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Orientation towards Sustainable Entrepreneurship: Empirical evidence on SMEs

Paul Oswaldo Sarango Lalangui

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PhD in Business | Paul Oswaldo Sarango Lalangui

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BARCELONA

PhD in Business

Orientation towards Sustainable Entrepreneurship: Empirical evidence on SMEs

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Orientation towards Sustainable Entrepreneurship: Empirical evidence on SMEs

PhD student:

Paul Oswaldo Sarango Lalangui

Advisors:

Esther Hormiga
José Álvarez García

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Dedication

To my wife Lorena and my daughter Paula Isabella,
To my parents Mariana and Jose,
To my brothers Vladimir, Jeremiah and Danilo
To all my friends,

God bless you all.

Acknowledgments

I had ever imagined the different experiences I had to live in Barcelona. Without a doubt, the sum of all of them has allowed me to reach this point in my life, in which I want first of all to thank sincerely and infinitely those who have allowed me to live them: God.

This doctoral thesis has been the result of good teamwork. This work has involved effort, personal dedication, and support from all to whom I want to dedicate the following lines.

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Thank you all for every word of encouragement and for being those who were always there, may God bless you all.

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CHAPTER 1

INTRODUCTION

1.1 Introduction and statement of the problem

Typically, entrepreneurship has been associated with economic development and wealth generation (Pigou, 1932; Dorfman, 1993), while environmental and social problems were largely neglected. In the last decade, there has been an exponential growth in the concern to understand what the real impact of business is on society. Some authors even talk about a change of paradigm in the economy (Shepherd, 2003; York, 2016; Patzelt, 2011). The traditional understanding of value creation only in terms of economic gains has been expanded to include non-economic gains (Kirzner, 2015).

In sustainability, there are different categories called: responsible business actions. These actions are classified as a) green entrepreneur; b) social entrepreneur and c) sustainable entrepreneur (Melay, 2012). The green entrepreneur is concerned about environmental challenges. The social entrepreneur focuses on the problems of our society, and the sustainable entrepreneur has an integral vision because it is concerned about the social, economic and environmental problems of the environments where enterprises operate. Green entrepreneurship and social entrepreneurship are often linked to sustainable entrepreneurship, because all three categories share the common goal of a positive environmental impact (Schaltegger et al., 2010; Isaak, 1998).

This thesis focuses on sustainable entrepreneurship, a field based on the belief that it is necessary to improve the consumption of three types of non-substitutable capital: economic, social, and environmental capital (Dyllick et al., 2002). Increasingly, enterprises are encouraged to participate in sustainable initiatives that seek to minimize their impact on the environment, contribute to the improvement of society as a whole and local communities, provide useful employment (Choi & Gray, 2008b) and find solutions to balance business aims with sustainability and environmental management (Hockerts & Wüstenhagen, 2010). The common characteristic that social and environmental entrepreneurs usually possess can also be applied to sustainable entrepreneurs, as they are described as an agent of change, implying a particular disagreement with existing prevailing paradigms, as well as a desire to implement a more long-term oriented approach, limiting themselves to do more with less input (Dees, 2001; Larson, 2000).

Sustainable entrepreneurship represents a concept of sustainability-driven by companies to increase their business and social value within a market. It also recognises that entrepreneurs are fully aware of the impact their enterprises generate in the environment directly and indirectly (Schaltegger, 2011). It is not only a question of exploring the opportunities and threats in the market but also of consciously analysing the social, environmental and economic impact that the business activity of large enterprises is having on the territories. Sustainable entrepreneurs identify new sustainable business opportunities that are more likely to lead to a reliable source of income and potential for higher profits than other companies (Ratten, 2017).

This strategy of identifying frontline opportunities and seizing them as first steps in the overall market economy should be defined as proactive, as it involves a certain degree of risk, mainly in the form of a new direction that an enterprise plans to explore (Ratten, 2017; Westerbeek, 2010).

In general terms, there are two fundamental perspectives on sustainable entrepreneurship. On the one hand, academics consider that any business activity should be subordinated to the relationship between sustainable development and the triple bottom line. This research is mainly published in sustainable management journals (Hall, 2010; Parrish, 2009; Hart, 1999). On the other hand, academics are aligned with the triple bottom line concept with a perspective on entrepreneurship processes and this research is published in entrepreneurship and sustainability journals (Parrish, 2009; Hart, 1999 and Schumpeter, 1942). Society increasingly recognises the need to incorporate sustainability and environmental concerns into income statement considerations (Allen and Malin, 2008, p. 829).

The need for a global approach to social, ecological and economic issues has catalysed the trend towards a paradigm shift in the business world in recent years. In the search for viable solutions to develop their organisations, entrepreneurs have become more open to social and environmental problems. They have undoubtedly begun to pay more attention to community growth, human rights and workforce conditions. They recognised that it is essential to ensure a right working environment for human resources and a responsible

attitude towards health care policies, organisational learning and social understanding (Schaltegger, 2011; Muñoz, 2013).

For this reason, this research focuses on small and medium-sized enterprises in Ecuador which face immense sustainability problems and challenges. There is a clear need to build and monitor public policies that are based on evidence, such as indicators designed to monitor environmental dynamics and their interrelationships with social and productive dynamics. (Martínez et al., 2009). Small and medium-sized enterprises make a substantial contribution to economic growth and employment generation in most countries around the world (McDougall, 1997). The personal impact of SMEs is relatively small, but their collective impact is substantial and essential for most regions. SMEs usually represent around 95% of all private sector enterprises in most modern nations and thus form an essential part of all economic activity (Schaper, 2002). In the case of SMEs, we find the particularity that they generally have more limited resources, which may lead to an understanding of sustainable practices with a different approach than large enterprises (Crals, 2005).

Sustainability in Ecuador is quite relevant at the Government, the University and the Enterprises, which are entities that seek to involve, raise awareness and support enterprises to manage their SMEs in a socially responsible way and to become mobilisers of a more just and equitable society. However, even in the literature, there is a lack of practical knowledge about how entrepreneurs identify sustainable opportunities, and these definitions are valid in the Ecuadorian environment. This theoretical reflection leads to an understanding of the importance of this research work which allows us to understand the bases of sustainable entrepreneurship at a global level, to identify the sustainable competencies that SMEs leaders must have and how they influence in development of the business environment, and therefore, the solution of social, economic and environmental problems. Finally, this study shows the degree of implementation of sustainable practices developed by SMEs in the context of Ecuador. Thus, the question posed in this research paper is the following: *How do small and medium-sized enterprises (SMEs) in Ecuador have an orientation towards sustainability?*

1.2 Research aims

The general aim of research is to determine the orientation towards sustainability of Ecuadorian SMEs to understand how this generate economic, social and environmental impacts in their immediate surroundings.

In order to achieve this general aim, the following specific goals are also proposed:

- To carry out a bibliometric study of the publications in Sustainable Entrepreneurship that will allow new academics to have a lively and precise description of the most relevant literature in this field of research and to identify the most prestigious international journals that have published on this topic.

- To understand the influence of the leader's sustainable competences on the social entrepreneurial orientation of SMEs and the latter on business outcomes.

- To analyse whether small and medium enterprises in Ecuador are involved in the adoption of sustainable practices, as well as to see if there are significant differences in adoption according to their size, sector and age.

- To explain the main conclusions, limitations and implications borne out in this doctoral thesis.

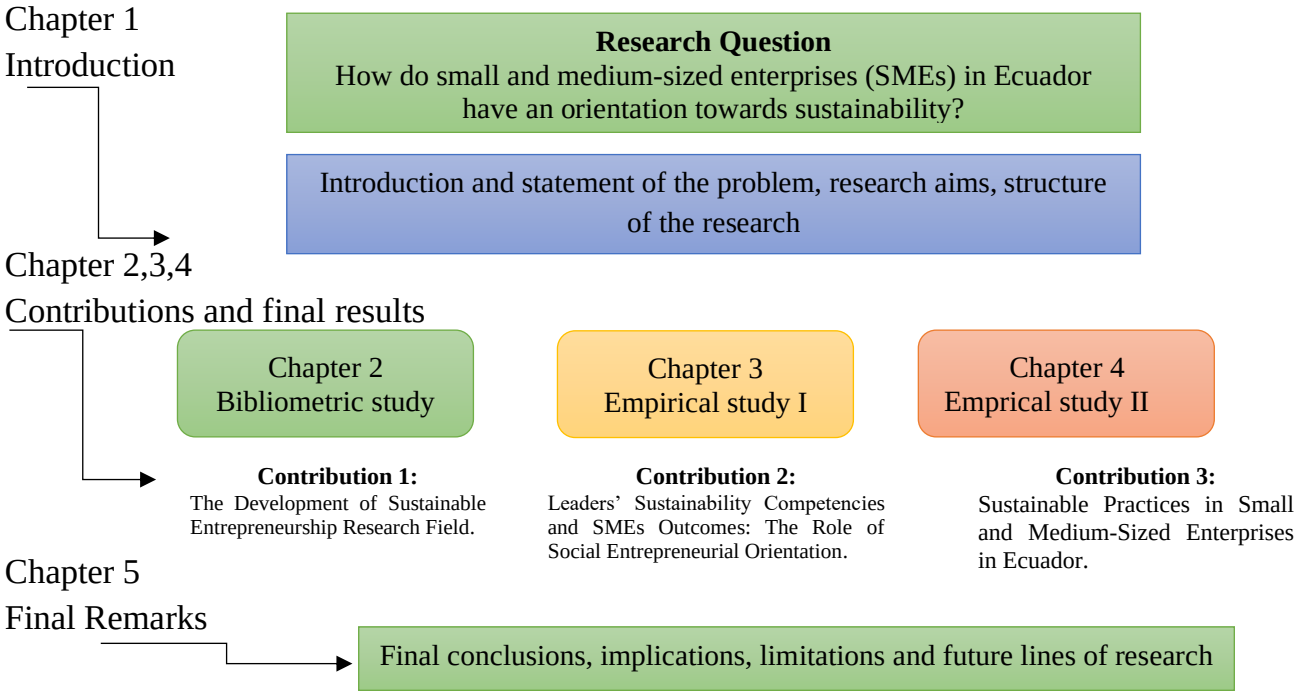
1.3 Structure of the research

In order to achieve the established aims, three academic contributions have been proposed, which constitute the central chapters of this research work. Previous versions of these articles have also been presented in national and international conferences from which suggestions and comments from valuable reviewers and external researchers have been gathered.

The academic contributions that constitute the body of this thesis are alignment with the aims of the research, based on measuring the orientation

towards sustainability in small and medium enterprises in Ecuador. Each of these three contributions is focused on achieving specific proposed goals, under different methodological strategies. Although they have been elaborated sequentially over time, these contributions are closely interrelated in their scientific aspects, from aims agreements initially proposed.
Thus, the work is structured in the following way *(see figure 1)*

Figure 1. *Structure of the research*



Source: Own elaboration

The content of each of the chapters of the thesis are described below:

Chapter 2 presents a bibliometric study on sustainable entrepreneurship, which corresponds to the first contribution entitled **"The Development of Sustainable Entrepreneurship Research Field".** In this first work, an in-depth analysis was carried out using bibliometric techniques and instruments which made it possible to map the central academic literature on sustainable entrepreneurship and analyse the most substantial contributions to the progress of research in this field. The chronological analysis of the literature in the Web of Science-Social Sciences Citation Index (WoS-SSCI) database- up to January 2018- provides new knowledge, such as the most influential journals, authors and articles so far. This knowledge allows new scholars to have a lively and precise description of the relevant literature in this field of research and to identify the international journals most sensitive to this topic. Sustainable entrepreneurship has received substantial recognition from academics and practitioners over the last decade, with a notable and rapid increase in publications on the subject. As a result, 282 articles were retrieved, published in 140 journals and written by 663 authors affiliated with 413 institutions, from 50 countries.

The analysis identified the evolution of the publication over time and provided clues to future research opportunities.
The sings of quality derived from this first academic contribution are as follows *(see table 1)*

Table 1. *Signs of quality chapter 2*

	First contribution	
Title	The Development of Sustainable Entrepreneurship Research Field	
Methodology	Through bibliometric techniques and tools, this study allows mapping the main academic literature on sustainable entrepreneurship and analyses the most substantial contributions to the advances of research in this field. The chronological analysis of literature from the Web of Science-Social Sciences Citation Index (WoS-SSCI) database—until January 2018—provides new insights not previously reviewed, such as the journals, authors and articles more influential so far.	
Aim	The present research aims to bring light to the topic of sustainable entrepreneurship by understanding, which is the most influential academic literature so far, where has been published and by whom.	
Publishing strategies	**Strategy #1**	**Aim and impact factor Journal**
		Name of Journal Sustainability

	Thematic orientation	Sustainability and sustainable development
	Description	Sustainability (ISSN 2071-1050; CODEN: SUSTDE) is an international, cross-disciplinary, scholarly, peer-reviewed and open access journal of environmental, cultural, economic, and social sustainability of human beings. It provides an advanced forum for studies related to sustainability and sustainable development and is published semi-monthly online by MDPI. The Society for Urban Ecology (SURE), Canadian Urban Transit Research & Innovation Consortium (CUTRIC) and International Council for Research and Innovation in Building and Construction (CIB) are affiliated with Sustainability and their members receive discounts of the article processing charge.
	Impact factor	2.576 (2019); 5-Year Impact Factor: 2.798 (2019) Q2
	Origin	Basel, Switzerland
	State	Published
	Citation	38
Strategy #2	**Congress presentation**	
	Congress	Workshop for Doctoral Students in Business Ethics, CSR and Sustainability (8-9 July 2017 U.P. Comillas, Madrid)
	Thematic orientation	Business Ethics, CSR and Sustainability
	State	Accepted and presented as an oral communication during the conference held in Madrid, Spain.

Source: Own elaboration

Chapter 3 presents an empirical study on sustainability competencies of SMEs' leaders, which corresponds to the second contribution entitled **"Leaders' Sustainability Competences and SMEs Outcomes: The Role of Social Entrepreneurial Orientation".** The aim of this article is to analyse the influence that the sustainability competencies of SMEs' leaders have on their social entrepreneurial orientation and the influence of this strategy on the company's performance (social and economic). The universe of the target population is 23,922 SMEs in the tourism sector in Ecuador classified as small and medium enterprises (SMEs) registered in the database (Directorio de Empresas Superintendencia). This study was carried out in two phases: (1) an exploratory phase, Exploratory Factor Analysis (AFE) with the statistical program "Statistical Package for the Social Sciences (SPSS 19.0)" and (2) confirmatory factor analysis, using AMOS 25.0 (Analysis of Moment Structures) software. The results show that the sustainability competencies of the leaders have a positive influence on the social entrepreneurial orientation of the enterprises. Furthermore, social risk-taking and social proactivity will positively influence the economic, social and green innovation performance of SMEs. *(see table 2).*

Table 2. *Signs of quality chapter 3*

Second contribution			
Title	Leaders' Sustainability Competences and SMEs Outcomes: The Role of Social Entrepreneurial Orientation.		
Methodology	The process of validating the measurement scales will be carried out in two phases: (1) one of an exploratory nature, Exploratory Factor Analysis (AFE) with the statistical program "Statistical Package for the Social Sciences (SPSS 19.0)" and (2) another confirmatory one through the confirmatory Factor Analysis, using AMOS 25.0		
Aim	The aim of this article is to analyse the influence that the sustainable competences of SME leaders have in their social entrepreneurial orientation and the influence of this strategy has in the firm performance (social and economic).		
Publishing strategies	**Strategy #1**	**Aim and impact factor Journal**	
		Name of Journal	The Journal of Cleaner Production
		Thematic orientation	Cleaner Production, Environmental, and Sustainability.
		Description	The Journal of Cleaner Production is an international, transdisciplinary journal focusing on Cleaner Production, Environmental, and Sustainability research and practice. Through our published articles, we aim at helping societies become more sustainable.

		Impact factor	Impact Factor: 7.246 5-Year Impact Factor: 7.491 Q1
		Origin	Netherlands
		State	Article submitted
		Citation	Not applicable
	Strategy #2	**Congress presentation**	
		Congress	ICSD 2021: 9th International Conference on Sustainable Development.
		Thematic orientation	Sustainable Development.
		State	Article to be sent to journal

Source: Own elaboration

Chapter 4 presents an empirical study on whether SMEs are involved in adopting sustainable practices which corresponds to the third contribution entitled **"Sustainable Practices in Small and Medium-Sized Enterprises in Ecuador".** This research aims to find out whether small and medium enterprises in this country are involved in the adoption of sustainable practices, as well as to see whether there are significant differences in adoption according to size, sector and age. This study interviewed 188 SME managers from three provinces included in Planning Zone 7.

The methodology used is a descriptive analysis and regression of the data obtained through a structured questionnaire (indicators of the Ethos Institute of Brazil). To determine the level of implementation of sustainability practices, the scale is converted into a percentage although both scales are equivalent: 7 represents 100% implementation and 1, 0% implementation. The analysis of the data was done with the statistical programme SPSS 19.0 (Statistical Package for the Social Sciences). The measurement scale was validated (reliability and validity). For the internal consistency analysis, the calculation of the total correlation coefficients of the Pearson items was used together with Cronbach's alpha. Besides, an exploratory factorial analysis (EFA) with varimax rotation was carried out to identify the dimensionality of the scales through the percentage of variance explained (minimum 50%) and the factorial load of each indicator. Finally, the t-Student test was applied to two independent samples to check if there were significant differences. The results obtained allowed a diagnosis of sustainability of SMEs in Ecuador, identifying strengths and weaknesses. Managers have a positive and favourable attitude towards sustainability. The practices considered show a medium-high level of implementation of 79.71% in economic sustainability,

82.28% in social sustainability and 78.14% in environmental sustainability in the enterprises considered in the sample *(see table 3).*

Table 3. *Signs of quality chapter 4*

Third contribution			
Title	Sustainable Practices in Small and Medium-Sized Enterprises in Ecuador		
Methodology	The methodology used is the performance of a descriptive analysis and regression of the data obtained through a structured questionnaire (indicators of the Ethos Institute of Brazil). Previously, the reliability of the questionnaire was validated through an exploratory factor analysis. The target population consists of 9843 enterprises, obtaining a sample size of 188 valid surveys, which implies a response rate of 2%, representing a sampling error of ±7.08%.		
Aim	The aim of this research is to find out if small and medium-sized enterprises in this country are involved in the adoption of sustainable practices as well as see if there are significant differences in adoption based on size, sector, and age.		
Publishing strategies	**Strategy #1**	**Aim and impact factor Journal**	
		Name of Journal	Sustainability
		Thematic orientation	Sustainability and sustainable development
		Description	Sustainability (ISSN 2071-1050; CODEN: SUSTDE) is an international, cross-disciplinary, scholarly, peer-reviewed and open access journal of environmental, cultural, economic, and social sustainability of human beings. It provides an advanced forum for studies related to sustainability and sustainable development and is published semi-monthly online by MDPI. The Society for Urban Ecology (SURE), Canadian Urban Transit Research & Innovation Consortium (CUTRIC) and International Council for Research and Innovation in Building and Construction (CIB) are affiliated with Sustainability and their members receive discounts of the article processing charge.
		Impact factor	2.576 (2019); 5-Year Impact Factor: 2.798 (2019) Q2
		Origin	Basel, Switzerland
		State	Published
		Citation	17
	Strategy #2	**Congress presentation**	
		Congress	CIKI 2017 International Congress on Knowledge and Innovation.
		Thematic orientation	Innovation and CSR

		State	Accepted and presented as an oral communication during the congress held in Foz do Iguaçu – Brazil.
	Strategy #3	**Congress presentation**	
		Congress	INTERNATIONAL CONGRESS TOURISM IN ISLANDS IN THE XXI CENTURY: DYNAMICS AND CHALLENGES
		Thematic orientation	Sustainable development and tourism
		State	Accepted and presented as an oral communication during the congress held in Orotava-Tenerife, Canary Islands 2018.
	Strategy #4	**Congress presentation**	
		Congress	Chilean Conference of Business and Management Schools (ENEFA 2018)
		Thematic orientation	Business and CSR
		State	Accepted and presented as an oral communication during the congress held in Valparaiso, Chile.
	Strategy #5	**Congress presentation**	
		Congress	VII UTPL RESEARCH
		Thematic orientation	Business and sustainability
		State	Accepted and presented as an oral communication during the congress held in Quito, Ecuador.

Source: Own elaboration

Main characteristics of the academic contributions of the doctoral thesis *(see table 4).*

Table 4. *Academic contributions*

Title	**Contribution 1**	**Contribution 2**	**Contribution 3**
	The Development of Sustainable Entrepreneurship Research Field	Leaders' Sustainability Competencies and SMEs Outcomes: The Role of Social Entrepreneurial Orientation.	Sustainable Practices in Small and Medium-Sized Enterprises in Ecuador
Purpose	The purpose of this article is to map the central academic	The purpose of this article is to analyse the	The purpose of this research is to find out whether

	literature on sustainable entrepreneurship and to analyse the most substantial contributions to research progress in this field. The chronological analysis of the literature in the Web of Science-Social Sciences Citation Index (WoS-SSCI) database provides new knowledge not previously reviewed, such as the most influential journals, authors and articles.	influence that the sustainable competencies of SME leaders have on their social entrepreneurial orientation and the influence of this strategy on the company's performance with variables such as social and economic performance.	small and medium-sized enterprises in Ecuador adopt sustainable practices on an individual basis, as well as to see whether there are significant differences in adoption by size, sector and age.
Findings	The flood of literature on sustainability is one of the main findings of this bibliometric study on sustainable entrepreneurship. The first articles appeared in the early 1990s, and after 2006 the number of articles on this subject increased significantly. The data reflect that this growth has not stopped, and that the topic of sustainable entrepreneurship is still a current research trend in development.	The findings show that the sustainability competencies of leaders have a positive influence on the social entrepreneurial orientation of companies. Furthermore, risk-taking and proactivity positively influence the economic, social and eco-innovation performance of SMEs. These results underline the crucial role that leaders' competencies have in the social orientation of	The results obtained allowed us to carry out a sustainability diagnosis of SMEs in Ecuador, identifying strengths and weaknesses. The managers have a positive and favourable attitude towards sustainability. The practices considered show a medium-high level of implementation in economic sustainability, social sustainability and environmental sustainability in

		SMEs and therefore, their necessary training in competences for sustainable development.	the companies considered in the sample. Although these percentages are significant, there is much room for improvement.
Methodology	Through bibliometric techniques and tools, this study allows mapping the main academic literature on sustainable entrepreneurship and analyses the most substantial contributions to the advances of research in this field. The chronological analysis of literature from the Web of Science-Social Sciences Citation Index (WoS-SSCI) database—until January 2018—provides new insights not previously reviewed, such as the journals, authors and articles more influential so far.	To test the hypotheses, the methodology used Structural Equation Modelling (SEM), also known as Covariance Structure Modelling, while the Maximum Likelihood Estimation Method (ML) was used to estimate the model. Data were collected through a structured questionnaire designed to measure the latent variables of the proposed model and to profile the respondents. A sample of 302 valid questionnaires was obtained from the print and mail distributions, representing a response rate of	The methodology used is the performance of a descriptive analysis and regression of the data obtained through a structured questionnaire (indicators of the Ethos Institute of Brazil). Previously, the reliability of the questionnaire was validated through an exploratory factor analysis. The target population consists of 9843 enterprises, obtaining a sample size of 188 valid surveys, which implies a response rate of 2%, representing a sampling error of ±7.08%.

		10.33% with a sampling error of ±5.44%.	
Originality/Practical implications	This review of the literature on sustainable entrepreneurship allows us to know the history and current state of the field at an international level by using the Web of Science Social Sciences Citation Index (WoS-SSCI) for data retrieval.	The results show that the key competences in which leaders must be trained in order to make the company has social entrepreneurial orientation are grouped into four dimensions: System and thinking competence, normative competence, interpersonal competence and action competence.	This research reveals that SMEs' managers have an unexpected extremely positive attitude towards sustainability. Neither the size of enterprises nor the sector the level of application of the practices, with the exception of the microenterprises that show greater interest in making their commitment to sustainability known by registering it in the vision, mission and values documents. In the case of the sector, the same applies to service enterprises.

Source: Own elaboration

Finally, **chapter 5** sets out the main conclusions obtained from the achievement of the aims initially set out in this study and also includes the future lines of research established with the challenge of improving and projecting this research.

CHAPTER 2

The Development of Sustainable Entrepreneurship Research Field

2.1 Introduction

Historically, an enterprise's success was explained almost exclusively based on its economic performance. The purpose of entrepreneurship research was to generate economic gains or, in some cases, to create employment sources. Those were the factors that traditionally would determine the entrepreneurship contribution to the territory's development (Amit et al., 2011; Davidsson & Wiklund, 2007). Therefore, value creation was commonly measured in economic-financial terms, by indicators such as sales, profit or returns on investment (ROI), and it was always exclusively understood as the maximization of individual profit (Schlange, 2006). In other words, entrepreneurship was committed to economic development and wealth Generation (Schumpeter & Backhaus, 2003; Kirzner, 2015) meanwhile, environmental and social issues were mostly avoided.

The issues related to the environmental and social role that enterprises play is not recent and have been the subject of discussion since the last century. For example, many scientists insist on the idea that the planet cannot physically sustains for much longer the impact of current economic activity (World Resources Institute, 2005) However, over the last decade, the wish to understand the real impact and value of companies on society has grown exponentially. Indeed, some authors talk about an economic paradigm shift (Pigou, 1932). The traditional understanding of value creation merely in terms of economic profit has extended to cover non-economic gains (Dorfman, 1993).

Following this path, an increasing number of researchers have started paying attention to the connection between sustainable development and entrepreneurship (Cohen & Winn, 2007; Gibbs, 2009; O'Neil et al., 2009). Sustainable entrepreneurship is nowadays a mainstream that began with sustainable management and entrepreneurial initiative and, in recent years, has received the attention of researchers from many different academic backgrounds and perspectives (Binder & Belz, 2014; Thompson et all., 2011). The present research aims to bring light to the topic of sustainable entrepreneurship by understanding, which is the most influential academic literature so far, where has been published and by whom. This knowledge enables new academics to have a lively and clear description of the relevant

literature in this research field and to identify the international journals more sensitive with this topic. In order to achieve these aims, the article is structured as followed. The next theoretical section discusses about the concept of sustainable entrepreneurship. Then, in section three, it is explained the methodology applied to search the literature and to make the analysis. Section 4 presents the results and finally, in the Section 5, the authors discuss the results, suggest certain limitations and present the conclusions.

2.2 Sustainable Entrepreneurship Definition

Initially the research on sustainable entrepreneurship was basically focus on the entrepreneurial activity and its relationship with environmental problems and solutions (Elkington, 1997). Gradually the term was evolving to a broader approach closer to the idea discussed by Elkington, in 1997, the triple bottom line perspective (Hall et al., 2010). As it was stated in the introduction, companies needed to be aware of their activity impact from an environmental and social point of view, not only using economic glasses. For this reason, it is evident that sustainable entrepreneurship has received much attention from different research domains, such as social entrepreneurship and environmental management research, which leads to a wide range of definitions too.

In general terms, there are two key perspectives on sustainable entrepreneurship. On the one hand, there are those academics that believe that any entrepreneurial activity must be subordinated to the relationship between sustainable entrepreneurship and the triple bottom line. Their research is mainly published in sustainable management journals (Parrish & Foxon, 2009). They concluded, “innovators and entrepreneurs will consider sustainable development as one of the greatest business opportunities in the history of trade” (Hart & Milstein, 1999, p. 25). These authors stress the link between sustainable development and entrepreneurship, pointing out that companies sustainability is attested by the main activities performed in their environments, impact evaluation, goal achievement, transparent communication of results, and that they must be oriented to the satisfaction of the people vital needs by applying the concept of creative destruction (Schumpeter, 1942), as precondition and driving force in the transition to a more sustainable entrepreneurial ecosystem.

Therefore, new ventures are key transformer of a sustainable economy, and their capacity to innovate can introduce more environmental and social solutions (Schaltegger & Wagner, 2011). Sustainable entrepreneurship is able to generate employment, enhances products and processes, and sets up new companies and changes people's lives. It is not only about the exploration of opportunities and market threatens, but also about consciously analysing the social, economic and environmental impact that corporations' performance is having on territories. Between the typology of the companies, it is important to highlight the role that, in general, small and medium sized enterprises play in the percentage of employment in most countries around the world (Oviatt & McDougall, 1997). The individual impact generated by SMEs is relatively small, but their collective impact is substantial and indispensable for most of the regions. Frequently SMEs represents around 95% and due to their more limited resources, their understanding of sustainable practices may differ from large enterprises (Crals & Vereeck, 2005).

On the other hand, there are those academics that support the concept of triple bottom line with a perspective of entrepreneurial processes (Dean & McMullen, 2007; Shepherd & Patzelt, 2011) and emphasize the relationship that must exist between individuals and opportunities. Accordingly, entrepreneurs are absolutely aware of the impact that their companies directly or indirectly have on the environment (Anggadwita & Mustafid, 2014). Based on this idea, sustainable entrepreneurship is defined as "the examination of how opportunities will bring into existence future goods and services as discovered, created, and exploited, by whom, and with what economic, psychological, social, and environmental consequences" (Cohen & Winn, 2007, p. 58). This approach understands that the sustainable development is the most important source of business opportunities in the long term and where the potential entrepreneur can find durable business models.

A common characteristic is the attention to the different phases of entrepreneurial opportunity: discovery, creation, evaluation, and exploitation (Dean & McMullen, 2007; Anggadwita & Mustafid, 2014; Hockerts & Wüstenhagen, 2010). Hence, these definitions of sustainable

entrepreneurship use a process approach instead of focusing on the individual entrepreneur, emphasizing an action-oriented perspective (Moroz & Hindle, 2012). Furthermore, they assume a certain type of consequences from entrepreneurial activity. These impacts are exposed either in general terms, like ". . .transformation of a sector towards an environmentally and socially more sustainable state" (Hockerts & Wüstenhagen, 2010 p. 482); or specifying certain outcomes, such us ". . . preservation of nature, life support, and community" (Pacheco & Dean, 2010 p.58). The Appendix A shows the main definitions of sustainable entrepreneurship published in the most influential scientific journals that address this topic.

In the last four years we found three interesting literature reviews that help to understand the increase importance of this topic during the last decade. Specifically, the two latest were published in the two more prolific journals in this topic, Journal of Cleaner Production and Sustainability. The article "Sustainable Entrepreneurship: A Current Review of Literature", by (Fellnhofer et al, 2014) evidences the increasing interest that sustainable entrepreneurship has gained and how it has become an influential concept in entrepreneurship despite of it is still a controversial and ambiguous concept. On their behalf, the authors of the article "Sustainable Entrepreneurship Orientation: A Reflection on Status-Quo Research on Factors Facilitating Responsible Managerial Practices" (Kraus, 2018), identify three relevant levels in the successful implementation of sustainable management practices: individual, organizational and contextual. Some interesting conclusions of this paper point out that, on the individual level, entrepreneurs tend to derive their purpose of acting in a more sustainable way based on personal values and traits. On the organizational level, internal corporate culture and resources reconfiguration are critical determinants to embrace a sustainable orientation. Lastly, on the contextual level, researchers focus on how entrepreneurs can help society and the environment by means of sustainable entrepreneurship. Finally, in their article "Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions" (Gast et al., 2017), suggest that sustainable entrepreneurship research should focus on understanding the qualitative and quantitative dimensions of networks and how they mitigate the financial and market challenges. This knowledge would help to understand the best

practices of the new sustainable ecological enterprises and the main challenges that established SMEs have to face.

2.3 Methodology

A bibliometric study uses data and bibliographic indicators in order to both outline the scientific production development (Araujo, 2007) and to analyse the relevant literature from a specific field (Santos et al., 2011). The whole field of bibliometric includes quantitative aspects and models of scientific communication, storage, dissemination, and data retrieval (Kobashi & Santos, 2006). Hence, bibliometric studies have been also applied to measure the impact of published works, counting the number of citations found in different areas of knowledge (Lazzarotti et al., 2011). Besides, a bibliometric study provides essential information to the analysis of quantitative data from the selected works (Kurtz, 2018), which allow identifying the characteristics of the current research on a subject, past trends and future directions/possibilities. In order to achieve the purpose to bring light to the topic of sustainable entrepreneurship, the research questions for this review are:

- How is characterized the chronological development of the topic (publications over time)?
- What are the most relevant journals on the topic (by two indicators: the number of papers published on sustainable entrepreneurship and the number of citations)?
- What are the most influential authors on the topic (by two indicators: the number of papers published on sustainable entrepreneurship and the number of citations by papers)?
- What are the most relevant articles on the topic?

To carry out the present study, procedures and techniques similar to those used in other bibliometric studies and systematic reviews of literature were adopted (Crossan & Apaydin, 2010). Two phases were defined: (2.1) Literature Search and (2.2) Analysis of literature.

2.3.1 Phase 1: Literature Search

The articles search was performed on Web of Science-Social Sciences Citation Index (WoS-SSCI) database, and all the available and complete years until the time of the investigation were considered: from 1956 to 2018. WoS-SSCI is one of the most complete scientific information databases available online; it is composed by magazines/journals reviewed by recognized researchers from the international scientific community, focused on scientific and academic production related to applied social sciences and contains indicators such as citation frequency (Crossan & Apaydin, 2010; Watanuki, 2014).

To conduct the search for literature on sustainable entrepreneurship, indexed in WoS-SSCI database, keywords were identified to allow retrieving related articles. The search for keywords is a useful procedure to ensure the objectivity and replicability of the process of recollection and localization of documents for bibliographic reviews. Initially, the WoS-SSCI list of subject terms (thesaurus) was consulted in order to identify synonyms related to the research. Titles, abstracts, keywords and citations (Cohen &Winn, 2007; Schaltegger & Wagner, 2011; Dean & McMullen, 2007), among others, were also consulted (Hockerts & Wüstenhagen, 2010; Pacheco & Dean, 2010; Kraus et al., 2018). Fifty keywords that can be used as research terms were listed by using these procedures (including variations such as plural, singular and others) (Young & Tilley, 2006; Teece, 2007). Among these words are: sustainable: "sustainable entrepreneurship" (or "sustainability entrepreneurship"), "sustainable entrepreneurial opportunity/ies, "sustainable opportunity (or "sustainable opportunities"), among others, such us, "ecological sustainability entrepreneurship"-"green", "sustainable", "ecological", "environmental", "entrepreneur*" (including entrepreneur, entrepreneurial, entrepreneurship), "ecopreneur*" (ecopreneur, ecopreneurial, ecopreneurship), "enviropreneur*" "social/environmental/economic entrepreneurship",(enviropreneur, enviropreneurial, enviropreneurship) "conventional entrepreneurship", "economic goals; social goals; ecological goals" among others (*see figure 2*).

Figure 2. *Keywords of sustainable entrepreneurship research field.*

Source: Own elaboration.

In order to know article would fall under the scope of the present bibliographic study, each word was individually searched on WoS-SSCI database and every result of the search—titles, summaries—was observed. After these the main keywords used as search terms was "sustainable entrepreneurship" (or "sustainability entrepreneurship") to derive similar works. These terms were searched under Topic (title, summary and/or keywords from literature indexed in WoS-SSCI). Only articles (or reviews) in English and the research areas: business, economics, environmental sciences, ecology, science, technology engineering, public administration, social sciences, were included.

Considering that the discussion of the differences between the terms "sustainable entrepreneurship" and "sustainability entrepreneurship" is not the purpose of this work, some criteria for inclusion and exclusion of articles were adopted. The inclusion criteria for selection of articles were: (1) articles from journals reviewed by peers; (2) business economics or environmental sciences ecology or science technology, other topics on engineering or public administration or social sciences); (3) every single article published between 1992 and 2018; (4) conceptual articles; (5) empirical studies. We decided the exclusion of (1) articles that did not come from journals reviewed by peers;

(2) articles that were not related to entrepreneurship; (3) articles that were not related to sustainability.

From these procedures were found 282 publications on 29 January 2018 (date that should be considered as a reference for accounting of the citation frequencies where mentioned). Therefore, the search for literature that has been performed is restricted to scientific literature on sustainable entrepreneurship, without considering its differences or similarities with other terms.

2.3.2 Phase 2: Analysis of the literature

From the 282 articles previously identified, we sought to identify papers that could be considered relevant on the topic sustainable entrepreneurship. In order to achieve it, two groups of articles were created following two paths. Initially, articles were selected articles based on the indicator of scientific impact based on an analysis of the citations received by articles. Thus, the group 1 allows identifying articles that have been cited by other works on the sustainable entrepreneurship research field. These works—identified by the number of citations—can be seen as "central" articles and relevant to be examined by researchers who are not familiar with the subject and, moreover, serve as initial literature for review of a new topic associated with the topic researched (Garfield & Pudovkin, 2003). Considering the criterion of counting citations allows retrieving studies that have been cited by others over years, means that the older the date of publication of an article is, the more likely it is to accumulate citations when compared with a recently published article. To deal with this bias and identify relevant articles published in recent years group 2 was formed. The main criteria used to select the articles in each of the groups are described below:

Group 1—At first, all works were listed in descending order, according to the citation frequency. The bibliometric indicator GCS (Global Citation Score), which shows the number of times the article is cited in the SSCI (Social Science Citation Index) database, was used. The first 47 articles were selected considering the average of 25 citations. After reading titles and abstracts from these 47 articles we select those that sustainable

entrepreneurship is the central theme. The group was reduced which were read and reviewed.

Group 2—Most recent articles: initially were selected articles published in the last years: 2015 and 2018 (a total of 147 articles). Since they were recent works, where the number of citations is neither significant nor can be used to select relevant articles on a subject (Gast, 2017), the selection criterion was based on the publication in high impact journals (based on the number of citations). The list of journals used as a reference to carry out this selection is shown in the result section. A total of 39 articles were selected. A total of 52 articles from groups 1 and 2 were identified. The main results are presented and discussed in the next section.

2.4 Results

282 articles on sustainable entrepreneurship were retrieved after a search on Web of Science Social Sciences Citation Index (WoS-SSCI) database. These articles were published in 140 journals and written by 663 authors from 413 institutions in 50 different countries. We also observed that these 282 articles used 15,945 bibliographic references, an average of 56.54 references per article. Table 5 shows an overview of general results (bibliographic data) obtained in the research.

Table 5. *Publications on sustainable entrepreneurship.*

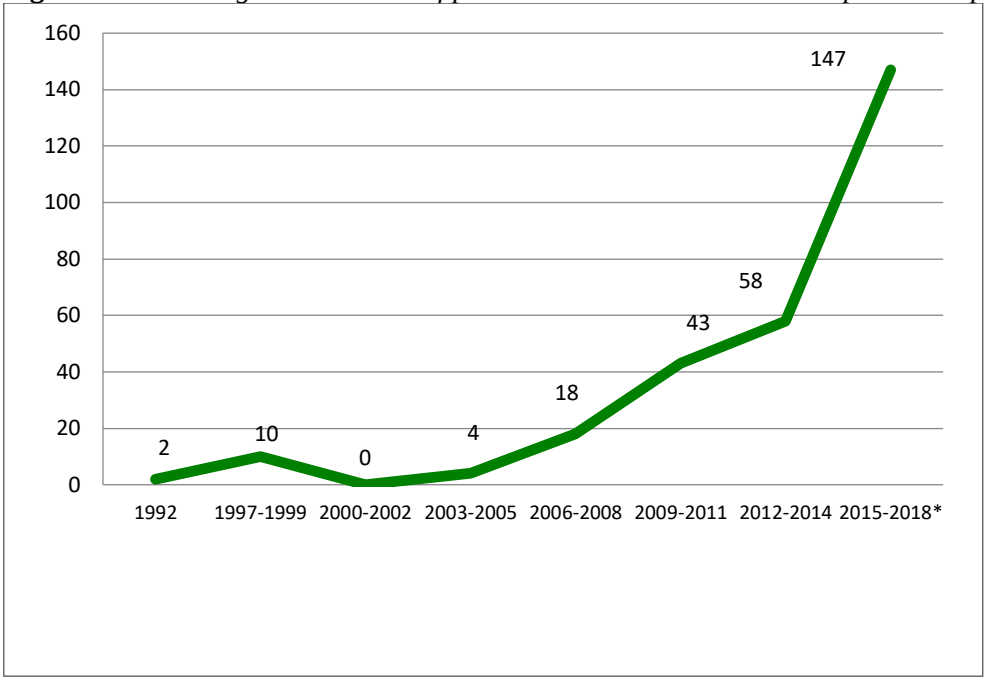
Elements	Quantity
Articles	282
Journals	140
Authors	663
Institutions (author affiliation)	413
Countries	50
References	15945

[1] Note: Value estimated based on data until 29 January 2018. Source: Social Sciences Citation Index-SSCI/Web of Science.

With regard to the distribution of publications over time (Figure 3), we verified that, during the period available in the database (from 1992 to 2017, extended to 29 January 2018), the first two works on sustainable entrepreneurship were published in 1992, 10 works from 1997 to 1999, works from 2000 to 2002 -which seems odd-, 4 works from 2003 to 2005, 18 works from 2006 to 2008, 43 works from 2009 to 2011, 58 works from 2012 to

2014. Finally, 147 works have been published from 2015 until 29 January 2018. *(see figure 3).*

Figure 3. *Chronologic distribution of publications on sustainable entrepreneurship.*



Note: Value estimated based on data until 29 January 2018. Source: Social Sciences Citation Index-SSCI/Web of Science.

Among the 140 journals containing works on sustainable entrepreneurship, we sought to identify the most relevant for this research. Both the number of articles published in each journal and the number of citations were considered as indicators. Table 6 shows the list of the main journals according to the number of articles on sustainable entrepreneurship. It also shows the citation frequency for these journals, measured by TGCS (Total Global Citation Score), which means the number of times the journal is cited in the SSCI (Social Sciences Citation Index) from the published articles on the subject. These journals (Table 6) have published 109 articles on sustainable entrepreneurship, which represents the 39% of the total. The four journals with the highest number of published articles, over 10 works each, are Journal of Cleaner Production, an international journal, with 23 articles; Sustainability, with 22 articles; Business Strategy and The Environment, with 11 articles; and Journal of Business Venturing, with 10 articles. These results allow us to infer that the editorial line of these journals reflects an interest in

this specific topic and, otherwise, researchers recognize these journals as relevant channels to communicate their findings in the research field.

In order to identify the journals with the highest impact, the 140 journals were listed in descending order, in accordance with the citation frequency by TGCS (Total Global Citation Score). A total 7172 citations (from the 282 articles in the 140 journals) in the SSCI database was identified, an average of 25 citations received per journal. It suggests that sustainable entrepreneurship researchers often use articles that have been published in these journals when quoting documents on this topic. Altogether, the papers of these journals were cited 4962 times, which represents the 69% of the 7172 citations. Tables 6 and 7 shows that Journal of Cleaner Production has the highest number of publications on the topic (23 articles), and 223 citations. The journal Sustainability, which comes in second place in the ranking (22 articles) comes in tenth place among the journals with the highest impact (33 citations). Meanwhile, three journals with 11, 10 and 9 articles each (see table 6) are among the most cited when it comes to sustainable entrepreneurship. They are Business Strategy and The Environment, Journal of Business Venturing, Journal of Business Ethics.

Table 6. *Most important journals on sustainable entrepreneurship sorted by citation frequency.*

Journals	Quantity of Articles	Citations *
Journal of Cleaner Production	23	223
Sustainability	22	33
Business Strategy and The Environment	11	307
Journal of Business Venturing	10	925
Journal of Business Ethics	9	213
Journal of Management Studies	8	79
Journal of Organizational Change Management	8	363
Organization & Environment	8	109
Small Business Economics	5	37
Sustainable Development	5	51
Total (specific)	**109**	**2340**
Percentage of total**	**39%**	**33%**

[2] *Note: *(29 January 2018) by TGCS - Total Global Citation Score. **Total: 282 articles and 7172 citations. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

Table 7. *Top 10 journals sorted by citation frequency in the collection on sustainable entrepreneurship*

Journals	Quantity of Articles	Citations *
Strategic Management Journal	2	2055
Journal of Business Venturing	10	925
Journal of Marketing	1	365
Journal of Organizational Change Management	8	363
Business Strategy and The Environment	11	307
Journal of Cleaner Production	23	223
Journal of Business Ethics	9	213
Journal of Management	2	200
Journal of the Academy of Marketing Science	2	184
Academy of Management Perspectives	1	127
Total	**69**	**4962**
Percentage of total**	**24%**	**69%**

[3] *Note: *(29 January 2018) by TGCS - Total Global Citation Score. **Total: 282 articles and 7172 citations. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

Table 8 lists the authors with the highest number of publications on sustainable entrepreneurship. Their works represent the 6% of the total number of articles that have been identified in this study (17 of 282). These authors are affiliated to institutions from different countries, such as United States, Canada, Germany and Rumania. The list of all the represented countries does not include any South American country. In general, the 3% of institutions represented by the authors, with works, which have been reviewed in this study, are located in the United States (38%), Canada (19%), Germany, Rumania and New Zealand (43%). The countries where the institutions with the most prolific authors are located (Table 9) may be diverse, but it is not in the case of authors with the highest citation frequency: The 10 most cited authors are researchers affiliated to institutions located in the United States, with exception of four authors: Wagner M (University of Wuerzburg, Germany), Schaltegger S (University of Lueneburg, Germany) and Cohen B & Winn MI (University of Victoria, Canada).

Table 8. *Authors with the largest number of publications on sustainable entrepreneurship.*

Authors	Quantity of Articles*	Institutions (Author's Affiliation)	Country
Shepherd, D.	4	Baylor University	USA
Shrivastava, P.	4	Concordia University	Canada
York, J.	4	University of Virginia	USA
Patzelt, H.	3	Technical University of Munich	Germany
Vatamanescu, E.	3	Bucharest University	Rumania
Walton, S.	3	University of Otago	New Zealand

[4] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science*.

Table 9. *Most cited authors on sustainable entrepreneurship journals.*

Authors	Quantity of Articles	Citations*	Institutions (Author's Affiliation)	Country
Menon, A.	2	730	Colorado State University	USA
Dean, T.	2	289	University of Colorado,	USA
Wagner, M.	2	281	University of Wuerzburg	Germany
McMullen, J.	2	236	Indiana University	USA
Cohen, B.	2	221	University of Victoria	Canada
Winn, M.	1	219	University of Victoria	Canada
Schaltegger, S.	2	207	University of Lueneburg	Germany
York, J.	4	199	University of Virginia	USA
Ireland, R.	1	190	Baylor University	USA
Ketchen, D.	1	190	Auburn University	USA

[5] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

Table 9 also shows authors (Winn M, Ireland, R and Ketchen, D) who have published 1 article (219 citations). The author York, J. have published 4 articles and Menon, A; Dean, T; Wagner, M., McMullen, J., Cohen, B. and Schaltegger, S. have published 2 articles each. Both Menon A. and Dean, T. are among the authors with an average of 2 articles on the topic (Table 9) and most cited authors that have been included in the collection analysed in Table 9 are the main authors of the highly cited papers.

These authors have accumulated 2762 citations on sustainable entrepreneurship. Bibliometric study shows a chronological list of publications on sustainable entrepreneurship a multitude of definitions, terminologies such as: Ecopreneurship, Environmental Entrepreneurship, Sustainable Development Entrepreneurship, Sustainable Entrepreneurs and Green Entrepreneurship has been used up interchangeably in the documents reviewed during the investigation (Dixon & Clifford, 2007; Isaak, 2002; Schaltegger, 2002). On the other hand, we must express that each

terminology is linked to ecological entrepreneurship that seeks to understand how business action can help preserve the natural environment (Belz & Binder, 2017; Stephan et al., 2016). In the last decade, sustainable entrepreneurship hat has been promoted in the most important journals of sustainable management with substantive and quality research that address regional and international experiences. Sustainable entrepreneurship became popular in the field of business initiatives and caused the interest from the economic, political, social media and naturally of the academic with social and environmental focus.

Furthermore, research in sustainable entrepreneurship involves the social, economic and environmental environment, but emphasizes the development of non-economic gains for individuals and societies (Shepherd et al., 2003). It also includes aspects of corporate social responsibility (CSR), which refers to actions to promote social goods, beyond the interest of the company (McWilliams & Siegel, 2001). By businesses to be profitable at the same time, they must have sustainable aims focused on reducing climate change, preserving the ecosystem, counteracting environmental degradation, deforestation and above all, improving good agricultural practices, drinking water and the environment.

Finally, research on sustainable entrepreneurship is considered a unique perspective that combines the creation of economic, social and environmental value, with a general concern for the welfare of future generations. Many researchers watch an entrepreneurial activity as sustainable when integrating holistic economic, social and environmental goals that persist over time and generate wealth over time for an organization to consider itself a sustainable development company (Gibbs, 2009; Schlange, 2009; Tilley & Young, 2009).

The papers included in Table 10 are the most cited articles on sustainable entrepreneurship, which were identified from the indicator GCS (Global Citation Score)—number of times the paper is cited in the SSCI (Social Sciences Citation Index) database. After the analysis performed on 13 articles, which are among the most cited, several relevant aspects, that have been discussed in the literature and can help to understand the topic of sustainable entrepreneurship, were identified. In general, some documents provide an explicit definition of sustainable entrepreneurship. Following a

chronological order, we'll begin our analysis with the author (Menon & Anil, 1997), who introduces the terms "environmental concerns" and their effect on the corporate competitive landscape, by incorporating market size variables (sales) and environmental awareness, with his article "Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy".

Later on, (Hart & Milstein, 1999) in his article "Global sustainability and the creative destruction of industries", focus on "how creative destruction happens", which was not competitive in the XIX siecle, fostered by sustainability, can increase corporate gains. Afterward, there are authors such as (Dean & McMullen, 2007), in his article titled "Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action" explained how entrepreneurship can help resolve the environmental problems of global socio-economic systems and suggested that environmental market failures represent opportunities for achieving profitability.

Another author (Cohen & Winn, 2007), in his article titled "Market imperfections, opportunity and sustainable entrepreneurship" analyses the relationship between market imperfections and entrepreneurial opportunities and between organizations and natural environment. They conclude that identification and exploitation of market imperfections in the natural environment enables the attainment of entrepreneurial rents and, simultaneously, of more sustainable markets. Afterward, in his article (Dixon & Clifford, 2007), "Ecopreneurship—a new approach to managing the triple bottom line" identifies a strong link between entrepreneurial initiative and environment. He concludes that entrepreneur's style allows the achievement of environmental, social and economic goals. Furthermore, in his article "Green Management Matters Regardless", the author (Alfred & Adam, 2009) states that from a moral or normative perspective the obligation for green management is absolute. Also, in his article (Short et al., 2010). "The Concept of Opportunity in Entrepreneurship Research: Past Accomplishments and Future Challenges", he put emphasis on the comprehension of the nature of opportunities, its causes, effects and processes in order to reach sustainability (Hockerts & Wüstenhagen, 2010), in his article "Greening Goliaths versus emerging David's Theorizing about

the role of incumbents and new entrants in sustainable entrepreneurship", suggests that an ambidextrous innovation policy that can simultaneously pursue incremental and disruptive innovation is needed in order to achieve sustainability.

In this article "The entrepreneur-environment nexus: Uncertainty, innovation, and allocation" (York & Venkataraman, 2010), also concludes that environmental issues clearly represent the kind of opportunity that entrepreneurs can take to orient themselves to sustainability and that environmental entrepreneurship is more effective for the new profit seeking companies. In addition, in his article (Kuckertz & Wagner, 2010). "The influence of sustainability orientation on entrepreneurial intentions Investigating the role of business experience", stated that, the individual sustainability orientation of entrepreneurs could contribute to the understanding of both entrepreneurial intentions and the impact of entrepreneurial experience. Moreover, (Schaltegger & Wagner, 2011), in his article Sustainable Entrepreneurship and Sustainability Innovation: Categories and Interactions claims that the degree of environmental or social responsibility orientation in the company is assessed on the basis of environmental and social goals and policies, the organization of environmental and social management and the communication of environmental and social issues.

Along with this line of thought, (Shepherd, 2003), in his article "The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial. Action Linking. "What Is to Be Sustained" With "What Is to Be Developed", claims that Sustainable entrepreneurship is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is construed as a whole. Finally, (Klewitz, J.; Hansen, 2014), in his article "Sustainability-oriented innovation of SMEs: a systematic review" concludes that proactive behaviours result in greater sustainability-oriented innovation capabilities and, therefore, in a better interaction with stakeholders, which increases innovation capabilities and improves organizational dynamics

Table 10. *Most cited articles on sustainable entrepreneurship.*

Authors	Article Title	Journal	Citations*
Menon, A.	Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy	Journal of Marketing	365
Dean, T.	Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action	Journal of Business Venturing	224
Cohen, B	Market imperfections, opportunity and sustainable entrepreneurship	Journal of Business Venturing	219
Schaltegger, S.	Sustainable Entrepreneurship and Sustainability Innovation: Categories and Interactions	Business Strategy and the Environment	197
Short, J.	The Concept of Opportunity in Entrepreneurship Research: Past Accomplishments and Future Challenges	Journal of Management	190
Hockerts, K.	Greening Goliaths versus emerging David's: Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship	Journal of Business Venturing	147
Alfred, A.	Green Management Matters Regardless	Academy of Management Perspectives	127
Hart, S.	Global sustainability and the creative destruction of industries	Sloan Management Review	114
Klewitz, J.	Sustainability-oriented innovation of SMEs: a systematic review	Journal of Cleaner Production	105
York, J.	The entrepreneur–environment nexus: Uncertainty, innovation and allocation.	Journal of Business Venturing	95
Shepherd, D.	The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking What Is to Be Sustained with What Is to Be Developed	Entrepreneurship Theory and Practice	92
Kuckertz, A.	The influence of sustainability orientation on entrepreneurial intentions: Investigating the role of business experience	Journal of Business Venturing	84
Dixon, S.	Ecopreneurship: a new approach to managing the triple bottom line	Journal of Organizational Change Management	71

[6] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science*

Table 11 lists the 39 articles that were classified during the period of 2015–2018. These articles help to understand which are the advancements in sustainable entrepreneurship research. Literature searches were performed in order to know which are the types of research, gaps, future lines of research and the most recent and relevant aspects of the topic addressed in this bibliometric study.

An approach to sustainable entrepreneurship relies on three specific analytical dimensions (Klewitz & Hansen, 2014): (1) the purpose of the initiative; (2) its form of organization and ownership; and (3) its embeddedness into local community or social movements. Besides (Gast, 2017), refers to the fragmented and inconsistent findings in the field of sustainable entrepreneurship and the variety of terms used in it, such as ecopreneurship, environmental entrepreneurship, environment and green entrepreneurial spirit. Also, (Poldner et al., 2017) claims that translating a sustainability message into a tangible product involves the support of three techniques: preservation, transformation and adding novelty.

Other authors (Belz & Binder, 2017; York et al., 2016; Calic & Mosakowski, 2016; Silajdžic et al., 2015; Thompson et al, 2016), refer to the key findings that the triple bottom line of ecological, social and economic goals is integrated sequentially, not simultaneously, that is to say, sustainable entrepreneurs must: (1) be motivated by identities based on both commercial and ecological logics; (2) prioritize commercial and/or ecological goals; and (3) approach stakeholders in a broadly inclusive, exclusive, or co-created manner in order to acquire financial resources through crowdfunding, because sustainable entrepreneurs do not seem to be ready to respond to the challenges or to take any risks by investing in green business, but also that the government and educational institutions do not recognize their own role and the need of supporting the development of green entrepreneurship.

However, ref. (Fellnhofer, 2017) claims that future studies should further connect sustainable and institutional entrepreneurship research and take group and individual factors into account when explaining how sustainable entrepreneurs engage in institutional change. Thus, the green entrepreneurial spirit is a personal drive, a mission, a location and a future orientation in terms of sustainability. Sustainable entrepreneurs create new symbols, construct new measures, build consensus, and forge new relations to alter or

create new institutions. In addition, entrepreneurial collaboration has three feedback effects: it creates accessible modes, diversity of scope, and an increased scale of institutional change strategies.

Finally, sustainable entrepreneurs that act by themselves intend to engage in institutional change strategies to increase the adaptability to complaints by using their interpersonal nets.

Table 11. *Recent articles selected in the collection on sustainable entrepreneurship.*

Authors	Article Title	Journal
Kraus, S.	Sustainable Entrepreneurship Orientation: A Reflection on Status-Quo Research on Factors Facilitating Responsible Managerial Practices	Sustainability
Fellnhofer, K.	Drivers of innovation success in sustainable businesses	Journal of Cleaner Production
Kraus, S.	Configurational paths to social performance in SMEs: The interplay of innovation, sustainability, resources and achievement motivation	Sustainability
Ceptureanu, E.	Empirical Study on Sustainable Opportunities Recognition. A Polyvinyl Chloride (PVC) Joinery Industry Analysis Using Augmented Sustainable Development Process Model	Sustainability
Zhang, J.	Eco-innovation and business performance: the moderating effects of environmental orientation and resource commitment in green-oriented SMEs.	R and D Management
Hsu, C.	Identifying key performance factors for sustainability development of SMEs–integrating QFD and fuzzy MADM methods	Journal of Cleaner Production
Criado-Gomis, A.	Sustainable Entrepreneurial Orientation: A Business Strategic Approach for Sustainable Development	Sustainability
Ramos-González, M.	Building corporate reputation through sustainable entrepreneurship: The mediating effect of ethical behaviour	Sustainability
Peñalvo-López, E.	A methodology for analysing sustainability in energy scenarios	Sustainability

[7] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

Table 12. *Recent articles selected in the collection on sustainable entrepreneurship*

Authors	Article Title	Journal
Afshar Jahanshahi, A.	Who takes more sustainability-oriented entrepreneurial actions? The role of entrepreneurs' values, beliefs and orientations	Sustainability
Iyer, E.	The Intersection of Sustainability, Marketing, and Public Policy: Introduction to the Special Section on Sustainability	Journal of Public Policy & Marketing

Li, Y.	The study on ecological sustainable development in Chengdu	Physics and Chemistry of the Earth
De Lange, D.	Start-up sustainability: An insurmountable cost or a life-giving investment?	Journal of Cleaner Production
Hernández-Perlines, F.	Sustainable entrepreneurial orientation in family firms	Sustainability
Ceptureanu, S.I.	Toward a Romanian NPOs sustainability model: Determinants of sustainability	Sustainability
Gasbarro, F.	The Interplay Between Sustainable Entrepreneurs and Public Authorities: Evidence from Sustainable Energy Transitions	Organization and Environment
Magnani, N.	Ecopreneurs rural development and alternative socio-technical arrangements for community renewable energy	Journal of Rural Studies
DiVito, L.	Entrepreneurial orientation and its effect on sustainability decision trade-offs: The case of sustainable fashion firms	Journal of Business Venturing
Provasnek, A.	Sustainable Corporate Entrepreneurship: Performance and Strategies Toward Innovation	Business Strategy and the Environment
Corbett, J.	Environmental Entrepreneurship and Interorganizational Arrangements: A Model of Social-benefit Market Creation	Strategic Entrepreneurship Journal
Stubbs, W.	Sustainable Entrepreneurship and B Corps	Business Strategy and the Environment
Leonidou, L.	Internal Drivers and Performance Consequences of Small Firm Green Business Strategy: The Moderating Role of External Forces	Journal of Business Ethics
Santini, C.	Ecopreneurship and Ecopreneurs: Limits, trends and characteristics	Sustainability
Sarkar, S.	Sustainability-driven innovation at the bottom: Insights from grassroots ecopreneurs	Technological Forecasting and Social Change
Lapinskien˙ e, G.	Testing environmental Kuznets curve hypothesis: the role of enterprise's sustainability and other factors on GHG in European countries	Journal of Business Economics and Management
Poldner, K.	Embodied Multi-Discursivity: An Aesthetic Process Approach to Sustainable Entrepreneurship	Business and Society
De Lange, D.	Increasing sustainable tourism through social entrepreneurship	Internet Journal of Contemporary Hospitality Management

Poldner, K.	Aesthetic mediation of creativity, sustainability and the organization	Journal of Cleaner Production
Klewitz, J.	Grazing, exploring and networking for sustainability-oriented innovations in learning-action networks: an SME perspective	Innovation
Swanson, K.	A theoretical framework for sustaining culture: Culturally sustainable entrepreneurship	Annals of Tourism Research
Hörisch, J.	What influences environmental entrepreneurship? A multilevel analysis of the determinants of entrepreneurs' environmental orientation	Small Business Economics

[7] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

Table 13. *Recent articles selected in the collection on sustainable entrepreneurship*

Authors	Article Title	Journal
Gast, J.	Doing business in a green way: A systematic review of the ecological sustainability entrepreneurship literature and future research directions	Journal of Cleaner Production
Belz, F.	Sustainable Entrepreneurship: A Convergent Process Model	Business Strategy and the Environment
Calic, G.	Kicking Off Social Entrepreneurship: How A Sustainability Orientation Influences Crowdfunding Success	Journal of Management Studies
O'Neill, K.	Rethinking green entrepreneurship–Fluid narratives of the green economy	Environment and Planning A
York, J.	Exploring Environmental Entrepreneurship: Identity Coupling, Venture Goals, and Stakeholder Incentives	Journal of Management Studies
Waldron, T.	How Social Entrepreneurs Facilitate the Adoption of New Industry Practices	Journal of Management Studies
Hunt, R.	Intergenerational Fairness and the Crowding Out Effects of Well-Intended Environmental Policies	Journal of Management Studies
Steinz, H.	How to Green the red Dragon: A Start-ups' Little Helper for Sustainable Development in China	Business Strategy and the Environment

[7] *Note: (*) 29 January 2018. Source: Data collected from Social Sciences Citation Index–SSCI/Web of Science.*

2.5 Conclusions

The flood of literature on sustainability is among the main findings of this bibliometric study on sustainable entrepreneurship. The first articles appear at the beginning of the 90s, after 2006 the number of articles on this topic increases significantly. The data reflects that this growth has not stopped, and that the topic of sustainable entrepreneurship is still a developing stream of research. Hence, the existence of a diversity of definitions to describe it is not surprising.

A remarkable result of bibliometrics is that the articles that were published in impacting journals found a common ground on how to define sustainable entrepreneurship and terms related to environment, such as: "green", "sustainable", "ecological", "environmental", "entrepreneurial" "ecopreneur*" "ecopreneur" "enviropreneur*" "Environmental Entrepreneurship" "Ecological Goals" "Economic Entrepreneurs", etc. Hence, this study reveals the importance of equilibrating the economic, social and ecological achievements in sustainable organizations, by making use of the source and the creation of sustainable entrepreneurial opportunities.

When aiming to really understand the research field and be able to provide theoretical and practical contributions, quality scientific research requires the access to knowledge accumulated in previous studies on the specific topic. Thus, this study contributes to developing the entrepreneurship research by performing a bibliometric review of scientific literature with the help of one of the most recognized databases, Web of Science-Social Sciences Citation Index. Besides, the present work can be a guide for future researchers, especially for those who are not familiar with sustainable entrepreneurship.

By providing the chronological distribution of publications, this work allows the systematic review of scientific literature on the topic over time. The first two works that were retrieved from the database were published in 1992, and from 1997 to 1999 10 works were published. From 2000 until now 282 documents on sustainable entrepreneurship have been published, which confirms, what other researchers pointed out, that collaboration within the sustainable entrepreneurship context is a relatively new concept that has attracted the scientific community's interest after 2005. The increasing

interest and relevance are proved by the significant rise in the number of publications from the year 2006 until now (considering the final date, 29 January, when this work was finished).

The present bibliometric study also allows the identification of the most prominent journals and works in the research field of sustainable entrepreneurship. Two lists of journals were provided: (i) Journals with the highest number of articles and (ii) the most cited journals (high impact journals). The results reflect that most articles were published in Journal of Cleaner Production, Sustainability, Business Strategy and the Environment Journal of Business Venturing. Articles that stand out in the area, documents with a high number of citations and documents that have been published in high impact journals in the last two years are also listed. All the provided lists enable researchers to start up or move forward on their research and get acquainted with the most prominent works in the field, that is to say, those high-impact documents that other researchers have used to support their research.

Different lines of research, that may be useful for future research on sustainable entrepreneurship, have been identified in the context of our bibliometric review. On the one hand, there is the need for theoretical development. Although there is a big number of conceptual works on sustainable entrepreneurship, there are some authors that still develop theoretical models (Thompson et all., 2011; Shepherd & Patzelt, 2011) form a framework in order to detect sustainable development opportunities (Poldner et al.,2017). Current theories and empirical studies suggest a causal model, with the identification of sustainable development opportunities as a variable dependent on environmental and community awareness and the insertion of a moderating variable such as corporate knowledge. Sustainable entrepreneurship must focus on the sustainable systems' features that tend to be complex, disperse, global, uncertain, and interdependent and have long-term horizons. The differential role of large and small companies in the transformation towards sustainable development can't be neglected. That is to say, it is about understanding the nature of opportunities, its causes and effects by means of empirical studies (Short et al., 2010).

Other important factors to carry out future researches are motivations for innovation and sustainable entrepreneurship models, which need to be adjusted to the corporate environment (Schaltegger & Wagner, 2011) through different perspectives, in order to explore variables that focus on nature and lifestyle (Shepherd & Patzelt, 2011) and that should strengthen the connection between sustainable institutional entrepreneurship research and institutional entrepreneurship research (Thompson et al., 2015). Besides, the directly proportional relationship between uncertainty and innovation opportunities must be analysed by performing empirical tests on social entrepreneurship initiatives in the field of sustainable energies (York et al., 2016) and by analysing how ecologically sustainable entrepreneurs and their companies influences communities and society (Gast at al., 2017), since social and ecological factors can be a source of business opportunities (Belz & Binder, 2017). This document also provides an exhaustive analysis of the selected works, showing possible gaps and opportunities for new research on sustainable entrepreneurship. Interested researchers could use the provided information and results to conduct their investigations.

Academics should focus on knowing how sustainable enterprises develop their roadmap to search by social and environmental impacts that materialize through good practices developed in their environments (Pacheco at al., 2016). However, research shows that the literature on practices in sustainable entrepreneurship is a heavy gap for future research, that measurement mechanisms are used in the practices and monitor the change over time, since companies operate in unfavourable environments by affectation of external agents as political and economic factors (Dey & Mason, 2018; Sharma et al., 2018). Challenging tasks by researchers would be to diagnose practices and research because of the complexity of quantifying and the perception of social and environmental impact differences (Austin et al.,2006). While it is a challenge, this begins avenues for future research on measuring impact and accountability (André et al., 2018; Molecke & Pinkse, 2017; Rawhouser & Cummings, 2017).

By advance within the framework of the understanding of sustainable entrepreneurship, future research should focus on how sustainable entrepreneurs interact and form associations with communities of a social nature (Peredo et al., 2017). When interacting with others, sustainable

companies create new identities and cooperate categories (Conger et al., 2018). Some companies are formalized through certifications such as: B Corps, Rainforest Alliance or Fairtrade (Stubbs, 2017). Finally, it is essential to understand how sustainable enterprises they create value beyond the limits of the enterprises, contributing positively to social and ecological systems.

CHAPTER 3

Leaders' Sustainability Competencies and SMEs Outcomes: The Role of Social Entrepreneurial Orientation.

3.1 Introduction

The concept of sustainable entrepreneurship has gained relevance over recent years (Schaltegger & Wagner, 2011); largely as a result of the increase in demand for environmentally and socially conscious products (Haigh et al., 2015). This concept arises from the convergence of two areas of knowledge: entrepreneurship and sustainability. Schaltegger and Wagner (2011) define sustainable entrepreneurship as the contribution of business efforts to social, ecological and economic aspects, in other words, to sustainable development. On the other hand, social entrepreneurship from a social perspective (Schaltegger & Wagner, 2011; Zahra et al., 2009) goes beyond the quest for environmental opportunities from an economic viewpoint (Zahra et al., 2009); instead, its final objective is the creation of social value (Lans et al., 2014).

In this sense, academics have reached a certain consensus on the current and future importance of entrepreneurs that focus on sustainability and their key role as agents of change and transformation; particularly in improving their immediate environments and regions of influence (Kyrö, 2015; Parrish & Foxon 2009). These leaders tend to have a holistic vision of the outcomes of their company based on the philosophy of "the triple bottom line", which focuses on social and environmental concerns just as it does on economic profits. They are able to integrate sustainable values within their company's mission and to work with daily indicators that show the social impact of their entrepreneurial activities (Gagnon, 2012; Ploum et al., 2018).

Any organization seeking to implement sustainable and social practices requires leaders with the competences to detect entrepreneurial opportunities that are respectful of the environment (Lans et al., 2014), along with the interpersonal skills distinctive of an entrepreneur (Dunphy et al., 2007). In this regard, Lans, Blok and Wesselink (2014:40) identify the following qualities "as the backbone of entrepreneurial competence": opportunity competence, social competence, business competence, industry-specific competence, and entrepreneurial self-efficacy. The authors continue adding that "for sustainable development, companies are in need of owners, managers and staff-members who are able to recognize sustainability as an

opportunity, i.e., as a driver for strategic renewal, innovation and venturing" (Lans et al., 2014:37).

If this is important for managers in multinationals and large companies, it is essential for leaders in small- and medium-sized enterprises (SMEs). These enterprises make up for the vast majority of the economic structure in most regions, and if genuine change is sought after, then this sort of human capital represents a cornerstone at base. The question now would be if SMEs leaders have the necessary skills to bring about such change.

This research contributes to the literature by answering the following questions: How do the leader's sustainability competences influence the company's social entrepreneurial orientation? Does social orientation entrepreneurship have a positive influence on SMEs performance? The aim of this research is to analyse the effect of leader's sustainability competences on social entrepreneurial orientation and the latter on business outcomes, namely, green innovation performance, social performance and economic performance. To meet the objective, a theoretical model will be estimated using the Structural Equation Modelling technique and a novel dataset, collected from a sample of 302 tourism SMEs located in Ecuador (sampling error of ±5.44% for a confidence level of 95%).

The novelty of this study lies in examining the relationship between leaders' sustainability competencies and Social Orientation Entrepreneurship (SOE) in SMEs, along with investigating how this influences SMEs performance in different areas. A considerable literature has studied the priors and consequences of entrepreneurial orientation, such as personality traits, cultural background, Government aided programs and entrepreneurial education relative to individual entrepreneurial orientation, (Wang and Chen, 2013; Zainol, 2013; Brush, 2014; Carvalho et al., 2015); however, to the best of our knowledge, none has analysed the relationship between leaders sustainability competences, social orientation entrepreneurship and entrepreneurial performance.

The document is structured as follows. The introduction has already contextualized the subject under study and stated the objective; next, section 2 will address the theoretical framework for the concepts of sustainability

competences and social entrepreneurial orientation. Section 3 will explain the methodology, while section 4 will present the results, and section 5 will discuss them. A last chapter, section 6, will conclude and draw implications for practitioners.

3.2 Theoretical Framework

3.2.1 Sustainability competences

In 2015, the United Nations announced 17 Sustainable Development Goals (SDG) and 169 targets in its 2030 Agenda. The SDGs are universal and oriented to achieve global sustainable development. Target 4.7 endeavours to "ensure that all learners acquire the knowledge and skills necessary to promote sustainable development [...]" (United Nations, 2015). Although the majority can recognize the importance of these objectives, there is still a manifest confusion on the best path to achieve them and on how to train future entrepreneurs to fulfil said target. There is a need to better understand the ways in which leader's competences help sustainable entrepreneurship, and at the same time, entrepreneurs and managers need to understand the economic opportunities behind sustainable entrepreneurship to reinforce sustainability at a fundamental and structural level (Lans et al., 2014).

Sustainability requires a system-wide understanding to integrate the complexity of diverse pursuits and stakeholders' interests for example (governments, individuals), as well as the ability to evaluate the effects of potential decisions across different domains and scales (Wiek et al., 2011). For this reason, a deep change does not only require state intervention from formal institutions (i.e., new legislation) and the availability of new technologies, it also demands the active and passive support of the population (De Haan, 2006), and even more so of their leaders.

Research on the identification of competences for sustainable development has advanced significantly in recent years, with scholars cultivating different perspectives on training future managers to be more "sustainable" (Byrne, 2000; De Haan, 2006; Barth et al., 2007; Sipos et al. 2008; Segalàs et al. 2009; Frisk & Larson, 2011; Wiek et al., 2011; Willard et al., 2011; Dentoni et al., 2012; Ploum et al., 2018). For instance, De Haan (2006) identifies eight key competences that should serve as foundations for the educational

standard: foresighted thinking; interdisciplinary work and learning; trans-cultural understanding and cooperation; participation; planning and implementation; empathy, compassion and solidarity; self-motivation and motivating others; and distanced reflection on individual and cultural models. Sipos, Battisti, and Grimm (2008) proposed 18 learning objectives for transformative sustainability learning, from which seven entrepreneurial competences can be drawn: trans-disciplinarity, systems thinking, conflict resolution, collaboration, empowerment, creativity, and inclusivity.
Subsequently, Wiek, Withycombe and Redman (2011) carried out a research to compile the competences studied in the previous literature (28 journal articles and books, and 15 reports and whitepapers), which resulted in the proposal of five key competences in sustainability to help institutions design academic and training programs: systems-thinking competence, anticipatory competence, normative competence, strategic competence, and interpersonal competence. Similarly, Dentoni, Blok, Lans and Wesselink (2012:63) identified seven key competences based on "a literature review on competencies for sustainable development and innovation and [...] four focus group discussions with lecturers from 'green' higher education institutes (HEI's) in the Netherlands"; these are systems-thinking, foresighted thinking, normative competence, embracing diversity and interdisciplinarity, interpersonal competence, action competence and strategic management.

Based on these two studies, Lans, Blok and Wesselink (2014) proposed a qualitative and quantitative study to understand which competencies are at the heart of entrepreneurship and sustainable development (i.e., sustainable entrepreneurship). These were defined as follows:

- *Systems-thinking competence* is the ability to understand complex systems across different spheres –such as the social, environmental and economic realms– and from the local to the global scale. This will favour problem resolution, seizing opportunities and taking advantage of technologies in a holistic and interconnected manner (Wiek et al., 2011).
- *Foresighted thinking* is the ability to simultaneously analyse and evaluate the prospect impact that the local and short-term decisions on the environment, society and the economy will have on the long term and at a global scale (Wiek et al., 2011).

- *Strategic management* is the ability to collectively design and execute projects that lead companies to develop sustainable development practices (Lans et al., 2014; Ploum et al., 2018). This individual skill will be key to effectively draw sustainability transition strategies (Wiek et al., 2011)
- *Normative competence* is the ability to design, reconcile and apply sustainable values, principals and targets with internal and external stakeholders (Wiet el al, 2011; Ploum et al., 2018). This skill is important to balance and build up socioeconomic activities and environmental capacities (Swart et al., 2004).
- *Action competence* is the ability to become actively involved in responsible actions to improve the sustainability of socio-ecological systems (Lans et al., 2014, Ploum et al., 2018)
- *Embracing diversity and multidisciplinarity* is the ability to organise relations and recognise the legitimacy of different viewpoints in business decision-making processes regarding environmental, social and economic issues, while promoting sharing and learning between different groups (Wiek et al., 2011; Lans et al., 2014).
- *Interpersonal competence* is the ability to bring about collaborative and participatory sustainability research, as well as problem solving (Wiek et al., 2011). This includes all of those skills that have an influence on the interaction with other people and that drive to teamwork and alliances, such as communication, leadership, negotiation or empathy.

After closer examination, the strategic management and action competences were combined into a single one, seeing that there was an obvious overlap between them given that both had been traditionally important for entrepreneurs and for sustainability in terms of the centrality of complex problems and the importance of novelty/creativity, self-enrolment and engagement with others (Lans et al., 2014). Bottom line, organisations are in need of founders, managers and employees who are able to recognise sustainability as an opportunity (Lans et al., 2016; Ploum et al., 2018).

3.2.2 Social entrepreneurial orientation

Entrepreneurial Orientation (EO) has emerged as a major construct within the strategic management and entrepreneurship literature over the years (Morris et al., 2012). “EO can be defined as the nature of the decision-making mindset, behaviours and processes underpinning the firm’s strategy creation practice, competitive posture and management philosophy and thus encapsulates de entrepreneurial tendencies of the firm” (Hughes et al., 2015:119). Various characteristics have come to be grouped alongside EO, including autonomy and competitive aggressiveness (Lumpkin & Dess 1996; Lim & Envick 2013), although the characteristics receiving the most attention in the literature have been innovativeness, proactiveness and risk propensity (Covin & Slevin 1989; Lumpkin & Dess 1996; Wiklund & Shepherd 2003; Lim & Envick, 2013). In this sense, Miller (1983) defined EO as a company that is involved in innovation, undertakes risky ventures and pursues opportunities proactively.

On the other hand, the social side of entrepreneurship has increasingly attracted academic interest, thereby social entrepreneurship has grown into a prominent literature stream in the last decade, with most definitions of this concept highlighting the “hybrid nature of combining a social mission with entrepreneurial activities” (Saebi et al., 2019:3). For example, the term 'social business hybrids' is applied to those organisations that "create value for society in areas where markets and governments are failing, while developing financially sustainable operations that leverage commercial contracts and enable reaching scale" (Santos et al., 2015: 38).

However, the controversy on which unit of analysis is under the concept of social entrepreneurship still remains and makes finding a universal definition difficult (Foss & Saebi, 2017). What is undeniable is the increasing trend in academia to try and understand the levels and impacts of transformativeness that companies are having in society. If impact is understood as the “value created by the organization for society in the achievement of its mission, which can include environmental benefits and social gains” (Santos et al., 2015:39), then the social orientation of any type of company favours a greater redistribution of resources toward the disadvantaged, their communities and their society, simultaneously creating value (Hlady-Rispal and Servantie,

2018). As a consequence, it is becoming increasingly difficult to find the line that separates commercial from social/ sustainable companies.

Based on the previous literature, this research defines Social Entrepreneurial Orientation (SEO) as the tendency of any business to adapt its strategies and management decisions to a social entrepreneurial perspective, which implies engaging in innovations that add social value to the community and include a social reflection in its design. SEO entails assuming a certain amount of risk in the firm's decisions and being proactive in the search for social benefits, and it will depend on the weight that companies attribute to social innovation, which will all require balancing the social gains and the economic profits that all organisations produce. The three main dimensions of social entrepreneurial orientation are delineated below:

- *Social innovativeness* reflects the tendency of a company to foster, engage with and enrol in new ideas and creative processes with the capacity to achieve a social impact or solve a social problem. If the degree of novelty is key in any industry and competitive context, then is even more necessary to solve social problems in a competitive way.
- *Social proactiveness* refers to a posture of anticipating future social demands and needs in the marketplace, thereby creating a first-mover advantage over competitors. It implies foreseeing entrepreneurial opportunities behind social problems with a vision to solve them in an economic and sustainable way.
- *Social risk-taking* or risk propensity is associated with a willingness to commit resources and time in projects with a social impact or a social mission, in spite of the uncertainty in outcomes or net profits for the company. Any entrepreneurial decision involves uncertain results, but the risk associated when trying to balance social and profit purposes can be even higher.

According to Santos, Pache and Birkholz (2015), any type of company starts to realise that addressing societal issues is often good business by itself as a result of three elements: a) *Societal demand*, from the increase in users and customers of socially oriented products and services, caused also by the higher pricing power of producers; attention to this kind of demand can help ventures innovate and rethink their business model, as well as the potential innovations and changes related to social products; b) *value chain efficiency*,

which means using a simpler value chain to deliver the same outcomes and is a social innovation with the power to cut costs; and c) *impact in communities*, where the project of social responsibility has the potential of helping communities and creating goodwill. In this manner, the social orientation of any type of company and in any type of sector gradually begins to be valued by users, which increases the possibilities of becoming competitive in the market. For many public institutions, social orientation has become an imperative already, and in time, it will stop being exclusive at all; instead, it will grant advantages over competitors and improve competitiveness overall. Therefore, companies that know how to adapt their mission to social and sustainable values will have a higher chance of survival (Santos et al., 2015).

3.2.3 The importance of leaders' sustainability competences for SMEs social entrepreneurial orientation.

In the context of SMEs, leaders are a key source of value creation when interacting with a value network that contributes to the organisation with means and opportunities (Hlady-Rispal and Servantie, 2018; Gallego-Roquelaure, 2020). In fact, leaders are one of the key intangible assets to overcome the known liability of smallness and newness (Stinchcombe, 1965). Therefore, the orientation of strategies and actions of these type of companies toward social concerns will be strongly determined by the inclinations and abilities of their leaders.

Individual competencies for sustainable development have received attention in the field of education (Wiek et al., 2011), where researchers have tried to emphasize the importance for future leaders to acquire the necessary skills and abilities to deal with the challenges created by the new sustainability goals (Dentoni et al., 2012). In this line, Osagie and colleagues (2016) revealed that sustainability strategic competences were critical when leaders had the authority and capacity to develop social responsibility strategies in the company. For a small company to be able to bet on ambitious plans with social impact and get ahead of their customers' demands, it will require a certain type of abilities from their leaders. In contrast with larger companies, who maintain whole departments in charge of corporate social responsibility (CSR), SMEs cannot usually afford this practice. The more proficient leaders

are in these competences, the higher their probabilities to exploit sustainable opportunities and to implement more innovative and aggressive social practices, and the deeper their understanding of entrepreneurial opportunities behind social problems.

Therefore, it is vital to analyse the extent to which the leader's sustainability competences influence the dimensions of Social Entrepreneurial Orientation –social innovation, social risk-taking and social proactivity–. Based on this statement, this work posits the following hypotheses:

H1: *There is a positive and direct relationship between leaders' sustainability competences and the social innovation dimension of the social entrepreneurial orientation of small and medium enterprises.*

H2: *There is a positive and direct relationship between leaders' sustainability competences and the social risk-taking and social proactivity dimensions of the social entrepreneurial orientation of small and medium enterprises.*

3.2.4 Social entrepreneurial orientation and SMEs outcomes

Empirical evidence shows in a consistent manner that entrepreneurial orientation can be a driver of firm performance and growth, regardless of different organisation sizes and types (Zahra & Covin, 1995; Wiklung & Shepherd, 2005; Eggers et al., 2013), especially in a turbulent market environment (Baker & Sinkula, 2009; Covin & Slevin, 1989). The market of sustainable and socially responsible products is growing in many countries, although their demand is still uncertain in many economies, and in fact, social orientation has started to emerge as a compulsory quality for companies in some industries and with a specific type of clients.

Authors like Kuratko, McMullen, Hornsby and Jackson (2017) underscore the importance of social proactivity in the successful implementation of a corporate social entrepreneurship strategy. Moreover, social proactiveness benefits SMEs when they are perceived as genuinely committed to the community and the environment by their customers and stakeholders in general. Their mission and social actions will not be condemned as just a cover to remain competitive in the market (e.g., legal requirements of public

organisations) or as simply a reaction to consumers pressure; instead, their actions towards sustainability will be well-received as a voluntary choice and a consequence of true organisational values. Being socially innovative and proactive can really benefit the brand when actions are perceived as authentic, positively turning firms' outcomes (Covin & Slevin, 1989; Zahra & Covin, 1995; Lumpkin & Dess, 1996; Lee et al., 2001; Lumpkin & Dess, 2001; Wiklund & Shepherd, 2005; Keh et al., 2007).

Based on these assumptions, secondary hypotheses of this research ensue:

H3: *There is a positive and direct relationship between social innovation and green innovation performance in small and medium enterprises.*

H4: *There is a positive and direct relationship between social innovation and social performance in small and medium enterprises.*

H5: *There is a positive and direct relationship between social innovation and economic performance in small and medium enterprises.*

H6: *There is a positive and direct relationship between social risk-taking and social proactiveness, and green innovation performance in small and medium enterprises.*

H7: *There is a positive and direct relationship between social risk-taking and social proactiveness, and social performance in small and medium enterprises.*

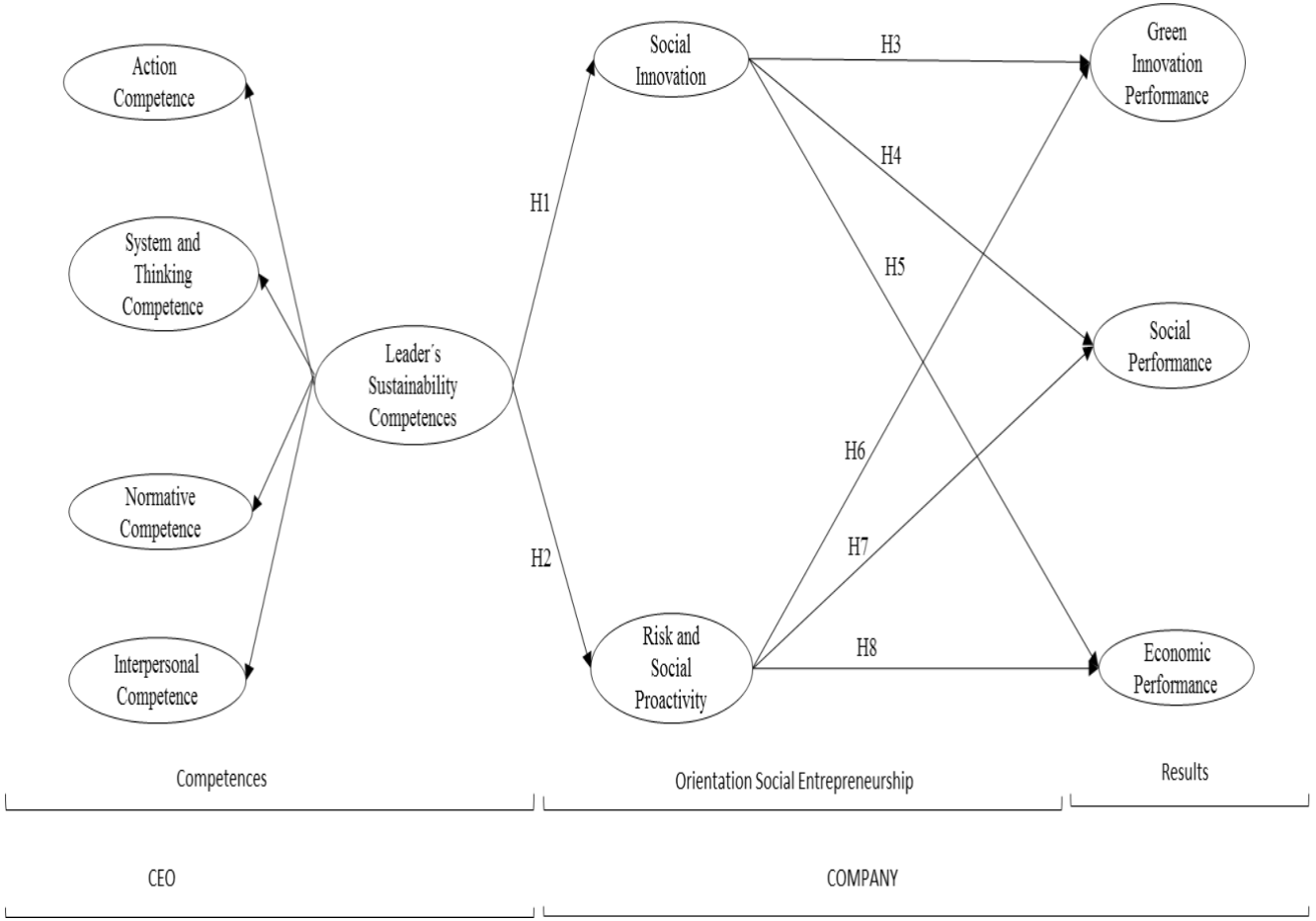
H8: *There is a positive and direct relationship between social risk-taking and social proactiveness, and economic performance in small and medium enterprises.*

H9: *There is a positive and direct relationship between social innovation and risk-taking and social proactivity in small and medium enterprises.*

H10: *There is a positive and direct relationship between economic performance and social performance in small and medium enterprises.*

Figure 4 summarises the relationships and hypothesis of the research ensue:

Figure 4. *Relationship between leaders' sustainable entrepreneurship competences, social entrepreneurial orientation and performance in SMEs*



Source: Authors' own design

3.3 Methodology

3.3.1 Universe of the study, questionnaire and measurement

The target population universe comprises the companies in the tourism sector of Ecuador that are catalogued as small and medium enterprises (SMEs) by the Superintendence of Companies, Securities and Insurance of Ecuador. In total, 23,922 SMEs are registered in the Superintendence's database.

Data used here was collected through a structured questionnaire designed to measure the latent variables of the proposed model and to profile the respondents. Regarding measurement scales for each latent variable, the internal validity requirement was met by means of including items previously used in other investigations (Churchill, 1979). Specifically, the scale of competences on sustainable entrepreneurship has a total of 23 items adapted from the scale of Lans, Blok and Wesselink (2014); while the scale of orientation to social entrepreneurship includes 12 items –5 for social innovation and 7 for social risk-taking and social proactiveness–, adapted from Kraus and co-authors (2017). The 5 items presented in Hormiga, Batista-Canino and Sánchez-Medina (2011) were used to measure economic performance, and 4 items from the scale of Hosseininia and Ramezani (2016) were considered and adapted to measure social performance, plus 8 to measure green innovation performance. Table 35 in the Appendix B contains the list of all items by scale. Finally, the five-point Likert scale was used for the questionnaire responses, where 1 stands for 'totally disagree' and 5 for 'totally agree'. A pre-test confirmed the validity and clarity of the items and revealed the necessary adjustments to be made before the actual questionnaire.

A sample of 302 valid questionnaires was obtained from the print and mail distributions, representing a response rate of 10.33% with a sampling error of ±5.44% for a confidence level of 95% (Z=1.96, p=q=0.5). Regarding the profile of the sample, 52.32% of those surveyed were men and 47.68% were women, 66.89% were in the 36-55 age range and approximately 96% had attended university.

The problem of the Common Method Bias (CMB), that may arise from data collected from a single source (structured survey), was addressed through the Harman single factor test and through CMB post control measures (Podsakoff & Organ, 1986) estimated using the software SPSS (Statistical Package for the Social Sciences). The tests did not detect a single factor that could explain most of the total variance (>50%), which confirmed the non-existence of the common method problem in this research.

3.3 2. Data Analysis

3.3.2.1 Model Validation

The validation process of the measurement scales was performed in two phases. The first stage was an Exploratory Factor Analysis (EFA) built in the statistical program SPSS (version 19.0); the second phase executed a Confirmatory Factor Analysis (CFA) using the software AMOS (Analysis of Moment Structures 25.0).

Cronbach's alpha tested the reliability of the EFA, its coefficient has to be greater than 0.7 for confirmatory studies (Nunnally, 1979); the values of the item-total correlations were also examined, these have to be greater than 0.3 (Nurosis, 1993); items that did not meet these parameters were removed from the scale. In addition, the unidimensionality of the scales was contrasted to determine which observable variables loaded into which latent variables. The exploratory analysis was carried out choosing Maximum Likelihood as the extraction method and Varimax as the rotation type, because it distributes the variance among the different factors (Costello & Osbourne, 2009); the loadings have to be higher than 0.05 and the percentage of the explained variance higher than 50% (Hair et al., 1999).

A first-order Confirmatory Factor Analysis (CFA) was implemented in the second stage of the scale purification process, which consists in dropping some of the observable variables to retain only those that best represent the latent variables. The Maximum Likelihood Method (ML) was used to examine the reliability and validity of the measurement model, the structural model and the global model of each of the scales. To begin with, the non-existence of offending estimates was confirmed; these are negative or non-significant error variances, standardised coefficients that exceed or are very close to 1.0, or unusually large standard errors (Hair et al., 1999: 637).

The global model is evaluated by examining its goodness-of-fit indicators (Jöreskog & Sörbom, 1993; Lévy-Mangin & Varela-Mallou, 2006). There are three types of global fit measures: absolute, incremental and parsimonious (Bollen & Long, 1993). The measures of absolute fit determine the global model's accuracy in predicting the covariance matrix: the chi-square (x^2) and significance level (p) indices are very sensitive to the sample size, and may not be reliable when they are excessively large (Bagozzi & Yi, 1988); the goodness of fit index (GFI) shows an acceptable fit for values close to 0.9 (Jöreskog & Sörbom, 1993) and the Root Mean Square Error of Approximation (RMSEA) represents a reasonable error when values approach 0.08 (Browne & Cudeck, 1993).

On the other side, incremental fit indices compare the analysed model with a base model commonly known as the null (Lévy-Mangin & Varela-Mallou, 2006); the most frequently used measures are the comparative fit index (CFI)–which is recommended over the chi-square (x^2) for samples greater than 100–, the adjusted goodness of fit index (AGFI), the normed fit index (NFI) and the Tucker-Lewis Index (TLI); a value close to 0.9 is recommended for all of them. Finally, the parsimony fit indices relate the goodness of fit of the model with the number of coefficients necessary to achieve said level of fit (Lévy-Mangin & Varela-Mallou, 2006); this research will estimate the normalised chi-square (x^2/df), which has desirable values of around 2, 3 or 5 (Hair et al., 1999; Jöreskog & Söbom, 1993).

To evaluate the measurement model, its reliability is examined again (Lévy-Mangin & Varela-Mallou, 2006) through the coefficients of composite reliability (CR) and the square root of the average variance extracted (AVE) for each construct; their recommended levels are approximately 0.7 for the former (Fornell & Larcker, 1981) and over 0.5 for the latter (Hair et al., 1999). To evaluate the structural model, the significance of all estimators in the model is re-examined using the critical ratio for a regression weight (t-student), which must exceed ±1.96, and the standard regression weight (β), which is usually higher than 0.6 (Jöreskog and Söbom, 1993). If these criteria were not met, the scales were eliminated and the model respecified, until all the indices approached their advisable levels.

3.3.2.2 Structural Equation Modelling (SEM)

Once the scales have been validated, the hypotheses raised in the proposed theoretical model are tested. Recapitulating, this validation process included the specification and identification of the model, the estimation of parameters, the evaluation of the fit of the model to the data and finally, the re-specification of the model when necessary (Lévy-Mangin & Varela-Mallou, 2006). To test the hypotheses, the methodology used Structural Equation Modelling (SEM), also known as Covariance Structure Modelling, while the Maximum Likelihood Estimation Method (ML) was used to estimate the model. The bootstrap technique with 500 samples was applied to solve the problems arising from the absence of normality. The next stage evaluated and adjusted the model, which allowed contrasting the proposed hypotheses and the global interpretation of the model. For the global fit of the model, please refer to the indicators of absolute, incremental and parsimony fit laid out in Section 3.2.1.

To evaluate the fit of the measurement and structural models, firstly, the statistical significance of each load between the indicator and the latent variable was examined (t-student below ±1.96). Next, the reliability of each of the indicators was looked at, as well as the composite reliability of each construct shown by the parameter R2, which indicates the amount of the construct's variance that is explained by the model. In the last stage, the model was respecified when necessary to improve its fit.

3. 4. Results

3.4.1 Measurement model

3.4.1.1 Scale of entrepreneurship competences

Results from the exploratory factor analysis (EFA) show that total item-correlation is above 0.3, which renders item elimination unnecessary, while the reliability measured through Cronbach's alpha is higher than the minimum recommended of 0.7. Considering that the scale corresponds to the research carried out by Lans, Blok and Wsselink (2014) through focus groups, it becomes necessary to analyse its structure (unidimensionality). To this end, the analysis used the Maximum Likelihood extraction method and the Varimax rotation type. Table 14 presents the descriptive findings;

factorial loads lower than 0.4 were eliminated to facilitate interpretation. The names of scale items have been shortened in order to simplify the presentation of results and will be referred to by their mnemonic from here on (see table 35 in the Appendix B for the detailed list of items).

Table 14. *Descriptive findings and exploratory factor analysis (reliability and validity of scales)*

Factors	**Scale items**	**Mean**	**Standard deviation**	**Exploratory Factor Analysis (Rotated Component Matrix or Loadings)**			
				Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
Systems Thinking Competence (Cronbach's α:0.887)	STC1	4,06	1.09	0.646			
	STC2	4,18	0.95	0.730			
	STC3	4,14	0.95	0.780			
	STC4	4,12	0.95	0.789			
	STC5	4,19	0.90	0.697			
	STC6	4,09	1.03	0.599			
	STC7	4,24	0.94	0.571			
Action Competence (Cronbach's α:0.834)	AC1	4.16	0.89		0.794		
	AC2	4.12	0.88		0.717		
	AC3	3.96	1.07		0.758		
	AC4	4.11	1.09		0.552		
	AC5	3.89	1.17		0.785		
Normative Competence (Cronbach's α:0.859)	NC1	4.48	0.70			0.754	
	NC2	4.40	0.87			0.579	
	NC3	4.50	0.73			0.695	
	NC4	4.54	0.72			0.759	
	NC5	4.50	0.75			0.658	
	NC6	4.36	0.88			0.442	
Interpersonal Competence (Cronbach's α: 0.788)	IC1	4.22	0.88				0.556
	IC2	4.01	1.10				0.596
	IC3	4.47	0.89				0.670
	IC4	4.37	0.85				0.646
	IC5	4.45	0.82				0.531
Eigen value				4.332	4.165	3.756	2.427
% Explained variance factor				18.834	18.109	16.330	10.553
% Cumulative variance explained				18.834	36.943	53.825	63.825
Bartlett´s test of sphericity *Kaiser-Meyer Olkin Index*	χ^2(sig.): 4407.383 (0.000) KMO: 0.903 Measure of simple adequacy (MSA): (0.900-0.896) % Variance: 63.825						

[1]The Bartlett´s test of sphericity and the Kaiser-Meyer Olkin Index show if the data obtained through the questionnaire is adequate to perform factor analysis. Their requirements are Bartlett's Sphericity Test $\chi 2$ (sig<0.05), KMO> 0.9 very good, MSA = unacceptable for values below 0.5.

[2]The detailed list of scale items can be found in table 35 in the Appendix B.

[3]Factor 1: Systems-thinking competence; Factor 2: Action competence; Factor 3: Normative competence; Factor 4: Interpersonal competence.

Source: Authors' own data and estimations.

Following Lans, Blok and Wsselink (2014:40), Factor 1 represents the ability to identify and analyse all relevant subsystems, known as Systems-Thinking Competence; Factor 2 stands for the Action Competence, the ability to actively engage in responsible actions to improve the sustainability of socio-ecological systems (Ellis & Weekes, 2008; Mogensen & Schnack, 2010); Factor 3 is the ability to apply and reconcile sustainability values, principles and objectives, or Normative Competence (Wiek et al., 2011); and Factor 4 is the Interpersonal Competence, or the skills to communicate, collaborate and negotiate with empathy and compassion (De Haan, 2006; Wiek et al., 2011). Considering the criterion of a percentage of the cumulative variance explained larger than 50%, the four factors aforementioned can explain the result of 63.825. On the other hand, all the loadings are above the recommended minimum of 0.5. Therefore, the solution is satisfactory.

Continuing with the analysis, the confirmatory factor analysis (CFA) is applied, which informs whether the competences for sustainable entrepreneurship are a multidimensional concept formed by four dimensions or whether each construct should be considered separately. Then, a Rival Model strategy is introduced (Hair et al., 1999). In the first place, a Model 1 consisting of one variable and 23 items is proposed, where all items load in a single factor; secondly, a Model 2 of 1st order with 4 variables and 23 items was proposed to improve the fit of Model 1. Results showed that Model 2 did provide a better fit for the data than Model 1. In order to improve the fit further, Model 2 was then respecified into Model 3, indeed obtaining the results sought after. The four factors turned out to be strongly correlated, which suggested that there may be a second-order factor that could allow explaining the three latent factors; this was the reason to propose Model 4, of 2nd order with 5 variables and 20 items. Goodness-of-fit indices for these models are summarised in table 15.

Table 15. *Fit indices for the models*

Models	χ2	df	χ2(df)	p	GFI	AGFI	TLI	CFI	RMSEA
Model 1 (1 variable, 23 items)	1787.436	230	7.771	0.000	0.598	0.517	0.600	0.636	0.150
Model 2 - 1st order (4 variables, 23 items)	701.365	164	4.277	0.000	0.818	0.766	0.829	0.852	0.104
Model 3 - Respecified model 2 (4 variables, 20 items)	501.365	155	3.236	0.000	0.871	0.826	0.883	0.905	0.086
Model 4 – 2nd order Respecified model 2 (5 variables, 20 items)	482.172	155	3.111	0.000	0.874	0.830	0.890	0.910	0.084

χ2: chi-square: df: degrees of freedom; χ2/df: normalised chi-square; p: significance p-value; GFI: Goodness-of-fit index; AGFI: Adjusted goodness of fit index; TLI: Tucker-Lewis Index; CFI: Comparative fit index; RMSEA: Root mean square error of approximation.
Source: Authors' own data and estimations.

As observed in Table 15, results confirm that the optimal measurement model is a 2nd-order model, in which the competences for sustainable entrepreneurship consist of 4 dimensions. Table 16 shows the results of the scales CFA; items SFTC6, IC1 and IC2 are eliminated because their factor loadings were not significant. The rest of the items have a standard regression weight of β>0.50 and are statistically significant (critical coefficient >±1.96). The model presents good measures of absolute, incremental and parsimony fit. All indicators present values within generally accepted limits.

Table 16. *Reliability and Confirmatory Factor Analysis*

Scales	Scale items	β	CR	AV	Confirmatory Factory Analysis (2nd Order)
					Composite reliability test
Action Competence (Cronbach's α: 0.834)	AC1 AC2 AC3 AC4 AC5	0.724 0.630 0.775 0.691 0.768	0.90	0.59	χ^2(df5) = 482.172 (p=0.000), GFI=0.874, AGFI=0.830, CFI=0.910 RMSEA=0.084, Normalised χ^2 (χ^2/df) = 3.111
Systems Thinking Competence (Cronbach's α: 0.887)	STC1 STC2 STC3 STC4	0.676 0.858 0.913 0.777	0.84	0.51	

	STC5 STC7	0.679 0.614			
Normative Competence (Cronbach's α: 0 .859)	NC1 NC2 NC3 NC4 NC5 NC6	0.484 0.570 0.890 0.911 0.812 0.679	0.92	0.66	
Interpersonal Competence (Cronbach's α: 0.788)	IC3 IC4 IC5	0.667 0.714 0.811	0.82	0.61	

β: standard regression weight; CR: composite reliability; AV: average variance; p<0.001. The detailed list of scale items can be found in table 35 in the Appendix.
Source: Authors' own data and estimations.

Average variance (AV) and composite reliability (CR) regard the reliability of the scale. Table 3 shows that all the scales take values above the recommended values of 0.5 for the AV and 0.7 for the CR (Bagozzi and Yi, 1988; Hair et al., 1999). Content validity was secured by the literature review and the pre-test carried out, while convergent validity was verified in two steps: first, it is verified that $\beta>0.5$ and is statistically significant (t-student $>\pm1.96$); secondly, it is confirmed that AV>0.5. It can then be concluded that there exists convergent validity.

3.4.1.2 Scale of orientation to social entrepreneurship

We follow the same steps as in the previous scale. The EFA shows that the total item-correlation is above 0.3, indicating that item elimination is not necessary, while Cronbach's alpha yields higher than 0.7, which indicates that the scale is reliable. In the unidimensionality analysis, two factors can explain the result of 57.062 in the percentage of cumulative variance explained for Factor 2, which is above 50%, and loadings over 0.5: Factor 1 of social innovation and Factor 2 of social risk-taking and proactivity, as portrayed in Table 17.

Table 17. *Descriptive findings and exploratory factor analysis (reliability and validity of scales)*

Constructs included SEM	Scale items	Mean	Standard deviation	Exploratory Factor Analysis (Loadings)	
				Factor 1	Factor 2
Social Innovation (Cronbach's α: 0.810)	SI1	3.97	0.94	0.823	
	SI2	3.99	0.89	0.806	
	SI3	4.08	0.85	0.776	
	SI4	4.49	0.68	0.555	
	SI5	4.40	0.87	0.550	
Social Risk-taking and Proactivity (Cronbach's α: 0.825)	RPS1	4.16	0.88		0.759
	RPS2	4.12	0.87		0.701
	RPS3	3.95	1.07		0.782
	RPS4	4.21	0.88		0.576
	RPS5	4.02	1.10		0.656
	RPS6	4.10	1.11		0.626
	RPS7	3.87	1.18		0.800
Eigen value				3.793	3.054
% Explained variance factor				31.610	25.452
% Cumulative variance explained				31.610	57.062
Bartlett´s test of sphericity *Kaiser-Meyer Olkin Index*	χ^2(sig.): 1933.527 (.000) KMO: 0.845 Measure of simple adequacy: (0.804-0.888) % Variance: 57.062				

[1] The Bartlett´s test of sphericity and the Kaiser-Meyer Olkin Index show if the data obtained through the questionnaire is adequate to perform factor analysis. Their requirements are Bartlett's Sphericity Test χ2 (sig<0.05), KMO> 0.8 good, MSA = unacceptable for values below 0.5.
[2] The detailed list of scale items can be found in table 35 in the Appendix.
[3] Factor 1: Social innovation; Factor 2: Social risk-taking and social proactiveness.
Source: Authors' own data and estimations.

Then, a CFA is applied to confirm the unidimensionality of the constructs. Table 18 shows the goodness-of-fit indices for the proposed models. The respecified first-order model (Model 3) is the one with the best fit to the data. Therefore, both constructs are considered separately.

Table 18. *Fit indices for the models*

Models	χ2	df	χ2(df)	p	GFI	AGFI	TLI	CFI	REMSEA
Model 1 (1 variable, 12 items)	675.352	54	12.507	0.000	0.588	0.495	0.600	0.673	0.196
Model 2 – 1st order (2 variables, 12 items)	373.637	53	7.050	0.000	0.737	0.558	0.790	0.831	0.142
Model 3 - Respecified model 2 (2 variables, 10 items)	79.697	30	2.657	0.000	0.951	0.910	0.956	0.971	0.074

Model 4 - 2nd order, Respecified model 2 (3 variables, 10 items)	146.864	31	4.738	0.000	0.909	0.839	0.900	0.931	0.111

χ2: chi-square: df: degrees of freedom; χ2/df: normalised chi-square; p: significance p-value; GFI: Goodness-of-fit index; AGFI: Adjusted goodness of fit index; TLI: Tucker-Lewis Index; CFI: Comparative fit index; RMSEA: Root mean square error of approximation.
Source: Authors' own data and estimations.

Table 19 shows the results of the CFA; items SI4 and SI5 are eliminated since their factor loads were not significant. The rest of the indicators attest β>0.50 and significance. The model presents good measures of absolute, incremental and parsimony fit. All indicators present values within generally accepted limits.

Table 19. *Reliability and Confirmatory Factor Analysis*

Scales [a]	**Scale items**	**β**	**CR**	**AV**	**Confirmatory Factory Analysis (1st order)**
					Composite reliability test
Social Innovation (Cronbach's α: 0.810)	SI1 SI2 SI3	0.910 0.936 0.725	0.92	0.79	χ^2(df5) = 79.697 (p=.000), GFI= 0.951, AGFI= 0.910, CFI= 0.956, RMSEA= 0.074, Normalised χ^2 (χ^2/df) =2.657
Social Risk-taking and Social Proactivity (Cronbach's α: 0.825)	RPS1 RPS2 RPS3 RPS4 RPS5 RPS6 RPS7	0.700 0.622 0.772 0.594 0.729 0.696 0.772	0.87	0.49	

β: standard regression weight; CR: composite reliability; AV: average variance; p<0.001. The detailed list of scale items can be found in Table 35 in the Appendix. Source: Authors' own data and estimations.

The reliability of the scale is analysed once more: AV>0.5 and CR>0.7. The validity of the content, as in the previous scale, was verified by the literature review and the pre-test carried out. Observing that β>0.5, t-student>1.96 (statistically significant) and AV>0.5, convergent validity is confirmed.

3.4.1.3 Scale of results

The EFA reveals that it is not necessary to eliminate any item, total item-correlation is larger than 0.3, while the Cronbach's alpha is greater than 0.7, indicating that the scales are reliable. From the unidimensionality analysis of the scale of results, three factors can explain the result of 61,038>50%; in all

scales, the loadings are greater than 0.5. The factors identified are Factor 1, of economic performance, which refers to profits; Factor 2, of green innovation performance, which has to do with the environmental management and ecological practices that help companies achieve greater efficiency, establish and strengthen their basic competences and improve their green image (Albort-Morant et al., 2016)); and Factor 3, of social performance, understood as the effective translation of the social objectives of an institution into practice. *(see table 20).*

Table 20. *Descriptive findings and exploratory factor analysis (reliability and validity of scales)*

Constructs included in SEM	**Scale items**	**Mean**	**Standard deviation**	**Exploratory Factor Analysis (Loadings)**		
				Factor 1	**Factor 2**	**Factor 3**
Economic Performance (Cronbach's α: 0.750)	EP1	4.81	0.84	0.580		
	EP2	4.81	0.84	0.767		
	EP3	4.61	1.18	0.658		
	EP4	4.78	0.89	0.773		
	EP5	4.86	0.71	0.675		
Green Innovation Performance (Cronbach's α: 0.887)	GP1	4.13	0.90		0.903	
	GP2	4.16	0.88		0.912	
	GP3	4.11	0.87		0.771	
	GP4	3.95	1.07		0.725	
	GP5	4.21	0.88		0.542	
	GP6	4.02	1.10		0.562	
	GP7	4.10	1.11		0.561	
	GP8	3.87	1.18		0.709	
Social Performance (Cronbach's α: 0.812)	SP1	3.99	1.08			0.747
	SP2	3.96	1.11			0.834
	SP3	4.09	1.00			0.869
	SP4	4.09	1.00			0.812
Eigen value				4.405	25.909	25.909
% Explained variance factor				2.990	17.591	43.500
% Cumulative explained variance				2.981	17.538	61.038
Bartlett´s test of sphericity Kaiser-Meyer Olkin Index	χ^2(sig.): 3182.228 (0.000) KMO: 0.848 Measure of simple adequacy: (0.927-0.866) % Variance: 61.038					

[1] The Bartlett´s test of sphericity and the Kaiser-Meyer Olkin Index show if the data obtained through the questionnaire is adequate to perform factor analysis. Their requirements are Bartlett's Sphericity Test χ2 (sig<0.05), KMO> 0.7 median and KMO> 0.8 good, MSA = unacceptable for values below 0.5
[2] The detailed list of scale items can be found in Table 35 in the Appendix.
[3] Factor 1: Economic performance; Factor 2: Green innovation performance; Factor 3: Social performance.
Source: Authors' own data and estimations.

The next step is the application of the CFA to confirm unidimensionality. For this purpose, four models are proposed, their composition can be seen in Table 21. Comparing the goodness-of-fit indices of the proposed models, Model 3 emerges as the best model; this is, model 2 respecified with 3 variables and 15 items. The items GP5, GP6 and GP7 were eliminated as the factor loadings were not significant. The rest of the indicators show $\beta>0.50$ and critical coefficient$>\pm1.96$ (significant). The model presents good measures of absolute, incremental and parsimony fit, all indicators present values within generally accepted limits. The correlations were low in Model 3, so it was possible that the three factors were not loading into a single factor called result (Model 4 of 2nd order); after verification, it was confirmed that this was the case. The constructs are worked separately.

Table 21. *Fit indices for the models*

Models	$\chi2$	df	$\chi2$(df)	P	GFI	AGFI	TLI	CFI	REMSEA
Model 1 (1 variable, 17 items)	1542.597	119	12.963	0.000	0.508	0.367	0.478	0.543	0.199
Model 2 - 1st order (3 variables, 17 items)	648.968	116	5.595	0.000	0.761	0.6384	0.799	0.829	0.124
Model 3 - Respecified model 2 (3 variables, 15 items)	186.829	73	2.559	0.000	0.918	0.883	0.945	0.956	0.072
Model 4 - 2nd order, Respecified model 2 (4 variables, 15 items)	191.983	72	2.666	0.000	0.915	0.876	0.941	0.953	0.074

$\chi2$: chi-square: df: degrees of freedom; $\chi2$/df: normalised chi-square; p: significance p-value; GFI: Goodness-of-fit index; AGFI: Adjusted goodness of fit index; TLI: Tucker-Lewis Index; CFI: Comparative fit index; RMSEA: Root mean square error of approximation.
Source: Authors' own data and estimations.

The reliability of the scale is analysed again. Average variance is over 0.5 and composite reliability over 0.7, indicating good reliability. Content validity was verified by the literature review and the pre-test carried out. Observing that $\beta>0.5$, t-student$>\pm1.96$, and AV>0.5, convergent validity is confirmed, as shown in Table 22.

Table 22. *Reliability and Confirmatory Factor Analysis*

Scales	Scale Items	β	CR	AV	Confirmatory Factory Analysis Composite reliability test
Economic Performance (EP) (Cronbach's α: 0.750)	EP1 EP2 EP3 EP4 EP5	0.488 0.696 0.524 0.804 0.634	0.82	0.48	χ^2(df5) = 186.829 (p=0.000), GFI=9.918, AGFI=.883, CFI=.653, RMSEA=.072, Normalised χ^2 (χ^2/df) = 2.559
Green Innovation Performance (GIP) (Cronbach's α: 0.887)	GP1 GP2 GP3 GP4 GP8	0.979 0.998 0.708 0.598 0.560	0.87	0.60	
Social Performance (SP) (Cronbach's α: 0.812)	SP1 SP2 SP3 SP4	0.743 0.841 0.834 0.779	0.87	0.62	

β: standard regression weight; CR: composite reliability; AV: average variance; p<0.001. The detailed list of scale items can be found in Table 35 in the Appendix. Source: Authors' own data and estimations.

To finalise the analysis of results, the discriminant validity of each scale was examined in three steps: (1) confirm that the Cronbach's alpha of each scale is higher than any of the correlations between that scale and the other scales; (2) establish that inter-scale correlations are less than the square root of the average variance extracted (Fornell and Larcker, 1981, Chin, 1998), (3) corroborate that none of the confidence intervals contains the unit (Bagozzi and Yi, 1988). All the results hold up to these conditions, hence verifying the discriminant validity of the scales. Table 23 illustrates this analysis.

Table 23. *Correlation matrix and discriminant validity*

Scales	Square Root AVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Action Competence (1)	0.71	**0.834**[a]	0.530[b]	0.479	0.340	0.262	0.380	0.339	0.245	0.169
Systems and Foresighted Thinking Competence (2)	0.76		**0,887**	0.674	0.556	0.156	0.306	0.238	0.258	0.287
Normative Competence (3)	0.81			**0.859**	0.674	0.219	0.291	0.222	0.211	0.218
Interpersonal Competence (4)	0.78				**0.788**	0.159	0.260	0.188	0.170	0.232
Social Innovation (5)	0.88					**0.810**	0.568 0.096[c] (0.224-0.396)	0.523	0.300	0.277
Social Risk-taking and Social Proactivity (6)	0.70						**0.825**	0.916	0.477	0.365

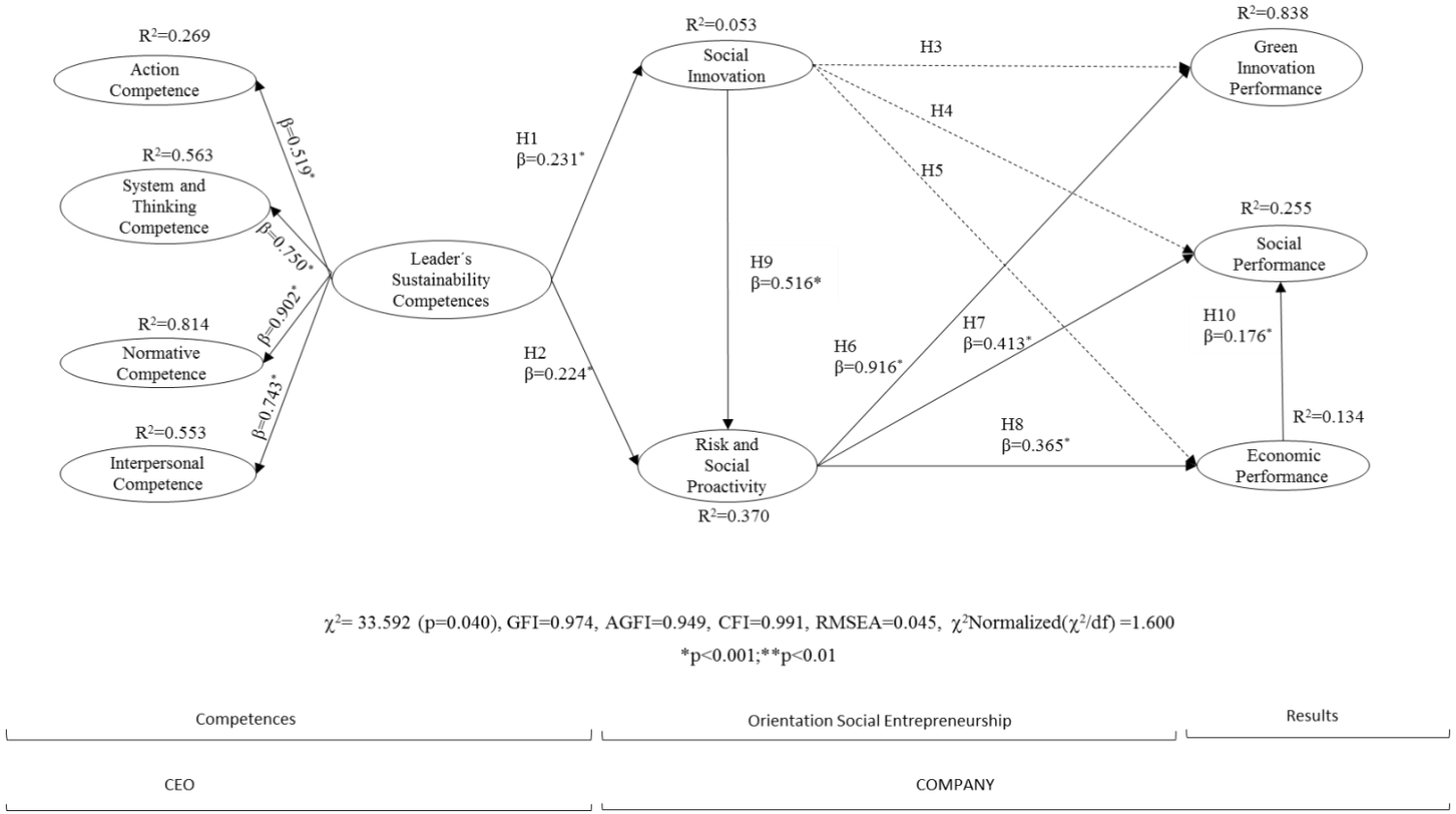
Green Innovation Performance (7)	0.77							**0.887**	0.409 0.060 (0.150-0.342)	0.214 0.024 (0.108-0.204)
Social Performance (8)	0.78								**0.812**	0.327 0.014 (0.064-0.176)
Economic Performance (9)	0.69									**0.750**

[a] *Shown in bold on the main diagonal are the Cronbach´s alphas for each scale, which should be higher than the correlation between that scale and the other scales.*
[b] *Inter-scale correlation: should be less than the square root of the average variance extracted.*
[c] *the squared correlation between pairs of factors should be less than the AVE, and the confidence interval for the estimated correlations should be twice the standard error; it does not include the value of 1.*
All significant at p-value<0.01…. Source: Authors' own data and estimations.

3.4.1.4 Structural Models

The hypotheses of the research were finally tested; the results are summarised visually in Figure 5. The structural model presents good fit measures, all the indices are above the minimum values recommended by Hair, Anderson, Tatham and Black (1999): normalised chi-square (χ^2/df=1.503), goodness of fit index (GFI=0.974), adjusted goodness of fit index (AGFI=0.932), comparative fit index (CFI=0.949), and root mean square error of approximation (RMSEA=0.041). The estimates of the standardised coefficients (β) –which show the weights of the direct effects of one variable on another and the direction (hypothesis)– are all significant at the probability levels $p<0.001$ and $p<0.01$, except for the proposed relationships between social innovation and green innovation performance (H3), social performance (H4) and economic performance (H5); and between social risk-taking and proactivity and innovation performance (H10), where the betas were not significant. From the coefficient R^2 –which indicates the amount of variance of the constructs that is explained by the model–, it is observed that the model explains 83.8% of the green innovation performance variable; however, it explains only 25.5% of social performance and 13.4% of economic performance.

Figure 5. *Structural Model*



Source: Authors' own data and estimations.

Table 24. *Hypotheses tested*

Construct	Hypotheses
Social Innovation ← Leader´s sustainability competences	H1 corroborated
Risk and Social Proactivity ← Leader´s sustainability competences	H2 corroborated
Green Innovation Performance ← Social Innovation	H3 not corroborated
Social Performance ← Social Innovation	H4 not corroborated
Economic Performance ← Social Innovation	H5 not corroborated
Green Innovation Performance ← Social Risk-taking and Proactivity	H6 corroborated
Social performance ← Social Risk-taking and Proactivity	H7 corroborated
Economic Performance ← Social Risk-taking and Proactivity	H8 corroborated
Social Risk-taking and Proactivity ← Social Innovation	H9 corroborated
Social Performance ← Economic Performance	H10 corroborated

Source: Authors' own data

3.5 Discussion

The R^2 obtained in the Structural Model (Figure 5) shows a strong explanatory capacity of the theoretical model in the green innovation performance construct (R^2=0.838); on the contrary, the explanatory capacity for economic and social performance was rather weak (0.134 and 0.255 respectively). Regarding the competences for sustainable entrepreneurship, the research concluded that these are a four-dimensioned variable, with three out of the four dimensions having a strong explanatory capacity: systems and foresighted thinking competence (R^2=0.563), normative competence (0.814) and interpersonal competence (0.553). In turn, the action competence did not excel at explaining the results of the model (0.269).

A direct –though weak– influence was observed from the leader´s sustainability competences to social innovation (H1) (β=0.231, $p<0.001$) and to social risk propensity and proactivity (H2) (β=0.224, $p<0.001$). Other studies have found evidence in favour of the relationship between entrepreneurship skills (entrepreneurship education) and the entrepreneurial orientation (EO) dimensions (Wickramaratne et al., 2014; Marques et al., 2018), although not specifically in the context of this research (social entrepreneurial orientation).

Taking into account the standardized coefficients (β) and their significance (p) at the 0.001 and 0.01 levels, all the hypotheses regarding performance constructs are substantiated, with the exception of H3, H4 and H5. In other words, social innovation does not directly influence green innovation

performance (H3), economic performance (H4) or social performance (H5); rather, it does so indirectly through social risk-taking and social proactivity. Effectively, social risk propensity and social proactivity have a direct influence on green innovation performance (H6) (β=0.916, $p<0.001$), social performance (H7) (β=0.413, $p<0.001$) and economic performance (H8) (β=0.365, $p<0.001$). Hence, this is the only construct that directly influences the outcomes of SMEs, which leads to pondering an additional hypothesis (H9): that social innovation has only an indirect influence through the social risk-taking and social proactivity construct (β=0.516, $p<0.001$).

Following this line of thought, it is worth noting the appearance of two causal relationships that were not initially raised in this research, but that find support in the study of Altinay, Madanoglu, Daniele and Lashley (2012) and in the one from Aldás-Manzano, Lassala-Navarré, Ruiz-Maféand Sanz-Blas (2009). The first of these two causal relationships are picked up by hypothesis nine (H9), which relates social innovation with social risk-taking and social proactiveness and shows that the former has moderate influence in the latter in the results (β=0.516, $p<0.001$). H9 is in line with findings from Altinay and co-authors (2012:492), who support the idea that innovativeness has a relationship with social risk-taking, affirming that "innovation itself includes a risk element due to the uncertainty surrounding the innovation activity".

The second causal relationship is captured by hypothesis ten (H10), which relates economic performance with social performance and exhibit a very weak influence in the results (β=0.176, $p<0.001$). This reinforces evidence collected in the research of McGuire, Sundgren and Schneeweis (1988), and in Waddock and Graves (1997), in the direction that a better economic performance results in a better social performance.

The results of this research also agree with those found in other studies. For instance, Alegre and Chiva (2013) discovered a relationship between entrepreneurial orientation and innovation performance and firm performance. Arshad, Rasli, Arshad and Zain (2014) gathered empirical evidence for the relationship between social innovation, social risk propensity and proactivity, and economic performance. In this sense, there is a wealth of studies that show positive outcomes for the relationship (Lee et al., 2001; Wiklund & Shepherd, 2005; Jantunen et al., 2005; Chow, 2006; Coulthard, 2007; Madsen, 2007; Keh et al., 2007; among others).

3.6 Conclusions

This research set out to analyse the structure of relationships between a leader's sustainability competences, the company's social entrepreneurial orientation and the firm's performance in small and medium enterprises. The following questions were then posed: How do the leader's sustainable competencies influence SMEs social entrepreneurial orientation? Does social entrepreneurial orientation have a positive influence on the performance of small and medium enterprises?

The work here developed allowed observing that leaders should be trained in specific key competencies for the company to have a sustainable and social orientation, that is, to be sensitive to environmental and social practices. These skills can be grouped in four dimensions: systems-thinking and foresighted thinking competences; normative competences; interpersonal competences; and action competences. Therefore, leaders must be trained with the objective of acquiring capacities and competences in the analysis of integrated systems, in applying and reconciling the values, principles and goals of sustainability with internal and external stakeholders, and in promoting teamwork and alliances; as well as with the aim of acquiring the necessary competences to expand their capacity to actively engage in responsible actions to improve sustainability. Nevertheless, from the predictive capacity of the dimensions of social entrepreneurial orientation, it becomes evident that the leader's sustainability competences will not be the only relevant skills.

Through the social entrepreneurial orientation, the leader's acquired competencies have an influence on the company's performance, especially in green innovation performance and, to a lesser extent, in economic and social performance –given that the predictive capacity of these factors turned out to be low. All of this shows that the competences for sustainable entrepreneurship, as a prior for social orientation entrepreneurship, affect green innovation performance in a determinant manner; this is, green products or green processes, innovation in technologies for energy saving, pollution prevention, waste recycling, green product designing, and corporate environmental management (Chen et al., 2006). It was also observed that the influence occurs mainly through the social risk propensity and proactivity

dimension, and not so much through social innovation –the company's tendency to promote new ideas and processes with social impact.

In sum, the leaders acquired competences are indispensable to generate a strong social proactivity in the company, as these will allow anticipating future social demands in time and identifying market needs in advance. In the same line, these competences are essential to favour leaders' social risk-taking, as well as their ability to make decisions under uncertain situations where social impact is free to have a greater weight than the pursuit of economic benefits for the company.

CHAPTER 4

Sustainable Practices in Small and Medium-Sized Enterprises in Ecuador

4.1 Introduction

Concern and criticism towards environmental degradation and social injustice are not new, because they involve a large proportion of business activity (Pigou, 1932). Since business activities have been considered one of the main causes of environmental degradation, it has become important to analyse the role played by employers and their organizations in the sustainability of territories (Hockerts & Wüstenhagen, 2010; O'Neill et al., 2009; Parrish, 2010; Tilley & Young, 2009). Thus, in the last decade, a concern to understand what the real impact of companies on society is has grown exponentially, with some authors even talking about a paradigm shift in the economy. Traditional understanding of value creation simply in terms of economic gains has increased to include non-economic gains (Dorfman, 1993). Following this line, a new discipline called "sustainable business initiative" has been developed, that seeks to link the effort of entrepreneurship to sustainability management (Dean & McMullen, 2007).

The need for a global approach in social, ecological and economic aspects has catalysed the trend towards a paradigm shift in the business world. In addition, the search for viable solutions to develop organizations, encourages their managers to be more open to social and environmental problems. There is no doubt that they have begun to pay more attention to community growth, human rights and labour force conditions (Schaltegger & Wagner, 2011; Muñoz, 2013), thus emerging a change towards sustainability.

Sustainability recognises that companies are fully aware of the impact of their behaviour on the material and immaterial situation of their direct and indirect environment (Anggadwita & Mustafid, 2014). It deals not only with the exploration of opportunities and threats in the market, but also with analysing consciously the social, environmental and economic impact that the developed business activity is having on the territory. It is also important to bear in mind that sustainability contributes greatly to the economic and non-economic development of a country because it creates employment sources, improves products and processes, establishes new companies, and it changes people´s lives (Cohen & Winn, 2007). Castrillon and Mares (Szopik-Depczyn´ska, 2017, p.63) consider that there are seven variables that intervene in the sustainability of organizations: strategy on climate and eco-efficiency, Corporate Social Responsibility, Corporate Governance, Code of

Ethics, Stakeholders, Reputation, Environmental responsibility and Management system.

In recent years, sustainability has aroused the interest of numerous researchers, with numerous conceptual and empirical studies emerging. The scope of this discipline can be observed through the studies of (Kajikawa et al., 2008; Castrillón & Mares, 2014; Bettencourt & Kaur, 2011; Schoolman et al., 2012; Buter & Van Raan, 2013; White, 2013), among others. In these investigations, bibliometric, bibliographic and citation analysis techniques on the field of sustainability knowledge are combined, enabling to see a complete in-depth analysis of the area of study.

The literature on sustainable business practices has focused on large companies, such as multinationals, whose individual impacts are significant (Kajikawa et al., 2014; Arruda et al., 2013; Chang et al., 2015; Garcia-Torres et al., 2017). However, although small and medium-sized enterprises have relatively little individual importance, associatively they can have great impacts on the regions where they are operating. This characteristic is relevant in certain regions or countries such as Latin America, where 95% of its business fabric is SMEs and specifically, in Ecuador, 99%; so, it is very important to take into account the strategic role of these types of companies in the economy, and the economic, social and environmental impact of their activities taken together.

Taking into account the above, the aim of this research is to find out if small and medium-sized enterprises in Ecuador adopt sustainable practices individually, as well as see if there are significant differences in adoption based on size, sector and age. With this purpose, a survey was carried out with 188 managers of SMEs of three provinces included in the Planning Zone 7.

This work is structured into 5 sections. After the introduction, the theoretical framework contextualizes the concept of sustainability in SMEs. In section 3, the methodology followed in the research work is presented and in the next section, the results obtained are discussed. Finally, in the last section, the most relevant conclusions are presented, as well as the limitations of research and future lines of research.

4.2 Theoretical Framework

Sustainable development was initially linked to the environmental dimension, and the first definition that appears on sustainability with an environmental approach appears in the Brundtland Commission (Batista & Francisco, 2018), that was adopted by the United Nations General Assembly in 1987, which proposes practical means to reverse environmental problems. This report defines what is understood by sustainable development "it is development that meets current needs without compromising the ability of future generations to meet their own needs". However, "sustainability" is a complex and multidimensional concept (Brundtland Commission, 1987), with multiple interpretations.

John Elkington introduced the concept of "Triple Bottom Line", in which he explained the idea that for a company to be sustainable, it has to ensure a triple aim: being economically viable, being socially beneficial and being environmentally responsible, everything focused on a gain-gain-gain situation for business, society and the environment (Hart & Milstein, 2003). In this sense, this author considered it important to move from environmental management to sustainable management, so that companies manage environmental, social and economic aspects in an integrated manner, enabling organizations to improve their performance in these three areas and this becomes a factor of competitiveness.

Many definitions that consider different aspects or approaches to the field of sustainability have emerged in recent years. However, almost all the bibliographic sources identified in the systematic review carried out refer to the concept of "Triple Bottom Line" as the underlying principle of sustainability (Elkington, 1994; Castrillon & Mares, 2014; Szopik-Depczyn´ska, 2017), when reviewing the concepts contributed by (Hart & Milstein, 2013; Brundtland Commission, 2018; Freeman & Evan, 1990; Garbett, 1988; Gregory, 1991; Turban & Cable, 2003; Beatty & Ritter, 1986; Fonbrum & Sanley, 1990; Preston & O'Banon, 1997; Margolis & Walsh, 2003; Allouche & Laroche, 2005; Bradley & Parrish, 2005), propose that the concept of sustainability "defines companies that create value at the level of strategies and practices to move towards a more sustainable world, with a formula of profitability on a human scale, that through the connection with

all groups of interest (Stakeholders) and the natural environment, face the challenge of minimizing waste from operations and reorienting their portfolio of competences towards sustainable and competitive technologies" (Szopik-Depczyn´ska, 2017, p.60).

Sustainability incorporates the notions of economy and governance, the environment and society (Parrish, 2005), so it is not surprising that the creation of value from a company perspective shows overlaps with the concepts of a conventional, social and environmental company. Although each of the concepts emphasize one or two aspects of sustainable development, that requires a holistic perspective in the creation of business value (Azapagic, 2000). As a result, sustainable enterprises need to balance the competition aims of creation of economic, social and ecological value (Cohen, 2008). This leads to an increase in the complexity of sustainability compared to other forms of entrepreneurship, which could be one-dimensional or two-dimensional in nature (O`Neill, 2009).

In short, there are three sustainability dimensions. The economic dimension, that refers to the economic viability of the company, which is necessary because it generates benefits, employment and means that contribute to social and environmental welfare in general. The social dimension comprises the responsibility of companies with the environment in which they operate and combines the interests of employees and society in general, with the aim of doing business following an ethical approach. And the environmental dimension refers to the impacts of companies on natural systems (Parrish, 2005).

Nowadays, sustainability is considered one of the key factors of success in the long-term business strategy, since for a company to be profitable today it must be able to manage the economic, social and environmental impact on the environment (Schlange, 2006). On the other hand, integrating sustainability into companies provides many benefits; "better reputation, transparency and good governance, reaching better economic results, which are more appealing to work, less vulnerable to crises and more attractive for responsible investors; they achieve greater quality in their commercial offer, in labour quality, ethical, environmental, social and innovation responsibility and manage to reconcile economic development with the care of the social

environment and the protection of the environment" (Szopik-Depczyn´ska, 2017, p.60).

There are several academic studies developed in the field of Business Sustainability (Kuosmanen, 2009; Rodriguez, 2002). In the literature it has been argued that this type of policies aimed at achieving corporate sustainability led to favourable results for the company (Prahalad, 2005) as they contribute to improving financial results (Kanji, 2010; Fülöp, 2000; Orlitzky, 2005; Pivato, 2008) and favour the improvement of reputation, image or brand value (Chen, 2008; Stanaland, 2011; Madueño, 2016). On the other hand, according to (Madueño and Groza, 2011, p.32) it is a reflection of the expectations of the clients (Bhattacharya, 2004; Bruch, 2005), employees (Brammer, 2007; Preuss, 2010; Rahbek, 2009; Mahoney, 2005), investors (Mark-Herbert, 2007), managers (Comunidad Andina, 2009) and other interested parties (Senplades, 2010).

4.3 Methodology

4.3.1 Universe Study, Questionnaire and Measurement

In Ecuador, with the desire to initiate deconcentrating and decentralization processes, the Government published by decree the Official Gazette No. 205 of June 2, 2010, that the country has nine planning zones composed of 140 districts and 1134 circuits. Regarding the business sector, as we have already mentioned, 99% are small and medium-sized enterprises, which according to their turnover, social capital, number of workers, production level or assets, have characteristics of this type of economic entity. According to the Superintendency of Companies of Ecuador as of November 2016, there are 233,809 active SMEs in the nine planning zones in the country, and 25% are microenterprises, 31% are small enterprises and 44% are medium-sized enterprises. According to the Resolution of the Andean Community-CAN [61] the company can be classified according to the number of workers: micro-enterprise (from 1 to 9 workers), small company (from 10 to 49), medium (from 50 to 199), large company (200 or more workers).

In this context, due to the impossibility of surveying all companies, it was decided to conduct research in 3 provinces belonging to zone 7 (Zamora, Loja and El Oro) with administrative headquarters in the city of Loja. The decision

to use zone 7 as a pilot project is based on the fact that this area "privileges the sustainable use of natural heritage and biodiversity, innovates and develops technologies and biotechnologies, and generates bio-knowledge based on having consolidated a synergy between conservation, research and bio industrialization " (Podsakoff, 1986, p.75). The target population is made up of 9,843 companies, 64% established in el Oro, 30% in Loja and 6% in Zamora.

The questionnaire was designed using the indicators of the Ethos Institute as a reference, which is a non-governmental organization of Brazil founded in 1998, with the aim of mobilizing, sensitizing and supporting companies in the incorporation of sustainability and corporate social responsibility in their business strategies. This management tool is free of charge and can be used by all companies, regardless of their size and sector of activity. In view of our investigation, the questionnaire was structured into two different parts; general data of the company that enables to define the profile and sustainability indicators that are to be measured. Specifically, 13 indicators of economic sustainability, 21 of social sustainability and 6 of environmental sustainability were defined. We used a 7-point Likert scale that goes from 1, totally disagree to 7, totally agree. We considered sustainability practices that correspond to the reality of Ecuador's SME.

The Ethos Institute (Prajogo, 2014) indicators are designed to be a means of assisting companies to implement socially responsible management and have been jointly developed by Latin American organization leaders in Corporate Social Responsibility (CSR) and the Ethos Institute within the Latin American Program of Corporate Social Responsibility (PLARSE). These indicators introduce a new approach to the management of companies, integrating CSR principles and behaviour, based on a concept of sustainable and responsible business. Their purpose is to evaluate how much of sustainability and social responsibility has been incorporated into businesses. The Ethos Institute groups them in the areas of human rights, labour standards and environmental protection and the fight against corruption.

Prior to sending the final questionnaires, pre-sampling with chief executives of the enterprises and experts in sustainability was done. 188 valid questionnaires were obtained, so the sample consisted of 30 newly created

companies (less than 42 months) and 158 consolidated companies (4 years or more). The response rate was approximately 2%, representing a sampling error of ± 7.08% for a confidence level of 95% (*Z = 1.96, p=q=0.5*). The Harman single-factor test was used as a common method bias post control measure (Guo, 2016; Nunnally, 1979). The existence of a common variance or bias of the method was examined, and the test detected no single factor that could explain most of the total variance, which suggests that bias is very unlikely. *See Appendix C.*

4.3.2 Analysis of Data

The data analysis is done with the statistical program SPSS 19.0 (Statistical Package for the Social Sciences). In the first place, with the aim of analysing the implementation level of sustainability practices, a descriptive analysis was carried out (% of companies with implemented practices, mean and standard deviation). In order to determine the implementation level of sustainability practices, the scale is converted to a percentage, although both scales are equivalent; 7 represents 100% implantation and 1, 0% implantation.

Secondly, the scale of measurement (reliability and validity) was validated. For the internal consistency analysis, the calculation of Pearson's total-item correlation coefficients was used (the correlation between the items should exceed 0.3 according to (Bagozzi, 1994) and Cronbach's alpha, where alpha must be greater than 0.7 (Bagozzi, 1994) or 0.6 for exploratory studies (Costello, 2005). The items ES5, SS15, SS17 were eliminated because they showed values below the recommended minimum of 0.3, which allowed to improve Cronbach's alpha. After eliminating the scales, Cronbach's Alpha coefficient reaches higher values than 0.7, which is the minimum required.

An exploratory factor analysis (EFA) with varimax rotation was carried out to identify the dimensionality of the scales (Miquel, 1997), through the percentage of variance explained and the factor load of each indicator. This process allowed to group the items of each of the concepts and to know their structure. Prior to this analysis, it was found that the data are suitable for the application of this technique: the correlation matrix was examined, Bartlett's

test of sphericity (estimate of the $\chi 2$ test) and Kaiser-Meyer-Oklin index and Measure of simple adequacy (MSA) were done.

Finally, the T-Student test was applied for two independent samples in order to check if there are significant differences. This test allows comparing the means of two groups of variables, one dependent with another independent dichotomous as is the size (microenterprise, from 1 to 9 workers; small company, from 10 to 49; medium, from 50 to 199), el sector (manufacturing sector and service sector) and the age of the companies (consolidated companies, 4 years or more; newly created companies, less than 42 months). So, if the significance of T-Student is <0.05, the hypothesis of equality of means is rejected, so there are significant differences, and it can be affirmed that there is an association between the dependent variable and the independent variable. Since the groups are of different sizes, it is necessary to analyse homoscedasticity or equality of variances through the Levene test. It is verified that the two sample populations have the same variance. This test allows us to test the hypothesis that the population variances are equal, so that if the level of significance is less than 0.05, the equality hypothesis is rejected, and the Kruskal-Wallis test is applied (non-parametric test).

4.4 Results

Descriptive analysis enables to observe that economic sustainability practices show a significant implementation level in the companies of the sample in general terms of 79.71%. Table 25 shows the percentage of companies with a high and weak implementation of the practices. It is observed that the practice implemented in most companies is compliance with legal labour obligations in 89.4% of the companies, together with customer service and quality care of their products (80.9). The number of companies that do not have a channel to meet customers and consumers´ demands (38.8%) is very high.

Table 25. *Economic Sustainability Practices*

Economic Sustainability (ES) Mean= 5.58; % implementation= 79.71%*	% companies with high implementation (higher than 85%)	% companies with weak implementation (lower than 57%)
(ES1) The number of clients of the company has increased.	49.4	25.6
(ES2) The company increased in the average customer purchase.	47.9	34.6
(ES3) It is profitable and well-managed.	59.0	18.6
(ES4) The company complies with all legal labour obligations regarding the payment of salaries and benefits by law.	89.4	4.2
(ES5) The company employees have decreased.	31.4	60.2
(ES6) The company has local labour.	71.8	16.5
(ES7) The company employees are well paid compared to the competition.	51.1	30.8
(ES8) There is provision for employee benefits.	55.3	34.1
(ES9) The company reflects a positive attitude towards economic factors.	55.8	26.1
(ES10) It is recognized for the service given to its customers and caring for the quality of its products and services.	80.9	7.4
(ES11) The company gives preference to the purchase of supplies and/or services from suppliers that are socially responsible.	63.3	22.3
(ES12) The company has a channel to meet customer/consumer demands.	48.4	38.8
(ES13) The company has a financial accounting balance at the final results date.	76.6	13.8

** Average score between 6-7, strongly implemented practices (higher than 85%); between 5-6 with a significant implementation (between 70 and 85%); between 4-5 moderate implementation (between 57-70%), between 1-4 weak implementation (less than 57%). Source: Authors' own data*

Regarding the implementation of social sustainability practices, it is observed that the implementation level is 82.28%. The number of companies that have implemented the practices in this case, is also very high; more than 85% of the companies comply with clear ethical criteria, which allows them to convey an image of a responsible and reliable company (82.9%) (Table 26).

Table 26. *Social Sustainability Practices*

Social Sustainability (SS) Mean= 5.76; % implementation= 82.28%*	**%** companies with high implementation (higher than 85%)	**%** companies with weak implementation (lower than 57%)
(SS1) The company has community support.	60.7	19.1
(SS2) The company participates with the community.	62.2	20.2
(SS3) The company promotes work and family life reconciliation among its employees.	68.1	17
(SS4) It is concerned about its employees´ professional and personal development and equality of opportunities.	61.1	17.1
(SS5) The company has a process of dialogue and participation of the internal and external public in defining the issues that must be addressed in its vision of sustainability.	54.3	23.4
(SS6) The company has relationship initiatives with its employees that allows them to be heard.	64.9	13.8
(SS7) The company defends the interest of society to participate in the development of public policies.	48.4	38.3
(SS8) The company has formal practices of relationship with its employees, to listen, evaluate, and accompany them in order to incorporate new learnings and knowledge.	66.5	18.1
(SS9) The company includes references to sustainability in the statement documents of vision, mission and values.	59.5	21.4
(SS10) The company is concerned about its supplier companies also performing responsibly.	72.4	13.2
(SS11) It conveys the image of a responsible and reliable Company.	82.9	7.0
(SS12) It complies with ethical and clear criteria.	85.1	3.7
(SS13) It provides its employees with a safe and healthy environment to work.	78.2	10.1
(SS14) The company has specific policies to deal with issues related to human rights.	66.5	21.3
(SS15) The company repudiates exploitation of child labour in its code.	73.9	17.6
(SS16) The company participates in the development of public policies that seek the elimination of forced labour.	44.2	43.6

(SS17) The company has discrimination problems.	19.1	74
(SS18) The company provides employees with basic training to carry out their operations.	69.6	19.2
(SS19) The company complies with current local legislation related to dismissals and retirement processes.	72.9	13.8
(SS20) The company regularly conducts training in employee health and safety.	59.1	23.3
(ESS21) The company respects employees´ daily working hours.	72.8	12.3

** Average score between 6-7, strongly implemented practices (higher than 85%); between 5-6 with a significant implementation (between 70 and 85%); between 4-5 moderate implementation (between 57-70%), between 1-4 weak implementation (less than 57%). Source: Authors' own data.*

SMEs in the environmental field have developed good sustainability practices, with an implementation level of 78.14% (Table 27). Among the most implemented practices, it can be seen that 74.5% of companies are concerned about caring for and protecting the environment, for which 52.6% carry out specific initiatives to reduce energy consumption, 54.8% to reduce materials and 54.2% to reduce water consumption.

Table 27. *Environmental Sustainability Practices*

Environmental Sustainability Mean= 5.47; % de implementation= 78.14%*	**%** companies with high implementation (higher than 85%)	**%** companies with weak implementation (lower than 57%)
(EVS1) The company cares for and protects the environment.	74.5	13.3
(EVS2) The company seeks to know the possible impacts on climate change for its business.	53.8	29.7
(EVS3) The company is recognised for excellence in cleaner production and in pollution prevention management.	43.1	34.6
(EVS4) The company carries out specific initiatives to reduce materials.	54.8	25
(EVS5) The company carries out specific initiatives to reduce water consumption.	54.2	27.2
(EVS6) The company carries out specific initiatives to reduce energy consumption.	52.6	24.5

** Average score between 6-7, strongly implemented practices (greater than 85%); between 5-6 with a significant implementation (between 70 and 85%); between 4-5 moderate implementation (between 57-70%), between 1-4 weak implementation (less than 57%). Source: Authors' own data.*

This descriptive analysis allows to fulfil one of the aims set out in this research; to know the implementation level of sustainability practices in companies in Ecuador. Before proceeding with the analyses that enables to fulfil the second aim, it is necessary to check the validity, one-dimensionality and reliability of the scale used. The exploratory factor analysis shows the factors in which economic sustainability practices are grouped (Table 28).

Table 28. *Descriptive findings and exploratory factor analysis (reliability and validity of scales). Economic Sustainability*

Dimension	**Scale items** [A]	**Mean**	**(s.d.)** [B]	**Item-total Correlation**	**Exploratory Factor Analysis**[1]	
					Loadings	**Bartlett´s test of Sphericity Kaiser-Meyer-Oklin index**
Economic Sustainability (ES) (α Cronbach: .719)	Factor 1: Practices related to the results obtained (Eigenvalue= 2.079; %; Variance= 17.32; α Cronbach: .750)					χ^2(sig.): 497.705 (.000) KMO:.768 Measure of simple adequacy: (.688-.711) % Variance: 52.15
	ES1	5.29	1.65	.310	.859	
	ES2	5.09	1.68	.371	.830	
	ES3	5.60	1.36	.471	.664	
	Factor 2: Practices related to the fulfilment of Legal Obligations (Eigenvalue= 1.766; %; Variance= 14.712; α Cronbach: .736)					
	ES4	6.59	0.96	.340	.788	
	ES13	6.11	1.54	.359	.789	
	Factor 3: Practices related to Management (Eigenvalue= 2.413; %Variance= 20.11; α Cronbach: .699)					
	ES5	3.78	2.27	-.015	The item is removed	
	ES6	5.78	1.77	.323		
	ES7	5.34	1.57	.443	.602	
	ES8	5.04	1.94	.347	.668	
	ES9				.519	
	ES10				.588	
	ES11				.528	

	ES12	5.37 6.28 5.59 5.03	1.75 1.23 1.63 1.83	.518 .484 .504 .271	.652 .477	

**N= 188; Likert scale= 1= Totally disagree /7= Totally agree. [A] The items listed in this table have been summarized for ease of presentation and comprehension; [B] s.d.: Standard deviation.*

[1] Tests that show that the data obtained through the questionnaire are adequate to perform the factor analysis (requirements: Bartlett's Sphericity Test χ2 (sig.> 05), KMO> .7 median, MSA = unacceptable for values below .5). Source: Authors' own data

The three factors identified are Practices related to "Results obtained", "Compliance with legal obligations" and "Management". These factors accounted for 52.15% of the total variance (exceeding the minimum requirement of 50%). Cronbach's Alpha that measures the reliability of each factor (.750, .736, .699 respectively) is greater than 0.7 recommended minimum (Bagozzi, 1994), for exploratory studies values higher than 0.6 can be accepted (Chen, 2008).

The analysis of the one-dimensionality of the social sustainability dimension grouped the items into four factors (Table 29). The four factors identified are related to "stakeholders", "corporate image of the company", "Human Rights" and "Human Resources". These factors accounted for 52.87% of the total variance (it exceeds the required minimum of 50%). Cronbach's alpha that measures the reliability of each factor (.827, .640, .641, .749 respectively) is higher than the recommended 0.7 minimum (Miquel, 1997) or 0.6 for exploratory studies (Chen, 2008).

Table 29. *Descriptive findings and exploratory factor analysis (reliability and validity of scales). Social Sustainability*

Dimension	**Scale items [A]**	**Mean**	**(s.d.) [B]**	**Item-total Correlation**	**Exploratory Factor Analysis[1]**	
					Loadings	**Bartlett´s test of Sphericity Kaiser-Meyer-Oklin index**
Social Sustainability (SS) (α Cronbach: .852)	Factor 1: Practices related to Stakeholders (Eigenvalue= 3.167; %; Variance= 16.67; α Cronbach: .827)					χ^2(sig.): 1169.502 (.000) KMO:.867

						Measure of simple adequacy: (.805-.870) % Variance: 52.87
	SS1	5.55	1.73	.420	.714	
	SS2	5.59	1.46	.585	.685	
	SS3	5.58	1.30	.614	.593	
	SS4	6.57	1.37	.603	.475	
	SS5	7.55	1.67	.587	.630	
	SS7	5.48	1.48	.530	.666	
	SS9	5.09		.547	.427	
		5.62				
	Factor 2: Practices related to the social image of the company (Eigenvalue= 2.140; %; Variance= 11.26; α Cronbach: .640)					
	SS10	6.05	1.19	.452	.603	
	SS11	6.39	1.14	.314	.787	
	SS12	6.45	0.90	514	.689	
	Factor 3: Practices related to human rights (Eigenvalue= 2.150; %; Variance= 11.31; α Cronbach: .641)					
	SS13	6.17	1.23	.436	.403	
	SS14	7.54	1.52	.534	.585	
	SS15	5.72	1.72	.175	The item is deleted	
	SS16	5.95	2.04	.370	.765	
		4.75				
	Factor 4: Practices related to Human Resources (Eigenvalue= 2.589; %; Variance= 13.63; α Cronbach: .749)					
	SS6	5.78	1.29	.599	.549	
	SS8	5.71	1.37	.627	.402	
	SS17	7.16	2.26	-.071	The item is deleted	
	SS18	2.76	1.45	.483	.577	
	SS19	5.88	1.49	.400	.598	
	SS20			.476	.568	
				.367	.733	

	SS21	6.09 5.56 6.08	1.24			

**N= 188; Likert scale= 1= Totally disagree /7= Totally agree.*

[A] The items listed in this table have been summarized for ease of presentation and comprehension.

[B] s.d.: Standard deviation.

[1] Tests that show that the data obtained through the questionnaire are adequate to perform the factor analysis (requirements: Bartlett's Sphericity Test χ2 (sig.> 05), KMO> .7 median, MSA = unacceptable for values below .5). Source: Authors' own data.

Finally, the environmental sustainability dimension shows a one-dimensional structure. The cumulative percentage of variance explained is greater than 50% and Cronbach's alpha that measures reliability is higher than the recommended 0.7 minimum (.803) (Table 30).

Table 30. *Descriptive findings and exploratory factor analysis (reliability and validity of scales). Social Sustainability*

Constructs included SEM	**Scale items [A]**	**Mean**	**(s.d.) [B]**	**Item-total Correlation**	**Exploratory Factor Analysis[1]**	
					Loadings	**Bartlett´s test of Sphericity Kaiser-Meyer_Oklin index**
Environmental Sustainability (EVS) (α Cronbach: .803)	EVS1	6.01	1.27	.461	.612	χ^2(sig.): 325.403 (.000)
	EVS2	5.34	1.53	.594	.740	KMO: .802
	EVS3	5.19	1.52	.531	.683	Measure of simple adequacy: (.892-.784)
	EVS4	5.44	1.57	.631	.771	
	EVS5	5.47	1.44	.587	.736	% Variance: 50.406
	EVS6	5.40	1.52	.550	.707	

*N= 188; Likert scale= 1= Totally disagree /7= Totally agree.

[A] The items listed in this table have been summarized for ease of presentation and comprehension.

[B] s.d.: Standard deviation.

[1] Tests that show that the data obtained through the questionnaire are adequate to perform the factor analysis (requirements: Bartlett's Sphericity Test χ2 (sig.> 05), KMO> .7 median, MSA = unacceptable for values below .5). Source: Authors' own data.

In all scales, the cumulative percentage of variance explained is greater than 50% and β higher than 0.3 and Cronbach's alpha is higher than the recommended 0.7 minimum. Therefore, taking into account the results, we can affirm that the proposed scales are highly reliable, being therefore free of random errors and capable of providing consistent results.

It was also verified whether there were significant differences in the implementation level of the practices based on the age of the companies in the market; newly created companies (less than 42 months) and consolidated companies (4 years or more), size (1, microenterprise, from 1 to 9 workers; 2, small company, from 10 to 49; 3, medium, from 50 to 199) and sector (1, manufacturing sector, 2, service sector). We used the T-Student test for two independent samples, which allows to compare the means of two groups, a dependent variable (practices) with a dichotomous independent variable, age and sector. If the T-Student is <.05, we reject the hypothesis of equality of means, corroborating that there are significant differences (there is an association between both variables) (table 31).

Table 31. *Statistical tests of comparison of means (only those items that present significant differences are included)*

				Test of Levene	**Student's T test**	**Sig.**
	F	**Sig.**	**t**	**Sig.**		
Size (number of workers; Micro-enterprise n = 108; Small company n = 80)						
(SS9) The company includes references to sustainability in the statement documents of vision, mission and values.	2.022	.157	2.093	.003		**<.05**
Sector (manufacturing n = 66, service n = 122)						
(EVS5) The company carries out specific initiatives to reduce water consumption	0.651	.421	-2.161	.032		**<.05**

** Test of Levene for equality of variances = this test allows us to test the hypothesis that population variances are equal, if sig. <. 05, we reject the equality hypothesis. Source: Authors' own data*

It is verified that there are significant differences in the item SS9 and size, and EVS5 and the sector. In both cases there is an association, which means that micro-enterprises make greater emphasis on references to sustainability in the statement documents of vision, mission and values (micro-enterprises: mean 5.83, s.d. 1.38; small company: mean 5.38, s.d. 1.55). It is also observed that the company of the service sector make a greater effort in the implementation of specific initiatives to reduce water consumption (manufacturing sector: mean 5.16, s.d. 1.57; service sector: mean 5.63, s.d. 1.34).

If the differences are analysed taking into account the factors obtained in the confirmatory factor analysis for each of the variables (economic sustainability, social and environmental), it is observed that there are significant differences in the environmental sustainability dimension and the sector (Table 32). It is also observed that the implementation level of practices related to environmental sustainability is higher in the service sector (mean 5.59, s.d. 0.981).

Table 32. *Statistical tests of comparison of means (only those the factors that present significant differences are included)*

	Test of Levene		**Student's T test**		Sig.
	F	Sig.	t	Sig.	
Sector (manufacturing n = 66, service n = 122)					
Environmental Sustainability	1.691	.195	-2.055	.041	**<.05**

** Test of Levene for equality of variances. This test allows us to test the hypothesis that population variances are equal. If sig. <0.05, we reject the equality hypothesis. Source: Authors' own data.*

4.5 Discussion and conclusions

In this research, an exploratory-descriptive study is carried out, which allowed to go into detail about sustainability practices that SMEs in Ecuador include in their management, allowing to fulfil the first aim raised in this research. It is observed that managers have a positive and favourable attitude towards sustainability, the practices considered have a medium-high implementation level of 79.71% in economic sustainability, 82.28% in social sustainability and 78.14 % in environmental sustainability in the companies considered in the sample. Although these percentages are significant, the scope for improvement is wide. The individual analysis of each of the items allows to observe the weaknesses and, therefore, it is relevant information for companies, as well as for the authorities involved in promoting the concept of sustainable enterprise.

From the analysis of the average scores obtained for each of the items, the main strengths and weaknesses are observed. The four main strengths are related to the practice to the social image of the company and related to human rights; the analysed companies worry that its supplier companies also performing responsibly, and it conveys the image of a responsible and reliable company. As well as it complies with ethical and clear criteria and it

provides its employees with a safe and healthy environment to work. The main weaknesses that companies must take into account to start their improvement process are related to social sustainability; the companies must participate in the development of public policies that seek the elimination of forced labour and others related to economic sustainability; companies must have channel to meet customer/consumer demand, create a provision for employee benefits and adequately remunerate their employees compared to the competition.

The scale of measurement used in the investigation was statistically validated; its validity and reliability were tested, as well as the one-dimensionality of each of the dimensions was analysed, which enabled to know its structure. Therefore, it can be said that it is a reliable scale, which provides consistent results, so it can be used in companies in Ecuador to deepen the implementation level of sustainability practices. The one-dimensionality analysis shows that economic sustainability is grouped into three factors, that we denominate "Results obtained", "Compliance with legal obligations" and "Management". The items that measure social sustainability were grouped into four factors: "stakeholders", "corporate image of the company", "Human Rights" and "Human Resources".

CHAPTER 5

Final Remarks

5.1 Main conclusions

The purpose of this research is to analyse the orientation towards sustainable entrepreneurship in small and medium enterprises in Ecuador. This analysis was carried out based on three academic contributions, using different methodological strategies, which made it possible to achieve the aims initially set out in the doctoral thesis.

The conclusions obtained in this work are detailed below, grouped into three blocks: the first of these includes the most relevant conclusions related to the bibliometric study, whilst the second and third sections deals with the relevant aspects of the two empirical contributions made.

5.1.1 Conclusions of the bibliometric study

This research reviews one of the most recognized databases, the Web of Science-Social Sciences Citation Index, having a chronological distribution of the publications that allows a systematic review of the scientific literature in the timeline. The study also shows the most outstanding journals and papers in the field. The largest number of articles published in sustainable entrepreneurship are published in top journals such as the Journal of Cleaner Production, Sustainability, Business Strategy and the Environment Journal of Business Venturing.

The extensive proliferation of literature on sustainable entrepreneurship is one of the main findings of this bibliometric study. The data reflect that this growth has not stopped, and that the topic of sustainable entrepreneurship continues to be a current research stream in development.

The bibliometric study shows five themes such as sustainable entrepreneurs, economic-social effects, environmental entrepreneurship, developing countries and recognition of opportunity. These five topics form a coherent body of knowledge based on the framework of Sahlman (1996) for the study of any phenomenon, but this does not mean that further research on these topics is not necessary. Current theories and empirical studies suggest a causal model, with the identification of sustainable development opportunities as a variable dependent on environmental and community

awareness and the insertion of a moderating variable such as corporate knowledge.

5.1.3 Conclusions of the empirical study I

This research focuses on measuring how the sustainable competencies of the leader influence the social entrepreneurial orientation of SMEs and their outcomes. It is observed that the key competencies that leaders must form or develop in order for SMEs to have a social entrepreneurial orientation are focused on environmental and social practices based on four dimensions: System and thinking competence, normative competence, interpersonal competence and action competence.

This research shows that the skills acquired by the leaders of SMEs influence the social entrepreneurial orientation and business development, especially in green innovation performance, economic performance and social performance. It is also observed that the influence is mainly through the social risk and social proactivity dimensions and not so much through social innovation (the tendency of the company to promote new ideas and processes with social impact).

The research shows that the competencies acquired by the leaders are transcendent to develop high social proactivity in the companies. The competencies allow the identification, at the right time, of the needs to anticipate future demands and social needs that are found in the market where companies operate. The competencies developed in leaders are essential to encourage the assumption of social risks by leaders, who are capable of making decisions in situations of uncertainty in which the social impact is more important than the economic benefits for the company. Successful SMEs require leaders with sustainable competencies and a focus on social orientation that enables community support systems.

5.1.4 Conclusions of the empirical study II

The research, through an exploratory-descriptive study, made possible to analyse the sustainability practices that SMEs in Ecuador include in their business management. Among the most important findings is that managers have an extremely positive and favourable attitude towards sustainability.

Practices in economic sustainability have a medium-high implementation level. The main strengths are related to SMEs social image and human rights; SMEs analysed show concern that their supplier enterprises should also act responsibly in order to convey the image of a responsible and reliable company. Also, SMEs comply with clear ethical criteria and provide their employees with a safe and healthy working environment.

The main finding and contribution of this research to the scientific literature are that the size of companies in the market does not influence the level of implementation of practices related to the results obtained, compliance with legal obligations, management, the company's social image, human rights, human resources and the environmental practices of SMEs. Micro-enterprises show greater interest in making their commitment to sustainability known by expressing it in their vision, mission and values documents. If there are differences between the manufacturing sector and the service sector concerning water consumption, companies in the service sector are much more aware of the implementation of practices which reduce water consumption.

5.2. Implications, limitations and future lines of research

5.2.1 *Bibliometric study*

New researchers or academics who are interested in entering this field can obtain a comprehensive overview of the origin, evolution and current status of Sustainable Entrepreneurship research. Researchers can find a synthesized summary of the various definitions, perspectives and research trends. Researchers can also see a complete picture of the global research on Sustainable Entrepreneurship and how it is distributed across the thematic areas. Finally, academics who are already researching this field may find this study significant, as it presents several proposals for future research opportunities. It is essential to understand how sustainable enterprises create value beyond the boundaries of business, contributing positively to social and ecological systems.

This research also has a comprehensive analysis of the selected works, showing possible gaps and opportunities for further research on sustainable

entrepreneurship. New researchers, who are interested in this field should focus on understanding, how sustainable businesses develop their roadmap to look for social and environmental impacts that materialize through acceptable practices developed in their environments. The challenging tasks for researchers would be to diagnose practices and research due to the complexity of quantifying and perceiving differences in social and environmental impact. Also, researchers should focus on how sustainable entrepreneurs interact and form partnerships with social communities.

Bibliographic studies allow retrieving and condensing large amounts of bibliographic information; however, they have some limitations. The limitations of this study are at least related to two issues that are intrinsically connected: (i) the variance in human judgment and (ii) the characteristics of both the database and the citation frequency used in this analysis. The use of just one database, although justified, is a human decision, which shows an obvious scope limitation, due to the fact that it contains just a sample of article. Hence, the reviewed publications represent merely a part of the scientific production on the topic. Research that has been published in other databases and languages (Spanish among them) are not represented here.

Regarding the citation frequency used to select articles relevant to the analysis, in order to minimize the bias, this study has only considered articles on the specific topic of sustainable entrepreneurship, considering the whole number of citations that each article have in WoS-SSCI (a database that contains articles on many different topics and fields). Similarly, citations from the WoS-SSCI (indicator TGCS—Total Global Citation Score) were used to identify and selected journals that focuses on the topic, instead of using Journal Impact Factor.

The use of citation frequency to select journals and articles does not allow us to understand the context in which the article or the journal was quoted since it can be a sporadic quote (that appears once or twice in the text) or a core citation to the theoretical development. Future research can include all documents that have been retrieved and analyse their contents in order to understand how the quote was made and which of them are really crucial to the sustainable entrepreneurship research development.

There is also another limitation derived from the use of just WoS-SSCI. Despite the importance this database has in the scientific community, we suggested future bibliometric studies on the topic considering also other databases, such as Scopus. New revisions of the scientific production on sustainable entrepreneurship could be done through, for example, journal rankings and others specialized publications, such as academic books.

5.2.2 Empirical study I

Current research adds to the existing literature in several ways. On the one hand, it is evident that the higher the leader's competencies in sustainable entrepreneurship, the greater the social orientation and shows a significant positive effect. That is to say, incorporating social considerations into the institutional philosophy and strategic planning of SMEs. Also, the incorporation of these practices improves the capacity of the companies to face the uncertainties and leads to a greater business performance above all in developed and developing countries.

The results offer an important implication in the sense that if the company wishes to follow a vision of social and sustainable development and improve its green performance, it must rely on leaders focused on sustainability as key agents of change to improve society. For this, training in the specific competencies for sustainable development here presented will be paramount.

This research would benefit from further improvements. Firstly, the conceptual and research model would be improved by including more detailed and focused measures of existing constructions. At this point, the elements assigned to the measurement of the leader's sustainable competencies are not the actual behaviours.

Therefore, a future study would visualise another multi-element framework focusing on aspects of behaviour and conduct. Secondly, the conceptual and research model would benefit from including other constructs and variables that were not considered at this point. We assume that the fact that the current model takes into account other essential relationships between latent variables and the consideration of other moderating factors or effects would refine the methodological design and results, for example, the inclusion of controls in the structural model, such as the size of the firm, would be a

relevant effort in this respect. Thirdly, testing the proposed hypotheses on larger samples or in various representative settings would make the analysis more accurate and present a clearer picture of state of the art in the field.

Finally, as far as the future constructs integrated into the research model are concerned, a theoretical development beyond the leader's sustainable competencies would be recommended and other factors (business strategy, business planning, etc.) that can give an overview of sustainable business activity. The two main limitations of this work are the usual related to cross section, since the research was done at a specific moment in time, and to the use of a structured questionnaire.

5.2.3 Empirical study II

The results of this research have certain academic and practical implications. From the academic point of view, the data show the study of the sustainable practices of SMEs in Ecuador has a prominent role. The elevated level of the practices reported by the interviewees indicate, at least, that there is a very high interest of the managers towards their development. The surprisingly high level of adoption should also be complemented with an external audit in the SMEs to see if these practices are really being carried out and in what way.

From the point of view of the managers of an SMEs, these results should indicate to them the importance that these sustainable practices already have in Ecuador. This forces managers to observe the movements of other companies and to have the need to adapt as quickly as possible to the environment in which they compete.

This research has some limitations that are prompting to future lines of research. The first one makes specific reference to the sample in one of the planning zones of Ecuador, with 9 zones. This pilot work will enable the validation of an instrument for measuring sustainability, with the aim of applying it in the future to the rest of the zones. On the other hand, the data was obtained from company managers, which implies the risk of receiving biased responses by a person involved, this limitation was overcome by applying the Harman test. Therefore, it would be interesting to carry out the study taking into account the response of the company's human resources,

which would bring different points of view. A third limitation is related to the cross section of the study, since it is carried out at a specific moment in time.

5.3 The realisation of the aims initially set

The general aim of the research is to determine the orientation towards sustainable entrepreneurship of Ecuadorian SMEs and to understand how these generate economic, social and environmental impacts in their immediate surroundings.

The doctoral research was framed within the fields of study of sustainable entrepreneurship, sustainable competencies possessed by the leaders of small and medium enterprises, SMEs and the implementation of sustainable entrepreneurship practices developed by companies in Ecuador.

The results of the various analyses, comparisons, and measurements in the contributions have enabled the overall objective to be achieved in its entirety. Similarly, the specific objectives presented in the first chapter of this research were fully met, as shown in the following table 33.

Table 33. *The realisation of the aims initially set.*

Aims		Chapters	Article status	Title	Journal	Publication link	Citation
Aim 1	To carry out a bibliometric study of the publications in Sustainable Entrepreneurship that will allow new academics to have a lively and precise description of the most relevant literature in this field of research and to identify the most prestigious international journals.	2	Published	The Development of Sustainable Entrepreneurship Research Field	Sustainability	https://www.mdpi.com/2071-1050/10/6/2005	40
Aim 2	Establish a theoretical model aimed at guiding empirical evidence on the influence of the leader's sustainable competencies on the social entrepreneurial orientation of companies in Ecuador.	3	Link to be sent to the journal	Leaders' Sustainability Competencies and SMEs Outcomes: The Role of Social Entrepreneurial Orientation.	Journal cleaner of production	Not applicable	Not applicable

Aim 3	To analyse whether small and medium enterprises in Ecuador are involved in the adoption of sustainable practices, as well as to see if there are significant differences in adoption according to the size of some variables that provide relevant information to managers on their level of application of sustainability	4	Published	Sustainable Practices in Small and Medium-Sized Enterprises in Ecuador	Sustainability	https://www.mdpi.com/2071-1050/10/6/2105	17

Source: Own elaboration

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APPENDIX

A. Definitions and Key Aspects

In addition to this definition, Table 34 presents other definitions of sustainable entrepreneurship found in works with a high influence in the field (at the time of this work, all the articles had received more than 200 citations).

Table 34. *Definitions and Key Aspects*

Definitions and Key Aspects	Reference
"The examination of how opportunities to bring into existence future goods and services are discovered, created, and exploited, by whom, and with what economic, psychological, social, and environmental consequences".	Cohen, B.; Winn, M.
"The process of discovering, evaluating, and exploiting economic opportunities that are present in market failures which detract from sustainability, including those that are environmentally relevant".	Dean, T.J.; McMullen, J.
"The discovery and exploitation of economic opportunities through the generation of market disequilibria that initiate the transformation of a sector towards an environmentally and socially more sustainable state".	Hockerts, K.
"We view sustainable entrepreneurship as the discovery, creation, evaluation, and exploitation of opportunities to create future goods and services that is consistent with sustainable development goals".	Pacheco, D
A focus "on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society".	Patzelt, H.; Shepherd, D.
"An innovative, market-oriented and personality driven form of creating economic and societal value by means of break-through environmentally or socially beneficial market or institutional innovations".	Young, W.

B. Measurement scales

Table 35. *List of Scale Items by Sustainability Competencies*

Mnemonic	Item	Scale
SFTC1	I am able to identify the key operations of a company that have a negative impact on the environment or society.	Systems-thinking and foresighted thinking competence
SFTC2	I am able to identify key elements of production chains and agricultural ecosystems.	
SFTC3	I am able to analyse the strengths and weaknesses of production chains and propose improvements to reduce their negative effects on the environment or society.	
SFTC4	I am able to build and consider different directions for sustainability in the future.	

Mnemonic	Item	Scale
SFTC5	When analysing and evaluating action scenarios, I take into consideration both local and global impacts.	
SFTC6	*I am able to identify the risks and opportunities inherent to current and future developments.*	
SFTC7	When analysing and evaluating action scenarios, I take into account both short-term and long-term impacts.	
AC1	I am very good at identifying opportunities for sustainable development.	Action competence
AC2	I am able to motivate the top management of a company to invest in sustainability.	
AC3	I know how social, environmental or economic challenges can become opportunities for an organisation/company.	
AC4	I make use of the experiences, activities and values of various relevant stakeholders to address sustainability issues.	
AC5	I am able to explain the importance of sustainability issues.	
NC1	If I want to achieve a sustainability goal, I know the steps that will lead to success.	Normative competence
NC2	I am able to gather economic, social and environmental conflicts of interest.	
NC3	I am able to apply sustainability standards, values, goals and principles to my own practice.	
NC4	I know what is considered a "good sustainable practice" in my field of action.	
NC5	I know how to explain the decisions of a company regarding sustainability.	
NC6	I am willing to take the initiative to make improvements in my own practice on the basis of standards, values, objectives and principles of sustainability.	
IC1	*I challenge unsustainable ways of working in a company.*	Interpersonal competence
IC2	*I am able to actively involve stakeholders and experts from other disciplines in dealing with sustainability issues.*	
IC3	In a personal conflict, I can take the perspective of others and actually understand their point of view.	
IC4	I am patient and sensitive with someone who "lets off steam" on complex issues.	
IC5	I am able to feel the extent to which stakeholders are willing to cooperate on a project.	
SI1	Social innovation (referring to a process of creation, implementation and dissemination	Social innovation

Mnemonic	Item	Scale
	of new social practices) is important for our company.	
SI2	We invest heavily in developing new ways to increase our social impact or serve our beneficiaries.	
SI3	New ideas for solving social problems arise very frequently in our company.	
SI4	*We are not afraid to take substantial risks when we are serving our social purpose.*	
SI5	*We typically initiate actions that other social enterprises/ entrepreneurs copy.*	
RSP1	Bold action is necessary to achieve our company's social mission.	Social risk-taking and Social proactiveness
RSP2	We avoid the cautious line of action if social opportunities are lost that way.	
RSP3	The objective of fulfilling our social mission precedes the objective of generating profits.	
RSP4	Our company makes a strong emphasis on alliances with other organisations and/or governments to ensure greater and accelerated fulfilment of our social mission.	
RSP5	We set ambitious goals for sustainability and incorporate them into all strategic decisions.	
RSP6	Our goal is to be at the forefront to make the world a better place.	
RSP7	Our organisation has a strong tendency to be ahead of others in fulfilling its social mission.	
ECP1	The company's investor group says the return on investment...	Economic performance
ECP2	Our company's sales have grown in the last year.	
ECP3	Our company's market share has increased in the last year.	
ECP4	Our company's market share has decreased.	
ECP5	Our clients are satisfied with our services.	
SP1	Our company shows interest in other social welfare initiatives.	Social performance
SP2	The results of our company have a significant impact on general well-being.	
SP3	Our company is on the right track to fulfil its social mission.	
SP4	Our company is decisively committed to developing new innovative products.	
GP1	The company has a council or group of people who knows about sustainability.	Green innovation performance
GIP2	The company chooses the materials that consume the least amount of energy and resources to develop or design its products.	
GIP3	The company uses the least number of materials to produce, develop or design its products.	

Mnemonic	Item	Scale
GIP4	The company assesses whether its products are easy to recycle, reuse and decompose to develop or design its products.	
GIP5	The production process of the company effectively reduces the emission of hazardous substances or waste.	
GIP6	The production process of the company efficiently recycles waste and emissions that can be treated and reused.	
GIP7	The production process of the company effectively reduces the consumption of water, electricity, coal or oil.	
GIP8	The production process of the company effectively reduces the use of raw materials.	

Source: Authors' own design based in literature review

C. Measurement scales

Table 36. *List of Scale Items by Sustainability Practices*

nemonic	Item	Scale
ES1	The number of clients of the company has increased.	Economic Sustainability Practices.
ES2	The company increased in the average customer purchase.	
ES3	It is profitable and well-managed.	
ES4	The company complies with all legal labour obligation regarding the payment of salaries and benefits by law.	
ES5	The company employees have decreased.	
ES6	The company has local labour.	
ES7	The company employees are well-paid compared to th competition.	
ES8	There is provision for employee benefits.	
ES9	The company reflects a positive attitude towards economic factors.	
ES10	It is recognized for the service given to its customers an caring for the quality of its products and services.	
ES11	The company gives preference to the purchase of supplie and/or services from suppliers that are socially responsible.	
ES12	The company has a channel to meet customer/consume demands.	
ES13	The company has a financial accounting balance at the fina results date.	
SS1	The company has community support.	Social Sustainability Practices.
SS2	The company participates with the community.	
SS3	The company promotes work and family life reconciliatio among its employees.	
SS4	It is concerned about its employees' professional and persona development and equality of opportunities.	

nemonic	Item	Scale
SS5	The company has a process of dialogue and participation o the internal and external public in defining the issues that mus be addressed in its vision of sustainability.	
SS6	The company has relationship initiatives with its employee that allows them to be heard.	
SS7	The company defends the interest of society to participate i the development of public policies.	
SS8	The company has formal practices of relationship with it employees, to listen, evaluate, and accompany them in orde to incorporate new learnings and knowledge.	
SS9	The company includes references to sustainability in th statement documents of vision, mission, and values.	
SS10	The company is concerned about its supplier companies als performing responsibly.	
SS11	It conveys the image of a responsible and reliable Company.	
SS12	It complies with ethical and clear criteria.	
SS13	It provides its employees with a safe and healthy environmer to work.	
SS14	The company has specific policies to deal with issues relate to human rights.	
SS15	The company repudiates exploitation of child labour in it code.	
SS16	The company participates in the development of publi policies that seek the elimination of forced labour.	
SS17	The company has discrimination problems.	
SS18	The company provides employees with basic training to carr out their operations.	
SS19	The company complies with current local legislation related t dismissals and retirement processes.	
SS20	The company regularly conducts training in employee healt and safety.	
SS21	The company respects employees' daily working hours.	
EVS1	The company cares for and protects the environment.	Environmental Sustainability Practices.
EVS2	The company seeks to know the possible impacts on climat change for its business.	
EVS3	The company is recognised for excellence in cleane production and in pollution prevention management.	
EVS4	The company carries out specific initiatives to reduc materials.	
EVS5	The company carries out specific initiatives to reduce wate consumption.	
EVS6	The company carries out specific initiatives to reduce energ consumption.	

Source: Authors' own design based in literature review