareness affect positively environmental performance (Hoogendoorn et al. 2014).

Agency theory supported on the antagonism of power and influence between owners and managers (Allouche & Amann, 2000; Liu et al., 2012; Hoogendoorn et al., 2014). Thus, the agency relationship states that agents (managers) conducted by own goals may take decisions against interest of owners (principals). Thus, it leads to a greater monitoring of managers by the owners, which lead to costs and reduction of the performance. The idea that resources are wasted and capabilities reduced by the indirect management is highlighted (Miller et al., 2006). Sharma (2004) state that FB allows the alignment of ownership and management and reduce agency problems based in an altruistic behaviour of family members. This unification has also a positive impact to firm shared values between family managers and shareholders, employees, suppliers and customers enhancing engagement and partnership in an outperforming social network (Allouche et al., 1995, 2007, 2008).

Also, resource-based view (RBV) of the firm support FB's greater performance hypothesis. RBV has emerged, articulating the relationships among firm resources, capabilities and competitive advantage (Barney, 1991; Hart, 1995). In a performance management angle, family businesses possess resources such as human capital (Sirmon & Hitt, 2003), social capital, physical and financial capital (Dyer, 2006), trust and reputation (Allouche & Amann, 2002). The resources generate capabilities non imitable (e.g. control of network, alliances, technical knowledge, etc...) and influence the competitive advantage, wealth, and value creation potential of family firms (Sirmon & Hitt, 2003; Daspit et al., 2017).

Stakeholder theory provides also a framework for understanding FB's performance (Sharma, 2004; Nekhili et al., 2017). Proximity, social care and family ethical standards may support a proactive stakeholder engagement and management (Cennamo et al., 2012). The alignment between family SME's strategy and stakeholder perspective can pull success of business (Shama, 2004). The integration of family network with employee or non-familiar managers, the large partnership with customers or suppliers will contribute to greater responsiveness and outperforming capacity (Allouche & Amann, 2000; McGuire et al., 2012).

Recently authors have focused institution-based view theory to argue a set of explanations supporting the better performance of family businesses (Liu, 2010). As explain by DiMaggio & Powell (1983), organizations are conditioned through external pressures to meet strategic and operational legitimacy. Organizations adopt business practices because it provides legitimacy through coercive isomorphism, mimetic process or normative pressures. In this point of view, new imperatives of sustainability between corporate environmental and social performance due to physical, social and regulatory forces of institutional logics stands

to firms (Miller et al., 2017). For example, reflecting family loyalty based on paternalism conventions, competition based on economic norms or environmental engagement based on legal prescriptive forces (Nee, 2005; Wright et al., 2014). Institutionalism pulls the FB to an external interaction logic which influence the degree that stewardship or agency behaviours are applied and how SEW priorities are context-based (Miller et al., 2017).

This literature review and the approach of sustainability performance analysis in Portuguese's SMEs, in particular FBs, lead us to formulate and test the following hypothesis:

**Hypothesis 1:** In Portugal, FBs enjoy better sustainable performance than NFBs

Corporate sustainability performance is highly influenced by the TBL concept (Elkington, 1997; Engert, et al., 2016). The integration and balance of sustainability dimensions (economic, environmental and social) is in academic literature the main model which translate a firm sustainable performance (Hubbard, 2009). The TBL concept shows the complexity of tensions and trade-offs among the three elements (Rogers & Hudson, 2011). Theoretical analyses are based mainly on the SME sustainability approach and theories linked to FB research, namely RBV, agency, stewardship, institutionalism and stakeholders' frameworks. On an RBV theoretical angle, FBs possess resources or "familiness" capitals which generates capabilities non imitable (Dyer, 2006). Thus, FBs performance is affected positively by competitive advantages generate by these unique resources (Sirmon & Hitt, 2003). Also based on agency theory by a more direct management, FBs are more efficient and less spenders, predicting a stronger financial performance of FBs (Allouche et al., 1995, 2008). Thus, the following hypothesis is derived:

***Hypothesis 1a:*** *In Portugal, FBs have stronger financial performance than NFBs*

Uhlaner et al. (2012) states that larger business-owning families have a positive effect on engagement in environmental management practices. In this context, social performance, local integration, reputation and visibility lead FBs to be environmentally focus (McGuire et al., 2012; Hoogendoorn et al., 2014). Within a limited risk culture, FB's managers tend to listen and anticipate environmental pressures, mainly from regulatory stakeholders, (government, regulatory institutions or society), but also internal stakeholders (Shareholders, employees), and market stakeholders (Customers and providers) (Huang et al., 2009). Thus,

family SMEs by their direct capacity of decision are available to be outperformers on time on an environmental dimension. Management and ownership lead to decision without intermediaries sharing and direct engagement with key stakeholders in environmental actions. This allows FBs to gain support and extend the firm's reputation (McGuire et al., 2012). FBs are more prone to give close and preventive answer due to impacts on survival and successions value of the family (Déniz & Suarez, 2005). Thus, the following hypothesis is derived:

***Hypothesis 1b: In Portugal, FBs have stronger Environmental performance than NFBs***

Researchers have recently put a focus on a particular attention to understand CSR in FBs. Given that, the topic of social performance among FBs has been investigated only in a very few studies yet (Campapiano et al., 2012). Niehm et al. (2008) state that FBs often rely on local society as a resource for business operations. Thus, to enhance the firm's and, in turn, the family's reputation, FB's engage more in CSR activities (Amann et al., 2012; el Ghouli et al., 2016). Stewardship framework provides the support for FBs greater focus on social performance, which include SEW for family shareholders and stakeholders on a long-term reference (Cruz et al., 2014). SME management is intrinsically linked to performance, stakeholder and institutional pressures. Due to their space proximity and time responsiveness, specific local resources availability and competences, SMEs may have more opportunities to exploit engagement of community, capitalizing stocks of reputation, trust, legitimacy, norms and networks to support the long-term performance (Spence et al., 2003; Perrini, 2006; Marques, et al., 2014). Finally, governance and leadership of owner-managers influence directly social orientations and choices through their own vision and values (Jenkins, 2006; Fassin, 2010). Without agency dynamics, direct management and monitoring of FBs allow to apply more efficiency resources available on a social strategic purpose (McGuire et al., 2012). Thus, the following hypothesis is derived:

***Hypothesis 1c: In Portugal, FBs have stronger social performance than NFBs***

## 2.4 Link nature between CSP and CFP theory and hypothesis

Smaller or unlisted firms capitalize and benefits from sustainability-oriented initiatives as much or more than large firms (Dixon-Fowler et al., 2013). For example, studies show that environmentally oriented innovation strategy helps SMEs to improve their profitability (Sáez-Martínez et al., 2014). RBV theory suggests that corporate sustainability, as instrumental concept, is used to achieve sustained competitive advantage with organizational valuable capabilities (Hart, 1995). In this sense also, SMEs are positively affected, increasing competitiveness generated using unique resources. For stakeholder theory, CSP is positively associates to financial performance (Allouche & Laroche, 2006) because it enhances the satisfaction of stakeholders improving trust and reputation (Sroufe & Gopalakrishna-Remani, 2018). On an internal lens, CSP can be linked to a greater work environment with more motivate, thus more efficient workers (Habbershon & Williams, 1999).

The nature of the link between CSP and CFP is questioned in SMEs context with various theoretical perspectives (Hirigoyen & Poulain-Rehm, 2015). Firstly, three different causal nature of the influence can be enounced, questioning if CFP determines CSP, or inversely CSP determines CFP or finally if there are reciprocal influences (Preston & O'Bannon, 1997; Allouche & Laroche, 2006). Secondly, three major links build academic studies and the debate around relationship between CSP and CFP (Orlitzky, 2006). Aggregating causal influence and empirical research, Allouche & Laroche (2006) concludes of eight models on relationship between CSP/ CFP (Table 4.2).

**Table 4.2 – Relationship between CSP/ CFP**

Causal direction	Models in empirical research		
	Positive	Negative	Neutral
Social performance > Financial Performance	(1) Social impact hypothesis	(4) Trade-off hypothesis	(7) Absence of link hypothesis
Financial performance > Social Performance	(2) Available funds hypothesis	(5) Opportunism Hypothesis	----
Social performance < > Financial Performance	(3) Positive synergy	(6) Negative Synergy	(8) Complex link Hypothesis

*Adapted from Allouche & Laroche (2006)*

Primarily, models propose positive link based on a stakeholder and RBV lens, stating that social (and environmental) actions satisfy stakeholders (Huang et al., 2009; Bingham et al., 2011) and give competitive advantage to face competitors, by inimitable resources and capabilities on a market-oriented strategy (Barney, 1991; Hart, 1995).

Secondly, models in empirical research, which concluded about negative link, based on neo-classic primacy of efficient financial management. This vision observed that corporate social responsibility adds costs, which conduct to competitive disadvantages (Allouche & Laroche, 2006). In the same negative link logic, another hypothesis reflect that managers are led by their own interest, sometimes conflicting with stakeholders and putting short-term objectives in first place, more than on a long run lens.

Third, appears a neutral model that includes four different hypotheses. The synergetic model explores positive or negative dynamics stating that CSP improve CFP which in turn improve CSP in a virtuous circle. This angle conceives also the opposite scenario with a negative lens (Allouche & Laroche, 2005). Another model focuses the absence of link, concluding on the independence between CSP & CFP (McWilliams & Siegel, 2001). Finally, the last model proposes a more complex link, where intensity, time and efficiency of CSP or CFP can influence the other dimension positively, negatively or be neutral (Allouche & Laroche, 2006; Brammer & Millington, 2008). For example, U-shaped relationship concluded that positive influence of CSP on CFP reach an optimum level of positive effect beginning to have limited effects from that point.

Additionally, putting more diversity on research approach, Allouche & Laroche (2006) highlight the methodological limitations found in different studies that create more uncertainty on the nature of the link. Thus, the following hypothesis is derived:

**Hypothesis 2:** In Portugal, SME financial performance is positively linked to environmental and social performance

A common vision on SMEs, is defining main characteristics based on the size (Jenkins, 2006). Taking RBV theory, resources and inimitable capabilities contribute to stronger performance (Barney, 1991; Hart, 1995). Research has shown that organizations with a larger size are more likely to undertake sustainable strategies leading to an interpretation that SMEs' lack of resources prevents them to have stronger performance (Aragon-Correa et al., 2008; Nihem et al., 2008). Sustainability performance requires tools, which signify a greater investment of time, finances and energy for the small firm than for large firms, for example environment certification (Spence et al., 2000; Bos-Brouwers, 2010).

Also, on an institutional logic, family SMEs tend to be less significant because they enjoy a certain degree of anonymity (Hoogendoorn et al., 2014) and create a certain degree of own family culture, norms and conventions. Thus legal, regulatory and social pressures have less impact on family SME than on larger firm. Numerous and diverse stakeholders increase the large firm's social pressures and challenges to sustainable performance and few force SMEs (Amann et al., 2012). On a stakeholder point of view, larger companies are more under the public lens and stressed to achieve better sustainable performance (Hoogendoorn et al., 2014). Size has been suggested in previous research to be relevant due to the evidence that smaller firms did not demonstrate stronger corporate social performance, as do larger firms (Uhlener et al., 2012).

As previously highlighted, stakeholder theory fundamental dilemma is how to prioritise the diversity of stakeholder. This challenge includes stakeholder identification, consultation, communication, dialogue and accountability (O'Riordan & Fairbass, 2014). In this sense establishing action to improve performance on a stakeholder vision is complex, since that include the incorporation of a large scale of human and financial resources. A large set of elements lead to evoking SMEs as out of sustainability trends and performance, namely due to the lack of human resources or the insignificance of external stakeholder's demand (Ramos et al., 2013). In this sense, micro and small enterprises may not prioritize social performance comparing to medium enterprises, from the lens of scale economies and market shares (Aragon-Correa et al., 2008). Differences in firms' capacity to define and implement environmental strategies have been explained on a size determinant, claiming that is a prerogative of large firms (Perrini, 2007). Firm size was recognized as potential to explain differences in behaviour under the same legal environment context (Amann et al., 2012; Ducassy & Montandru, 2014). On a RBV lens, research focus positive relationship between larger firm and environmental actions (Hoogendoorn et al., 2014). Thus, we can expose that the micro and small enterprise with less access to resources will have a weaker environmental performance. Aragon-Correa et al. (2008) observe that small firms are reluctant to investments in environmental practices due to lack of resources characterizing SMEs and the low pressures by their stakeholders. Therefore, the following hypothesis is derived:

**Hypothesis 3:** In Portugal, Environmental and Social Performance is explained by the Size

Beside size, sector activity belonging is also point as factor to differences on performance of SMEs. In fact, Miller et al. (2007) state that among other determinants (for

example: governance, management or social capital) industry is strictly linked to firm performance. Industry determines specific demands on competitiveness, environmental and social areas that require resources and adapted capabilities (Dapsit, 2017). Different priorities appear based on different goals are also likely to diverge from SMEs in the manner in which their resource stocks are used (Chrisman et al., 2009). SMEs activity and its institutional logic, influence decisions and action by regulations, norms or conventions (Mitchell et al., 2011). For example, sustainability awareness on manufacturing sector, namely focus on environmental dimension (Al Farooque et al., 2014), tend to aggregate also social practices. Firms manage its CSR efforts towards the environment when it explicitly asserts the intention to take care or to recover its image (Campopiano et al., 2012). In this sense, manufacturing industries are more exposed to external evaluation and control. Traditionally, manufacturing family SMEs have a greater focus in values like product quality, respect and protection of employees, and involvement with the local community (Déniz & Suárez, 2005). Sector activity circumstances pose different environmental challenges, influencing environmental practices of firms (Huang et al., 2009). Industry (Manufacturing) sector enhanced environmental practices through legislation, industry sensitivity to environment, stakeholder's awareness and pressure (Al Farooque et al., 2014). In an institutional lens, the industry effect tends to be translated by a group of regulations, norms (eg. good practice) and conventions. Legislation on energy conservation or encouraging climate change management strategies conduct significant action from manufacturer on energy and air emission reduction. (Al Farooque et al., 2014). Therefore, the following hypothesis is derived:

**Hypothesis 4:** In Portugal, environmental and social performance is explained by firm sector activity

Beyond the scope of this essay, we need to highlight the potential effect of financial public debt crisis in Portugal starting officially in May 17<sup>th</sup>, 2011 with International Monetary Fund, European Central Bank and European Commission intervention. The crisis led to a banking and financial sector rescue. Portuguese authorities encouraged the main financial institutions to merge and take over the weaker institutions supporting it by public funds. This reorganization process in the financial sector create more difficulties to Portuguese enterprises in order to receive funds from banks and other financial institutions. In a managerial practice, crisis input new preventive and conservative strategies from managers. In table 4.3, we can



observe that 2012 is the year of greatest recession in Portuguese economy with a decrease of 4,03% of GDP. Slowly, the economy recovers starting in 2014 and consolidating in following years (2015 and 2016).

**Table 4.3 – GDP growth rate of Portugal (in real terms), by civil year 2007 – 2016**

<b>Year</b>	<b>2007</b>	<b>Year</b>	<b>2012</b>
<b>GDP</b>	2,49	<b>GDP</b>	-4,03
<b>Year</b>	<b>2008</b>	<b>Year</b>	<b>2013</b>
<b>GDP</b>	0,20	<b>GDP</b>	-1,13
<b>Year</b>	<b>2009</b>	<b>Year</b>	<b>2014</b>
<b>GDP</b>	-2,98	<b>GDP</b>	0,89
<b>Year</b>	<b>2010</b>	<b>Year</b>	<b>2015</b>
<b>GDP</b>	1,90	<b>GDP</b>	1,82
<b>Year</b>	<b>2011</b>	<b>Year</b>	<b>2016</b>
<b>GDP</b>	-1,83	<b>GDP</b>	1,62

### 3. METHODOLOGY

#### 3.1 Sample and data sources

SMEs study places researchers on a critical investigation field with an enormous set of challenges and obstacles, which require adaptability, resistance and perseverance. SMEs, in particular family businesses, are extremely locked in regard to the information access. This attitude found its source in several reasons: Secrecy and closure of information, lack of human resources and knowledge for basic statistical treatment, feeling of no belonging to the investigated field or lack of awareness for scientific studies and research.

In addition to the lack of reactivity of SMEs, the research was also confronted with specificities in sampling and public disclosure:

- FBs and NFBs are not a specific criterion for national statistical entities (INE- Instituto Nacional de Estatística, GEP- Gabinete de Estratégia e Planeamento & IES- Informação Empresarial Simplificada). Thus, it was not technically possible a segregation of family or non-family businesses creating limitations to access to data's;
- On a social dimension, confidentiality terms of data from the “Relatório Único” provided by the GEP, prevent the collection of individual datas of FBs / NFBs even identified previously (email - GEP.dados@gep.mtsss.pt from 2016.11.23);

- At environmental performance level, despite the existence of regulatory bodies within the scope (Portuguese Environment Agency -APA), the reporting of data is limited to a few numbers of large companies (more pollute industries). Thus, it was not possible to access to the environmental data´s from SMEs.

Igalens & Gond (2005) states that five retrieving approaches can be used: (1) the content of annual reports, (2) pollution indicators, (3) questionnaire surveys, (4) reputation indices and (5) data produced by measurement agencies. Due to limitation above describe, we opted for a questionnaire survey based on the mandatory statistical business information to report at least once a year. We divided it on three recognized TBL dimensions (Elkington, 1997) and based on the specifications of the Tax authority (Autoridade Tributária) through General Directorate of Taxes, GEP (Gabinete de Estratégia e Planeamento) and APA (Agência Portuguesa do Ambiente).

Our questionnaire has been conceived based on standard business statistics in Portugal:

- For economic dimension, we take data´s based on “Informação Empresarial Simplificada (IES)” report which consists on a legal obligation accounting, tax and statistical report on yearly base, applicable to all companies in Portuguese territory.

This report includes:

- a. Annual accounts and the corresponding registration with the trade register conservatories;
  - b. Annual declaration of accounting and tax information to the Ministry of Finance (General Directorate of Taxes);
  - c. Delivery of annual information of an accounting nature to INE for statistical purposes;
  - d. Delivery of information on annual accounting data for statistical purposes o Bank of Portugal.
- For social dimension, we support our survey on “Social Unique” report (Relatório Único) which is built on an annual questionnaire required to be completed by *"natural or legal persons with workers at their service and by the central, regional and local administration and public institutes with workers at their service under the legal regime of individual employment contract, only with respect to these*

*workers.*" and sent to the Strategy and Planning Office of the Ministry of Labor and Social Security (GEP);

- At the environmental level, inspired by indicators requested for large consumers of water and electricity and their communications to regulatory entities within the responsibility of the Agência Portuguesa do Ambiente (Environmental Portuguese Agency).

One of the main concerns is that the collected data in the field will reflect as accurately as possible the reality studied (Drucker-Godard et al., 2014). The first step is to use reliable methods on data collection. Primary and legitimate sources should preferably be drawn from secondary sources. To be reliable, the data and the measuring instrument must allow different observers to make consistent measurements of the same subject with the same instrument. In our study, reliability is based in direct information (primary sources) collected from firms sampled.

**Table 4.4 – Questionnaire Data collected versions 1 and 2**

<b>Economic Dimension</b>	<b>Social Dimension</b>	<b>Environmental Dimension</b>
1. Total of Revenues	1. Training costs (euros)	1.Total of amount spend on environmental practices
2. Total expenses	2. Total training hours performed (Hours)	2. Fines and sanctions for non-compliance with environmental laws and regulations
3. Total assets	3. Health and Safety costs	3. Total of cost of water
4. Common equity	4. Social contributions value	4.Total of cost energy
5. Dividends	5. Number of working hours	5.Environmental/sustainability reports (Y/N)
6. Total Capital Invested	6. Salary and others costs (euros)	6. EMS (14001, EMS) (Y/N)
7. Total operating expenses	7. Accident frequency rate	
8. Depreciation	8. Accident Gravity rate	
9. Long term debt	9. Total number by retreat	
10. Short term debt	10. Total number by demission	
11. Total capital	11. Total number by retreat	
12. Current assets	12. Number of work conflicts and/or work infraction	
13. Current liabilities		
14. Cash & Equivalent		
15. Receivables (Net)		

Over the time, our questionnaire has evolved to shorter data recover to increase the probability of a greater number of responses by SMEs. Thus, after confirming with *InformaDB*, a provider of private sector financial and risk information the purchase of the similar financial data of the IES, we reduce our questionnaire to environmental and social information. However, we face a tremendous challenge to retrieve firm's answers, to complete our sample objectives.

For the distribution of our questionnaire, we carry out a two-stage methodology. Firstly, it was performed an identification case by case of non-family companies on different industry sector and country geography, excluded banks and public entities. This search has been made by personnel contact with consultants, CEO 's, entrepreneurship centres and

incubators, industry associations and by internet search. It was guaranteed that the sample was in respect with the geographical and industry statistical proportion.

To this first group, we use a standard message that contained the questionnaire. The message, with the request for collaboration in the work, was distributed by postal and by computer means, sending by e-mail to managers or directors of companies. On a second step, we identified FB for each NFB previously selected and sent the same message containing the same questionnaire by the same methodology.

### **3.2 Data**

In this study, FBs have been considered those that meet the following criterion:

*“A firm if it so wishes to be considered and if:*

- 1. The majority of votes is in possession of the natural person(s) who established the firm, in possession of the natural person(s) who has/have acquired the share capital of the firm, or in possession of their spouses, parents, child or child’s direct heirs.*
- 2. The majority of the votes may be indirect or direct.*
- 3. At one point in the firm’s existence, at least two representatives of the family or kin of different generations have been involved in the management or administration of the firm, either simultaneously or in succession.*
- 4. Listed companies meet the definition of family enterprise if the person who established or acquired the firm (share capital) or their families possess 25 percent of the right to vote mandated by their share capital.” (Coimbra, 2008: pag. 3).*

Only questionnaires with equal or more than 66% of data answered have been integrated in our sample (44 out of 66 measures). Also, only SMEs with more than five years (at least starting operating in 2012 with a tax declaration submitted) were included in our sampling. From Bank of Portugal data firms within 5 to 6 years have a survival percentage of 55% to 48% respectively, so companies with five full operational years tend to be more experienced and prepared to sustainability challenges and with consistent financial background.

**Table 4.5 - Firms sector sample (n = 65)**

Industry	SIC	n	%
C. Manufacturing	13	4	6,15%
	14	6	9,23%
	20	1	1,54%
	23	4	6,15%
	25	2	3,08%
	27	4	6,15%
	31	1	1,54%
E. Water collection, treatment and distribution; sewerage, waste management and remediation activities	38	4	6,15%
F. Construction	41	2	3,08%
	43	10	15,38%
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	46	8	12,31%
J. Information and communication activities	62	6	9,23%
M. Consultancy, scientific and technical activities	70	2	3,08%
	71	4	6,15%
	72	2	3,08%
	74	2	3,08%
N. Administrative and support service activities	81	2	3,08%
Q. Human health activities and social support	86	1	1,54%
<b>Total</b>		65	100%

In table 4.5, we observe the full sample used in our study, with a total of 65 Portuguese SMEs included. A total of 18 two – digit SIC which include a broad spectrum of economic activity in Portugal. By Size our sample includes, 5 micro-enterprises (7,69%), 42 small enterprises (64,62%) and 18 medium enterprises (27,69%) have been considered in all steps of our investigation. In table 4.6, we aggregate the descriptive statistic of our sample by each analytic dimension and hypotheses.

**Table 4.6 - Firms sample (n = 65)**

Number of Enterprises (FB / NFB)		Matched paired Methodology (Firms number 2012 & 2016)			Linear Regression (Firms number)		
FB	NFB	Financial	Social	Environmental	CFP= CSP/CEP	CSP= Size	CSP= Industry
34	31	60	44	42	34	34	34

### 3.3 Method

#### 3.3.1 Matched paired method

In this section we present the method used to match firms in 2012 and 2016, as well as used to validate variables and measures. Matching methods have been widely used in comparative studies of FBs and NFBs (e.g. Allouche et al. 1995, 2007, 2008; Llach and Nordqvist, 2010).

This technique has been used in a large range of study in other areas of management research. Bansal & Hunter (2003) applied it to test on a sample of US firms certified ISO 14001 and not certified, comparing the effect on firm strategies in respect to the natural environment, corporate social responsibility, quality, and internationalization. Kreander et al. (2005) used this technique to evaluate the performance of ethical and non-ethical funds. Allouche et al. (1995, 2007, 2008) analysed the impact of family control on the performance and financial characteristics comparing FB and NFB based on a matched-paired investigation. Llach et al. (2012) searched a possible differential behaviour of FBs in the recession context using a matched-pairs method that increases the comparability of the available data. Amann & Jaussaud (2011) investigate FB and NFB resilience in an economic downturn supported on this technique. Also, Amann et al. (2011) focused on corporate social responsibility in FB and NFB to determined differences and determinants using matched-paired technique. Finally, Eccles et al. (2014) investigate the effect of corporate sustainability on organizational processes and performance using a matched sample of 180 US companies.

Two samples of Portuguese's SMEs were formed, one consisting of FBs and the other of NFBs. A matching methodology was used based on a two-fold size criterion (annual turnover or average annual workforce) and sectorial membership (first two digits of the Standard Industrial Codes). For size, we consider that two companies are paired, if the overall turn-over per employees are within 60% of each over. Consequently, we obtained for 2012 and 2016:

- 30 matching pairs ( $n= 60$  firms) for financial dimension, and
- 22 matching pairs ( $n= 44$  firms) for social, and
- 21 matching pairs ( $n= 42$  firms) for environmental dimension.

We used Student t tests on paired samples to retrieve the statistical significance of the mean difference between FB and NFB SMEs.

For Hypothesis 1, we use a univariate analysis (comparison of means) to investigate statistical differences between FBs and NFBs. Significance analysis has been performed for each individual measures of table 4.7 and divided in three dimensions (Economic, Social & environmental), as hypothesized previously. A total of 32 performance measures have been compared and analysed in this study.

**Table 4.7 – Final measures and data for the years 2012 & 2016**

Label	Measures
Economic (EC)	Return on Assets (%) Return on Equity—Total (%) Return on Invested Capital (%) Earnings Before Interest and Taxes (EBIT) Net Income (%) Pretax Margin (%) Total Debt % Total Capital Long Term Debt % Total Capital Total Debt % Common Equity Gearing Ratio Current Ratio Quick Ratio
Environment (EN)	Amount spends in environmental practices Cost of water consumption Direct energy consumption Environmental/sustainability reports EMS (14001, EMS)
Social (SO)	Training costs per workers (euros) Training costs per revenue (%) Average number of training hours per worker Health and Safety costs per revenue (%) Average of working hours per worker Average of cost per hour Accident Frequency rate Accident Gravity rate Turnover of workers (%) Average of leaves by retreat Average of leaves by demission Average of leaves by dismissal Proportion of female employees Average of work cost Average of tax paid/ Turn-over



### 3.3.2 Variables and Linear regression

For hypotheses 2, 3 and 4 we used a multivariate methodology, employing a multiple linear regression technique. The use of this methodology is justified by the nature of our sample (not paired) and the purpose of estimation. The linear regression is an equation for estimating the conditional (expected value) of a variable  $y$ , given the values of some other variables  $x$ . The relation is expressed by a positive or negative relation between variables. Taking in consideration sample size ( $30 < x < 40$ ) and assumption tests, multiple linear regression fit within study objectives (Miles & Shevlin, 2001).

In our study the dependent variables relate to firm performance are (1) Return on Assets (ROA), (2) Return on Invested Capital (ROIC) and (3) Return on Equity (ROE) (Allouche et al. 1995, 2007, 2008). ROA is a performance accounting indicator defined by the ratio of net income to total assets. ROIC is also a performance indicator, which measure firm efficiency of investment (financial resources management). Finally, ROE is an indicator on a shareholder perspective, which measures the amount of returns based on shareholder investment.

The key independent variables are social performance (SocP) and environmental performance (EnvP) defined as average of percentage on turn-over spent on social and environmental dimensions. Additionally, size and industry are included to control firm specific characteristics (Anderson & Reeb, 2003). Size dummy is based on workers number and allow to capture effect, distinguishing two groups microfirms (1–9 employees) and small firms (10–49 employees), and medium-sized firms (50–249 employees; reference category). Industry dummy, which take the value 1 if the firm is an industry firm and 0 otherwise, are also included to capture effect and specific characteristics.

For Hypothesis 2, we use multivariate analysis of full FB sample based on the following equation:

$$Firm\ Performance = f(SocP, EnvP)$$

as explain on this linear regression:

$$Firm\ Performance = \alpha_0 + \alpha_1 SocP_i + \alpha_2 EnvP_i + \varepsilon$$

Where  $i$  = firm; *Firm Performance* = Return On Assets (ROA), Return on Invested Capital (ROIC) and Return on Equity (ROE);  $SocP_i$  = Average of percentage on turn-over spent on social dimension;  $EnvP_i$  = Average of percentage on turn-over spent on environmental dimension;  $\alpha_0$  = constant;  $\alpha_1$ ,  $\alpha_2$  and  $\alpha_3$  = regression coefficients, and  $\varepsilon$  = residual term.

**Table 4.8 – Definition of variables**

<b>Variables</b>	<b>Description</b>
<b><i>Dependent variables</i></b>	
Return on Assets	(Net Income / Total assets)*100
Return on Invested Capital	(Net Operating Profit After Tax/Invested Capital) *100
Return on Equity	(Net Income/Shareholder's Equity)*100
<b><i>Explanatory and control variables</i></b>	
SoCP	(Training costs + Health and Safety costs + Salaries & social contributions) / Total of turn-over
EnvP	Total of amount spend on environmental practices/ Total of turn-over

For hypothesis 3 & 4, we performed a multivariate analysis based on the following equation:

$$ESP = f(Size, Ind)$$

as explain on this linear regression:

$$ESP_i = \alpha_0 + \alpha_1 Size_i + \alpha_2 Ind/Nind_i + \varepsilon$$

Where  $i$  = firm; *ESP* = Environmental and Social Performance (Average of percentage on turn-over spent on environmental and social); *Size* = Number of workers;  $Ind_i = IND/NIND_i$  if firm 1 is Industry and 0 if otherwise and  $\varepsilon$  = residual term, as explain in table 4.9.

**Table 4.9 – Definition of variables Hypothesis 3 & 4**

<b>Variables</b>	<b>Description</b>
<b><i>Dependent variables</i></b>	
SoCP	(Training costs + Health and Safety costs + Salaries & social contributions) / Total of revenues*100
EnvP	(Total of amount spend on environmental practices/ Total revenues)*100
<b><i>Explanatory and control variables</i></b>	
Size	Number of workers
Industry dummies	Dummy variables for industry for each industry to capture

Table 4.10 detailed the expected sign (positive or negative) between dependent and explanatory variables, based on hypothesis 2, 3 and 4.

**Table 4.10 – Expected sign of variables**

Variables	Expected sign				
	ROA	ROE	ROIC	ENV	SOC
ENV	+	+	+		
SOC	+	+	+		
Size				+/-	+
Industry				+	+/-

## 4. RESULTS

### 4.1 Matched Paired results

The matched pairs approach objectives are to compare systematically family and non-family businesses with the same profiles, in the same industry, and of nearly the same size. Our study focus Portuguese's SMEs performance in 2012 and 2016, based on financial, environmental and social indicators.

Our first analysis focuses the SME financial performance variance and the influence of family control. Financial performance has been structured on two dimensions translating profitability:

- Investment efficiency, delimited by ROA, ROE and ROIC indicators, and
- Earnings generation, through EBIT, Net incomes and pretax margin observation.

Financial structure was analysed in two dimensions:

- Level of indebtedness, envisaged through total debt and long-term debt per total capital and common equity, but also Gearing ratio, and
- Level of Liquidity, by Current ratio and Quick ratio analysis.

In table 4.11, we find that the two groups exhibit very similar financial performance. ROA and ROIC translate no significant difference in results between FBs and NFBs. Despite statistically no significant, difference was found since we observed a higher performance for the FBs with the crisis alleviation in 2016 (+38,09% than NFB) in ROE indicators results (shareholder perspective).

On earnings generation perspective, no statistically significant differences between SME FBs and NFBs have been verified. However, we can highlight the recovery of earnings observed in FBs in contrast with an apparent stability for NFBs. Supported by Amann and Jaussaud (2011) observations, FBs seems to recover better than NFBs and it may be linked to greater investments (see Gearing Ratio 2012 & 2016) and ability to mobilize their resources which generates capabilities non imitable (Dyer, 2006), confirming RBV theory.

Similarly, in indebtedness perspective no statistically significance was found in total debt/ total capital, long-term debt/ total capital and total debt / common equity. However, comparing means we can observe that FBs are less indebted than NFBs in both years.

A significant difference in gearing ratios is observed (p-value 10% in 2012 and p-value 5% in 2016) between the two groups. Gearing ratio is lower in FBs than NFBs for the two years, translating a lower level of debt comparing to common equity dependence (shareholder perspective). This result is consistent with previous findings showing that FBs are more efficient, less spenders and less dependent of financial sector (Allouche et al., 1995, 2008; Amann & Jaussaud, 2011). In terms of liquidity, the differences are significant in 2016 at 5% threshold, matching with academic findings that pointed for a greater ability of FBs to meet short-term financial commitments and resist in adverse economics scenarios (Allouche et al., 1995, 2008; Amann & Jaussaud, 2011). Observing means, we can conclude that FBs have higher current ratios and quick ratios in 2012 and 2016 compared to NFBs. The stronger financial structures of FBs compared to NFBs support the long-term strategy and commitment, thus the capacity to invest stated by various authors (Habbershon & Williams, 1999; Paiva et al., 2015).

In 2016, despite in the profitability perspective no significant difference has been found between FBs and NFBs, we can observe a great capacity of earnings recover by FBs. These observations are consistent with agency theory related to more efficient organizational processes, greater flexibility and seem to prove the RBV perspective of resources mobilization capacity in FBs (McConaughy et al., 1995). On a financial structure perspective, we gain a new understanding that FBs have a significant and stronger financial structure. In accordance on previous findings, FBs achieve their success because of their long-term orientation (Miller et al. 2006) and sustained 'familiness' management (Habbershon and Williams 1999; Dyer, 2006) translated on a strong and long-term financial structure. These two financial dimensions analyses, allow us to conclude that hypotheses 1a is accepted.

In another angle, table 4.12 shows us the comparative environmental performance between FBs and NFBs. Taking the internal and external commitment perspective, we draw five environmental indicators as follow:

- Internal environmental performance, based on amount spend in environmental Practices, Cost of water consumption and Direct energy consumption, and
- External environmental performance, based on Environmental/sustainability reporting and EMS (14001, EMS) certification.

**Table 4.11 – Comparative financial performance between FB and NFB**

	<b>2012</b>						<b>2016</b>					
	<i>n</i>	Means		Difference	t-statistics	<i>Sig.</i>	<i>n</i>	Means		Difference	t-statistics	<i>Sig.</i>
		FB	NFB					FB	NFB			
Return on Assets	30	2,62%	2,96%	-0,34%	-0,126	0,901	30	5,45%	5,47%	-0,03%	-0,011	0,992
Return on Equity—Total (%)	30	11,08%	20,32%	-9,24%	-0,844	0,405	30	30,73%	-7,36%	38,09%	1,375	0,180
Return on Invested Capital	30	7,20%	8,98%	-1,77%	-0,129	0,898	30	5,57%	4,85%	0,73%	0,484	0,632
Earnings Before Interest and Taxes (EBIT)	30	-1,07%	6,12%	-7,19%	-0,932	0,359	30	7,40%	7,17%	0,24%	0,096	0,924
Net Income (%)	30	-3,64%	3,44%	-7,08%	-0,955	0,348	30	5,17%	4,75%	0,42%	0,207	0,838
Pretax Margin	30	-1,99%	5,09%	-7,08%	-0,908	0,372	30	6,56%	6,46%	0,11%	0,043	0,966
Total Debt % Total Capital	30	107,55%	149,96%	-42,41%	-0,546	0,589	30	198,96%	270,60%	-71,64%	-0,282	0,780
Long Term Debt % Total Capital	30	23,42%	44,51%	-21,10%	-1,175	0,249	30	40,54%	64,83%	-24,29%	-0,478	0,636
Total Debt % Common Equity	30	62,51%	75,22%	-12,71%	-1,075	0,291	30	65,82%	74,02%	-8,19%	-0,660	0,514
Gearing ratio	30	49,85%	62,31%	-12,46%	-1,815	0,080*	30	49,31%	64,73%	-15,42%	-2,373	0,024**
Current Ratio	30	1,79	1,37	0,42	1,451	0,157	30	1,81	1,35	0,46	2,122	0,042**
Quick Ratio	30	2,22	1,76	0,46	1,319	0,198	30	2,67	1,93	0,74	2,126	0,042**

\*\* Significant at 5% level

\* Significant at 10% level

(*n*=pairs)

**Table 4.12 – Comparative environmental performance between FB and NFB**

	<b>2012</b>						<b>2016</b>					
	<i>n</i>	Means		Difference	t-statistics	<i>Sig.</i>	<i>n</i>	Means		Difference	t-statistics	<i>Sig.</i>
		FB	NFB					FB	NFB			
Amount spend in environmental Practices (%)	15	0,67%	3,01%	-2,34%	-0,809	0,432	14	0,36%	4,79%	-4,44%	-0,969	0,350
Cost of water consumption (%)	17	0,33%	0,43%	-0,10%	-0,319	0,754	19	0,14%	0,26%	-0,12%	-0,983	0,338
Direct electric energy consumption (%)	16	1,03%	2,36%	-1,33%	1,435	0,172	19	1,11%	2,52%	-1,41%	-1,478	0,157
Environmental/sustainability reports	20	0,05	0,14	-0,09	-0,439	0,666	21	0,14	0,19	-0,05	-0,370	0,715
EMS (14001, EMS)	20	0,05	0,10	-0,05	-0,567	0,577	21	0,10	0,24	-0,14	-1,142	0,267

(*n*=pairs)

No statistic significant differences exist between FBs and NFBs in both years (2012 & 2016), when we compare environmental performance. However, the means analysis highlight in 2012 & 2016 three different trends. First trend is the greater investment from NFBs in environmental practices compared to turn-over. Second trend is that NFBs have greater external actions, since we can observe a larger number of reporting and certification practices than in FBs. Third trend, FBs are less water and energy consumer than NFBs. The two first trends may imply that NFBs are more externally aware about environmental publicity challenges and anticipate environmental pressures, namely in a “green washing” perspective (Huang et al., 2009; Albertini, 2013). It also confirmed that the degree of anonymity creates less stress to SMEs for an environmental performance on an external lens (Bansal & Hunter, 2003; Hoogendoorn et al., 2014). In line with cost and close control supported by agency theory, FBs have lower consumption of water and energy with lower environmental impacts (Déniz & Suarez, 2005). In this sense it’s appear that NFBs have greater proactive environment actions than FBs.

As previously analysed, we can conclude that hypotheses 1b is rejected, there’s no supported evidence that in Portugal, FBs have stronger Environmental performance than NFBs.

The third dimension of matched pair methodology focus social performance dimension, translated in fifteen indicators spread in six dimensions:

- Training and competence investment, based on training costs per workers, training costs per revenue and average number of training hours per worker;
- Health and safety performance supported, on health and safety costs per revenue, accident frequency rate and accident gravity rate;
- Labour relations management, through turnover of workers, average of leaves by retreat, average of leaves by demission and average of leaves by dismissal indicators;
- Working hours, through the average of working hours per worker;
- Working cost, by average of cost per hour and average of work cost;
- Human resource structure, through proportion of female employees, and
- Societal contribution, based on average of tax paid per turn-over.

Table 4.13 presents the results of comparative social performance between FBs and NFBs. In 2012 no significant difference exists for the different dimensions analysed. However, in 2016 some significant differences on working cost and labour relations management.



**Table 4.13 – Comparative social performance between FB and NFB**

	2012						2016					
	<i>n</i>	Means		Difference	t-statistics	Sig.	<i>n</i>	Means		Difference	t-statistics	Sig.
		FB	NFB					FB	NFB			
Training costs per workers (euros)	16	103,58 €	62,21 €	41,37 €	0,588	0,565	18	74,01 €	113,08 €	-39,07 €	-0,771	0,451
Training costs per revenue (%)	16	0,20%	0,08%	0,12%	1,116	0,282	18	0,17%	0,16%	0,00%	0,039	0,969
Average number of training hours per worker	13	13,72	17,93	-4,20	-0,512	0,618	15	12,31	16,55	-4,24	-0,835	0,418
Health and Safety costs per revenue (%)	16	0,95%	0,11%	0,85%	1,071	0,301	19	0,18%	0,25%	-0,07%	-0,554	0,586
Average of working hours per worker	12	1795,99	1786,70	9,29	0,092	0,928	14	1747,25	1834,91	-87,66	-0,863	0,404
Average of cost per hour	11	7,87 €	13,12 €	-5,25 €	-1,555	0,151	14	8,52 €	11,90 €	-3,38 €	-2,292	0,039**
Accident Frequency rate	17	14,32	6,84	7,48	0,944	0,359	17	16,15	11,73	4,42	0,452	0,657
Accident Gravity rate	16	376,27	426,60	-50,32	-0,225	0,825	10	469,89	485,92	-16,02	-0,060	0,953
Turnover of workers (%)	16	11,63%	8,67%	2,96%	0,454	0,657	16	15,32%	4,75%	10,57%	1,568	0,138
Average of leaves by retreat	16	0,0031	0,0009	0,0022	0,929	0,368	16	0,0015	0,0020	-0,0006	-0,274	0,788
Average of leaves by demission	19	0,04	0,03	0,01	0,373	0,714	20	0,08	0,03	0,05	1,891	0,074*
Average of leaves by dismissal	18	0,07	0,06	0,02	0,317	0,755	19	0,06	0,03	0,04	0,928	0,365
Proportion of female employees	22	44%	38%	6,44%	0,589	0,562	21	47%	40%	7%	0,671	0,510
Average of work cost	21	19 075,45 €	21 524,56 €	-2 449,12 €	-0,561	0,581	21	15 522,41 €	20 553,48 €	-5 031,07 €	-2,422	0,025**
Average of tax paid/ Turn-over	22	1,46%	1,05%	0,41%	1,018	0,320	21	1,51%	1,24%	0,27%	0,575	0,572

\*\* Significant at 5% level

\* Significant at 10% level

(*n*=pairs)

The year 2016 reveals significant difference at 5% threshold in working cost with lowers average of cost per hour and average of work cost for FBs. In this case, NFBs have more working cost contradicting that family-oriented workplace may have greater human resources performance generating specific motivation (Habbershon & Williams, 1999). However, these results support agency theory, which state that a more direct management allow FBs to be more efficient, and less spenders (Allouche & Amann, 1995). On a labour relations management dimension, we found a significant difference at 10% threshold in 2016 on average of leaves by demission (worker initiative) higher in FBs than NFBs. Additionally in this dimension, we can observe in 2012 and 2016 by means analysis that FBs have a higher turn-over than NFBs, contradicting as previously the higher motivational workplace vision. On training and competence investment, table 4.13 reveals that the average of number of training hours per worker is higher in NFBs than FBs in both years. However, training cost per revenue is higher in FBs. For health and safety performance, data did not reveal consistent standardized differences and consistence between years. Accident frequency rate is higher in FBs compared to NFBs, but accident gravity rate is higher in NFBs than in FBs. In human resource structure, FBs have a higher proportion of female employees with nearest parity in 2016. At societal contribution level, FBs have a higher contribution through tax payment in both years. Finally, FB's have lower earnings in 2012.

Empirically, the findings show that there is no significant difference between FBs and NFBs in terms of social performance. We can conclude that hypotheses 1c is rejected, there's no supported evidence that in Portugal, FBs have stronger social performance than NFBs.

Our results are in line with mixed results reported in previous research as observe in table 4.14. At financial level, FBs show better structure than NFBs as state by previous studies (Allouche & Amann, 1995; McConaughy, et al., 2001; Anderson & Reeb, 2003; Miralles-Marcelo et al., 2013). At environmental and social level, our findings state mixed results that did not confirm that FBs have better performance than NFBs as previous studies (Krissen et al., 2005; Amann et al., 2012).

**Table 4.14 – Family versus non-family firm performance comparisons studies**

Authors	Country	Sample / Method	Performance Measure	FB Influence	Main Conclusions
Allouche, J., & Amann, B. (1995)	France	140 large firms from 1989 to 1992  Matched Pair	Financial Profitability Economic Profitability Financial structure  Employment structure Wages structure Skills development policies	Positive	Family firms generally perform better on financial, economic and social dimensions
McConaughy, D. L., Matthews, C. H., & Fialko, A. S. (2001).	United States	219 firms identified from “The BusinessWeek CEO 1000 From 1986-1988  Matched Pair	Efficiency Capital structure Value.	Positive	Firms controlled by the founding family have greater value, are operated more efficiently, and carry less debt than other firms.
Anderson, R. C., & Reeb, D. M. (2003)	United States	403 firms from S&P 500.  from 1992–1999	Tobin’s $q_{S\&P}$ Return on assets. Return on equity.	Positive	Family firms have higher Tobin’s q and return on assets. Firm performance is increasing until families own about one-third of the firm's outstanding equity.
Gallo, M. Á., Tàpies, J., & Cappuyns, K. (2004)	Spain	305 large firms from 1995  Means analysis	Sales / employee Growth, debt, Employment	Negative	Non-family firms had superior growth.
Jorissen, A., Laveren, E., Martens, R., & Reheul, A. M. (2005)	Belgium	178 firms from 2001  Questionnaire based and matched Pair	Strategy & Environment Management Information Systems Profitability and Growth	Mixed	Family firms are less profitable and lower ROA than nonfamily firms Family firms achieve lower net ROA Family firms have a higher growth of employment, but lower growth of total assets.

Authors	Country	Sample / Method	Performance Measure	FB Influence	Main Conclusions
Barontini, R., & Caprio, L. (2006)	European Union (11 Countries)	675 publicly traded corporations from 1999 to 2001  Matched Pair	Tobin's q. Return on assets.	Positive	Family control is positive for firm value and operating performance in Continental European firms.
Miller, D., Le Breton-Miller, I., Lester, R. H., & Cannella Jr, A. A. (2007)	United States	896 large firms from Fortune 1000 From 1996 to 2000  Matched Pair	Tobin's q. Sales	Mixed	Family firms did not exhibit superior performance
Uhlaner, L. M., Berent-Braun, M. M., Jeurissen, R. J., & de Wit, G. (2012)	Netherlands	689 SME's from 1996  Questionnaire based	Environmental practices	Positive	Family influence has a positive effect on engagement in environmental management practices for SMEs with larger business-owning families
Amann, B., Jaussaud, J., & Martinez, I. (2012)	Japan	200 large firms from a CSR database.  From 2009  Matched Pair	Employment and human resource management Environmental protection, Corporate governance, and Social contribution.	Mixed	No significant differences in CSR policies between family and non-family businesses in Japan.
Miralles-Marcelo, J. L., Miralles-Quirós, M. D. M., & Lisboa, I. (2013)	Portugal	65 large firms From Portuguese stock market, From 1999 to 2008  Matched Pair	Market return Size Book-to-market ratio Momentum Illiquidity Debt	Positive	Family firms outperform non-family firms, especially those family firms of smaller size.
Vieira, E. S. (2017)	Portugal	65 large firms from Euronext Lisbon for the period between 1999 and 2014  Means and OLS regression	ROA ROE Book-to-market ratio Debt	Mixed	Results suggest that family firms do not outperform non-family firms.

<b>Authors</b>	<b>Country</b>	<b>Sample / Method</b>	<b>Performance Measure</b>	<b>FB Influence</b>	<b>Main Conclusions</b>
Lunardi, M. A., Barbosa, E. T., Junior, M. M. R., da Silva, T. P., & Nakamura, W. T. (2017).	Brazil	63 BM&FBOVESPA stock market from 2011 to 2015  Data Envelopment Analysis	Economic Value Added (EVA) Market Value Added (MVA)	Mixed	The analysis concludes that in the period from 2011 to 2013 the family companies presented a better efficiency score compared to non-family. In following year, non-family companies showed a better efficiency (value creation and economic performance).
Vieira, E. S. (2018).	Portugal	63 from Euronext Lisbon from 2002 and 2013  Means and OLS regression	ROA ROE Book-to-market ratio	Positive	Results show that ownership concentration are positively associated with family firm's performance

## 4.2 Descriptive statistics

Table 4.15 presents the frequency of firms by industry for 2012 and 2016 used for our multivariate analyses. Only firms with full fill data's in financial, environmental and social dimensions have been considered for these analyses.

**Table 4.15 – Firm Sample by industry (year= 2012 & 2016)**

Industry	Frequency	%
C. Manufacturing	17	40,48%
E. Water collection, treatment and distribution; sewerage, waste management and remediation activities	3	7,14%
F. Construction	7	16,67%
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	5	11,90%
J. Information and communication activities	2	4,76%
M. Consultancy, scientific and technical activities	4	9,52%
N. Administrative and support service activities	2	4,76%
Q. Human health activities and social support	2	4,76%
Total	34	100%

Table 4.16 shows that correlations between Return on Assets (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC), Social Performance ratio (SOC), Environmental Performance ratio (ENV), firm size and industry dummy. In 2012, correlation is significant at 1% and positive between ROA, ROE and ROIC. ENV have significant and positive correlations with ROE at 1% and ROIC at 5%. Also, correlation is significant and positive at 1% between Firm Size and Industry belonging. There are no significant correlations between SOC and other variables. IND and firm size have no significant correlations with ROA, ROE, ROIC, SOC and ENV.

In 2016, ROA have a significant at 1% and positive correlations associated with ROE and ROIC. Additionally, ROIC and ROE have significant and positive correlation at 1%. Correlation is significant and positive at 1% between Firm Size and Industry belonging. Contrasting with the year 2012, there are no correlations between ENV and other variables. Finally, IND and firm size have no significant correlations ROA, ROE, ROIC, SOC and ENV. We can state that correlations between variables change between 2012 and 2016 with a lower influence between financial, social and environmental variables.

The matrix 4.16 shows that there are no strong correlations between explanatory variables, which may bias the multivariate analyses results.

**Table 4.16 – Pearson correlation matrix for dependent and explanatory variables (year= 2012 & 2016)**

	Year	ROA	ROE	ROIC	SOC	ENV	IND	FIRM SIZE
ROA	2012	1	,701***	,751***	-0,156	0,097	0,017	0,056
	2016	1	,799***	,875***	0,086	-0,152	0,101	0,297
ROE	2012	,701***	1	,960***	-0,289	,611***	-0,255	-0,186
	2016	,799***	1	,904***	-0,039	-0,167	0,053	0,283
ROIC	2012	,751***	,960***	1	-0,325	,430**	-0,287	-0,234
	2016	,875***	,904***	1	0,076	-0,164	0,184	0,312
SOC	2012	-0,156	-0,289	-0,325	1	-0,132	0,203	0,064
	2016	0,086	-0,039	0,076	1	0,186	0,146	0,004
ENV	2012	0,097	,611***	,430**	-0,132	1	-0,192	-0,091
	2016	-0,152	-0,167	-0,164	0,186	1	-0,119	-0,141
IND	2012	0,017	-0,255	-0,287	0,203	-0,192	1	,460***
	2016	0,101	0,053	0,184	0,146	-0,119	1	,463***
FIRM SIZE	2012	0,056	-0,186	-0,234	0,064	-0,091	,460***	1
	2016	0,297	0,283	0,312	0,004	-0,141	,463***	1

\*\*\* Significant at 1% level

\*\* Significant at 5% level

All variances inflation factor (VIF) values are checked for explanatory variables in tables 4.17 & 4.18. All values are smaller than 10, states that no multicollinearity exists in variables analysed. Also, heteroscedasticity and normality tests have been performed to confirm robustness of results.

For table 4.17 we calculate individually VIF value for each dependent and explanatory variable for the years 2012 and 2016. For Hypothesis 2 stating that in Portugal, SME financial performance is positively linked to environmental and social performance all VIF for each variable did not present multicollinearity between them. Thus, no correlation between variables confirm that variables are independent.

**Table 4.17 – Multicollinearity diagnostic VIF Values (Hypothesis 2)**

Explanatory and control variables	Dependent Variables			
	Year	ROA	ROE	ROIC
ENV	2012	3,252	1,44	2,472
	2016	1,071	1,072	1,069
SOC	2012	1,137	1,146	1,113
	2016	1,118	1,051	1,081

In same sense table 4.18 show VIF value for each dependent and explanatory variable for the years 2012 and 2016. For hypothesis 3 and 4 all VIF for each variables did not present multicollinearity between them, as values are under 10.

**Table 4.18 – Multicollinearity diagnostic VIF Values (Hypothesis 3 & 4)**

Explanatory and control variables	Dependent Variables		
	Year	ENV	SOC
FIRM SIZE	2012	1,27	1,268
	2016	1,285	1,28
INDUSTRY	2012	1,319	1,306
	2016	1,278	1,308

Descriptive statistics can only indict about environmental and social performance positive link to financial performance. Thus, as diagnostic it confirms that data are in compliance to be use and a multivariate analyses were employed to test hypotheses.

### 4.3 Multivariate analyses

Our approach to test our three hypotheses focus both years 2012 and 2016. Thus, we aim to test hypotheses on an evolutionary lens taking in account the different macro-economic environment in 2012 and 2016. By grouping two different years, our study focuses on evolving tendencies, taking two antagonistic years in terms of economic environment. Testing hypotheses through linear regression analysis provide a set of results that reached statistical significance to the academic debate on the link between CFP and CSP. Thus, results are presented by dependent variables and  $R^2$  value, unstandardized coefficient, standard coefficient, t value and significance value (p-value) for each explanatory variable.



Table 4.19 presents the results of linear regression of ROA, ROE and ROIC as dependent variables for 2012. We can conclude that ROA have a negative and insignificant coefficient with ENV ( $\beta = -0,049$ ; insignificant). Inversely, ROA have a positive coefficient with SOC but also insignificant ( $\beta = -0,062$ ; insignificant). ROE results reveal a negative coefficient with ENV but not significant ( $\beta = -0,166$ ; insignificant). However, ROE coefficient is positive and statistically significant with SOC  $\beta = 1,081$  ( $p\text{-value} < 0,01$ ). When we observed ROIC the coefficients are respectively  $\beta = -0,196$  ( $p\text{-value} < 0,10$ ) for ENV and  $\beta = 0,671$  ( $p\text{-value} < 0,05$ ) for SOC statistically significant. In 2012, models explain the behaviour of the dependent variables in 3% for ROA, 41,8% for ROE and 50,80% for ROIC. We can conclude that there is a supported relationship between ROE, ROIC, ENV and SOC. Although a mixed of negative and positive effect exist between variables. There is a positive link between financial performance and social performance. Negative effect is observable between environmental performance and other variables. Hence, these findings confirm partially the hypothesis 2, which imply that in Portugal, SME financial performance is positively linked to environmental and social performance.

**Table 4.19 – Linear regression results (Year = 2012)**

			(Constant)	ENV	SOC
<b>ROA</b>  ( $R^2 = 0,03$ )	Unstandardized Coefficient	B	<b>0,046</b>	<b>-0,049</b>	<b>0,062</b>
		Std Error	0,013	0,06	0,143
	Standard Coefficient	Bêta		-0,145	0,078
	t		3,544	-0,815	0,434
	Sig.		0,001	0,421	0,667
<b>ROE</b>  ( $R^2 = 0,418$ )	Unstandardized Coefficient	B	<b>0,074</b>	<b>-0,166</b>	<b>1,081</b>
		Std Error	0,023	0,108	0,256
	Standard Coefficient	Bêta		-0,212	0,583
	t		3,156	-1,535	4,217
	Sig.		0,004	0,135	0***
<b>ROIC</b>  ( $R^2 = 0,508$ )	Unstandardized Coefficient	B	<b>0,099</b>	<b>-0,196</b>	<b>0,671</b>
		Std Error	0,024	0,112	0,266
	Standard Coefficient	Bêta		-0,273	0,394
	t		4,087	-1,75	2,524
	Sig.		0	0,09*	0,017**

\*\*\* Significant at 1% level

\*\* Significant at 5% level

\* Significant at 10% level

Table 4.20 emphasis results of linear regression of ROA, ROE and ROIC as dependent variables for 2016. Contrary to findings in 2012, this table display non-significant coefficient between dependent and explanatory variables. In fact, ROA coefficient is positive but insignificant with ENV ( $\beta = -0,048$ ; insignificant) and negative with SOC ( $\beta = -1,653$ ; insignificant) projecting mixed link estimations. Regarding to ROE, it's observable an insignificant negative coefficient with ENV ( $\beta = -0,005$ ; insignificant) and SOC ( $\beta = -2,454$ ; insignificant). Also, ROIC have mixed and insignificant coefficient with ENV ( $\beta = 0,035$ ; insignificant) and SOC ( $\beta = -1,361$ ; insignificant). In 2016, models developed explain the dependent variables in 3,7% for ROA, 2,8% for ROE and 3,9% for ROIC. We can conclude for 2016, there are no supported relationships between ROE, ROIC, ENV and SOC. However, a mixed effect exists between variables. These findings did not confirm Hypothesis 2, which imply that in Portugal, SME financial performance is positively linked to environmental and social performance.

**Table 4.20 – Linear regression results (Year = 2016)**

		(Constant)	ENV	SOC	
<b>ROA</b>  ( <b>R<sup>2</sup>=0,037</b> )	Unstandardized Coefficient	<b>B</b>	<b>0,041</b>	<b>0,048</b>	<b>-1,653</b>
		Std Error	0,016	0,073	1,709
	Standard Coefficient	<b>Bêta</b>		0,119	-0,174
	t		2,61	0,661	-0,968
	Sig.		0,014	0,514	0,341
<b>ROE</b>  ( <b>R<sup>2</sup>=0,028</b> )	Unstandardized Coefficient	<b>B</b>	<b>0,083</b>	<b>-0,005</b>	<b>-2,454</b>
		Std Error	0,025	0,115	2,673
	Standard Coefficient	<b>Bêta</b>		-0,008	-0,165
	t		3,371	-0,047	-0,918
	Sig.		0,002	0,963	0,366
<b>ROIC</b>  ( <b>R<sup>2</sup>=0,039</b> )	Unstandardized Coefficient	<b>B</b>	<b>0,036</b>	<b>0,035</b>	<b>-1,361</b>
		Std Error	0,012	0,057	1,323
	Standard Coefficient	<b>Bêta</b>		0,11	-0,184
	t		2,979	0,614	-1,028
	Sig.		0,006	0,544	0,312

Concerning hypothesis 3 & 4, we test regression models for 2012 and 2016 about the link between Environmental and Social Performance and Size and industry (manufacturing) belonging. In table 4.21, we can observe results that ENV have neutral and non-significant

estimation coefficient to INDUSTRY ( $\beta= 0,000$ ; insignificant) and SIZE ( $\beta= 0,075$ ; insignificant) variables. INDUSTRY ( $\beta= -0,000008$ ; insignificant) and SIZE ( $\beta= - 0,027$ ; insignificant) have a negative and insignificant association to SOC. Results displayed tend to show that INDUSTRY belonging and SIZE have neutral influenced on higher or lower environmental performance. INDUSTRY belonging and SIZE negatively influence social performance. However, this influence is residual considering the low range of the coefficients. In 2012, models developed explain the dependent variables tendencies in 4,3% for ENV and 3,7% for SOC. For 2012, findings did not confirm Hypothesis 3 and 4, which imply that in Portugal, environmental and social performance is explained by the size and firm sector activity.

**Table 4.21 – Linear regression Size & Industry Effect (Year = 2012)**

			(Constant)	INDUSTRY	SIZE
<b>ENV</b>  ( <b>R<sup>2</sup>=0,043</b> )	Unstandardized Coefficient	B	<b>0,097</b>	<b>0</b>	<b>0,075</b>
		Std Error	0,047	0,001	0,067
	Standard Coefficient	Bêta		-0,038	0,221
	t		2,06	-0,19	1,116
	Sig.		0,048	0,85	0,273
<b>SOC</b>  ( <b>R<sup>2</sup>=0,037</b> )	Unstandardized Coefficient	B	<b>0,03</b>	<b>-0,000008</b>	<b>-0,027</b>
		Std Error	0,02	0	0,028
	Standard Coefficient	Bêta		-0,004	-0,19
	t		1,497	-0,02	-0,956
	Sig.		0,145	0,984	0,347

Table 4.22 reported size and industry effect on environmental and social performance for 2016. In conformance with results from 2012, no statistically significant coefficient exists between ENV, SOC, SIZE and INDUSTRY, inducing that no supported relationship exists between dependent and explanatory variables. ENV have neutral coefficient with SIZE ( $\beta= 0,000$ ; insignificant) and positive with INDUSTRY ( $\beta= 0,056$ ; insignificant). Inversely, SIZE ( $\beta= -0,000015$ ; insignificant) and INDUSTRY ( $\beta= -0,001$ ; insignificant) have negative coefficient with SOC. In 2016, models developed explain the dependent variables tendencies in 2,7% for ENV and 2,4% for SOC. For 2016, findings did not confirm Hypothesis 3 and 4.

**Table 4.22 – Linear regression Size & Industry Effect (Year = 2016)**

			<b>(Constant)</b>	<b>INDUSTRY</b>	<b>SIZE</b>
<b>ENV</b>  <b>(R<sup>2</sup>=0,027)</b>	Unstandardized Coefficient	B	<b>0,141</b>	<b>0,056</b>	<b>0,000</b>
		Std Error	0,041	0,061	0,001
	Standard Coefficient	Bêta		0,184	-0,081
	t		3,423	0,919	-0,406
	<i>Sig.</i>		<i>0,002</i>	<i>0,365</i>	<i>0,688</i>
<b>SOC</b>  <b>(R<sup>2</sup>=0,024)</b>	Unstandardized Coefficient	B	<b>0,003</b>	<b>-0,001</b>	<b>-0,000015</b>
		Std Error	0,002	0,003	0
	Standard Coefficient	Bêta		-0,068	-0,11
	t		1,461	-0,339	-0,548
	<i>Sig.</i>		<i>0,154</i>	<i>0,737</i>	<i>0,588</i>

**Table 4.23 – Summary of links between variables**

	Year	Dependent Variables				
		ROA	ROE	ROIC	ENV	SOC
ENV	2012	-	-	-		
	2016	+	-	+		
SOC	2012	+	+	+		
	2016	-	-	-		
SIZE	2012				+	-
	2016				Neutral	-
INDUSTRY	2012				Neutral	-
	2016				+	-

**Table 4.24 – Summary of Results**

Hypothesis		2012	2016
<b>Hypothesis 1</b> <i>In Portugal, FBs enjoy better sustainable performance than NFBs</i>	<b>Hypothesis 1a</b> <i>In Portugal, FBs have stronger financial performance than NFBs</i>	Accepted	Partially Accepted
	<b>Hypothesis 1b</b> <i>In Portugal, FBs have stronger Environmental performance than NFBs</i>	Rejected	Rejected
	<b>Hypothesis 1c</b> <i>In Portugal, FBs have stronger social performance than NFBs</i>	Rejected	Rejected
<b>Hypothesis 2</b> <i>In Portugal, SME financial performance is positively linked to environmental and social performance</i>	--	Partially Accepted	Partially Accepted
<b>Hypothesis 3</b> <i>In Portugal, environmental and social performance is explained by the size</i>	--	Rejected	Rejected
<b>Hypothesis 4</b> <i>In Portugal, environmental and social performance is explained by firm sector activity</i>	--	Rejected	Rejected

## 5. DISCUSSION & CONCLUSIONS

This study has theoretical and empirical contributions to a better understanding of the use of sustainable performance measures in small & medium firms in Portugal and the role of family influence. “*Corporate sustainability performance*” theoretical construction has been based on complementary view of institutionalism, RBV and stakeholder theory. We highlighted the great relevance of SMEs in world economy and the increase of studies focusing sustainability challenges and implementing sustainable performance evaluation systems (Perrini, 2007; Tencati et al., 2008) namely through value chain control, governance and leadership, and stakeholder and institutional pressure themes. Also, market oriented and competitiveness, namely the concern with the basic link between CSP and CFP. This essay aims to examine the determinants and relationship between sustainability performance, family governance and leadership. Two investigation axes have been developed. First, we analysed the influence of family involvement in sustainable management and performance. Secondly, we observed the determinants and link nature of CSP and CFP. Based on previous academic works in others contexts as France (Allouche and Amann, 1995), Japan (Allouche et al. 2008; Amann and Jaussaud, 2011), United States (Eccles et al., 2014), we compared performance between FBs and NFBs on a TBL based framework (financial, environmental and social). The scope of SMEs and the breadth of sustainability indicators make this study an innovative approach. A total of 32 measures has been analysed to determine management specificities in Portuguese SMEs. Secondly, we promote a multivariate analysis to investigate the determinants of the relationship between CSP, CFP, size and industry. This approach aims to be a Portuguese contribution on the large academic debate focusing links between CFP and CSP. In accordance with statistical methodology we performed correlation and regression analysis of 34 Portuguese’s SMEs. In this investigation, we include also an evolutionary perspective between 2012 and 2016 to understand time effect in firms.

Theoretically, this essay extends arguments on corporate sustainability performance in SMEs and the benefits or cost of family involvements discussed by agency theory, RBV, stewardship and socioemotional approach incorporating institution-based view and stakeholder theory. In this sense, our results contribute with new findings updating the theoretical field of corporate sustainability, extending the discussion about family

involvement on firm performance and the effect of sustainable strategy on financial performance in Portuguese SMEs.

Empirically, findings show that globally there is no significant difference between FBs and NFBs. Mixed results on the family involvement, aggregating all indicators and years have been found. These results are in line with previous studies in Portugal, which confirmed no significant differences on performance between FBs and NFBs (Paiva et al., 2014; Vieira, 2017, 2018). We highlighted in our study that in an average perspective, SMEs have very consistent results in the three dimensions. At financial level corresponding to our hypothesis 1a, we can conclude that FBs have a significant better financial structure including liquidity and low external dependence. These results highlight that FBs have a greater saving perspective confirming long-term orientation and capacity to investment through greater liquidity (Miller et al. 2006). Strong financial structure sustains the family independence from external forces linked to familiness and socioemotional of FBs leadership approach (Gomez-Mejia et al., 2007). This conscious restriction, to access to external financing source in FBs, is in accordance also with agency theory control of costs (Sener, 2014). It was noted also a greater capacity to recover earnings from FBs in contrast with an apparent stability in earnings for NFBs. These results may be linked to greater investments and ability to mobilize their resources, which generates capabilities non-imitable (Dyer, 2006), confirming RBV theory. At environmental performance level, no significant difference exists between FBs and NFBs. Hypothesis 1b, which predict that in Portugal, FB's have stronger environmental performance than NFB is not confirmed. However, by means analysis NFBs seems to be more focus on external actions and performance through great visible environmental investment, reporting and certifications than FBs. Internal savings and environmental actions are the main subject of attention of FBs managers. At social performance level, no significant differences exist between FBs and NFBs in 2012. However in 2016, three indicators demonstrate significant differences on working cost and labour relations management. Working cost are lowers in FBs than in NFBs, translating low salaries and a saving logic by managers. In another hand, we find more demission's in FBs. Hypothesis 1c, which predict that in Portugal, FB's have stronger social performance than NFB is not confirmed. These findings did not confirm that FBs engage more in CSR activities (Niehm et al., 2008, Amann et al., 2012; el Ghoul et al., 2016) or have greater focus on social performance, linked to wealth for family shareholders and stakeholders on a long-term reference (Cruz et al., 2014). Aggregating findings retrieved from matched paired analysis, our study confirm of superior performance of FBs compared to NFBs as most studies (Anderson & Reeb, 2003; Allouche et al., 1995,

2007, 2008; Amann & Jaussaud, 2011). However on an environmental and social performance, we did not find differences, which determines a greater performance from FBs, neither from NFBs. These mixed findings confirms mitigate results from other studies (Déniz & Suarez, 2005; Niehm, 2008; Amann et al., 2012).

Second hypothesis, which predicted that in Portugal, SME financial performance is positively linked to environmental and social performance is partially confirmed. In fact, significant link exists in 2012 which point for a positive relation between financial performance and social performance, but negative with environmental performance. Profitability is positively linked to social performance based on capital structure translated through ROE and ROIC (Equity or capital). Thus, we can argue that social performance influences a long-term profitability. Environmental performance appears as negative factor to profitability of SMEs. Finally, our findings in 2016 did not confirm linkage between financial, environmental and social indicators.

For the third hypothesis, our findings did not confirm that in Portugal, environmental and social performance is explained by the Size. In 2012 a positive link appears but not statistically significant and in 2016 the relation is neutral. In this sense our findings did not confirm that micro and small firms did not prioritize social performance comparing to medium enterprises (Aragon-Correa et al., 2008). There is no supported relationship between environmental and social performance and size in SMEs.

For the fourth hypothesis, which predicted that in Portugal, environmental and social performance is explained by Firm sector activity and it belonging to manufacturing / industry sector is not confirmed. Contradicting the greater focus on manufacturing / industry's impactful activities by local community and other stakeholders (Déniz & Suárez, 2005; Al Farooque et al., 2014).

This study faced several limitations that may guide further research. Firstly, SMEs are a difficult subject of investigation due to the great difficulty to access and retrieve data. For further studies, sample must be higher and in continuous years. Secondly, environmental indicators could be more focus on diverse factors (energy, air emissions, water use, wastewater, etc...). Thirdly, this study did not take in account previous and followings years as moderators. For further investigation, studies must take in account performance of previous years. In this sense, for hypothesis 1 and 2, due to variability between 2012 and 2016, we can assume that external factors (e.g. economic crisis) may influence the evolution of relations between performance dimensions. These external factors may have delayed effects on



corporate actions. Thus, we can suppose that the 2012 results are consequences of previous years actions and 2016 is conditioned by past restrictions reality (e.g. restriction of financing, lowest sales).

Finally in a statistic angle, the level of significance is affected by the size of the most determining sample (Snyder and Lawson, 1993). Thus, it is more likely to obtain a significant p-value with large sample sizes and, conversely, in small samples, the p-value may not be significant. In this sense, our results may be affected by the sample size effect.

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**APPENDIX:**

**Table 4.25 – Matched paired companies – Finance Measures**

#	Company (NFB)	SIC	Region	Company (FB)	SIC	Region
1	EIA Laboratório Lda.	71200	Lisbon	Equilibrium - Laboratório de Controlo de Qualidade e de Processos Lda.	71200	North
2	VESAM- Engenharia SA	25110	Center	Sertep - Serralharia Técnica de Portugal Lda.	25120	Lisbon
3	Ornofe Transitários, Lda	52291	North	K-Log, Logistica, S.A.	52291	North
4	Grupel, Grupos Electrogéneos, S.A	27110	Center	Termobrasa - Eusebio Ribeiro & Costa Lda	27122	North
5	P. S. Q. - Prestação de Serviços de Qualidade Lda	81291	Lisbon	Essiel - Limpeza Lda.	81292	North
6	Sopsec-Sociedade de Prestação de Serviços de Engenharia Civil S.A	71120	Lisbon	Tabique Engenharia, Lda.	71120	North
7	Gelcampo, SA	46311	Center	Pajá Internacional, Lda.	46732	Lisbon
8	Ecoleziria - Empresa Intermunicipal Para O Tratamento de Residuos Sólidos, EIM	38112	Lisbon	Socer - Embalagens Lda.	38212	Lisbon
9	Msg- Life Iberia, Unipessoal Lda	62090	North	St+I-Serviços Tecnicos de Informatica, Unipessoal Lda	62010	North
10	INOSER	74900	North	Simbiente - Engenharia e Gestão Ambiental Lda	74900	Lisbon
11	Openlimits Business Solutions, Lda.	62090	Center	F3M - Information Systems, S.A	62010	North
12	Cerma - Serviços Medicos e de Reabilitação Lda	86220	North	DLE Investimentos Lda	86230	North
13	Jomazé - Louças Artísticas e Decorativas Lda	23413	Center	Transgranitos	23703	North
14	Lusaenor Lda.	82990	North	Lusofactor - Metrologia, Consultoria e Ensaios Lda	82990	Lisbon
15	Volta Inesperada - Confecções, Lda	14131	North	Latino-Confecções Lda	14120	North
16	Global P - Polímeros e Aditivos Lda	46750	North	Habidom - Sinalização Rodoviária, Lda	46690	North
17	Brochado & Campos - Tinturaria e Acabamentos, Lda	13301	North	Bordados Joaquim Oliveira & Oliveira Lda	13991	North
18	Rodel - Rodrigues, Delgado & Ca, S.A	46430	North	Expotime SA	46421	North
19	Ampernor - Automação e Instalações Eléctricas Lda	43210	North	Homar, Lda.	43221	Center
20	Círculo Às Riscas Têxteis Lda	14131	North	Encoutêxtil - Confecções Lda	14131	North
21	Tinamar - Tinturaria Têxtil S.A	13301	North	Malhas Sonix S.A	13201	North
22	IT GEST	62020	North	Nka - New Knowledge Advice Lda	62020	North
23	SEPRI - Medicina No Trabalho Lda	86220	North	Workview - Prestação de Serviços de Higiene, Segurança e Saúde No Trabalho, Unipessoal Lda	86220	North

24	EDINORTE - Edificações Nortenhás S.A	41200	North	Joaquim Coelho da Silva S.A	41200	North
25	Citrup - Centro Integrado de Resíduos Lda	38212	North	Jmr-José Machado Ribeiro & Filhos Lda	38112	North
26	Posterede	23610	North	Pavimentos Pré-Esforçados Império (Braga) Lda	23610	North
27	Citygás - Infraestruturas de Gás S.A	43221	North	Redegás-Projecto e Instalações de Gás, S.A	43221	North
28	Stab -Vida, Investigação e Serviços Em Ciências Biológicas Lda	72110	Lisbon	Inovapotek, Pharmaceutical Research And Development Lda	72190	North
29	Redeteca - Construção de Instalações e Redes de Gás S.A	43221	North	Ien - Instalações Electromecânicas do Norte, Limitada	43221	North
30	Potauco - Equipamentos e Sistemas Eléctricos, S.A	27122	North	Monoquadros	27122	North

**Table 4.26 – Matched paired companies – Environmental measures**

#	Company (NFB)	SIC	Region	Company (FB)	SIC	Region
1	EIA Laboratório Lda.	71200	Lisbon	Equilibrium - Laboratório de Controlo de Qualidade e de Processos Lda.	71200	North
2	VESAM- Engenharia SA	25110	Center	Sertep - Serralharia Técnica de Portugal Lda.	25120	Lisbon
3	Grupel, Grupos Electrogéneos, S.A	27110	Center	Termobrasa - Eusebio Ribeiro & Costa Lda	27122	North
4	P. S. Q. - Prestação de Serviços de Qualidade Lda	81291	Lisbon	Essiel - Limpeza Lda.	81292	North
5	Sopsec-Sociedade de Prestação de Serviços de Engenharia Civil S.A	71120	Lisbon	Tabique Engenharia, Lda.	71120	North
6	Gelcampo, SA	46311	Center	Pajá Internacional, Lda.	46732	Lisbon
7	Ecoleziria - Empresa Intermunicipal Para O Tratamento de Resíduos Sólidos, EIM	38112	Lisbon	Socer - Embalagens Lda.	38212	Lisbon
8	Msg- Life Iberia, Unipessoal Lda	62090	North	St+I-Serviços Tecnicos de Informatica, Unipessoal Lda	62010	North
9	INOSER	74900	North	Simbiente - Engenharia e Gestão Ambiental Lda	74900	Lisbon
10	Openlimits Business Solutions, Lda.	62090	Center	F3M - Information Systems, S.A	62010	North
11	Cerma - Serviços Medicos e de Reabilitação Lda	86220	North	DLE Investimentos Lda	86230	North
12	Jomazé - Louças Artísticas e Decorativas Lda	23413	Center	Transgranitos	23703	North
13	Lusaenor Lda.	82990	North	Lusofactor - Metrologia, Consultoria e Ensaio Lda	82990	Lisbon
14	Volta Inesperada - Confecções, Lda	14131	North	Latino-Confecções Lda	14120	North
15	Global P - Polímeros e Aditivos Lda	46750	North	Habidom - Sinalização Rodoviária, Lda	46690	North
16	Brochado & Campos - Tinturaria e Acabamentos, Lda	13301	North	Bordados Joaquim Oliveira & Oliveira Lda	13991	North
17	Rodel - Rodrigues, Delgado & Ca, S.A	46430	North	Expotime SA	46421	North
18	Ampenor - Automação e Instalações Eléctricas Lda	43210	North	Homar, Lda.	43221	Center
19	Círculo Às Riscas Têxteis Lda	14131	North	Encoutêxtil - Confecções Lda	14131	North
20	Tinamar - Tinturaria Têxtil S.A	13301	North	Malhas Sonix S.A	13201	North
21	Citrup - Centro Integrado de Resíduos Lda	38212	North	Jmr-José Machado Ribeiro & Filhos Lda	38112	North

**Table 4.27 – Matched paired companies – Social measures**

#	Company (NFB)	SIC	Region	Company (NFB)	SIC	Region
1	EIA Laboratório Lda.	71200	Lisbon	Equilibrium - Laboratório de Controlo de Qualidade e de Processos Lda.	71200	North
2	VESAM- Engenharia SA	25110	Center	Sertep - Serralharia Técnica de Portugal Lda.	25120	Lisbon
3	Ornofe Transitários, Lda	52291	North	K-Log, Logistica, S.A.	52291	North
4	Grupel, Grupos Electrogéneos, S.A	27110	Center	Termobrasa - Eusebio Ribeiro & Costa Lda	27122	North
5	P. S. Q. - Prestação de Serviços de Qualidade Lda	81291	Lisbon	Essiel - Limpeza Lda.	81292	North
6	Sopsec-Sociedade de Prestação de Serviços de Engenharia Civil S.A	71120	Lisbon	Tabique Engenharia, Lda.	71120	North
7	Gelcampo, SA	46311	Center	Pajá Internacional, Lda.	46732	Lisbon
8	Msg- Life Iberia, Unipessoal Lda	62090	North	St+I-Serviços Tecnicos de Informatica, Unipessoal Lda	62010	North
9	INOSER	74900	North	Simbiente - Engenharia e Gestão Ambiental Lda	74900	Lisbon
10	Openlimits Business Solutions, Lda.	62090	Center	F3M - Information Systems, S.A	62010	North
11	Cerma - Serviços Medicos e de Reabilitação Lda	86220	North	DLE Investimentos Lda	86230	North
12	Jomazé - Louças Artísticas e Decorativas Lda	23413	Center	Transgranitos	23703	North
13	Lusaenor Lda.	82990	North	Lusofactor - Metrologia, Consultoria e Ensaios Lda	82990	Lisbon
14	Volta Inesperada - Confecções, Lda	14131	North	Latino-Confecções Lda	14120	North
15	Global P - Polímeros e Aditivos Lda	46750	North	Habidom - Sinalização Rodoviária, Lda	46690	North
16	Brochado & Campos - Tinturaria e Acabamentos, Lda	13301	North	Bordados Joaquim Oliveira & Oliveira Lda	13991	North
17	Rodel - Rodrigues, Delgado & Ca, S.A	46430	North	Expotime SA	46421	North
18	Ampernor - Automação e Instalações Eléctricas Lda	43210	North	Homar, Lda.	43221	Center
19	Círculo Às Riscas Têxteis Lda	14131	North	Encoutêxtil - Confecções Lda	14131	North
20	Tinamar - Tinturaria Têxtil S.A	13301	North	Malhas Sonix S.A	13201	North
21	Citrup - Centro Integrado de Resíduos Lda	38212	North	Jmr-José Machado Ribeiro & Filhos Lda	38112	North
22	Posterede	23610	North	Pavimentos Pré-Esforçados Império (Braga) Lda	23610	North

**Table 4.28 – Regression analysis companies’ sample**

#	Company	SIC	#	Company	SIC
1	Becri - Malhas e Confecções S.A	14131	18	NURI SA	14130
2	VESAM- Engenharia SA	25110	19	Sertep - Serralharia Técnica de Portugal Lda.	25120
3	Poliversal - Plásticos e Tecnologia S.A	20160	20	Valderva Lda	52291
4	Grupel, Grupos Electrogéneos, S.A	27110	21	Termobrasa - Eusebio Ribeiro & Costa Lda	27122
5	P. S. Q. - Prestação de Serviços de Qualidade Lda	81291	22	Essiel - Limpeza Lda.	81292
6	Gelcampo, SA	46311	23	Neo Electrica-Sociedade de Projectos e Instalações Electricas Lda	43210
7	Ecoleziria - Empresa Intermunicipal Para O Tratamento de Residuos Sólidos, EIM	38112	24	Eco Firma - Gestão do Ambiente S.A	43992
8	Cerlar - Serviços de Geriatria Lda	87301	25	Rodel - Rodrigues, Delgado & Ca, S.A	46430
9	Openlimits Business Solutions, Lda.	62090	26	Transgranitos	23703
10	Cerma - Serviços Medicos e de Reabilitação Lda	86220	27	Latino-Confecções Lda	14120
11	Jomazé - Louças Artísticas e Decorativas Lda	23413	28	Habidom - Sinalização Rodoviária, Lda	46690
12	Global P - Polímeros e Aditivos Lda	46750	29	Bordados Joaquim Oliveira & Oliveira Lda	13991
13	Homar, Lda.	43221	30	Expotime SA	46421
14	Tinamar - Tinturaria Têxtil S.A	13301	31	Malhas Sonix S.A	13201
15	EDINORTE - Edificações Nortenhas S.A	41200	32	JMR-José Machado Ribeiro & Filhos Lda	38112
16	Posterede	23610	33	Pavimentos Pré-Esforçados Império (Braga) Lda	23610
17	Citygás - Infraestruturas de Gás S.A	43221	34	Potauco - Equipamentos e Sistemas Eléctricos, S.A	27122



**5. CHAPTER 5 – SOCIOEMOTIONAL WEALTH IN PORTUGUESE FAMILY  
FIRM AND STAKEHOLDERS MANAGEMENT: INFLUENCES AND IMPACTS ON  
SUSTAINABILITY PERFORMANCE SYSTEMS - THE CASE STUDY OF  
MISTOLIN S.A.**

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**Conferences:**

This paper has been submitted and accepted to

- 15TH EIASM INTERDISCIPLINARY CONFERENCE ON INTANGIBLES AND INTELLECTUAL CAPITAL - NON-FINANCIAL AND INTEGRATED REPORTING, GOVERNANCE AND VALUE CREATION. Coimbra, Portugal, September 2019.

**Journal Submission**

The target journal for this paper is Family Business review

*Family Business review*

- FNEGE (2016): 2

**Acknowledgements**

I would like to thank to MISTOLIN S.A. Board of Managers and employees for their full availability to implement our case study protocol. I'm grateful to my good friend Leonildo Munguambe who support me with linguistic advices.

## **ABSTRACT**

Small and Medium Enterprises, in particular, Family Firms (FB), enclose specificities in their governance models that influence the design and implementation of sustainable performance systems. In this sense, sustainability theoretical field has been challenged when applied to family owned SMEs, namely stakeholder theory. Socio-emotional wealth (SEW) appears in academic literature as an influential concept in theoretical interpretation applied to family firms. This research aims to explain the understanding and use of sustainable performance measures in small and medium family firms, providing an illustration of how FB's SEW influence Corporate Sustainability Performance (CSP), through a single case study. Using lexical content analysis, we focused on managers discourses to extract SEW effects in the firm performance systems. Additionally, we investigated the link between financial, environmental and social performance using correlation and regression analysis in a dual managed company context. Based on the influence of primary stakeholders this study shows that a restricted SEW view is dominant in top managers discourses and in their managerial actions. Finally, we provide evidence of a positive link between environmental and financial performance in a dual managed context.

**Keywords:** Sustainability, Performance Measurement, Family business, Family-owned business enterprises, Socio-emotional wealth (SEW), stakeholder theory, Dual Board.

## 1. INTRODUCTION

For corporate sustainability performance (CSP) researcher's main question can be summarized as follow: How to be sustainable and measure it?

Two challenges appear to SMEs:

- External pressure to normalized sustainable performance, and
- Internal forces to change and operationalize sustainability.

SMEs have their own characteristics and context of action, which put different insights into the interpretation, design, and implementation of sustainable measurement systems. Recently, the environmental and social engagement of SMEs have been update in academic debate (Niehm et al., 2008; Huang, 2009; Hoogendoorn et al., 2014), particularly in family business context (Fitzgerald et al., 2010; Blodgett et al., 2011; Fassin et al., 2011; Amann et al., 2012; McGuire et al., 2012; Marques et al., 2014; van Gils et al., 2014; Nekhili et al., 2017). Multiple theoretical lines have supported academic discussion, namely triple bottom line concept (TBL), competitive advantage, social capital theories, agency theory, stewardship theory, resource-based view of firm (RBV), socio-emotional wealth (SEW), institutional and stakeholder theory (Allouche et al., 1995, 2007, 2008; Poza & Maheshwari, 1997; Perrini, 2006; Chrisman et al., 2010; Paiva et al., 2015; Miller et al., 2017).

However, doubts are posted on the sustainable characteristics of SMEs (Cennamo et al., 2012). The small businesses have been considered as fewer performing organizations on a social and environmental level due to lack of financial resources, knowledge and culture (Hoogendoorn et al., 2015). Several internal and external barriers in the operational and strategic lens are identified in previous studies. For example, the limited financial resources (Borga et al., 2009), lack of knowledge (Murillo & Lozano, 2006; Simpson et al., 2004), limitation on accessing resources to solve environmental and social challenges (Simpson et al., 2004; Revell et al., 2010) or scepticisms about the benefits of sustainability (Revell et al., 2010). On an external side, we can find as limitations the lack of stakeholder pressure (Ramos et al., 2013; Revell et al., 2010) or no perceived business case in SMEs context by regulators or society in general (Aragon-Correa et al., 2008; Parker et al., 2010). However, outside pressures are perceived as a driving force to SMEs to embrace sustainability process (Thorne et al., 2014). Jenkins (2006) focuses on the supply chain and the legislative pressure as great normative factors that introduce new issues, orientations and obligations to SMEs. In fact, SMEs may be more sensitive to direct and close external pressure by market and community agents (customers, regulator, NGO) than large companies. The stakeholder theoretical

framework presupposes that SMEs are active agents in the integration of the concepts of sustainability and react to intuitionism pressure (Simpson et al., 2004). In another angle, internal forces as personal motivation, family wealth or employee satisfaction quest may support responsible behaviour in small businesses shaped by the leadership of owners-managers (Fuller & Tian, 2006). In small and medium family business (FB) internal forces logic are supported by several theoretical assumptions based on agency theory, stewardship theory, the resource-based view of firm and SEW. Taking the main assumptions of stakeholder theory, the management of external and internal pressure allows to SMEs to identify aspects of sustainable performance and appears as a powerful force to lead to competitive advantage (Simpson et al., 2004; Fuller & Tian, 2006). Thus, a pro-active stakeholder engagement and management lead to outperforming at the financial, environmental and social level.

Previous studies argue that socio-emotional wealth (SEW) as an extension of behavioural agency theory, lead to taking managerial decisions based on the non-economic objective or emotional benefits, conducting to family wealth preservation (Wiseman & Gomez-Mejia, 1998; Cennamo et al., 2012). The SEW concept can be interpreted as the accumulation of affective value that the family invested in the firm and may increase corporate social performance (Cruz et al., 2014; Marques et al., 2014; Daspit et al., 2017). However, FBs seems to react to the different stakeholder's needs and requirements on an internal lens taking their own interest and success as the main objectives (Valiente et al., 2012). The limits between family and firms are almost undetectable in FBs. Thus, personal emotions influence the decision-making process (Baron, 2008).

Kellermanns et al. (2012) analysed the influence and destructive potential of conflict in FBs and concluded that SEW preservation may lead to negative social behaviour. In this sense, SEW may overcome stakeholders' interest and explain why FBs may be less environmentally and socially focus putting family needs above those of its stakeholders (Kidwell et al., 2012; Labelle et al., 2016). Thus, stakeholder engagement and management may be influenced by SEW perspective.

Our study aims to contribute to explain understanding and use of sustainable performance measures in small and medium firms, providing an illustration of how FB's SEW dynamics influence CSP. While prior research has focused on nature of influence (Kellermanns et al., 2012), on the consequences of the SEW in performance (Labelle et al., 2016) or on the role of values (Marques et al., 2014). This study illustrates how the SEW influenced stakeholder's management, the design and implementation of sustainable

performance systems. This research enhances understanding of these specific relationships through a single case study to complement previous research.

Our study is organized as follows. Section 2 a brief review of literature providing support to our hypothesis. Section 3 contains the description of methodology with description and procedure of our case. Section 4 reports and discuss the finding. The last section number 5 supports our main conclusions.

## 2. LITERATURE REVIEW & HYPOTHESIS

### 2.1 Family firms and stakeholder management

Freeman (1984) states that measuring corporate performance based on stakeholders' needs was a great challenge for managers and researchers. This vision, including a corporate social responsiveness stakeholder's management, remains current when we investigate SMEs CSP (Donaldson & Preston, 1995; Freeman, 1984; Mitchell et al., 1997). Stakeholder theory is important for the theoretical construction of the sustainability management field. The engagement with stakeholders allows companies to identify critical competitive factors (Hirigoyen & Poulain – Rehm, 2014). The interaction between firms and their stakeholders is a part of the responsible behaviour construct of SMEs (Fuller & Tian, 2006). This involvement appears as a powerful force to lead to competitive advantage through stakeholder's satisfaction (Simpson et al., 2004; Antolin-Lopez et al., 2016). On a normative theory or integrative angle, author's focus not directly on the final performance but on stakeholder satisfaction as a measure of performance (Freeman, 2010; Hörisch et al, 2014). Companies' competitiveness is based on value creation derived from stakeholders' satisfaction (Clarkson, 1995; Donaldson & Preston, 1995; Mitchell et al., 1997; Orlitzky et al., 2017).

As state by Hörisch et al. (2014), sustainability management and stakeholder theory have numerous similarities that justify the correlation. Thus, both theoretical frameworks propose:

- The societal and environmental performance, and interdependencies between the organization and its context;
- The extension of responsibilities beyond shareholders' interests;
- The opposition to the idea of separating ethical issues from business and to any compensation activities (e.g. Philanthropy or residual CSR);
- Profit and economic success are part of sustainability in short and long terms;
- Prescriptive and integrative strategic management on a long-run perspective.

The clear identification of stakeholders is the main challenge and resource spending activity to firms (Kochan & Rubistein, 2000). From a normative perspective, the academic debate focuses on the combination of different characteristics as the power to influence, legitimacy and urgency of claims of stakeholders (Mitchell et al., 1997). However, the

pluralism, complexity and hegemonic position of some stakeholders raise difficulties for decision-making processes (Skilton & Purdy, 2017). An adaptable and tailor-made strategy may be developed to save critical resources, putting limits on the scope of stakeholder management (Van der Laan et al., 2008). This challenge is even more relevant for SMEs since the lack of resources and low pressures by stakeholders creates uncertainty in managerial strategies and decisions (Aragon-Correa et al., 2008). Additionally, the stakeholder approach is linked to institutional theory and the influence that institutions have on companies' environment mapping (Tilley, 2000; Roxas & Coetzer, 2012). Thus, SMEs are more sensitive to social when operating in stakeholder-oriented countries under external pressure from institutions, namely family businesses tenet (e.g. reporting by law) (Labelle et al., 2016).

However, not only a full attendance of stakeholder's expectations characterized family SMEs management practices. In fact, personal motivation and responsible behaviour in small businesses are shaped by the leadership of owners-managers or family (Fuller & Tian, 2006; Jenkins, 2006, Russo & Tencati, 2009). The own interest and success may conduct to competitive advantage in the long term and from a stakeholder satisfaction perspective (Valiente et al., 2012). But in an inverse lens, the authors point out that small FBs present conservative behaviour, conditioning their attitude facing market risk and innovation (Llach & Nordqvist, 2010). Exploitation and expropriation of minority shareholders wealth for the benefit of family, at least to a restrict number of "blockholders" may create a second type of agency problems (Villalonga & Amit 2006; Labelle et al., 2016; Vieira, 2017). Labelle et al. (2016) findings show that family ownership is negatively associated with corporate social investments. This perspective assumes a "darkside" for SEW concept, where the dominant "familiness" management culture tend to decrease the ethical and social responsiveness against prevalent wellness of family or blockholders (Kellermanns et al., 2012; Cruz et al., 2014; Marques et al., 2014).

## **2.2 The Socioemotional wealth model in family firms**

Stewardship theory support that stewards are driven by more than self-interest and are intrinsically motivated for organizational achievements, contributing to the collective mission, longevity and success of firms (Davis et al., 1997). Thus, the stewardship theory assumes that the manager's interests are aligned with shareholders (Tshipa et al., 2018). This spirit of the mission may be more present among family businesses due to a greater emotionally linkage



(Miller et al., 2007). This behaviour in FBs generates a SEW that is seen as the theoretical foundation for most social and environmental decisions (Hoogendoorn et al., 2014; van Gils, 2014; Cruz et al., 2014; Daspit et al., 2017). Thus, FB's managers do not focus on core financial performance but the socioemotional endowments from the business (Gómez-Mejía et al., 2011; Miller & Le Breton-Miller, 2014). SEW theory derived from behavioural agency model, which integrates elements of a different approach as a behavioural theory of the firm and agency theory (Wiseman & Gomez- Mejia, 1998; Berrone et al., 2012; Cennamo et al., 2012). Berrone et al. (2012) describe five dimensions which characterized the SEW model:

- **Family control and influence**, translated by the ability to exercise authority by the family members in firms. This control can be manifested by the direct family manager (Family CEO) or by the nomination of board members. The control and influence may be formal or informal and disproportionate comparing to the share membership (Schulze et al. 2013);
- **Identification of family members with the firm**, include the image of firms, as the extension of the family in its own managerial and organizational culture. This identification is usually linked to the founder-owner and based on a successful business history (Kalm & Gome-Mejia, 2016);
- **Binding social ties**, refers to family firms' social relationships, which may be extended to close non-family members. The sense of belonging and identity are often shared by nonfamily employees, promoting commitment to the firm (Miller & Le Breton-Miller, 2005);
- **Emotional attachment of family members**, linking the affective emotions based on family culture and history. This dimension includes positive and negative effects of emotions on managerial practices and performance of FBs (Kellermanns et al., 2012);
- **Renewal of family bonds to the firm through dynastic succession**, through a time lens, FB's managers tend to implement actions and decisions moderated by generational transition objectives (Zellweger et al., 2012).

SEW appears as multidimensional priorities which lead decision-making and managerial behaviour. Miller and Le Breton Miller (2014), distinguish the restricted SEW and the extended SEW. The differences between these two approaches may explain divergent findings and theoretical perspectives on family firms. Different objectives and strategic

outcomes influenced managerial practices. For the restricted SEW, permanent job security and access to business resources for all current family members are the objectives.

On the contrary, extended SEW focus long-term well-being, which may prepare further generations to be able to expand the business. Thus, strategic conservatism is considered by authors as the main outcome on short-term. In another hand, strategic outcomes of extended SEW are a continuous reinvestment in the business and its renewal.

**Table 5.1 – SEW perspectives**

	<b>Restricted SEW</b>	<b>Extended SEW</b>
<b>Typical SEW priorities</b>	Permanent job security and access to business resources for all current family members	Long-term well-being of motivated later generations able and willing to nurture the firm
<b>Focal stakeholders</b>	Immediate family	The family over time, the business and all its stakeholders
<b>Related theories</b>	Agency and behavioural agency theory	Stewardship theory, stakeholder theory, sustainability
<b>Governance outcomes</b>	Family altruism Family dominated Leadership and governance - regardless of capability	Competent, motivated family members only Balance between family and nonfamily executives and directors
<b>Arrangements Strategic</b>	Strategic conservatism or stagnation, sparse investment in the business, risk aversion, family extraction of funds from business	Generous investment in products and processes Continuous reinvestment in the business and its renewal
<b>Commercial outcomes</b>	Inferior growth and longevity	Superior growth and longevity
<b>SEW outcomes</b>	Nepotism, entrenchment, family control of firm	Family pride in offerings and in relations with stakeholders and the community

Source: Adapted from Miller and Le Breton-Miller (2014)

On a time perspective, between a short and a long-term perspective, we may find a distinct strategic vision. However, this antagonism may not explain all effects of SEW on financial, environmental and social performance (Kalm & Gomes-Mejia, 2016). CSP can be influenced on different ways by SEW based decisions. The primacy of SEW dimensions will lead to varied performance outcomes for different stakeholder groups in family firms (Debicki et al., 2017). Thus, SEW gains or losses represent the reference that family firms use to make major decisions and results (Schepers et al., 2013). For example, Labelle et al. (2016) argue that FBs tend to manage their CSR investments based on the sensitive equilibrium between

SEW preservation and financial performance. Eventually, the lack of CSR investments decreases performance outcomes for employees or the local community but improves outcomes for shareholders. Zellweger and Nason (2008) (Table 5.2) characterized the impacts and relationship between performance outcomes and effect on stakeholder groups as overlapping, causal, synergistic, and substitutional.

**Table 5.2 – Performance outcomes effects**

<b>Performance outcomes effects</b>	<b>Definitions</b>
<b>Overlapping</b>	Performance outcome can satisfy multiple stakeholders. Overlapping is result of a negotiation process between various stakeholder's necessity and expectations.
<b>Causal</b>	Performance outcome causes other performance outcomes on a positive sequence, which may satisfy different stakeholders. These outcomes can be planned or involuntary.
<b>Synergistic</b>	When two different performance outcomes can mutually effect each other in the same direction (positively or negatively).
<b>Substitutional</b>	When two different performance outcomes can be substitute one for the other.

Source: Adapted from Zellweger and Nason (2008)

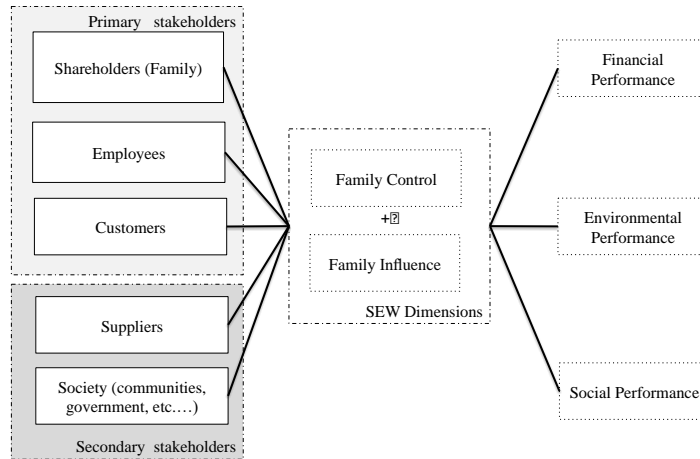
### **2.3 SEW influence in performance and hypothesis**

Previous findings suggest a great influence of family's SEW on social and environmental performance (Hirigoyen & Poulain – Rehm, 2014). Dyer and Wheten (2006) have identified evidence that large US family firms implement less socially or environmentally activities than non-family firms. Uhlaner et al., (2004) presented similar findings from 42 small and medium-sized Dutch family businesses. In fact, SEW influence decisions and performance on an internal organizational perspective. Wagner et al. (2015) through a meta-analysis of 380 articles found that FBs generally achieve better performance than NFBs. Also, Allouche et al. (1995, 2007, 2008) and Amann & Jaussaud (2011) searching for a possible behaviour difference between FBs and NFBs concluded that there is a greater financial performance by the family managed firms and a greater capacity to recover after downturns.

Inversely, Labelle et al. (2016) have found a negative link between family control and financial performance with greater level of control (share around 36 % and more). Several authors tend to identify that SEW quest may have positive or negative impacts in FBs

performance (Miller et al., 2013). SEW can have a moderating or expansive effect on performance with stakeholders linked to family control and influence in firms (Cennamo et al., 2012).

**Figure 5.1 – Conceptual model**



As stated by Kellermanns et al. (2012) negative balanced SEW dimensions lead to family-centric strategies and actions. This behaviour drives sustainable performance management system design to focusing on primary stakeholders (Clarkson, 1995; Van der Laan et al., 2007). In fact, family managers are under pressure not to lose SEW and not to fail the family's expectations (Gomez-Mejia et al., 2007). In these scenarios, small FBs managers facing resources limitation may focus strategic and performance actions to a restricted number of stakeholders, given primacy to firm “blockholders”.

Supported on agency theory perspective, for family principals, employees and suppliers the firm becomes an integral part of their lives. In this sense, some employees and suppliers may integrate the family cultural circle and then be included in “blockholders” definition (Gomez-Mejia et al., 2007; Cennamo et al., 2012).

Not only a limited number of stakeholders are included in SEW perspective, also a limited range of performance dimensions are considered to be measured. In this sense, SEW may lead to focus only on a firm-centric financial dimension (Kellermanns et al., 2012; Vieira, 2017). Interconnecting Kellermanns et al. (2012) and Miller & Le Breton (2014) works, the “dark side” of SEW may be considered as the restricted SEW. In SME’s performance systems restricted SEW reflects limited sustainability vision.

In our single case study, the company is fully owned by one family, including multiple members in the management position. Family objectives may include pressure on firm performance in a SEW preservation perspective. This pressure may include limited

performance scope (for example exclusively financial dimension) and very limited interests and needs of stakeholders.

In this sense and taking the small and medium FBs characteristics previously analysed, the following main hypothesis is derived:

**Hypothesis 1:** In a Portuguese family – owned SMEs, sustainable performance management system is more influenced by primary stakeholders through family governance and leadership logic reflecting a restricted SEW than by full engagement of stakeholders reflecting extended SEW.

However, family SMEs tend to be flexible and innovative to face their competitive challenges. Amann et al. (2012) found that CSR activities have positive and strongly significant coefficients with R&D/Sales. SMEs have also expansive and ambitious strategies as for example with internationalization strategies or advanced human resources empowerment processes. Governance innovation through a board of director's independence could be seen as a positive element between the company and the external environment (Thsipa et al, 2018). CEO duality, define as a top management board that includes family and non-family, has been presented on an agency theory perspective as counterproductive. Based on this perspective, agency problems appear as additional costs, slowness in the decision making or greater conflicts (Cai et al., 2012; Thsipa et al, 2018). Family participation on the board of directors may facilitate information and strategic decision. However, family centric tend to limit strategies (Arzubiaga et al., 2018).

Interestingly, recent works show that dual management companies outperform non-duality companies (Yang and Zhao, 2014; Arzubiaga et al., 2018). Additionally, dual top management companies, including non-family CEOs tend to have better financial performance and reputation (Cennamo et al., 2012; Cabrera-Suárez & Martín-Santana; 2015). Braun & Sharma (2007) states that when a non-dual structure is present, the firm performance is negatively related to the level of family ownership.

Our previous results focusing on the link between CFP and CSP did not include the duality management context. In this sense, we planned this study with focus on small & medium FBs with dual and independent managers (family and non-family).

In our single case study, the company include dual top management since 2012. Also, the company have a sustainability strategy that includes measuring a global set of financial, environmental and social indicators that support the study on the link between CFP and CSP.

Taking previous academic positive conclusions linking dual governance and performance, the following hypothesis is derived:

**Hypothesis 2:** In Portuguese family – owned SME with duality manager’s board composition (family and non-family), corporate financial performance (CFP) is positively linked to corporate social and environmental performance (CSP).

Through these two hypotheses, we support previous finding stating that SEW quest influenced negatively family SMEs performance, when the influence and control in management by family members is higher (Kellermanns et al., 2012; Kidwell et al., 2012; Labelle et al., 2016). We argue that SMEs privileges primary stakeholders, shortcutting performance strategic outcomes. Additionally, even in restricted SEW scenario, the external addition of non-family managers has a positive influence on firm sustainability performance.

### 3. METHODOLOGY

#### 3.1 Case study selection

Qualitative research improves sciences fields and supports empirical studies in management research (Reddy, 2015). Indeed, management sciences are focused on actions and results of the manager practices (Abdessemed, 2012). In this sense, case studies are helpful to understand contemporary phenomena of actions (Collerette, 1997; Yin, 2009). The case study quality is traditionally based on the construct of validity, reliability, internal and external validity (Harrison and Freeman, 1999). Thus, several quality tests or actions must be done as illustrated in table 5.3:

**Table 5.3 – Case study quality characteristics**

<b>Quality characteristics</b>	<b>Meaning</b>	<b>Robustness test / actions</b>
<b>Construct validity</b>	Establishing correct measures for the construct.	<ul style="list-style-type: none"> <li>- Multiple sources of evidence</li> <li>- Establishing a chain of evidence</li> <li>- Key informant to review draft of case study report</li> </ul>
<b>Reliability</b>	Other researcher in same context can repeat study.	<ul style="list-style-type: none"> <li>- Case study protocol</li> <li>- Establishing study database</li> </ul>
<b>Internal Validity</b>	Establishing causal relationship (relevant for explanatory cases).	<ul style="list-style-type: none"> <li>- Pattern matching methodology</li> <li>- Explanation Building</li> </ul>
<b>External validity</b>	Conducting to a generalization of results.	<ul style="list-style-type: none"> <li>- Multiple cases (or replication methods)</li> </ul>

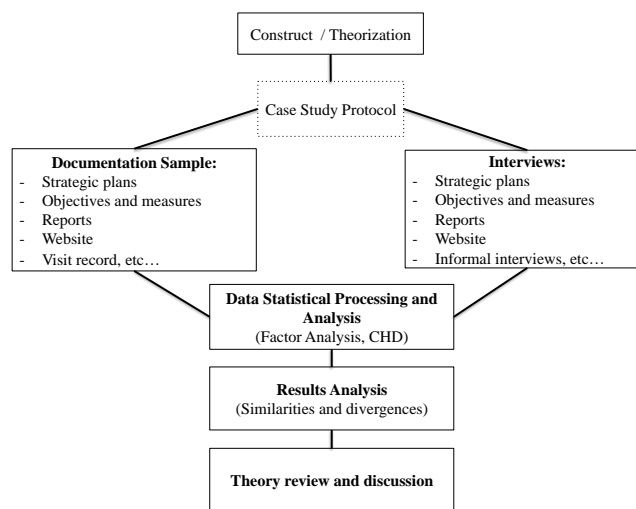
Source: Adapted from Yin (1994)

A case study may focus on a single case or several cases, depending on the nature of the subjects and the purpose of the investigation (Yin, 2009; Hlady-Rispal, 2015). In a single case study, the focus is one problem, and then we select a limited case to illustrate this, which may allow a better understanding of a phenomenon or may refine a theory in a new context (Stake, 2006). In a multiple case study (or collective case study), several case studies are selected to illustrate a problem (Stake, 2006), which will allow visualizing multiple perspectives on the same theme through different cases.

Considering that our investigation aims to support previous findings and refine the connection between two theoretical approaches (stakeholder theory and SEW), we choose to apply a single case. This method seems more relevant since the study of a single case allows an in-depth description of managerial practices and behaviours (Yin, 2009; De Massis & Kotlar, 2014). As state by Yin (2009) single case study is justifiable in three situations:

- The case represents a critical test of existing theory or rare or unique circumstances;
- The case is a representative or typical case; or,
- The case serves a revelatory or longitudinal purpose.

**Figure 5.2 – Single case scheme**



Source: Adapted from Alexandre (2013)

In our study, we propose an illustration method built around a clear theoretical framework, which allow a vertical and horizontal generalisation (David, 2004). In fact, corporate sustainability performance has been mainly supported on RBV, institutionalism and stakeholder theories. On the other hand, agency theory, stewardship and SEW frameworks have supported FB’s academic investigations. These two research lines also illustrate the main challenge to SMEs on an internal change and external demand perspective. Our case study purpose is to provide a description of a concrete situation interpreted through the theoretical framework lens. Theories listed will serve to explain the observations. Our work will reinforce the degree of relevance of a theory or, on the contrary, invalidate it.

The choice of Mistolin S.A. underlies the particular interest that may make the conclusions richer. Mistolin was founded in 1992 and develops products for home care and professional cleaning (Chemical base industry). The company started as a family-owned SME



and made a transition to a non-family firm and later to a family business as showed in table 5.4. Mistolin S.A. is owned since 2012 at 100% by a family holding Mistonetos – Gestão e Investimento Lda, owned by two brothers, their father and their uncle. In our research context, this company fits our main objectives as this case study is revelatory of corporate sustainability and offer opportunities for unusual research access (De Massis & Kotlar, 2014), namely because:

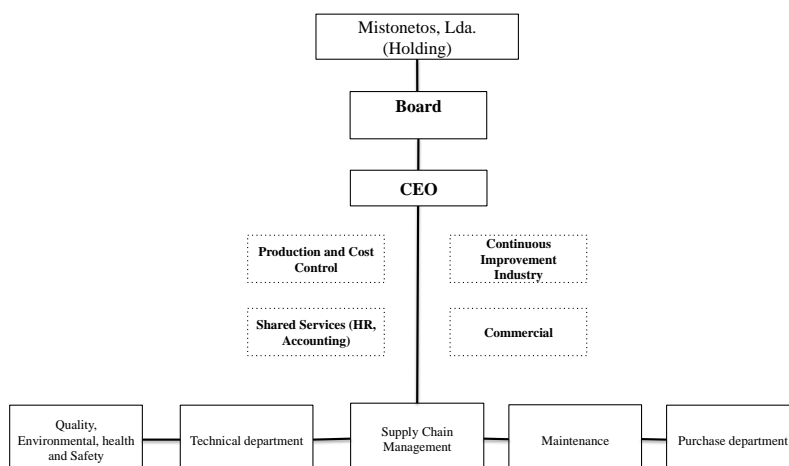
- Close family members are owners of high majority of shares;
- Family members participate in company management;
- The company has non-family members in top management (Board and CEO) in conformance with duality criteria for our research;
- Company is a medium company with enough capacity to receive our research process;
- The company introduced sustainability in strategy and discloses it, since 2012 when the family concluded the purchase process of 100% of shares;
- Company has a management system certified on several environmental and social standards (ISO 14001, SA 8000, OHSAS 18001, ISO 9001).

**Table 5.4 – Main Shares Transmission (1992-2012)**

<b>Year</b>	<b>Family Member Owner</b>	<b>Shares</b>	<b>FB definitions Status</b>
<b>1992</b>	Family owned firm (foundation)	1- 50% 1- 50%	Family Business
<b>1999</b>	Founder - owner Firm X (FB)	1- 50% 1- 50%	Non-family Business
<b>2002</b>	Founder –Owner Firm X (FB) Mistonetos – Gestão e Investimentos Lda	1- 33,33% 1-33,33% 1- 33,33%	Non-family Business
<b>2007</b>	Firm X Mistonetos – Gestão e Investimentos Lda	1- 33,33% 1- 66,66%	Family Business
<b>2010</b>	Firm X Mistonetos – Gestão e Investimentos Lda	1-5% 1- 95%	Family Business
<b>2012</b>	Mistonetos- Gestão e Investimentos Lda	1-100%	Family Business

A Board of director of four members, as represented in figure 5.3, composes the company organizational structure. Management duality is present on top management structures as the chairman and one administrator are brothers. In parallel, the two other administrators are not family members. Since 2012, two non-family CEO’s have been appointed with the more recent in the job since 2015. Thus, family owners have delegated a share of control to outsider managers, confirming a search for positive effects on strategic and performance dimensions.

**Figure 5.3 –Mistolin S.A. - Organizational chart**



Source: Adapted from Mistolin management system manual, June 2018

However, influence is maintained through the board, which is responsible for establishing the company’s strategy and policy, possessing golden decision in both medium and long-term perspectives.

### 3.2 Data Collection

Our single case study data collection was based on individual interviews, internal documents, external disclosed documentation (Web-site, journals articles, marketing prospects, etc.) and several site visits. We followed a triangulation of various data sources to validate the findings and conclusions as they provide multiple measures of the same phenomenon (Yin, 2009). In this sense, we retrieved a great number of financial, environmental and social data’s from Mistolin. A full accounting and financial documentation have been retrieved between 2007 until 2016. Also, social and environmental reports, job descriptions, KPIs monitoring reports, programs and strategic plans from 2012 to 2016 were analysed. Several visits have been undertaken to Mistonetos headquarter in Ponte de Vagos, Portugal and Mistolin production facility in Vagos, Aveiro, Portugal. These close contacts with production allow a full understanding of facility processes, challenges and complementary information through informal interviews. Finally, individual interviews occurred to Board members (3), CEO (1) and QEHS managers (2). A total of six (6) management members have been interviewed, including nearly 5 hours of recorded interviews.

### 3.3 Data Analysis

Data analysis was conducted by grouping and comparing several sources of information, including interview transcripts, EMS documents, environmental performance data and notes from the site visits. To facilitate the categorization process, we used IRAMUTEQ qualitative software, designed to carry out multidimensional texts allowing organizing our data efficiently (Soulez & Guillot-Soulez, 2006). The use of software facilitates data management, coding text, and theory testing. This method is widely used on qualitative research (Garnier & Guérin-Pace, 2010, Hernandez & Fiore, 2015). For hypothesis 1, we use a lexical content analysis from interviews. Under this methodology, we performed a word frequency distribution, a hierarchical classification descending analysis and factorial analysis of correspondence. Our objective is to understand the core content of different actors in family SME, taking their own point of view and in accordance with main topics retrieved from the literature review. As Yin (2009) argues, firstly, we follow the theoretical propositions that led to the case study, as they help to focus attention on certain data and to ignore extraneous data. The theoretical proposition also helps to organize the entire case study and to define alternative explanations to be examined.

**Table 5.5 – Lexical reduction statistics**

	<b>Initial extraction</b>	<b>Lexical reduction</b>	<b>Thesaurus</b>
	Lexicon 1	Lexicon 2	Lexicon 3
Words counting	5207	5179	1772
%	100%	99,54%	34,03%
Forms frequency	427	336	79
%	100%	78,68%	18,50%

In a second step, to explore hypothesis 2, we used statistical techniques based on data retrieving process from accounting, strategic plans and KPI's maps from 2012 to 2016. Then, we performed a linear regression analysis based on a social impact hypothesis (Preston & O'Bannon, 1997; Allouche & Laroche, 2006). Thus, we state a causal direction where social performance influence financial performance. For this analysis, the dependent variables relate to firm performance are (1) Return on Assets (ROA), (2) Return on Invested Capital (ROIC), (3) and Return on Equity (ROE) (Allouche et al. 1995, 2007, 2008; Naldi et al., 2013). ROA is a performance accounting indicator defined by the ratio of net income to total assets. ROIC is also a performance indicator, which measures firm efficiency of investment (financial

resources management). Finally, ROE is an indicator on a shareholder perspective, which measures the amount of returns based on shareholder investment.

The key independent variables are social performance (SocP) and environmental performance (EnvP) defined as the average of percentage on turn-over spent on social and consumption of environmental aspects (Water, Electricity or Chemicals) respectively.

For Hypothesis 2, we use univariate analysis of full sample based on the following equation:

$$Firm\ Performance = f(SocP, EnvP)$$

as explain on these linear regressions:

$$(1) Firm\ Performance = \alpha_0 + \alpha_1 EnvP + \varepsilon$$

$$(2) Firm\ Performance = \alpha_0 + \alpha_2 SocP + \varepsilon$$

Where *Firm Performance*= Return On Assets (ROA), Return on Invested Capital (ROIC) and Return on Equity (ROE); *EnvP<sub>i</sub>*= Average of percentage on production of consumption of electricity, water, chemical and waste production; *SocP<sub>i</sub>* = Average of percentage on turn-over spent on wages and social contribution, average of accidents per workers and average of training hour per workers;  $\alpha_0$ =constant;  $\alpha_1$ ,  $\alpha_2$  and  $\alpha_3$ = regression coefficients, and  $\varepsilon$  = residual term.

**Table 5.6 – Definition of variables**

<b>Variables</b>	<b>Description</b>
<b><i>Dependent variables</i></b>	
Return on Assets	(Net Income / Total assets)*100
Return on Invested Capital	(Net Operating Profit After Tax/Invested Capital) *100
Return on Equity	(Net Income/Shareholder's Equity)*100
<b><i>Explanatory variables</i></b>	
EnvP	ElecP : Total of amount electricity (Kwh) / Total of production WstP: Total of amount Waste (Kg) / Total of production ChmP: Total of amount Chemicals (Lt) / Total of production WatP: Total of amount Water (Lt) / Total of production
SocP	SalP: (Salaries & social contributions/ Total of revenues ) x 100 H&SP: (Total work accident/ Average number of workers) x 1000 TrainP: (Total number of Training hours / Total of workers) x 100
Size	Number of workers

Thus, a positive sign of SOC and a negative sign ENV characterize the positive link, between CFP and CSP. In fact, positive environmental performance is here measured by savings and less use of natural resources or less pollution. In this sense, we expect the following signs as described in table 5.7.

**Table 5.7 – Expected sign of variables**

<b>Variables</b>	<b>Expected sign</b>		
	ROA	ROE	ROIC
ENV	-	-	-
SOC	+	+	+

#### 4. RESULTS

*“Our vision is to develop new strategies to do business with our partners, to achieve sustainable solutions to the areas of hygiene and cleanliness around the world”.*

*Mistolin, Website.*

*“The satisfaction of its customers, suppliers and other stakeholders by meeting their needs and expectations”*

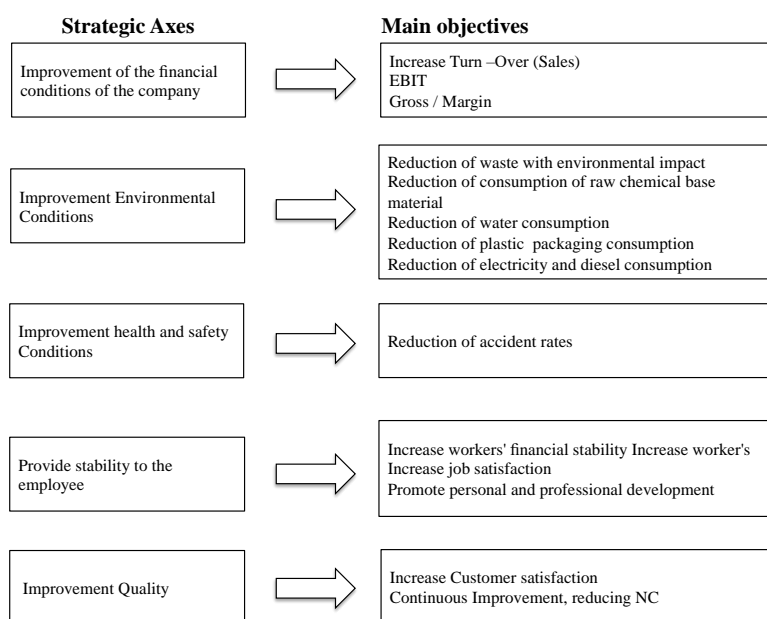
*Mistolin Strategy, 2017.*

*“Promote the training and information of all employees, employees and suppliers, in order to progressively strengthen their individual and personal competencies, with a view to the proper exercise of their responsibilities and creating conditions for the dynamics and enrichment of the organization.”*

*Mistolin’s Environmental, Health & Safety Policy, 2016.*

As previously explained, our case study focuses on a Portuguese SME family owned to support previous findings and refine the connection between theoretical approaches (stakeholders theory and SEW) which support the use, understanding and appreciation of sustainable measures. Mistolin S.A. case is justified by a declared environmental and social responsibility strategy in the development of hygiene, cleaning and wellness products and solutions for the domestic and professional areas. Also, the chemical base industry is associated with a greater demand for conformity with national and EU regulations, which include high pressures on social and environmental practices of firms. Mistolin S.A. has a specific sustainability management with proactive practices as for example the compliance with international standards, namely the commitment with ISO 9001 (Quality management), SA 8000 (Social Responsibility management), ISO 14001 (Environmental management) and OHSAS 18001 (Health and Safety management). From company documentation review, we retrieved a comprehensive set of policies, procedures and records that support an integrated and externally certified management system. Formally, the company integrates balanced management practices between financial, environmental and social performance. As mentioned in figure 5.4, the strategy includes dimensions beyond financial perspectives including aggregation of environmental, social (employees focused) and quality objectives.

**Figure 5.4 –Mistolin S.A. main objectives**



Source: Adapted from Mistolin Integrated Objectives 2012 -2016

In an operational point of view between 2012 and 2016, Mistolin S.A. put in action several environmental and social actions. This strategy improved corporate sustainability performance. In table 5.8 we can observe eco-efficiency ratios improvement with the decrease of energy, water and waste consumptions use in production.

**Table 5.8 – Consumption annual rate of change 2012-2016 (Base year=2012)**

	Production	Chemicals	Electricity	Water	Waste
<b>2013</b>	1,40%	0,94%	-0,46%	-0,94%	-0,73%
<b>2014</b>	2,34%	1,89%	1,50%	-1,89%	-1,19%
<b>2015</b>	34,98%	0,11%	1,30%	-0,11%	-13,15%
<b>2016</b>	-5,36%	2,73%	-1,82%	-2,73%	2,13%

## 4.1 Content Analysis

In order to understand the influence of restricted SEW attributes on FB's stakeholder management and sustainability performance system, it was performed an extended content analysis. Thus, we observed the frequency of forms in interviews, framing it with SEW dimensions (Gomez-Mejia et al., 2007) as exposed in table 5.9. Then, we proceed to a division on five groups: (1) Family control and influence, (2) Identification of family members with the firm (3) Binding social ties, (4) Emotional attachment of family members, (5) Renewal of family bonds to the firm through dynastic succession.

First group include forms associated to *Control and influence*. *Control* is represented by words linked to performance measurement (Result\_80; Magnitude\_80; Performance\_72; Production\_67; Finance\_67). Family influence is translated by management's lexical forms (Objective\_39; Organization\_37; Leadership\_33; Management\_32; Business\_22; Strategic\_20).

*“Our management is based on a strategy that was defined by the family holding (MSTN). The strategic guidelines for the short, medium- and long-term activities are translated by each business area “*

*(CEO – Non family member, 2018)*

The second group focus the *identification with a firm by family members*. The identification is a construct based on operations and values aggregation in a specific location and time by main shareholders (Operation\_63; Environment\_59; Company\_57; Value\_55; Action\_53; Time\_48; Location\_27; shareholder\_20; Term\_16).

*“Family influence is translated by a very close proximity to key employees within the organization. To be very close to these people allow the convey of principles and values at the business and behavioural level”*

*(Non-family Board Member, 2018)*

*Biding social ties* translate by the sense of identity appears on third group with forms associated to the aggregation and communication with primary stakeholders (Aggregate\_95; Communication\_31; Customer\_29; Person\_28; Employee\_28; Supplier\_16; Competitor\_13; CSR\_10).



*“Stakeholders identification? We identified our customers, employees, suppliers, our partners, our own administration and family shareholders”*

*(CEO- Non-family member, 2018)*

*The emotional attachment appears in interviewed manager through the reference to family and emotion words. The fourth group aggregates the emotions forms including knowledge concerns and conformity concerns (Family\_92; Emotion\_68; Knowledge\_38; Safety\_32; Compliance\_25; Concern\_14).*

*“Family managers highly value honesty and fidelity of employees. They privilege the relational part as family members informality.*

*(Non-family Board Member, 2018)*

Although present, *dynastic succession* appears with less frequency than expected. in this way in our results, we can observed the association of succession and challenges as for example innovation but also conflicts that may appears on this transition (Sucession\_21; Conflict\_21; Innovation\_15; Evolution\_15; Train\_14; Internal\_10; Competence\_10; Challenge\_10).

*“Succession is a goal, but not necessary in the family. It does not shock me that companies have a succession with people who are not direct blood, but who respect family values”.*

*(Family Member & Chairman, 2018)*

**Table 5.9 – SEW concept (word frequency > 9 occurrence)**

<b>Control and influence</b>	<i>Fq</i>	<b>Identification with the firm</b>	<i>Fq</i>	<b>Binding social ties</b>	<i>Fq</i>	<b>Emotional attachment</b>	<i>Fq</i>	<b>Dynastic succession</b>	<i>Fq</i>
<b>Result</b>	<b>80</b>	<b>Operation</b>	<b>63</b>	<b>Aggregate</b>	<b>95</b>	<b>Family</b>	<b>92</b>	Succession	21
<b>Magnitude</b>	<b>80</b>	<b>Environment</b>	<b>59</b>	Communication	31	<b>Emotion</b>	<b>68</b>	Conflict	21
<b>Performance</b>	<b>72</b>	Company	57	Customer	29	Knowledge	38	Innovation	15
<b>Production</b>	<b>67</b>	Value	55	Person (people)	28	Safety	32	Evolution	15
<b>Finance</b>	<b>67</b>	Action	53	Employee	25	Compliance	25	Train	14
Objective	39	Time	48	Quality	22	Concern	14	Internal	10
Organization	37	Location	27	Supplier	16			Competence	10
Leadership	33	Shareholder	20	Competitor	13			Challenge	10
Management	32	Other Geography	19	CSR	10				
Business	22	Term	16						
Strategic	20								

*Top 10 forms in bold*

Table 5.9 shows the frequency of words frames with SEW dimensions (FIBER). Our analysis supports the existence in the manager's discourse of the SEW concept. In this sense, we can argue that the manager's actions are influenced by a SEW own interpretation. In our case study, we observed that *control and influence* vocabulary prevail, translating in part the hardness on negotiation and conflicts to obtain a full control of company by the family, achieved in 2012. This theme is pre-eminent due also to full application of management duality since 2012 and subsequent delegation of authorities. A silent conflict seems to exist in managers' discourse between professionalization and family's manager control. Family members have a clear conscience of duality advantages. However, due to emotional and financial attachment from the family, a sensitive balance between non-family manager autonomy and family managers control appears on strategic and operational decisions.

Also, *emotional attachment* and *biding social ties* appears clearly in the manager's discourse. Company is part of their life with difficulty to separate personal and professional dimension.

*"I 'm always working, even in poolside with friends. All subjects are news inputs for our business"*

*(Family Member & Chairman, 2018)*

This attachment is also transmitted to non-family employees and in an extended lens to suppliers and customers. Aggregation through social ties allows the extension of family business values and principles (honesty, dedication, entrepreneurship, innovation, etc...) to primary stakeholders as employees, suppliers and customers.

*"The essential values for us (Family) are honesty, seriousness consistency, and entrepreneurship"*

*(Family Member & Chairman, 2018)*

By frequency counting, we found a low weight of *dynastic succession* vocabulary. It seems that a planned transition is still not in the agenda as the first succession between father and uncle was naturally soft due to advanced age of both. In fact, older family members invested in the company on the assumption that sons and nephews will manage the business. However, a second generation is growing inside the organizational structure, putting new challenges internally, namely based on a business evolution and human resource competence. The low frequency of succession vocabulary may also be justified by the young age of the third generation.

Even our results link SEW concept to managers discourse, a correlation analysis may clarify and conclude about the prevalence of an extended or a restricted SEW influence in managerial practices namely on stakeholder's management.

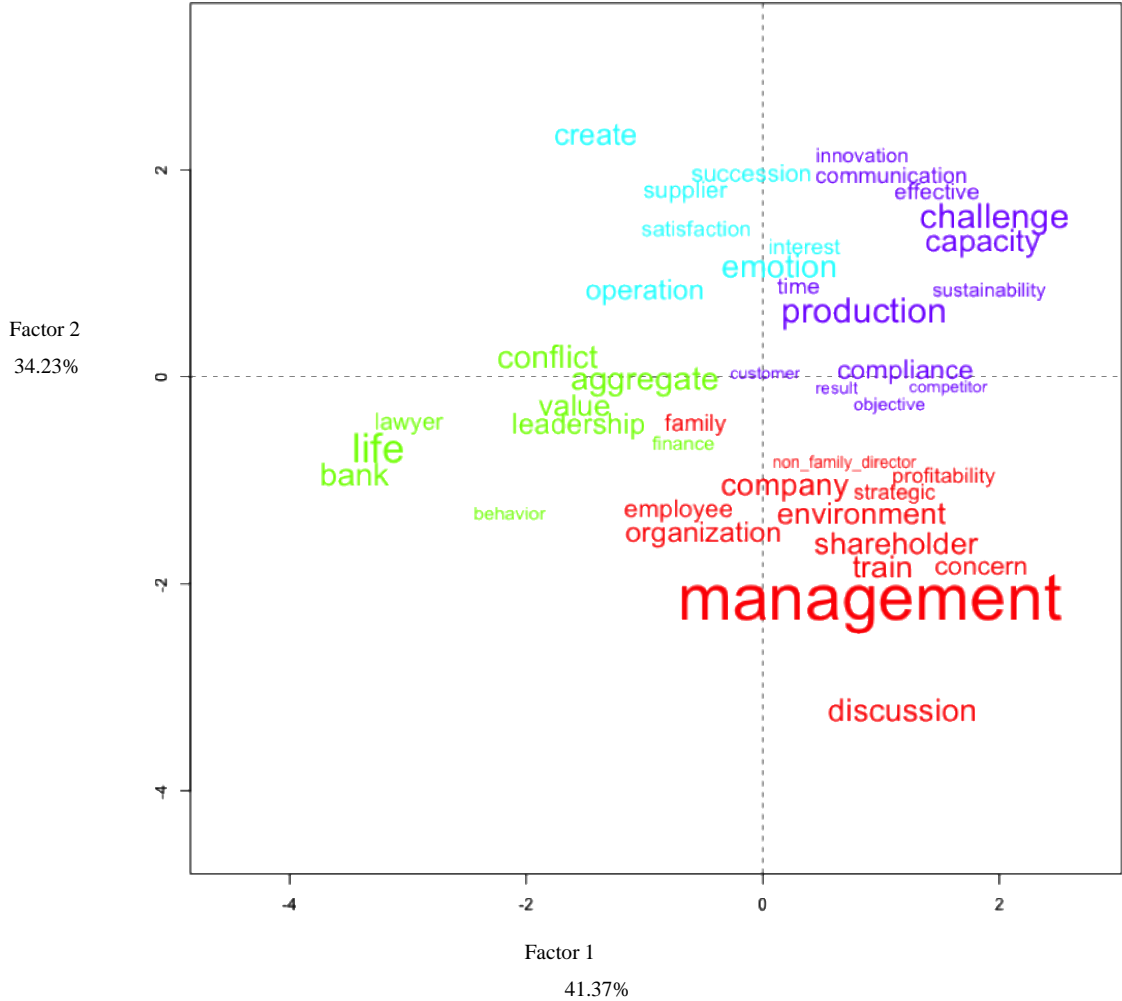
To extract correlations between groups and visualize the relationships of attraction and distance between elements including main managerial direction, we performed a Factorial Analysis of Correspondence. Factor map in which the strength of a relationship is proportional to the distance between words coordinates, allow us to analyse the lexical environment, themes and trends (Gavard-Perret & Moscarola, 1996; Bolden & Moscarola, 2000).

Figure 5.5 represents the factorial plan of words. We found two factors accounting for 75.60% of the variance, where the relative contribution of the first factor represents 41.37% and the second factor 34.23% confirming a certain degree of themes concentration. The two factors have a fairly explanatory meaning. Factor 1 translates reflections around Management organization, opposing words associated with operational control in present time and words associated with the challenges in future as innovation, creation and succession. Factor 2 corresponds to the opposition between the internal vision of firm and external compliance namely in a sustainability lens. This includes emotions, values and leadership forms against external compliance and operational capacity.

Taking words in a centrality analysis technique (Gavard-Perret & Moscarola, 1996), we observed a set of words that show consensus between managers discourses. Thus, we find that main topic focused are production, operations and customers. The production and operational performance are great challenges in Mistolin's managers minds. These results are related to recent investment in facilities enlargement and its productive maximization (2014 and 2015). Also, the central position of aggregation and family highlight the balance between family control and influence, and aggregation with stakeholders. With factorial analysis of correspondence, we can conclude that the internal vision of the firm includes organizational production and activities linked to primary stakeholders (employee, suppliers and customers) with family as a common theme. Family-owned SMEs have a limited range of resources and markets. Proximity allows for an efficient control and influence maintaining family aggregation and wealth. We can observe that central forms focus the primary stakeholders (Customers and family) and performance of the business (Result, objective, finance, profitability, production). From the correlations, we can observe that family, customers and results are linked in the managerial discourse. This consensus (centrality) between managers speech (family and non-family) shows that the clear identification of the company as a FB.

Thus, we can argue that family is the primary beneficiary of performance in the manager minds. It was also observed that customers are identified as focal stakeholders. Thus, we can conclude that primary stakeholders are focused on the managerial speech in opposition to secondary stakeholders.

Figure 5.5 – Word Factorial Analysis of Correspondence (n=1772)\*



\* Words with Chi2 >3,84

Deepening our field study focused on SEW, and its influence in stakeholder’s management, we used hierarchical classification descending to highlight the different dimensions of manager’s speech. This method aggregates forms in classes. For each class, our analysis focuses on the tendencies taking into account an analysis of the most representative lexical forms used by interviewed managers. Using a chi-square (Chi2) test of association, the hierarchical classification descending analysis provides sets of words and variables with significant statistical association with the class. Only the results from IRAMUTEQ that reached statistical significance are presented, i.e. when Chi2 values were higher than 3.84 ( $p \leq$

.05). Thus, the results of lexical forms and abstracts are presented in the decreasing order of Chi2 of the most significant to the smallest.

**Table 5.10 –Lexical forms by decreased Chi2 per Class (n = 101)**

Class 1 (22,77%)		Class 2 (26,73%)		Class 3 (18,81%)		Class 4 (31,68%)	
Chi <sup>2</sup>	Forms	Chi <sup>2</sup>	Forms	Chi <sup>2</sup>	Forms	Chi <sup>2</sup>	Forms
37.68	Management	20.61	Life	14.59	Emotion	16.66	Production
14.12	Discussion	14.96	Aggregate	12.90	Create	16.22	Challenge
13.85	Company	14.42	Bank	11.78	Operation	13.75	Capacity
13.48	Train	14.34	Conflict	8.95	Succession	10.71	Compliance
13.48	Shareholder	12.97	Value	8.67	Supplier	7.86	Effective
13.27	Environment	12.10	Leadership	7.24	Satisfaction	7.70	Communication
11.86	Organization	8.47	Lawyer	7.24	Interest	7.55	Time
10.12	Concern	5.46	Finance	4.74	Family	6.14	Innovation
9.36	Employee	4.95	Behaviour			5.67	Sustainability
8.49	Family					4.62	Objective
7.09	Strategic					4.15	Result
6.99	Profitability					3.87	Customer
4.26	Objective						

From our interview’s analyses, four significant and homogeneous classes emerged:

- Class 1: “*Management and internal organizational orientations*”- representing 22,77% forms, this class include mainly control and influence in management practice. This group of lexical forms focus the relation between family shareholders, employee and organizational structure;
- Class 2: “*Leadership values aggregation*”- with 26,73% of forms, this class focus themes related to identification with the firm and binding social ties. Challenges raised by firms social network and organizational unity are exposed in this group.
- Class 3: “*Succession and operational continuity*”- with 18,81% of lexical forms, this class represents emotional attachment and dynastic succession challenges in a mixed family and operational continuity angle.
- Class 4: “*Compliance and performance*” - representing 31,68% of forms. This class is the most representative of the vocabulary used by interviewed managers. This last class expressed performance and compliance forms in the speech, including sustainability themes.

Class 1 is characterized by a focus on firm management and internal organizational orientations. In this group, we find lexical forms that emphasise the challenges of business as

*management, discussion, company, concern, environment, strategic, profitability and objectives*. This class also focuses on primary stakeholders and their integration in the business and management. Firstly, *shareholder, employee and family* show that in managers' discourses the primary stakeholders make part of a successful equation. In simultaneity, *train* and *concern* focus on the challenges of continuous human resource competencies improvement for success. By the intensity of correlations, this class highlight strategic management and main actors for managers. Internal changes and action needs are supported by the following trilogy: *shareholder, employee and family*. Primary stakeholders are reduced to internal and close actors in company life, confirming the main influences in day-to-day management.

Second class has as main scope leadership's values aggregation. We find the fundamentals of identification with the firm and emotional attachment vocabulary. *Life* and *aggregate* as a confirmation of the identification of personal life with the firm. *Value, leadership* and *behaviour* represent main lines to conduct employees towards the company strategy. The second group of words express an antagonistic side, which influences FB 's values. Thus, *bank, conflict, lawyer* and *finance* translate a different angle, which balance "values" mainstream and rationality in management practices. In this sense, businesses are more than principles and values. Economic rationality seems to come from an outside dimension freezing internal values and straighten management practices. These lexical forms point out to conflicts between the family vision of business and external pressure. Also, secondary stakeholder, who appears as moderators of values transmission inside family, limits leadership.

With lower weight (18,81%), we observed third class focusing succession and operational continuity. This group of lexical forms introduces concerns about the company's future in two dimensions. Firstly, *emotion, succession, satisfaction, interest* and *family* are related to the hope of emotional transmission of companies and their values within the youngest family members. In another hand, *create, operation* and *supplier* are related to the operational continuity and firm regenerating expectations. This group translates the renewal of family bonds to the firm through dynastic succession (Berrone et al., 2012). It can be interpreted also as challenges proposed to future generations on an operational lens. Emotions and concerns of managers on a long-run vision are aggregated in this third class. Company survival and success appears linked to family purpose. Then, the wellness of internal stakeholders is intertwined with the succession process and strategy. Family continuity appears as a guarantee of success and wealth for internal stakeholders.

Class four include a higher number of forms, representing 31,68%. This group includes compliance and performance meanings. Focusing the industrial lexical and culture of performance, we observed words related as *production, challenge, capacity, effective, innovation, objective, results* and *customer*. A second group characterizes sustainability compliance scope with lexical forms as *compliance, communication, time* and *sustainability*. The internal dimension of performance is a strong concern for managers. In an industrial environment, production scale and effectiveness are still the main performance guidelines. Thus, these meanings are related to efficient and maximization of production capacity. This discourse is amplified by the recent investments and customer's challenges to the firm. The second group is related to sustainability and external forces to compliance. The external stakeholders' pressures to comply with legal, regulatory or market requirements are expressed in the managers' discourse. Chemical industry inserts several legal and regulatory communication requirements, which explain the high awareness of top managers on compliance and disclosure.

From hierarchical classification descending, we concluded that based on the influence of primary stakeholders a restricted SEW view is dominant in top managers discourses and minds. In this sense, we can relate hierarchical classification descending classes with Miller & Le Breton-Miller SEW perspectives:

- The relation between family shareholders, employee and organizational structure translate typical SEW Priorities and governance outcomes;
- The challenges raised by firm's social network and aggregation support that focal stakeholders are shareholders (family), employees and customers;
- Emotional attachment and dynastic succession challenges, showing agency and stewardship focal theories are present and;
- Performance and compliance support strategic and commercial outcomes.

Finally, to enrich our content study, we performed a thematic analysis. This technique is an intellectual categorization based on repetitive textual elements. Categorizations must be stable and adequate, linked to contextual and theoretical knowledge (Fallery & Rodhain, 2007). Researcher knowledge is based on company, interviews, industry context, applied sustainability strategy, SME and family owned-firm's theories. We performed an adequate link between theme and rheme, grouping 1772 words and 79 different forms in 25 themes. For our specific analysis, we take into consideration themes with a minimum of 79 counting frequency representing 71,09% of overall thesaurus present in management discourse.

In table 5.11, we observe that two fields dominate management discourse:

- Performance Management themes representing 40,94% of overall lexical forms, and
- Emotional aggregation themes representing 30,15 % of all themes.

Performance fields are in line with previous findings. This thematic is related to our study field, but also highlight management main concerns. Grouped in six different themes (*Performance, operational, finance, management, magnitude and business*), we can observe that discourses in a business family owned are focused on results. In this sense, the survival of family wealth is linked to high performance at the firm level.

The second group of themes link *family, aggregation, human capital, emotion and stakeholder* represents emotional aggregation concerns. This point of view shows that FBs management is not only based on family centrality. However, also, aggregation of human resources and stakeholders with company business based on emotions (values, principles) appears as an objective and concern. In this sense, sharing and grouping with primary stakeholder are seen as a mean to better performance. These findings show that family managers are focused on SEW through primary stakeholder aggregation (Gomez-Mejia et al., 2007). SEW appears as a driver on performance outcomes with stakeholders linked to family control and influence in firms (Cennamo et al., 2012). No full family-centric vision appears on managers' discourses in our case study. Findings confirm that SEW evolves with a very limited number of stakeholders (Kellermanns et al., 2012).

Surprisingly, we noted that sustainability themes did not appear in primary concerns. The lack of sustainable strategies outcomes shows that family SME managers still not consider a balanced performance with environmental or social practices. Evenly, environmental and social performance integration results from a negotiation with family and close stakeholders, based on a SEW dimensions priorities and evolution.



**Table 5.11 – Frequency distribution of themes (frequency > 78)**

Themes	%	Frequency
Performance	10,35%	185
Operational	8,78%	157
Family	7,27%	130
Finance	7,10%	127
Aggregation	6,71%	120
Human Capital	6,49%	116
Management	5,87%	105
Emotion	5,26%	94
Magnitude	4,42%	79
Business	4,42%	79
Stakeholder (external)	4,42%	79

#### 4.2 Linear Regression Analysis

In order to examine the influence of duality manager’s composition (CEO & Chairman), on the relation between Corporate Financial Performance (CFP) and Corporate Social and Environmental Performance (CSP), we performed a linear regression analysis based on Mistolin’s performance indicators between 2012 and 2016.

The use simple linear regression is justified by the nature of our sample (not paired) and the purpose of estimation. The linear regression is an equation for estimating the conditional (expected value) of a variable y, given the values of some other variables x. The relation is expressed by a positive or negative relations between variables. Taking in consideration sample size (n= 5) and assumption tests, simple linear regression fit within study objectives (Miles & Shevlin; 2001).

Table 5.12 shows that correlations between Return on Assets (ROA), Return on Equity (ROE), Return on Invested Capital (ROIC), Social Performance ratios (SOC), Environmental Performance ratios (ENV) and firm size. Consistently, correlations are significant at 1% and positive between ROA, ROE and ROIC. At the environmental level, electricity consumption has a significant and positive correlation at 5%. There is no significant correlation between waste production, chemical consumption and water consumption with ROA, ROE and ROIC. Correlation is significant and negative at 10% between Safety and ROA, ROE and ROIC. There are no significant correlations between others social ratios and other variables.

Between explanatory variables, we found a perfect correlation between the water and the chemical consumptions, confirming that our model is adequate as technically these two ratios are strongly interconnected. Secondly, we noted that size has a significant and negative correlation to the volume of training performed to workers. No other significant correlation exists between variables.

**Table 5.12 – Pearson correlation matrix for dependent and explanatory variables (years= 2012 to 2016)**

		FINANCE			ENVIRONMENT				SOCIAL			SIZE
		1	2	3	4	5	6	7	8	9	10	11
FINANCE	1	1										
	2	,998***	1									
	3	,996***	,998***	1								
ENVIRONMENT	4	,902**	,907**	,914**	1							
	5	-0,547	-0,585	-0,612	-0,531	1						
	6	-0,023	0,022	0,036	-0,123	-0,756	1					
	7	0,023	-0,022	-0,036	0,123	0,756	-	1				
SOCIAL	8	-0,12	-0,152	-0,131	0,153	0,523	-0,827	0,827	1			
	9	-0,813*	-0,826*	-0,808*	-0,552	0,641	-0,408	0,408	0,666	1		
	10	-0,451	-0,444	-0,418	-0,029	0,236	-0,308	0,308	0,711	0,804	1	
SIZE	11	0,461	0,445	0,434	0,035	-0,219	0,228	-0,228	-0,569	-0,731	-,965***	1

\*\*\*Significant at 0,01 level; \*\* Significant at 0,05 level; \* Significant at 0,10 level  
1. ROA; 2. ROE; 3. ROIC; 4. ELECTRICITY; 5. WASTE; 6. CHEMICALS; 7. WATER; 8. WAGES; 9. SAFETY; 10. TRAINING; 11. SIZE (workers).

We aim to test our hypothesis considering a full strategic period for the company between 2012 and 2016. Thus, we use linear regression analysis to provide a set of results that reached statistical significance to the academic debate on the link between CFP and CSP on a social impact hypothesis (Preston & O’Bannon, 1997; Allouche & Laroche, 2006). Thus, results are presented by dependent variables and R<sup>2</sup> value, unstandardized coefficient, standard coefficient, t value and significance value (p-value) for each explanatory variable.

Table 5.13 presents linear regression results of ROA as dependent variables and environmental performance indicators (Electricity, Waste and Chemicals) as explanatory variables. We can conclude that ROA have a positive and significant coefficient with

Electricity indicator ( $\beta = 46,398$ ; p-value  $<0,05$ ). Inversely, ROA has a negative coefficient with waste but also insignificant ( $\beta= -0,333$ ; insignificant). Also, a negative coefficient between ROA and Chemical variable is present in our analysis ( $\beta= -0,46$ ; insignificant). Finally, ROA presents a positive and insignificant association with water consumption ( $\beta= 0,46$ ; insignificant). Table 5.13 shows that  $R^2$  is not relevant for chemicals and water indicators ( $R^2= 0,001$ ), thus with less impact in terms of conclusions. Findings show that ROA improves with less waste production and chemical consumption, confirming eco-efficiency positive effects in financial dimensions. Inversely, ROA tends to increase in parallel with electricity and water consumption, supporting the conclusions that less environmental care tends to promote better return on assets.

**Table 5.13 – Linear regression results ROA ~ENV (2012 to 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	-0,47	0,0027	---	-1,771	0,175
<b>ELECTRICTY</b>	46,398	12,839	0,902	3,614	0,036**
$R^2=0,813$					
<b>(Constant)</b>	0,197	0,138	---	1,427	0,249
<b>WASTE</b>	-0,333	0,294	-0,547	-1,130	0,40
$R^2=0,299$					
<b>(Constant)</b>	0,54	0,297	---	0,183	0,867
<b>CHEMICALS</b>	-0,46	1,1169	0,023	-0,039	0,971
$R^2=0,001$					
<b>(Constant)</b>	0,08	0,873	---	0,009	0,993
<b>WATER</b>	0,46	1,169	0,023	0,039	0,971
$R^2=0,001$					

\*\*\*Significant at 0,01 level; \*\* Significant at 0,05 level; \* Significant at 0,10 level

Table 5.14 presents the results of the linear regression of ROA as the dependent variable and social ratios as explanatory variables. ROA reveal a negative coefficient with all social variables. A negative and significant relationship exists between ROA and Safety ( $\beta= -0,001$ ; p-value  $<0,10$ ), confirming that safety ROA improves with better practices in health and safety. For wages ( $\beta= -0,330$ ; insignificant) and training ( $\beta= -0,012$ ; insignificant) the relation is negative and insignificant. ROA demonstrates a positive but non-significant relation with size ( $\beta= -0,001$ ; insignificant). These results explain that costs in wages and training in a 5 years period framework did not improve ROA. However, ROA is positively

impacted by safety controls at accidents level. In this sense, occupational safety outperformance means better financial performance.

**Table 5.14 – Linear regression results ROA ~ SOC (2012 – 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	0,088	0,220	---	0,402	0,715
<b>WAGES</b>	-0,330	1,577	-0,120	-0,209	0,848
R <sup>2</sup> =0,14					
<b>(Constant)</b>	0,133	0,040	---	3,355	0,044
<b>SAFETY</b>	-0,001	0,000	-0,813	-2,422	0,094*
R <sup>2</sup> =0,662					
<b>(Constant)</b>	0,063	0,031	---	2,025	0,136
<b>TRAINING</b>	-0,012	0,013	-0,451	-0,875	0,446
R <sup>2</sup> =0,203					
<b>(Constant)</b>	-0,055	0,110	---	-0,497	0,654
<b>SIZE</b>	0,001	0,001	0,461	0,900	0,435
R <sup>2</sup> =0,212					

\*\*\*Significant at 0,01 level; \*\* Significant at 0,05 level; \* Significant at 0,10 level

Table 5.15 shows the results of the linear regression of ROE as the dependent variable and environmental ratios as explanatory variables. A positive and significant relation exists between ROE and Safety ( $\beta= 202,487$ ; p-value <0,05). This result presents a great correlation and impact on ROE by higher electricity consumption. No significant coefficient exists between ROE, Waste ( $\beta= -1,542$ ; insignificant), Chemicals ( $\beta= 0,195$ ; insignificant) and water ( $\beta= - 0,195$ ; insignificant). For ROE models, we found a low explanation rate of the dependent variables, with 0,000% for chemicals and water. Nevertheless, mixed conclusive results were founded with a negative correlation where less waste production allows better ROE performance. However, on the contrary, a greater energy consumption is linked to a ROE positive performance.

**Table 5.15 – Linear regression results ROE ~ ENV (2012 – 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	-0,223	0,113	---	-1,978	0,142
<b>ELECTRICITY</b>	202,487	54,128	0,907	3,741	0,033**
R <sup>2</sup> =0,823					
<b>(Constant)</b>	0,887	0,581	---	0,224	0,224
<b>WASTE</b>	-1,542	1,236	-0,585	0,301	0,301
R <sup>2</sup> =0,342					
<b>(Constant)</b>	0,120	1,288	---	0,093	0,932
<b>CHEMICALS</b>	0,195	5,068	0,022	0,038	0,972
R <sup>2</sup> =0,000					
<b>(Constant)</b>	0,315	3,785	---	0,083	0,939
<b>WATER</b>	-0,195	5,068	-0,022	-0,038	0,972
R <sup>2</sup> =0,000					

On table 5.16, we observe that ROE have negative and non-significant coefficient with two social ratios. In this sense, wages ( $\beta = -1,814$ ; insignificant) and training ( $\beta = -0,50$ ; insignificant) demonstrate a negative link with ROE performance. Again, safety ( $\beta = -0,03$ ; p-value  $< 0,05$ ) have a negative and significant relation with ROE which demonstrates that greater ROE ratio is explained by lesser accident rates.

**Table 5.16 – Linear regression results ROE ~SOC (2012 – 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	0,421	0,949	---	0,443	0,687
<b>WAGES</b>	-1,814	6,807	-0,152	-0,267	0,807
R <sup>2</sup> =0,23					
<b>(Constant)</b>	0,568	0,167	---	3,411	0,042**
<b>SAFETY</b>	-0,03	0,001	-0,826	-2,541	0,085*
R <sup>2</sup> =0,683					
<b>(Constant)</b>	0,258	0,136	---	1,896	0,154
<b>TRAINING</b>	-0,50	0,058	-0,444	-0,858	0,454
R <sup>2</sup> =0,197					
<b>(Constant)</b>	-0,237	0,480	---	-0,494	0,655
<b>SIZE</b>	0,005	0,006	0,445	0,861	0,453
R <sup>2</sup> =0,198					

Observing ROIC linear regression results in table 5.17, we find a statistically positive coefficient with electricity ( $\beta= 87,568$ ;  $p\text{-value} < 0,05$ ). This result is in line with the previous relation between efficient consumption of electricity, ROA and ROE. Waste ( $\beta= -0,694$ ; insignificant) and water ( $\beta= -0,136$ ; insignificant) demonstrate the same trend that with ROA and ROE, showing negative and insignificant relation. Chemical consumption efficiency ( $\beta=0,136$ ; insignificant) appears as positive and insignificant related to ROIC.

**Table 5.17 – Linear regression results ROIC ~ENV (2012 – 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	-0,018	0,047	---	-0,380	0,729
<b>ELECTRICTY</b>	87,568	22,440	0,914	3,902	0,030**
R <sup>2</sup> =0,835					
<b>(Constant)</b>	0,475	0,243	---	1,954	0,146
<b>WASTE</b>	-0,694	0,517	-0,612	-1,341	0,272
R <sup>2</sup> =0,375					
<b>(Constant)</b>	0,117	0,553	---	0,212	0,845
<b>CHEMICALS</b>	0,136	2,175	0,036	0,063	0,954
R <sup>2</sup> =0,001					
<b>(Constant)</b>	0,254	1,624		0,156	0,886
<b>WATER</b>	-0,136	2,175	-0,036	-0,063	0,954
R <sup>2</sup> =0,001					

As previously observed, also the relation between ROIC and social ratio follows the same trends of ROA and ROE. A significant and negative coefficient exist between ROIC and safety ( $\beta= -0,01$ ;  $p\text{-value} < 0,10$ ). ROIC has a positive but insignificant coefficient with size ( $\beta= 0,001$ ; insignificant). Also, wages ( $\beta= -0,670$ ; insignificant) and training ( $\beta= -0,020$ ; insignificant) relation with ROIC is negative and insignificant.

**Table 5.18 – Linear regression results ROIC ~SOC (2012 – 2016)**

	Unstandardized Coefficient		Standard Coefficient	t	Sig.
	B	Std Error	Bêta		
<b>(Constant)</b>	0,245	0,409	---	0,599	0,591
<b>WAGES</b>	-0,670	2,932	-0,131	-0,229	0,834
R <sup>2</sup> =0,017					
<b>(Constant)</b>	0,320	0,075	---	4,272	0,024
<b>SAFETY</b>	-0,01	0,000	-0,808	-2,377	0,098***
R <sup>2</sup> =0,653					
<b>(Constant)</b>	0,188	0,059	---	3,173	0,050
<b>TRAINING</b>	-0,020	0,025	-0,418	-0,798	0,483
R <sup>2</sup> =0,175					
<b>(Constant)</b>	-0,018	0,208	---	-0,087	0,936
<b>SIZE</b>	0,002	0,003	0,434	0,834	0,466
R <sup>2</sup> =0,188					

Reverse effects are observable between financial and environmental ratios, namely electricity and chemical consumption, as explain in table 5.19. Positive signs in these two variables translate less eco-efficiency when ROA, ROE and ROIC increase. However, positive financial indicators tend to be associated with decreasing waste production. Water indicator with negative sign means that when financial ratios are positive less water is used. In this sense, we can conclude on an environmental performance lens, hypothesis 2 is accepted. On a social performance lens, we can consider safety as having a positive relation, as negative signs mean less accidents are related to better financial performance. On contrary ROA, ROE and ROIC are negatively related to wages and training variables. In this sense, we conclude that in a social performance hypothesis 2 is not accepted. CFP is negatively linked to greater wages and training policy.

**Table 5.19 –Sign of variables**

Variables	Sign Finding			Hypothesis 2	Interpretation of signs
	ROA	ROE	ROIC		
<b>ENVIRONMENT</b>					
<i>ELECTRICITY</i>	+	+	+	Rejected	Indicator <b>ElecP (Kwh/ Litres)</b> positive sign translates that an increase of ROA, ROE and ROIC is linked to less efficiency per litres. Even the sign is positive, the effect is reversed for an environmental protection lens.
<i>WASTE</i>	-	-	-	Accepted	<b>WastP (kg / per litres)</b> a negative sign translates inverse relation. Thus, if ROA, ROE and ROIC increase the waste decrease.
<i>CHEMICALS</i>	-	+	+	Partially Accepted	<b>ChmP (Litres / Litres)</b> translates the level of chemical used. On an environmental perspective, less chemical consumption may not translate a better environmental performance. In fact, the balance of mix water and chemical is defined by factory. In accordance, if the sign is positive, it means an increase of chemicals per litres of product.
<i>WATER</i>	+	-	-	Partially Accepted	<b>WatP (litres/ litres)</b> translates the use of water as an environmental resource. A positive sign means a higher percentage of water on each unity of product when financial indicators increase.
<b>SOCIAL</b>					
<i>WAGES</i>	-	-	-	Rejected	<b>SalP</b> translates work cost per total of revenues. Negative sign translates an inverse effect between financial indicators and wages.
<i>SAFETY</i>	-	-	-	Accepted	<b>H&amp;SP</b> translates work accident and preventive actions on H&S lens. Then negative sign means less accidents and more safety actions efficiency when financial indicators are positive.
<i>TRAINING</i>	-	-	-	Rejected	<b>TrainP</b> translates training hours per workers. Then negative sign means less training when financial indicators are positive.

Our previous study did not confirm the hypothesis, which implies that in Portugal, SME financial performance is positively linked to environmental and social performance. With duality management in our single case, CSP is positively linked with environmental indicators, excepted electricity consumption. However, findings did not confirm a positive link with the social dimension. Thus, for the hypothesis 2, which predicted that in Portugal Family – owned SME with duality manager’s composition (CEO & Chairman), CFP is positively linked to CSP, we concluded that is partially confirmed on the environmental lens.



## 5. DISCUSSION & CONCLUSIONS

This study aims to a better understanding of internal and external influences on design and implementation of sustainable measurement systems. Previously, we highlighted that strong financial structure was found in FBs linked to familiness and SEW of FBs leadership approach (Gomez-Mejia et al., 2007). SEW preservation was discussed as a multidimensional perspective which influences decision-making and managerial behaviour. In a restricted point of view, SEW appears as a negative conditioner to a full application of stakeholder theory. In fact, the restricted SEW lead to conservative management practices, which focus private benefits at the expense of other stakeholders (Miller and Le Breton Miller; 2014). Thus, the satisfaction of the stakeholders did not appear as a driver to design companies' performance systems. Benefits and costs of family control have been discussed in the literature taking in account the influence of SEW concept (Cennamo et al., 2012), in particular, negative effect of "blockholders" primacy in firm's strategies (Gomez-Mejia et al., 2007). In general, studies take indirect methodologies, which include surveys (Debicki et al., 2017), comparison between FB and NFB (Miller et al., 2013; Labelle et al., 2016) to identify the influence of SEW and its components. However, these measures have their own limitations. For example, the assumption that ownership variables have an isomorphic behaviour or correlations are supported by a linear causal effect between ownership and emotional values. The survey may include biases as respondent may communicate a different image (Berrone et al., 2012). Therefore, our study takes a direct approach with the use of lexical content analysis to capture the SEW's dimensions. This technique allows the search in a psychological angle of FB's managers through their own discourse and vision. Non-family managers were integrated into our study to focus also their impact on decision making. Our approach allows us to conclude on SEW attributes existence and how they influence stakeholder management and engagement practices.

Theoretically, our findings confirm FIBER dimensions in all managers' speeches (Gomez-Mejia et al., 2007; Berrone et al., 2012; Cennamo et al., 2012). Then, our work extends arguments on the benefits or cost of family involvements discussed by agency theory, RBV, stewardship and SEW approach incorporating a reduced stakeholder theory perspective. In this sense, we contribute with new findings updating the theoretical field of corporate

sustainability performance, extending the discussion about family involvement and influence on firm performance and the effect of SEW preservation in Portuguese SMEs.

By words counting, family control and influence, family members' identification with the firm and emotional attachment lead managers discourses. We can conclude that family leadership and centrality is more present and relevant than bidding social ties. The dominant position of family members restricts the engagement of stakeholders in a strategic and operational perspective. The factorial, hierarchical classification descending, and thematic analysis are in line with wording counting results. Factorial correlations captured show a dominance of family and primary stakeholders, in opposition to secondary stakeholders. In hierarchical classification descending, we found restricted SEW perspectives where the relation between family shareholders, employee and organizational frame the main governance outcomes. Emotional attachment and dynastic succession are identified as challenges that may influence performance and sustainability compliance on a medium and long-run vision. Finally, thematic analysis enforced the restricted focus of performance management and emotional aggregation in a business family. Restricted SEW is present in manager's psychological behaviour and discourses.

Empirically, findings confirm that SEW creates a connection with a very limited number of stakeholders (Kellermanns et al., 2012). In consequence, stakeholder's engagement and management is limited by SEW preservation in Family SMEs. FBs manager's priorities are focused on management and internal organizational orientations, in leadership values and its organizational performance and family influence survival. As previously, it seems to be consensual that performance and sustainability measures have been studied in a three-dimensional optics (TBL) supported in the connection with the stakeholders in a search of a more competitive resources management. However, in our case study, the value of stakeholder engagement is limited to three groups: family, employees and customers. This approach determines that performance systems are not a construct based on a large stakeholder spectrum as demonstrated in large companies (Kellermanns et al., 2012; Labelle et al., 2016). The search of family wealth tends to limit vision and strategy to an operational and organizational performance, where the long-term strategy is the survival. To success, family managers and entourage need primary stakeholders aggregation to their own ethical values. The aggregation is an ultimate condition to ensure that succession has an appropriate context to support the next generations. In fact, family managers tend to bind social ties for the present success but also to support the youngest members in the future. In this sense strategies and performance measurement systems are limited by the centrality of

“blockholders”. In our single case study, integrated objectives and indicators are linked to family, employees and customers. These findings confirm agency theory and stewardship theory in the angle that the manager’s interests are aligned with shareholders and primary stakeholders (Tshipa et al., 2018). Also, RBV is updated, as SMEs facing limitations on accessing to resources tend to put obstacles to full use of “capitals” (Poza et al., 1997), focusing a limited number of stakeholders.

Also, sustainability themes did not appear in primary concerns. The lack of strategic focus shows that family SME managers still not consider a balanced performance with environmental or social leading practices. These findings confirm that FBs did not engage more in CSR activities or have greater focus on social and environmental performance, linked to stakeholders on a long-term reference (Niehm et al., 2008, Amann et al., 2012; Cruz et al., 2014; Miller and Le Breton Miller, 2014; el Ghouli et al., 2016). Evenly environmental and social outperformance result from previous SEW preservation strategy, including internal debate and aggregation of values with family and close stakeholders (Dyer and Whetten, 2006; Uhlaner et al., 2004).

In the face of our findings, we can conclude that SEW preservations are an effective obstacle to a full engagement of stakeholders and the identification of their expectations. Thus, the design and implementation of sustainable measurement systems are less pressed by external forces to normalize and more by internal dynamics to change and operationalize sustainability in practices. Then, we confirm hypothesis 1 that in Portuguese Family – owned SMEs, sustainability performance system is more influenced by primary stakeholders through family governance and leadership logic reflecting restricted SEW attributes than by secondary stakeholders reflecting extended SEW

Secondly, we use linear regression methods to investigate the influence of duality management on CFP and CSP performance. After a previous study, which did not confirm that SME Financial Performance is positively linked to Environmental and Social Performance (Mamede & Allouche, 2018). We introduce duality management concept, including non-family CEO. Dual managed firms tend to have better financial performance and reputation (Cennamo et al., 2012; Cabrera-Suárez & Martín-Santana; 2015). In a five years analysis, we conclude that with duality management in our single case, CFP is positively linked with environmental indicators. However, findings did not confirm positive link with the social dimension. Thus, for the hypothesis 2, which predicted that in Portugal Family – owned SME with duality manager’s composition (CEO & Chairman), Corporate

financial performance (CFP) is positively linked to Corporate Social and Environmental Performance (CSP), is partially confirmed based on an environmental lens.

This study faced several limitations that may guide further research. Firstly, to understand the full aggregation of SEW dimensions on management's practices, interviews and lexical content may be enlarged to employees and their representatives. But also, costumers may be taking on consideration on a new angle with an external lens. Also, at duality influence, a more extended period and companies sample may support future researches. Further investigations may focus on SEW influence on performance systems. Our study only focuses on the existence of SEW dimensions in managers and their action on a performance governance angle.

Also, in a statistic angle, the level of significance is affected by the size of the most determining sample (Snyder and Lawson, 1993). Thus, it is more likely to obtain a significant p-value with large sample sizes and, conversely, in small samples, the p-value may not be significant. In this sense, our results may be affected by the sample size effect.

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## APPENDIX:

### Interview Questionnaire guidelines:

#### 1. Job position in Company

- Can you describe your job?
- What is your role in this sustainable strategy management?
- How long have you been working in company?

#### 2. Leadership & Governance

##### *Family control and influence*

- Can you describe the main impacts of family control and influence on company performance?
- How Family control and influence is determinant in the Performance system design?
- Did family influence governance or organizational structure?
- Family is relevant in the leadership?

##### *Identification of family members with the firm*

- Do you feel that company performance system design represents family members identity?
- Can you describe the main characteristics of family identity common to company identity?

##### *Binding social ties*

- Can you describe the social network of company? *Main characteristic of internal and external network linkage*
- Do the company social network is based on a family social capital? What is the level of control by family of company network?
- Are social ties measured or monitorized?

##### *Emotional attachment of family members*

- Can you describe the emotional linkage of family to company?
- How family internal relationships (conflicts or partnership) influence a day to day operation?
- Do emotional attachment of family members is taken in consideration to performance systems? *Specific business area*

*Renewal of family bonds to the firm through dynastic succession.*

- Is succession an objective to family? Is a strategic goal?
- How can you describe differences between direct management vs CEO management?
- What are the pro or cons of a family management?
- What are the pros or cons of non-family management?
- Describe leadership on factory?
- is influenced by other family members?

### **3. Institutional and Stakeholder pressure**

*Institutional pressures*

- What kind of institutional pressures can you identified on Mistolin S.A.?
- How performance system is influenced?
- Can you list 5 indicators linked to institutional pressures?

*Stakeholders*

- Can you describe and hierarchies the main stakeholders of Mistolin S.A.? What criteria you use to prioritize stakeholders?
- How can these stakeholders affect your company?
- Does Mistolin S.A. evaluate the risks associated to stakeholder's non-satisfactory opinion or disagreement?
- Can you describe the integration of stakeholders demands and pressure in your performance system?
- How do you engage dialogue with stakeholders?

*Disclosure*

- How do you consider the reason to disclosure your performance?
- Who are main focus of disclosure in your company?

### **4. Mistolin S.A. sustainability strategy?**

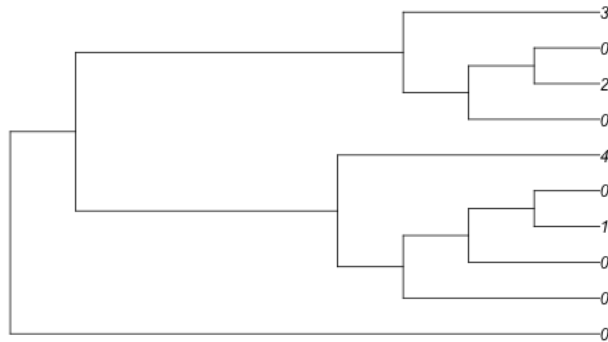
- What is the deep origin of company sustainability values? *Source, influencers*
- How is the sustainability strategy integrated into day-to-day operations?

- Can you describe the evolution of this environmental and social responsibility strategy during the recent years?
- What is the role of the departments as EH&S team in the sustainability strategy implementation? *i.e., set or provide guidelines, managing environmental/ Social strategy, challenging environmental performance, reshape or replace environmental strategy, monitoring results, reporting data, employee training ...*
- How is it helpful (or not) to make Mistolin´s strategy ISO 14001, OHSAS 18001 and SA 8000 certified?
- In your opinion what is the main dimension in sustainable strategy in Mistolin (Economic, Social or Environmental)?
- In your opinion sustainability in Mistolin is understandable? Sustainability is apply in every levels?
- In your opinion why applying a sustainability strategy?

#### **5. Mistolin S.A. Performance System?**

- Can you describe performance system structure?
- What are the main performance drivers?
- Describe how stakeholders influence the performance system?
- How objectives, goals and targets are defined? *Cooperation, dialogue with stakeholders, workers participation, etc....*
- What are the benefits of your performance system for the company and for its stakeholders?
- How does company continuously challenge the corporate sustainability performance?<sup>[1]</sup><sub>[SEP]</sub>
- In your opinion what is the main indicator for:
  - Shareholders
  - Workers
  - Customers
  - Providers/ suppliers
  - Community
  - Local municipality
  - Central state
- In your opinion what is the main indicator for you?

**Figure 5.6- Hierarchical Classification Descending Dendrogram**



**Table 5.20 - Lexical forms associated to the class 1 by decreased Chi2**

Class 1				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
14	18	77.78	37.68	management
4	4	100.00	14.12	discussion
14	30	46.67	13.85	company
6	8	75.00	13.48	train
6	8	75.00	13.48	shareholder
12	24	50.00	13.27	environment
10	19	52.63	11.86	organization
5	7	71.43	10.12	concern
8	15	53.33	9.36	employee
13	32	40.62	8.49	family
6	11	54.55	7.09	strategic
4	6	66.67	6.99	profitability
10	27	37.04	4.26	objective
2	3	66.67	3.39	non_family_director
13	42	30.95	2.74	result
13	44	29.55	2.03	performance



**Table 5.21 - Lexical forms associated to the class 2 by decreased Chi2**

Class 2				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
7	7	100.00	20.61	life
20	43	46.51	14.96	aggregate
5	5	100.00	14.42	bank
10	15	66.67	14.34	conflict
15	29	51.72	12.97	value
13	24	54.17	12.10	leadership
3	3	100.00	8.47	lawyer
14	34	41.18	5.46	finance
3	4	75.00	4.95	behavior
5	11	45.45	2.21	evolution
7	17	41.18	2.18	knowledge
7	17	41.18	2.18	business

**Table 5.22 - Lexical forms associated to the class 3 by decreased Chi2**

Class 3				
Eff.s.t.	Eff. Total	Percentage	Chi2	Word
13	32	40.62	14.59	emotion
4	5	80.00	12.90	create
13	35	37.14	11.78	operation
7	15	46.67	8.95	succession
6	12	50.00	8.67	supplier
4	7	57.14	7.24	satisfaction
4	7	57.14	7.24	interest
10	32	31.25	4.74	family
5	13	38.46	3.77	innovation
4	11	36.36	2.49	evolution

**Table 5.23 - Lexical forms associated to the class 4 by decreased Chi2**

<b>Class 4</b>				
<b>Eff.s.t.</b>	<b>Eff. Total</b>	<b>Percentage</b>	<b>Chi2</b>	<b>Word</b>
17	27	62.96	16.66	production
7	7	100.00	16.22	challenge
6	6	100.00	13.75	capacity
12	19	63.16	10.71	compliance
5	6	83.33	7.86	effective
8	12	66.67	7.70	communication
15	29	51.72	7.55	time
8	13	61.54	6.14	innovation
4	5	80.00	5.67	sustainability
13	27	48.15	4.62	objective
18	42	42.86	4.15	result
10	20	50.00	3.87	customer
4	6	66.67	3.61	competitor
8	17	47.06	2.23	business

**6. CHAPTER 6 – CONCLUSION**

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This dissertation explores the impact of family involvement on SMEs sustainability performance, as well as its influence on stakeholder management in four essays. Firstly, in essay 1, we have focused our attention to the evolution of academic research related to corporate sustainability performance through a bibliometric study. Thus, the multi-conceptual dimension of corporate sustainability was explored through the lens of the understanding and use of sustainable performance at the firm level by researchers. This approach has allowed us to determine the core theoretical base supporting corporate sustainable performance.

Secondly, in essay 2, we observed theoretical frameworks, through micro, small and medium enterprises (MSMEs) economic, environmental and social perspectives. Thus, we examined the impact and performance of MSMEs from an academic lens.

Thirdly, in essay 3, the influence of family involvement on corporate sustainability performance at the SME level was examined. Also, in this third step, the relationship between CSP and CFP was studied through the analysis of different determinants and effects.

Finally, the last essay focuses on the use and understanding of sustainable performance measures in the small and medium family firm, providing an illustration of how SEW concept influence CSP and stakeholder management. Also, this study clarifies the effect of mixed management boards (CEO Duality) on the relationship between CSP and CFP.

The two first essays are quantitative literature reviews focusing on corporate sustainability performance. Essays 3 and 4 as empirical studies are centred in the Portuguese context. Main results are summarized below where sub-section 1 reports the main findings. Sub-section 2 discusses the contribution and implications. The last sub-section debates limitations and avenues for further research.

## **1. MAIN FINDINGS**

Essay 1 aims to describe how academic research apprehends corporate sustainability performance. In this sense, we focus sustainability performance systems and its integration into the business management field in the research field.

This study was carried out through a bibliometric analysis where citation, co-citation, keywords counting, and co-occurrence were analysed and then mapped with correlation analysis and social network analysis techniques, mapping the relevant knowledge network and synthesised research streams and gaps in sustainability performance measures and measurement field between 1987 and 2015. In this context, we focus a total of 1271 articles extracted from ISI Web of Knowledge with 82,980 cited references. Several lenses have been

used to explore the integration of sustainable development at the firm level as for example supply-chain operations (Seuring & Müller, 2008), transparency and accountability level (Taticchi et al., 2010) or in a stakeholder perspective analysis (Antolin-Lopez et al., 2016).

The bibliometric analysis reveals that the corporate sustainability field is supported by theoretical foundations based on institutionalism, resource-based view, competitive advantage and stakeholder theories. In an evolutionary lens, the field shows a trend from legitimacy search to aggregation and consolidation of core theoretical knowledge with decisive contributions of sustainable development theorization and TBL framework applied to corporate sustainability performance. Thus, in the last period (2013-2015) a clearest theoretical framework supporting corporate sustainability appears where stakeholder theory has an influential role.

Corporate sustainability performance systems incorporate environmental and social dimensions linked to financial performance and on the influential role of stakeholders. Stakeholder theory became an important and inescapable supportive framework to operationalize sustainable performance at the firm level. Thus, we observed a supportive three-dimensional framework twinned from the TBL concept and mainly linked to stakeholder pivotal role. Our evolving methodology allowed us to find that institutionalism, resource-based view and competitive advantage also appear as core knowledge for academics.

On an operational lens, essay 1 shows that academic interests are concentrated on stakeholder management, reporting, environmental performance and corporate social responsibility. These subjects appear as central for corporate sustainability performance focused on the sustainability and corporate social responsibility themes, revealing the close relationship between these two concepts and the great debate on the nature of the link between environmental management and financial/ economic performance (Montiel, 2008).

Through an evolving analysis, it was possible to observe that new trends appear in the last period focusing on greater integration with a conventional performance system. Supply chain management, performance systems, corporate governance, intellectual capital, ethics, and innovation management are the new trends for research in the field. Thus, it seems that researchers tend to be more focused on the interaction and link between sustainability performance and other management dimensions. After the search of core theoretical justification and legitimization of the field, academics are reflecting the impact of the sustainability concept in management practices from an empirical perspective. Thus, we observed research broadening on latest years proving the great interest of management sciences in this field.

As previously highlight, SMEs have an important economic, environmental and social role in our societies. The impact and performance of SMEs in sustainable terms is important on academic perspective due to their relevance. In essay 2, using bibliometric and lexical analysis, 63 studies were scanned to understand theoretical and empirical literature on sustainable performance in SMEs. Thus, we investigated at SMEs level, how academic research capture corporate sustainability performance. Also, the main theoretical trends in SME sustainability performance at the strategic and operational level have been analysed.

Bibliometric analysis shows that SMEs sustainable performance field is supported by the resource-based view, stakeholder theory, TBL, corporate social responsibility and social capital theories. Thus, SMEs academic context appears as similar to the global research field integrating large firms. However, the resource-based view has a greater use by academics to support SMEs sustainability characteristics than studies performed and analysed in essay 1. Due to the smallest dimension and specificities others theoretical fields are explored to frame sustainable performance in SMEs. For example, social capital theories, institutionalism and competitive advantage lost their standing comparing with literature review in essay 1. Indeed, SMEs are considered less influenced by external forces.

In essay 2, we found that SMEs literature reflects sustainability in practice focusing the interest on results and performance communication. Academic works in SMEs tend to be result-based focused, highlighting operational practices. SME's characteristics, namely the lack of resources (financial and humans), tend to be more practical, applying sustainable orientations based on examples, orientations or requirements from supply chain leaders (customers or providers). Thus, sustainable performance studies in SMEs are mainly centred in an operational framework perspective.

Abstracts lexical content analysis confirm that SMEs are stressed by internal and close external (customers and providers) influencers to operationalize sustainable performance systems. The value chain control appears to have a greater influence on SMEs performance. Supply chain translates the requirements and expectations of stakeholders and institutional pressures. SMEs appears as dominated by close external forces to perform in a sustainable way. In an internal perspective pressure forces, performance results are expected by new governance and leadership management practices. The influential role of owners and evenly family members to apply sustainability practices is discussed on several perspectives in the literature.

In essay 2, content analysis expresses a market-oriented and competitiveness through CSP and CFP link debate and resources and capabilities use on a sustainable perspective for

SMEs. Thus, small firms are challenged to put sustainability in practice within their specificities.

From essay 1 and 2, two main research questions overstep in the corporate sustainability performance field. In this context, the family influence in corporate sustainability performance and the nature of the link between sustainability and financial performance are questioned. Thus, taking a matched paired methodology and multivariate approach, we focus on 65 Portuguese SMEs and 32 indicators at a financial, environmental and social level, comparing FBs and NFBs to investigate these two main questions in essay 3. Thus, our works provide findings in several dimensions answering to research questions. Firstly, it was observed that FBs have a significantly better financial structure, namely liquidity and low external dependence than NFBs. These findings are in line with previous studies stating that FBs have a greater saving perspective and capacity to investment through greater liquidity (Miller et al. 2006).

Secondly, we found that FBs have not a stronger environmental and social performance than NFBs. No significant differences have been found when compared to environmental indicators. However, at the environmental level, means analysis transmit that internal savings and environmental actions are the main subjects of attention of FBs. Hypothetically, FBs are more focused on internal pressure by stockholders and socioemotional wealth gains (Cruz et al., 2014). At the social performance level, no significant differences were found. Although in 2016 significant differences between FBs and NFBs appears on working cost and labour relations management. We find that working costs are lowered in FBs than in NFBs, translating low salaries and a saving logic by managers. In another hand, we find more demission's in FBs. Thus, NFBs seem to have more generous wage policy and work conditions than FBs, we speculate that there is less control in line with a savings culture in FBs. Aggregating findings retrieved from matched paired analysis, essay 3 provide findings that confirm the superior financial performance of FBs compared to NFBs. However, on environmental and social performance, we did not find differences, which determines a greater performance from FBs, neither from NFBs. Thus, the savings policy indicates that there are different hypothetical determinants between FBs and NFBs performance, that we explore in essay 4 through SEW concept and stakeholder management lens.

In a second step, we focused link between sustainability and financial performance nature. We tested several performance indicators in our essay 3, from 34 SMEs in 2012 and 2016, that allow us to conclude about the positive link between social and financial

performance. In fact, profitability is positively linked to social performance based on capital structure results. These results may be linked to higher productivity due to for example less accidents ratios, more capacity through training or motivation of workers. In fact, we can state that human resources are central to increased productivity, then profitability.

In contrast, environmental performance appears as a negative factor to profitability of SMEs. In fact, indicators focus immediate costs on environmental policies that are directly linked to the financial dimension in the short term. This finding indicates that environmental policies impacts negatively financial performance in small firm context. These results questioned the affirmation that to be green is profitable.

Using size as moderator, essay 3 shows that environmental and social performance is not explained by size. Thus, this result contrary the assumptions that differences on firms' capacity to define and implement environmental and social strategies is explain by a size, justifying that larger firms have better resources and capacities (Perrini, 2007).

This essay also explores whether manufacturing industry belonging is related to environmental and social performance. Starting from the assumption that industry has specific demands on environmental and social areas. The analyses display that industry belonging did not explain greater environmental and social performance. Thus, industry characteristics as the greater external pressures to be green or socially responsible did not appear as a determinant to environmental and social performance.

From essay 3, we retain that FBs did not have better CSP than NFBs. Thus, in essay 4 we extend our research questioning influences and impacts of the family on performance systems through SEW insights. Socio-emotional wealth (SEW) appears in academic literature as an influential concept applied to FBs. In this essay, we aim to explain the understanding and use of sustainable performance measures in small and medium family firms, providing an illustration of how FB's SEW influence CSP and evenly stakeholder management. Through a single case study, we carry out lexical content analysis, we focus on the manager's discourses to extract SEW effects in firm performance systems. Thus, words counting, factorial analysis of correspondence, hierarchical classification descending and thematic analysis have been performed to provide conclusions on impactful determinants in small and medium FBs.

Firstly, essay 4 concluded that SEW dimensions (FIBER) are present in managerial discourses and in their sustainability understanding. Family members' identification with the firm and emotional attachment stand out in managers speech and mind. The five elements (FIBER) influence the use (or not use) of sustainable performance measures. Thus, SEW tends to reduce external stakeholders influence incorporating a limited engagement



perspective to primary stakeholders. In fact, SEW preservation tend to focus managers on close stakeholders' interests. Essay 4 complement essay 3, as primary stakeholders (shareholders, employees and customers) tend to be internal forces whose interests are more financial rather than social and environmental. For example, shareholders by profits, employees by wages and benefits, and customers by competitive prices as results of firm savings.

The content analysis reveals that family wealth preservation limits organizational structure to an operational performance perspective. In fact, the family encompasses its own values and principles definitions that restrict organizational structure and sustainability vision. Thus, strategic and commercial objectives are designed base exclusively in financial performance and compliance with external requirements. There is no managerial awareness of a three-dimensional approach to sustainability, taking internal and external stakeholders' interests.

Linked to these organizational limitations, thematic analysis shows that sustainability themes did not appear in primary managers concerns. Cross-organizational interviews show that primary family values are a priority compared to sustainability principles. This absence in managers discourses complements the previous finding in essay 3, supporting that FBs did not engage more in social and environmental activities.

Associate to essay 3 results, we explore in essay 4 the link between financial, environmental and social performance using correlation and regression. In this case study, we use the fact that the company was in a dual managed company context. Searching the dual board management effect, the essay shows in a five years analysis (2012-2016) that financial performance is positively linked with environmental indicators. However, findings did not confirm positive link with the social dimension. These results explain that external manager may have a less family centred governance, searching to be responsive to external request by environmental actions.

As previously indicated very few studies on SMEs and the influence of family in CSP are available which let us limited on the comparison with others case. However, compared with overall studies in CSP (including CSR) applied in others context, we can conclude that findings may contribute to shed light into family influence on corporate sustainability performance, the nature of the link between CFP and CSP, and family influence in stakeholder management debates.

## **2. CONTRIBUTION AND IMPLICATIONS**

Our results focus on the benefits and costs of family engagement on the understanding and use of sustainable performance measures at the level of Portuguese SMEs. This dissertation allows theoretical and empirical contributions to the family business, to the link nature between financial and sustainability performance, and to stakeholder management theory literature.

### **2.1 Contribution to corporate sustainability performance literature**

This dissertation is part of the research on corporate sustainability performance raised in last years (Searcy, 2011; Goyal et al., 2013) and provides a conceptual framework through which companies can develop innovative management practices. Based on the sustainable development concept (WCED, 1987), sustainability approach focuses on the imperative of balanced management between corporate environmental and social performance, and corporate competitive advantage and financial performance. The critical use of resources and social inequalities warned the consciences about creating economic value but considering the undeniable natural resources limitation and societal welfare. Thus, this research contributes to the consolidation of the corporate sustainability performance concept extending to family-owned SMEs.

Firstly, a core theoretical framework which supports the concept has been raised. Corporate sustainability performance is based on complementary interaction between RBV and stakeholder theories to obtain a competitive and sustained advantage, through a triple bottom line perspective. The RBV theory has emerged, articulating the relationships among firm resources, capabilities, and competitive advantage (Barney, 1991; Hart, 1995). Corporate Sustainability tends to provide internal benefits developing new resources and capabilities, through internal knowledge (Baumgartner & Ebner, 2010) and external reputation and legitimacy benefits (Porter & Vander Linde, 1995; Baumgartner & Rauter, 2017).

Stakeholder theory has a close linkage to corporate sustainability (Freeman, 1984; Clarkson, 1995; Donaldson & Preston, 1995; Waddock & Graves, 1997). First, works focus business in society taking a large scope of stakeholder groups (Freeman, 1984). These authors

argue that a sustainability-based strategy must be based on stakeholders needs linked to the firm's products and services (e.g. green products).

Secondly, our research provides a large image of the evolution of corporate sustainability performance themes. From environmental and social dimensions lawful incorporation in performance systems debates to the sustainable performance models designed in the recent years (Dyllick & Hockerts, 2002). Our research contributed also to clarify sustainability effect on financial performance (McWilliams & Siegel, 2001; Orlitzky, 2003).

Thirdly, we introduce corporate sustainability performance in SMEs context contributing to a specific knowledge on small firms' reality, which have a tremendous economic, environmental and social weight in our societies. Thus, it was observed that theoretical background applied to SMEs have their own specificities, introducing, for example, the social capital theory as a complement of the RBV theory. Thus, it was highlighted the owner role and leadership to potentiate social capital.

We also updated the SMEs' position when confronted with sustainability performance. Thus, small businesses tend to reflect more on management practices, strategic leadership and management change in an internal lens. Despite the external dimension and its institutional pressures, SMEs tend to be centred to internal and operational challenges. Then, it was observed that the influence of large range stakeholders is limited in the smallest organizations. SMEs have a higher concentration on operational management and less on a strategic dimension.

In conclusion, this dissertation contributes to the understanding of SMEs specificities in corporate sustainability performance field. It was confirmed that there are differences between large and small business. The simple assumptions that SMEs are "*little big companies*" and corporate sustainability performance can be implemented as a large firm cannot be supported (Tilley, 2000). Thus, SMEs have their own theoretical framework to explain sustainable performance, based on firm intrinsic nature and context, and not only based on dimension or scale.

### **2.3 Contribution to family business literature**

In accordance with family business scholars, this dissertation aims to answer the question of “Do SME owned family have superior sustainable performance than non –family?”. We take the option in our essays to consider sustainable performance as a result of three complementary and interconnected dimensions: financial, environmental and social (Elkington, 1997). Thus, we went beyond the traditional debate centred on the unique economic comparisons, adding new dimensions to the family business research. Recent researchers have argued that FBs tend to have a greater performance (Allouche et al. 1995, 2007, 2008; Habbershon & Williams, 1999; Anderson & Reeb, 2003; Amann & Jaussaud, 2011; Miralles-Marcelo et al. 2013; Wagner et al., 2015).

This dissertation contributes to this literature in several ways. Firstly, by focusing the financial, environmental and social performance, it complements studies which explore attributes and context that explain the family positive influence in the firms’ management. Thus, it complements prior studies arguing that the long-term vision allows companies for a robustness at the financial structure level. Namely, showing that FBs are more efficient, less spenders and less dependent on the financial sector (Allouche et al., 1995, 2008; Amann & Jaussaud, 2011). The sustained ‘familiness’ management vision is reinforced by this research as it was found that survival and successional objectives lead FBs to have better liquidity and lower external dependency, compared to NFBs (Habbershon & Williams 1999; Dyer, 2006).

Agency theory researchers argue that family owners and managers provide closer monitoring to firms allowing the alignment of ownership and management and reducing agency problems (Allouche et al., 1995, 2007, 2008; Sharma, 2004). Thus, wasted resources and capabilities are reduced by the direct management, leading to better performance (Allouche et al., 1995, 2007, 2008; Sharma, 2004; Miller et al., 2006). This dissertation contributes to the debate on agency relations, confirming that FBs have better financial performance than NFBs. Family proximity and influence tend to have better use of available resources giving it greater value by cost control and saving logic.

Also, in a RBV theoretical lens, our research makes contributions. Authors argue that family businesses possess resources such as human, social, physical and financial capital (Dyer, 2006), trust and reputation (Allouche & Amann, 2002). These resources generate capabilities non-imitable which allow higher performance than firms that did not have it (Sirmon & Hitt, 2003; Daspit et al., 2017). This investigation adds to prior research that

family involvement impact positively financial performance by the larger efficiency in resources use.

Furthermore, this dissertation also contributes to FBs and NFBs comparative environmental and social performance research. Several authors argue that FBs influence did not determine greater environmental and social standards (Miller et al., 2007; Labelle et al., 2016). This assumption is justified by restricted SEW perspective, where the dominant “familiness” management culture tend to decrease the ethical and social responsiveness against a prevalent wellness of family (Kellermanns et al., 2012; Cruz et al., 2014; Miller and Le Breton Miller, 2014; Marques et al., 2014). This dissertation investigates an environmental and social measures use perspective, observing that family businesses did not have higher environmental and social performance than non-family businesses. For SEW researchers, FB’s managers do not focus on core financial performance, but on the socioemotional endowments from the business (Gómez-Mejía et al., 2011). Thus, SEW gains or losses represent the reference that family firms use to make major decisions and results (Schepers et al., 2013). In this sense, SEW impact management decisions on a sensitive equilibrium between SEW preservation and financial performance (Labelle et al., 2016). A restricted SEW leads to a strategic conservatism on short-term that results in mixed involvement on sustainability performance (Miller & Le Breton-Miller, 2014). Firstly, our results confirm the existence of FIBER dimensions in the discourse and culture of management in the FBs (Gomez-Mejia et al., 2007, Berrone et al., 2012, Cennamo et al., 2012). Secondly, our research concluded that there is a reduced SEW approach conflict with sustainable performance model since environmental and social actions costs may divert short-term income to the family entourage. Thirdly, this dissertation shows that SEW conservation tends to lead to restricted management practices, which focus benefits on the family on the detriment of other stakeholders (Miller and Le Breton Miller, 2014). Negative behaviour as lack of professionalism rather than meritocratic system (Miller et al., 2006) or exploitation and expropriation of minority shareholders wealth for benefit of the family are seen as reducing innovative strategies (Vieira, 2015).

Finally, this dissertation shows that family institutionalism is dominant in performance measurement practices, particularly with leadership and normative behaviour. Cultural behaviour creates values that cross over generations in a time continuum process (Eddleston et al., 2013). Family intangible values create internal logic that may resist to external influence. For example, the founder family name that conveys principles and traditions representing a particular culture which determines strategic and operational management

(Allouche & Amann, 2000). Thus, family culture may conflict with stakeholders and their environmental and social pressure. In fact, for family-owned businesses, sustainability issues were not among the main concerns. Our work outlines that the daily businesses were led to a financial and sales perspective and did not involve social and environmental activities.

## **2.4 Contribution to link nature between financial and sustainability performance literature**

From a bibliometric analysis in the last thirteen years, we observed a great interest in correlating CFP and CSP, to explore the nature of linkage between traditional and innovative performance models (Carroll, 1979; Waddock & Graves, 1997; Aragon-Correa, 2003; Margolis & Walsh, 2003; Orlitzky et al., 2003; Bansal, 2005). This debate is summarized on the question "Does it pay to be green?" searching different approaches on the positive or negative effect of sustainability in firm's profitability (Albertini, 2013). This research extends the debate to SMEs context, using a causal influence from CSP to CFP.

This dissertation outlines that a positive causal influence exists between social and financial performance in Portuguese SMEs. RBV theory gives support to the assumption that sustainability management generates inimitable capabilities that conduct to competitive robustness (Hart, 1995; Russo & Fouts, 1997). Thus in SMEs context, our research confirms that resources and capacities related to the social dimension have a positive influence on financial performance. This work supports stakeholder's theory assumptions that CSP is positively associated to financial performance because it improves stakeholder's satisfaction, then increases trust and reputation (Sroufe & Gopalakrishna-Remani, 2018). Internally, a greater investment in the social dimension tend to improve workers motivation, thus their efficiency (Habbershon & Williams, 1999).

The diversity in research approaches has created uncertainty on the nature of the link (Margolis & Walsh, 2003; Allouche & Laroche, 2006). This dissertation shows that environmental performance appears to be a negative factor for the profitability of SMEs, at the opposite of social dimension. This finding contributes to the assumption of long-term relationship as environmental compliance is based on costly investments that tend to penalize the profitability of companies in the first place before impacting positively (Albertini, 2013). It also introduces the limitation of short-term analysis that does not allow for an effective test

of the link between environmental and financial performance without an adequate theoretical framework (Wagner and Schaltegger, 2003).

Introducing dual management board, authors state that firms limit the family-centric negative effects leading to better performance and reputation (Cennamo et al., 2012; Cabrera-Suárez & Martín-Santana; 2015; Arzubiaga et al., 2018). This dissertation provides evidence that in dual board companies context, financial performance is positively related to environmental indicators. In this sense, non-family managers tend to influence governance with an external and independent lens, through less short-term financial performance focus to a higher outside environmental responsiveness.

Authors have directly or indirectly questioned firm attributes that may explain better environmental and social performance. Size has been pointed out as an important feature to achieve environmental performance given the human and financial resources available in bigger firms (Jenkins, 2006; Nihem et al., 2008). In the SME context, this dissertation contributes to clarifying the impact of size on CSP, showing that firm's size does not explain superior environmental and social performance. Medium enterprises with larger revenues and human resources teams did not show an outstanding performance when compared with micro and small enterprises. This contribution updates the assumption that physical assets tend to lead to better performance, refocusing questions on the strategic decision and intangible values, as for example intellectual capital and innovation.

Besides the size, authors tend to demonstrate that sector activity circumstances influence environmental performance. The manufacturing industry is seen as more sustainability aware and prepared to perform in compliance with new managerial social and environmental dimensions (Kehbila et al., 2009; Al Farooque et al., 2014). This dissertation contributes to sector belonging debate showing that sector activity does not explain superior environmental and social performance.

## **2.5 Contribution to stakeholder management theory literature**

Stakeholder theory is one the most influential framework in the corporate sustainability literature which explains managerial behaviour but also states normative directions. This theory argues that various groups with interest create pressure on the firm to act according to their interests (Reference is missing). Stakeholder management introduces

deliberate actions to manage stakeholder concerns and simultaneously target company objectives (Freeman, 1984, 2010). Stakeholder management can reduce business risk and improve social and environmental performance (Jenkins, 2006). This dissertation contributes to this theory by greater precision providing evidence that there is a restrictive view of stakeholders that decreases their influence on sustainability measurement systems. It was shown that in FBs SEW reduced approach conflict with a sustainable performance model application as a very limited number of stakeholders are engaged.

Proximity, social care and family ethical standard may support a proactive stakeholder engagement and management with positive performance (Cennamo et al., 2012). Our research outlines the existence of FIBER dimensions in the discourse and culture of management in the family business (Gomez-Mejia et al., 2007, Berrone et al., 2012, Cennamo et al., 2012). SEW is present in FB managerial practices and influence the overall performance measurement system.

Authors tend to defend that an extended SEW is related to stakeholder theory and family pride in relations with stakeholders and the community (Miller & Le Breton-Miller, 2014). However, our dissertation shows that SEW tends to lead to conservative management practices, which focus benefits on the family to the detriment of other stakeholders (Kalm & Gomes-Mejia, 2016).

This dissertation contributes to the identification SEW theory consequences in stakeholder engagement process. Thus, our results demonstrate that SEW tends to reduce the influence of stakeholders by incorporating a reduced engagement perspective for primary stakeholders. A primary stakeholder group is one without whose survival of the company was not possible. To success, family managers and entourage need primary stakeholders aggregation to their own ethical values. This research shows FBs values aggregation between close stakeholders and managerial family support succession, giving an appropriate context to support the next generations. In this sense, performance measurement systems are limited by the centrality of “blockholders”. It is further confirmed that family institutionalism dominates performance measurement practices, particularly with leadership and its normative values. Results confirm the higher weight of family values in performance measures definitions. In a corporate sustainability performance lens, FBs tend to be an aggregate of shared history, founders’ principles or common experiences in and out of the business. Thus, our research confirmed that performance systems derive more from an internal source and not from external demands. Stakeholder’s satisfaction is conditioned if actions are compatible with family values background.



This dissertation contributes to the debate on the preservation of family wealth and its impact on the limitation of the organizational structure and operational performance implementation. This conclusion leads to a limited range of performance dimensions being considered for the measurement. SEW focus only on a firm-centric financial dimension and did not take into consideration a large range of stakeholders demands (Kellermanns et al., 2012; Vieira, 2017). Thus, SEW search impacts performance interpretation on a stakeholder lens, namely on an engagement process. Thus, the design and implementation of sustainable measurement systems are less pressed by external forces and more by internal dynamics

Furthermore, our work contributes to clarifying the impacts of family SEW preservation on stakeholder management and engagement practices, showing that SEW tends to reduce stakeholders influence, incorporating a limited engagement perspective to primary stakeholders.

## **2.4 Methodological contribution**

This thesis mobilized different research methods. Throughout the dissertation, we used quantitative and qualitative, mixing methodologies. Firstly, we used a quantitative and mixed approach in our bibliometrics studies including, statistical, keyword analysis, lexical and thematic analysis in essay 1 and 2. Secondly, we used quantitative methods in essay 3 performing a matched pair analysis and then a multivariate analysis. Finally, in essay 4 we used qualitative methods for the case study, and we complemented our investigation with a multivariate analysis. This combination of different techniques allowed us to observe from a descriptive, quantitative and exploratory angle CSP in family-owned SMEs, thus enriching the academic knowledge fields.

In fact, after identifying the core theoretical field of CSP and SME's CSP with multiple contributions from traditional management sciences authors, it clarified the main academic themes and debates in place. Then, we have tested quantitatively our hypotheses to aggregate new knowledge on the main debates, namely on the nature of the link between CSP and CFP and the influence of family involvement on CSP. Finally, the mobilization of more qualitative research methods allows the study of certain aspects of the stakeholder management in FBs, using SEW perspective.

The use of multiple methods and techniques have enriched our analysis. Thus, it was possible to obtain a large number of the results and conclusions.

## **2.5 Managerial implications**

Family owned SMEs are the most prevalent form of organization, impacting economically, socially and environmentally our society. Thus, any changes in strategic orientation and operational behaviour may have positive consequences at national or even transnational level.

This dissertation contributes with three different managerial contributions on CSP family owned SME field. Firstly, this research has been centred around the positive influence of CSP on CFP and the importance given to its management. For a long time, CSP was considered by managers as mandatory external demands with high costs and without any profits. The conclusions of this thesis show that CSP does not penalize CFP when dual board (family and non-family) exist. The collaboration between managers tend to conduct to a positive effect in various dimensions to improving the environmental, social and thus financial performance.

Secondly, this thesis contributes to the understanding of the family influence on CSP. Family management tends to have a higher economic based result view but not environmentally and socially concerns. As previously stated, the link between CSP and CFP is positive, thus new awareness is needed to family managers to understand the positive effects of CSP. The adding of the external point of view in FB managerial scope, allow a balanced deployment of environmental and social actions that lead to better financial performance. Heterogeneity in board facilitates the release from internal conservatism ties.

Thirdly, restricted SEW perspective limit the positive effect of stakeholders demands integration in CSP thus in CFP. In fact, stakeholder engagement aggregates long-term perspective in firms, allowing risk controls on business continuity namely through the understanding and anticipating the needs of the market and society by strengthening the firm legitimacy (intangible license to operate). Thus, family-owned SMEs balancing family and stakeholders values may limit the negative effect of blockholders.

This dissertation implies in the managerial lens that a balanced utilization of the positive effects of family and stakeholders influences in the understanding and use of corporate sustainability measures lead to greater performance.

### **3. LIMITATIONS AND AVENUES FOR FURTHER RESEARCH**

#### **3.1 Limitations of the research**

This dissertation is built around six sub-questions under the general theme of corporate sustainability performance. Each essay required specific theoretical investigations and very different research methods. Each essay has specific limitations described in the conclusions of each chapters. Nevertheless, certain limitations cross the full dissertation and underline new research perspectives.

The first limitation is related to the nature of CSP. Even sustainable development has stable definitions in academic literature, its application to businesses and above all SMEs continues to be a growing debate. The multidimensional nature of sustainability makes it particularly difficult to frame on normative performance perspective. In fact, measuring social and environmental dimensions still contains a high level of subjectivity. Few social and environmental measures have normative and consensual definitions. The value allocation of economic, social and environmental gains derived from the sustainable performance has not yet achieved consensus. Also, the external valuation of sustainable performance inserts lack of practical effects in terms of advantages in obtaining investment or tax benefits. A few examples tend to value the “green economy” as sustainable stock indices. However, the measurement of sustainability still contains many doubts and debates. Thus, our definition of measures for analysing and comparing sustainable performance requires normative and global acceptance. The validity of using organizational measures to accurately measure CSP has never been empirically established. Thus, the absence of commonly accepted CSP measures is an important limitation to the conclusions of this dissertation.

Secondly, another limitation is linked to the subject of study and samples. SMEs are a difficult research topic due to the great difficulty of accessing and retrieving data in the field. Based on methodological accuracy reasons, we only use reliable direct information sources. This option led to very limited number of companies participating in the studies, as the information display was based on previous firm consent. Although the sectorial and geographic distribution is compatible with scientific quality requirements, the sample

dimension (number) achieved should be considered as a limitation to be taken to our work. Linked to the sample limitation, we were specifically confronted with the lack of environmental data. Firstly, we use a limited number of environmental measures privileging the ease of information acquisition. Our option reduced the environmental analysis, especially not taking other aspects such as atmospheric emissions, wastewater, etc ... . The research is limited to first degree measures without composite indicators that could better explain environmental performance. Secondly, the number of responses was minimal which influenced our results' interpretations in environmental dimension. Finally, the level of awareness to non-financial measures in SMEs is still low in the Portuguese context, which forced us to filter the data received and eliminate many hypothetical false data.

Thirstly, this dissertation inserts limitations in timeframe characteristics. Within our objectives of robustness and stability, we chose to consider only stabilized periods of time in which data consolidation was guaranteed. This study did not take into account the previous and subsequent years as moderators. For further examination, studies should consider the performance of previous and subsequent years as moderators. At the same time, we took a period of 5 years but not the 5 consecutives, which would have given a more precise evolving analysis. In the timeframe limitation, we need to highlight the hypothetical limitations of 2012-2016 context. This period was characterized by a crisis and an abnormal growth which may have introduced non-identified contradictory and non-standardized effects on our results.

Moreover, in order to explore SEW preservation impact stakeholder engagement, we use an internal lens using the deduction process. Hence, the generalization is done based on a single case that may limit conclusions. The use of the abduction process taking the stakeholders point of view may improve the understanding of SEW complex effect in stakeholder involvement and in the design of CSP systems.

### **3.3 Further research avenues**

Besides the opportunities arising from the limitations of this dissertation, there are also some other research avenues.

One future direction for CSP research is to explore in a more empirical way the relationship between SEW preservation and FB stakeholders engagement, particularly through methodologies of interaction with different stakeholders in a 360° logic analysis.

To deepen the study on the duality of management, the more empirical perspective may be used to conduct studies based on an agency theory and stewardship approach. For instance, new studies could explore how family and non-family managers introduce and negotiate performance measures requirements. These studies may include field empirical analysis and multiple case studies.

Since sustainable measures are perceived as challenging traditional performance systems, studies may focus its design and implementation in SMEs (Searcy, 2012). Particular attention may be taken to the KPIs operationalization facing stakeholders innovative demands.

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## **UNDERSTANDING AND USE OF SUSTAINABLE PERFORMANCE MEASURES IN SMALL & MEDIUM FIRMS: THE IMPACT OF FAMILY INVOLVEMENT**

### **ABSTRACT:**

From a corporate sustainability performance lens, the purpose of this thesis is to investigate the implications of family involvement in the understanding and use of sustainable performance measures in SMEs with an emphasis in Portuguese family firms. First, a bibliometric study has been used to map the relevant knowledge network on sustainability performance measures and measurement field, retrieving 1271 articles from 1987 to 2015. Second, a bibliometric and abstract lexical analysis were used on 63 SMEs. Corporate sustainability performance studies showed specificities of core theoretical knowledge and the greater operational SMEs focus. Third, using matched paired methodology and multivariate approach, we focus 65 Portuguese SMEs from 2012 and 2016. The main findings show a consistent pattern that corporate family involvement influence financial performance but have a mixed effect on environmental and social performance. It was also be provide evidence of positive link between social and financial performance. Fourth, a case study of a sustainable oriented family owned SME shows that a restricted socioemotional view is dominant in top managers discourses and in their managerial actions, privileging primary stakeholders engagement. Finally, it was provided evidence of positive link between environmental and financial performance in a dual managed context.

### *Keywords:*

Sustainability, performance, corporate sustainability, family business, Portuguese SME, stakeholder theory, socio-emotional wealth (SEW), Dual Board effect, bibliometric analysis, lexical study, matched pair analysis, content analysis, case study.

## **COMPREHENSION ET UTILISATION DE LA MESURE DURABLE DANS LES PETITES ET MOYENNES ENTREPRISES : L'IMPACT DE LA PARTICIPATION FAMILIALE**

### **RÉSUMÉ DE LA THÈSE :**

Partant du point de vue de la performance durable des entreprises, cette thèse se propose à étudier les implications de l'influence familiale au niveau de la compréhension et l'utilisation de mesures de performance durable dans les PME, en particulier dans les entreprises familiales portugaises. Dans un premier temps, une étude bibliométrique a été utilisée pour cartographier les réseaux de connaissances pertinents sur la performance durable des entreprises, extrayant 1271 articles de 1987 à 2015. Par la suite, une analyse bibliométrique sur la période 1987 à 2015 et une analyse lexicale de 63 résumés portant sur les PME ont été menées. Les articles analysés ont montré un cadre théorique propre et l'orientation opérationnelle des études sur les PME. Puis, en utilisant une méthodologie matched-paired et une approche statistique multivariée, nous avons utilisés des données de performance de 65 PME portugaises de 2012 à 2016. Les principales conclusions confirment que la participation familiale influence positivement la performance financière, mais a un effet mixte sur les performances environnementales et sociales. Il a également été prouvé qu'il existe un lien positif entre la performance sociale et financière. Finalement, une étude de cas d'une PME familiale montre qu'une vision socioémotionnelle restreinte prédomine dans les discours des dirigeants et dans leurs actions de gestion, privilégiant ainsi l'engagement limité des parties prenantes. Enfin, il a été prouvé qu'il existait un lien positif entre la performance environnementale et la performance financière dans un contexte de gestion mixte familiale / non-familiale.

### *Mots clés :*

Durabilité, performance, entreprise durable, entreprise familiale, PME portugaise, théorie des parties prenantes, socioémotionnelle (SEW), effet Dual Board, analyse bibliométrique, étude lexicale, analyse matched-paired, analyse de contenu, étude de cas.