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**ENTREPRENEURIAL AND INNOVATIVE
BEHAVIOR IN SPANISH SMEs: ESSAYS ON
PROFITABILITY, GROWTH AND EXPORT
INTENSITY.**

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**ENTREPRENEURIAL AND INNOVATIVE BEHAVIOR IN
SPANISH SMEs: ESSAYS ON PROFITABILITY, GROWTH AND
EXPORT INTENSITY.**

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Dedicated to my family

TABLE OF CONTENTS	
TABLE OF CONTENTS	VII
LIST OF TABLES	XI
LIST OF FIGURES	XIII
ACKNOWLEDGEMENTS	XV
ABSTRACT	3
RESUMEN	5
RESUMO	7
CHAPTER I	9
INTRODUCTION OF THE DISSERTATION	9
1. Entrepreneurship as Entrepreneurial Behavior	9
2. Problem Statement	11
<i>2.1. Entrepreneurial and Innovative Behavior in SMEs and their Contribution to Performance</i>	11
<i>2.2. The importance and relevance of entrepreneurial SMEs for contemporary societies</i>	12
<i>2.3. The importance of innovation and internationalization for contemporary societies</i>	13
3. Objective of the Dissertation and Research Questions	15
CHAPTER II	19
MAIN THEORIES AND CONSTRUCTS USED	19
1. Resource-Based View	19
<i>1.1. SME and the Knowledge-based view of the firm</i>	20
2. Contingency Theory	22
<i>2.1. Contingency relationships between corporate entrepreneurship and performance</i>	23
<i>2.2. The role of environmental hostility</i>	25
3. Absorptive Capability and Organizational Learning Theory	27
4. Social Network in Organizational Contexts	32
5. Entrepreneurial Orientation	35
6. Innovativeness	39

CHAPTER III	43
ESSAY 1 – ENTREPRENEURIAL ORIENTATION, ENVIRONMENTAL HOSTILITY AND SME PROFITABILITY: A CONTINGENCY APPROACH	43
1. Introduction	43
2. Theoretical Framework, Previous Research and Hypotheses	46
<i>2.1. Entrepreneurial orientation as a resource</i>	46
<i>2.2. The moderating role of environmental hostility: a contingency approach</i>	49
3. Research Design	51
<i>3.1. Sample and data collection</i>	51
<i>3.2. Techniques for controlling Common Method Biases</i>	54
<i>3.3. Variables</i>	55
4. Analysis and Results	59
5. Discussion and Conclusions	64
CHAPTER IV	67
ESSAY 2 – THE EFFECTIVENESS OF ENTREPRENEURIAL ORIENTATION AND NETWORK RESOURCES IN TERMS OF SMEs GROWTH	67
1. Introduction	67
2. Theoretical Framework, Previous Research and Hypotheses	70
<i>2.1. Firm networks and EO development</i>	70
<i>2.2. EO and firm growth</i>	72
<i>2.3. Firm networks and growth: direct and indirect causal effects</i>	75
<i>2.4. Size as a moderator term</i>	79
3. Research Design	81
<i>3.1. Sample and data collection</i>	81
<i>3.2. Variables</i>	83
4. Analysis and Results	85
5. Discussion and Conclusions	89

CHAPTER V	93
ESSAY 3 – INNOVATIVENESS AND EXPORT IN SMALL FIRMS: EXAMINING THEIR MUTUAL EFFECTS	93
1. Introduction	93
2. Theoretical Framework, Previous Research and Hypotheses	95
<i>2.1. Innovative capability as a resource: from innovativeness to foreign markets</i>	95
<i>2.2. Learning-by-exporting: from export activities toward innovativeness</i>	99
3. Research Design	100
<i>3.1. Database</i>	100
<i>3.2. Variables</i>	102
4. Analysis and Results	106
<i>4.1. The choice of specification</i>	106
<i>4.2. Export intensity</i>	107
<i>4.3. Innovativeness</i>	113
5. Discussion and Conclusions	116
CHAPTER VI	119
CONCLUSIONS, CONTRIBUTIONS AND IMPLICATIONS OF THE DISSERTATION	119
1. Summary of the Dissertation	119
2. Contributions of the Dissertation	120
3. Implications of the Dissertation	123
<i>3.1. Implications for the literature</i>	123
<i>3.2. Implications to management</i>	124
<i>3.3. Implications to public policy-makers</i>	125
4. Limitations and Future Research Lines	128
<i>4.1. Essay One</i>	128
<i>4.2. Essay Two</i>	129
<i>4.3. Essay Three</i>	130
REFERENCES	133
APPENDIX	157

LIST OF TABLES	
Table 1. Dissertation approach	17
Table 2. Key variables exploring the CE-performance relationship in a contingent approach	24
Table 3. Environment – main definitions	27
Table 4. Absorptive capability (ACAP) and organizational learning (OLER): a brief of main studies	30
Table 5. Social network in CE: key reasons	34
Table 6. Entrepreneurial Orientation – what we need to know to understand the concept	37
Table 7. Industrial classification of samples selected and returned	54
Table 8. Scale reliability	56
Table 9. Measuring profitability	57
Table 10. FCF measurement	58
Table 11. Summary of statistics and correlation coefficients for key variables	60
Table 12. Results of regression analyses	63
Table 13. Scale reliability	84
Table 14. Hypotheses estimates	88
Table 15. Multigroup analysis: small and medium-sized firms	89
Table 16. Firm characteristics	101
Table 17. Questions capturing innovativeness	104
Table 18. Summary statistics and correlation for key variables: Ordinal regression 2007 and 2008	108
Table 19. Summary statistics and correlation for key variables: Logit regression 2007 and 2008	109
Table 20. Ordinal logistic regression to export intensity: a cross-sectional analysis for the years 2007 and 2008	112
Table 21. Logit regression to innovativeness: a cross-sectional analysis for the years 2007 and 2008	115
Table 22. Summary of the contributions through hypotheses	122
Table 23. Summary of the implications in different ways	127

LIST OF FIGURES	
Figure 1. EO and environmental hostility: impact on firm profitability	51
Figure 2. Proposed model and relationship between firm networks, EO and growth	79
Figure 3. The moderating role of size	80
Figure 4. Proposed model to SEM	87

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ABSTRACT

In this doctoral dissertation, we address three research essays attempting to respond to different research questions: (1) What effect does entrepreneurial orientation have on SME profitability? Does the linkage between entrepreneurial orientation and profitability depend on environmental hostility? (2) Is networking the missing link in entrepreneurial orientation? Network usage and entrepreneurial orientation, what effects do they have on SME growth? and (3) What effect does innovativeness have on small business export? Does export propensity enhance the ability to innovate? Accordingly, we draw on various theoretical perspectives to develop hypotheses that propose entrepreneurial orientation, environmental hostility, firm networks, innovativeness and business performance. Several research techniques have been used to test these relationships, such as lineal regression, structural equation modeling, ordinal regression, logistic regression, etc. Findings confirm most of the proposed relationships. Lastly, implications and future research lines are discussed.

RESUMEN

En esta tesis doctoral, presentamos tres estudios empíricos que tratan de responder a diferentes preguntas de investigación: (1) ¿Qué efecto tiene la orientación emprendedora sobre la rentabilidad financiera de las PYMEs? ¿La relación entre la orientación emprendedora y la rentabilidad financiera depende de la hostilidad del entorno operativo? (2) ¿Podría la utilización de las redes fortalecer la orientación emprendedora? ¿Qué efectos tienen el uso de las redes y la orientación emprendedora sobre el crecimiento de la PYMEs? y ¿Qué efecto tiene la capacidad de innovación sobre la propensión y la intensidad exportadora de la pequeña empresa? ¿La propensión a exportar impulsa la capacidad innovadora de la pequeña empresa?

En consecuencia, nos basamos en diferentes perspectivas teóricas para desarrollar las hipótesis propuestas. Además, utilizamos varias técnicas de investigación para poner en prueba dichas hipótesis, tales como: regresión lineal, modelo de ecuaciones estructurales, regresión ordinal, regresión logística, etc. Los resultados confirman la mayoría de las relaciones propuestas. Finalmente, discutimos las implicaciones de nuestros hallazgos y proponemos futuras líneas de investigación.

RESUMO

Nesta tese de doutorado abordamos três estudos independentes com o objetivo de responder às diferentes questões de investigação: (1) Qual o efeito da orientação empreendedora sobre a rentabilidade da PME? A relação entre orientação empreendedora e rentabilidade depende do grau de hostilidade do entorno? (2) A utilização das redes seria mais um elo para alcançar a orientação empreendedora? Que efeitos tem o uso das redes e a orientação empreendedora sobre o crescimento da PME? (3) Que efeito exerce a inovação sobre a propensão a exportar? A propensão a exportar aumenta a capacidade de inovação?

Em consequência, adotamos várias perspectivas teóricas para desenvolver as hipóteses propostas neste estudo. Do mesmo modo, várias técnicas de investigação foram utilizadas para testar as relações propostas, tais como: regressão linear, modelos de equações estruturais, regressão ordinal, regressão logística, etc. Nossos resultados confirmam a maioria das relações propostas. Finalmente, discutimos as possíveis implicações desses resultados e propomos futuras linhas de investigação.

CHAPTER I

INTRODUCTION OF THE DISSERTATION

1. Entrepreneurship as Entrepreneurial Behavior

This dissertation is the result of a research effort that focuses on subjects related to a major driver of economic growth: entrepreneurship. It is widely acknowledged that entrepreneurship is one of the most important forces that shape the changes in the economic landscape (Reynolds et al., 2005), moreover, entrepreneurship contributes to economic performance by introducing innovation, enhancing rivalry and creating competition (Wong et al., 2005). Hence, the important contribution of entrepreneurship to national growth has been documented by several authors in the literature (Levenburg and Schwartz, 2008; Tang et al., 2008; Uhlaner and Thurik, 2007; Urban, 2008). But what is entrepreneurship? There is no single definition of entrepreneurship. According to Chow (2006), most often entrepreneurship is interpreted as business ownership or self-employment, but that is not an accurate definition. Furthermore, entrepreneurship often appears under different denominations, which explains why it is defined in different ways (Cuervo et al., 2007). However, there seems to be a consensus that the essence of entrepreneurship is the willingness to pursue opportunity. Thus, “entrepreneurship is a process by which individuals- either on their own or inside organizations- pursue opportunities” (Stevenson and Jarillo, 1990 p. 23). Opportunity is defined as a future situation according to desires and goals of individuals or organizations. In turn, entrepreneurial opportunities differ from the larger set of all opportunities for “profit, particularly opportunities to enhance the efficiency of existing goods, services, raw materials, and organizing methods” (Shane and Venkataraman, 2000 p. 220)

Entrepreneurship can be seen as “entrepreneurial function”, which involves more than the creation of a new business. Entrepreneurship implies the pursuit of opportunity, evaluation, and exploitation of opportunities and the set of individuals who discover, evaluate, and exploit them (Shane and Venkataraman, 2000 p. 218). In brief, in a firm-level perspective these opportunities are not specifically related to business creation but rather through new products, services and process, new strategic behaviors and new market opportunities. Thus, entrepreneurial opportunities come in a variety of forms: opportunities in a product markets (Venkataraman, 1997), opportunities in factor markets, as in the case of the discovery of new things – *innovation* (Schumpeter, 1934). But, what about our research? Where is it located? As noted above, we can identify that two streams of research have denominated the entrepreneurship literature. The first has largely focused on the individual entrepreneur as the unit of analysis, especially on identifying the traits which distinguished successful entrepreneurs from less successful ones (Gartner, 1989). In contrast, the second stream of research tends to view entrepreneurial activities as a firm-level phenomenon (Covin and Slevin, 1991), labeled Corporate Entrepreneurship – CE (Zahra and Covin, 1995). “An individual’s psychological profile does not make a person an entrepreneur. Rather, we know entrepreneurs through their actions or behavior” (Covin and Slevin, 1991 p. 8). Therefore, as stressed by Yeoh and Jeong (1995), the fact that organizational level is a better predictor of entrepreneurial effectiveness suggests that organizations can and should be viewed as entrepreneurial entities.

Our research is inserted in a CE context, precisely. The entrepreneurial behavior of small and medium-sized enterprises (SMEs) and its influence on the performance of them is the main topic in this dissertation. By entrepreneurial behavior we must understand the behavior that combines innovation in product or process

(innovativeness), the risk-taking propensity by the CEO, and evidence of proactiveness (Miller and Friesen, 1982; Miller, 1983; Covin and Slevin, 1989).

2. Problem Statement

2.1. Entrepreneurial and Innovative Behavior in SMEs and their Contribution to Performance

The study of organizational strategy is a recurrent theme examined by academics, and “depending on the strategic orientation adopted, the firm may emphasize more or less aspects such as technological position, innovation, organization design, etc.” (Aragón-Sánchez and Sánchez-Marín, 2005 p. 288).

Companies are very diverse when it comes to their strategic entrepreneurial orientation; namely, they can range from very entrepreneurial to very conservative (Miller and Friesen, 1982; Covin and Slevin, 1989). In this vein, a central concept emerges in the domain of corporate entrepreneurship, which receives a substantial amount of theoretical and empirical attention, Entrepreneurial Orientation (EO). EO refers to the strategy-making process that provides organizations with a basis for entrepreneurial decisions and actions (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Drawing on prior strategy-making process and entrepreneurship research, measurement scales of EO have been developed and widely used, and their relationships with other variables have been examined. According to Richard et al. (2009), it is a major firm-level construct in strategic management and entrepreneurship studies (p. 1078).

Although the theoretical foundation of the relationship between EO and performance has rarely been explicated (Wiklund and Shepherd, 2011), it is clear that the majority of research on the topic implicitly assumes that EO somehow provides an advantage to firms. Nonetheless, some empirical, as well as conceptual, arguments suggest that EO is

not equally suitable in all environments (e.g., Covin and Slevin, 1989; Robertson and Chetty, 2000; Wiklund and Shepherd, 2005). That is, in an uncertain environment where an atmosphere of high risk predominates, fewer opportunities, and with tremendous competitiveness, an entrepreneurial behavior is specially recommended.

Over the last few years, the business environment, in Spain and elsewhere, has grown increasingly hostile and it can certainly be argued that the external environment may have a strong impact on SME viability and growth. In this sense, an entrepreneurial behavior has become an increasingly important survival condition (Bouchard and Basso, 2011). Moreover, the importance of proper alignment of the strategy with the environment means that both entrepreneurial and conservative companies must develop characteristics that enable them to cope with their environments (Yamada and Eshima, 2009; Yeoh and Jeong, 1995).

2.2. The importance and relevance of entrepreneurial SMEs for contemporary societies

As already stressed, there are many evidences that entrepreneurship is of great value for economic growth, productivity, innovation and employment. In this sense, many countries members and partners of the Organization for Economic Co-operation and Development - OECD have made entrepreneurial activities an explicit policy priority.

According to OECD report (2009), entrepreneurship has gained additional attention in the current economic crisis, as it is widely viewed as a key aspect of economic dynamism. It is acknowledged that economic crises are historically times of industrial renew, or creative destruction. It is also during crisis when less efficient firms fail while more efficient ones emerge and expand.

With regard to the use of SME samples, we decided to work with small and medium-sized companies, considering the important and irreplaceable role of these companies

within the economy of a country, sometimes facing particular difficulties. Precisely, in Spain about 99% of the companies could be classified as SMEs¹. According to the *Directorio Central de Empresas* published by the *Instituto Nacional de Estadística* – INE, in 2009 there were 3,283,495 companies with between 0 and 249 employees. Over the decade (1999-2009), there was a cumulative increase of 26.7% of these companies in the Spanish context, however, in 2009 this growth was affected by the crisis, representing a reduction of 2.7% of all SMEs in just one year.

Precisely, over the last three years the SMEs environment, in Spain and elsewhere, has grown increasingly turbulent and it can certainly be argued that probably few SMEs operate in a benign environment. Nonetheless, is especially important to highlight that SMEs are closely related to the creation of new products and process techniques. “In some countries SMEs are responsible for a significant part of innovations that are new to the market or new to the world” (OECD, 2009 p. 38).

2.3. The importance of innovation and internationalization for contemporary societies

As globalization reshapes the international economic landscape and technological change creates greater uncertainty in the world economy, entrepreneurship is believed to offer ways to help to meet new economic, social and environmental challenges.

In this sense, successful entrepreneurship both in SMEs and in large firms depends heavily on innovation and R&D. According to OECD report – *Science, Technology and Industry Scoreboard* (2009), R&D intensity has increased in all OECD countries with the gradual shift to a knowledge-based economy. Knowledge creation and diffusion are broader than R&D since a large and growing share of innovations is not necessarily

¹ SMEs - According to the European Union recommendation, in effect from January, 2005: Companies which employ between 10 and 249 employees and whose annual turnover does not exceed €50 million or whose annual balance sheet does not exceed €43 million, are considered SMEs.

The full text of the recommendation is in C(2003)1422:Commission Recommendation of 6th May 2003, concerning the definition of small and medium-sized firms. Official Journal of the European Union No L124 of 25/05/2003 P. 0036-0040.

linked to R&D and/or technology. By innovating in products, processes, marketing and organizational forms, firms seize entrepreneurial opportunities. Entrepreneurial opportunities are likely to be larger when firms develop innovations that are new to the market or new to the world.

Regarding to innovativeness, it is acknowledged that of the three dimensions that integrate the EO construct, innovativeness is the one that meets with the greatest degree of consensus regarding its positive relationship with firm performance (Casillas and Moreno, 2010; Rauch et al., 2009). The innovativeness dimension reflects the tendency to engage in and support new ideas generation, novelty, experimentation and creative processes (Lumpkin and Dess, 1996). Innovative firms, through the creation and introduction of new products and technologies, develop a market niche with new products/services, differentiate themselves and/or substitute incumbents with better quality, cheaper price or other means that customers value (Richard et al., 2009; Wiklund and Shepherd, 2005). Furthermore, innovativeness increases the likelihood that a firm will realize first-mover advantages and capitalize on emerging market opportunities (Wiklund, 1999). Unsurprisingly, it has received special attention, and remains as a topic with substantial conceptual and empirical attention (e.g., Auh and Menguc, 2004; Hult et al., 2004; Tajeddini, et al., 2006), representing, thus, a subject used consistently in the academic literature.

In circumstance of uncertainty and constantly competition both locally and internationally it seems essential to identify the strategic posture which may reflect firms' strengths and that probably influence their performance (Ramírez-Alesón and Espitia-Escuer, 2001). Thus, linking entrepreneurial and innovative concepts with SME performance, this dissertation attempts to shed light on some issues that are still unexploited, as well as to strengthen the existing literature. Therefore, it is very

important to provide a holistic view of the effect of the entrepreneurial and innovative behavior on the performance in SMEs.

3. Objective of the Dissertation and Research Questions

Once that the distinctive features of this dissertation have been described, the main objectives of this investigation are presented:

- To measure the effects of the fit between EO and external environment² on firm profitability.
- To evaluate the impact of the use of SME networking on EO development and to measure the effects of the use of these intangible resources (network usage and EO) on firm growth.
- To evaluate how innovativeness drives the international expansion of the SMEs, and to measure the mutual effect between innovativeness and export activity.

Several specific objectives in the form of research questions stem from the general objectives. Thus, the specific objectives are presented in Table 1, as well as the theoretical framework, research methodology, and key findings.

The structure of this doctoral dissertation is organized as follows: in the next section, some key concepts and theoretical frameworks are reviewed. Then, consistent with the objectives of the dissertation, it is divided into three different empirical chapters (essays). The primary focus of this dissertation is to provide empirical evidence on firm financial performance using a variety of firm profitability measures, such as ROA, ROS and FCF. In the second essay, this study shows evidence on firm growth, providing

² For the purpose of this study, it was decided to operationalize the external environment according to its level of hostility, both international and domestic, consistent with the specifications of Yeoh and Jeong (1995). This environment-framing method has regularly been used in the past, with researchers making the distinction between hostile and benign environments (e.g., Covin and Slevin, 1989; Miller and Friesen, 1983; Robertson and Chetty, 2000).

empirical evidence on the relationship between network usage, EO and SME growth. In the third essay, our efforts are focused on the topic of innovativeness as a driving force of international expansion, as well as the mutual effects of export propensity on a firm's innovation. In each empirical essay the research gap, literature review and hypotheses, research design, followed by a presentation of the research findings, results, discussion and conclusions are presented.

Finally, the dissertation presents a chapter with the study's contributions, implications, limitations and possible future research directions identified in the global conclusion section.

Table 1. **Dissertation approach**

Essay	One	Two	Three
Research questions	<ul style="list-style-type: none"> ✓ Does EO make firms more profitable? ✓ Will firms be more profitable in accordance with the fit between EO and the environment? 	<ul style="list-style-type: none"> ✓ Does network usage contribute to EO development? ✓ Is there a positive relationship between EO and a firm's growth? ✓ Is there a positive relationship between network usage and a firm's growth? Moreover, does network usage exert an indirect effect on growth through the EO? 	<ul style="list-style-type: none"> ✓ Does innovativeness have a positive impact on export-related activities in small businesses? ✓ Does export activity impact small firms' innovativeness positively?
Theoretical Framework	<ul style="list-style-type: none"> ✓ Resource-based view ✓ Contingency Theory 	<ul style="list-style-type: none"> ✓ Resource-based view ✓ Social Network Theory 	<ul style="list-style-type: none"> ✓ Resource-based view ✓ Absorptive capability and Learning Theory
Research design	<ul style="list-style-type: none"> ✓ Quantitative study ✓ Survey from 121 Spanish SMEs ✓ Multiple regression analysis 	<ul style="list-style-type: none"> ✓ Quantitative study ✓ Survey from 121 Spanish SMEs ✓ Structural equation modeling 	<ul style="list-style-type: none"> ✓ Quantitative study ✓ Survey from GEM database ✓ Ordinal regression and Logit regressions
Key findings	<ul style="list-style-type: none"> ✓ There is a positive effect of EO on SME profitability; ✓ More importantly, the effect of EO on SME profitability is higher when there is a fit between EO and the external environment. 	<ul style="list-style-type: none"> ✓ There is a positive effect of network usage on EO development. ✓ EO and firm networks exert a positive influence on SME growth. Furthermore, this essay confirmed an indirect effect of network usage on firm growth through the EO construct. ✓ There are differences between small and medium-sized firms in terms of the proposed relationships. 	<ul style="list-style-type: none"> ✓ An innovative behavior (innovation in product or service, as well as process innovation) may push small firms to operate abroad and increase their sales in foreign markets. ✓ The export experience exerts a positive influence on small firms' innovativeness, especially on product and service innovation.

Source: Self-elaborated

CHAPTER II

MAIN THEORIES AND CONSTRUCTS USED

1. Resource-Based View

The Resource-based view (RBV) has as its main antecedent the seminal study by Penrose (1959), who pointed out a concept of firm growth based on the set of its resources. However, the RBV approach was further developed in the 1980s and 1990s (e.g., Barney, 1991; Grant, 1991; Wernerfelt, 1984, 1995). The central idea in this approach suggests that the best way to understand a firm is by considering it as a collection of productive resources specific to each organization, which allows it to compete successfully against other firms (Penrose, 1959). “The units of analysis in this theory are the resources and capabilities possessed by companies, as well as their differences and the importance that it has for their results” (Rialp, 2003 p. 191). Hence, the capacity of firms to generate sustainable competitive advantages depends on their particular set of resources. According to Barney (1991), the resources that generate competitive advantages must fulfill four conditions: they must be valuable, scarce, inimitable and non-substitutable. These resources and capabilities can be viewed as bundles of tangible and intangible assets, including a firm’s skills, its organizational processes and routines and the information and knowledge it controls (Barney, 1991; Barney et al., 2001).

The tangible resources are considered as those which are fixed within the firm and usually they have a relative, fixed capacity through time (Wernerfelt, 1984). Regarding tangible resources, it may present some disadvantages such as relative transparency and being very easy to copy (Grant, 1991). On the other hand, intangible resources form a

particular set of resources more difficult to copy, thus, they can generate important competitive advantages for the firm (Delgado-Gómez et al., 2004).

The Resource-based view of the firm has made important contribution in different areas of management studies, such as: human resource management, economics and finance, marketing, international business and corporate entrepreneurship.

In the field of entrepreneurship, Alvarez and Busenitz (2001) present RBV through the entrepreneurial process of cognition, discovery, understanding market opportunities, and coordinated knowledge. Namely, they examined the role of entrepreneurial resources within RBV, suggesting how these resources might be unique to entrepreneurship. Entrepreneurial opportunities exist primarily because different agents have different beliefs about the relative value of resources when they are converted from inputs into outputs (Schumpeter, 1934; Shane and Venkataraman, 2000).

The approach adopted by Alvarez and Busenitz (2001) emphasizes that entrepreneurs are heterogeneous and integrates the role of the entrepreneurs with other important resources. The importance of the nature of cognitive factors for human capital, recognizing that not all managers possess the requisite combination or level of skills to generate profits. In summary, “entrepreneurial opportunities emerge when certain individuals have insights into the value of resources that others do not” (Barney et al., 2001 p. 628).

1.1.SME and the knowledge-based view of the firm

As stated by Grant's (1991) resource categories, and highlighted by Gassmann and Keupp (2007), SMEs suffer from structural phenomenon labeled “liability of smallness” and cannot be presumed to be well endowed with tangible assets. In this sense, the crucial resources of an SME are essentially intangible, such as knowledge (Chetty and

Wilson, 2003), social ties and external networks (Anand and Khanna, 2000; Keupp and Gassmann, 2009), managerial behavior (Aragón-Sánchez and Sánchez-Marín, 2007), entrepreneurial orientation (Ripollés and Blesa, 2006), among others.

Given that SMEs present a particular way to generate competitive advantage, and they do it from their experimental knowledge (Gassmann and Keupp, 2007), we understand relevant to connect the Knowledge-based view (KBV) into this review. The resource-based view perceives the firm as a unique bundle of idiosyncratic resources and capabilities (tangibles and intangibles). In turn, the KBV (Grant, 1996b) has emerged from the RBV by focusing on intangible resources, rather than on tangible assets. “To the extent that it focuses upon knowledge as the most strategically important of the firm’s resources, it is an outgrowth of the resource-based view” (Grant, 1996b p. 110).

Fundamental to a KBV of the firm is the assumption that the critical input is knowledge. Knowledge can be transferred across domestic and foreign markets. Moreover, in dynamic (sometimes hostile) environments in which many SMEs operate, it can be used to identify entrepreneurial opportunities, to develop creative or novel internal solutions or external offerings. The analysis of organizational knowledge offers insight into the linkage between organizational capability and competitive advantage. According to Grant (1996a) organizational capability is seen as the outcome of knowledge integration. Thus, if small and medium firms can generate competitive advantage mainly from their intangible resources, we believe that KBV as part of the RBV seems especially suitable as a conceptual support for our analysis of SMEs.

2. Contingency Theory

The Contingency Theory emerges in the 1960s and comes from isolated empirical research, conducted with the aim of verifying the models of effective organizational structures and management decisions (Lawrence and Lorsch, 1967). From this comes a new company concept, which conforms to the changing environment through the identification of variables that produce the greatest impact, where the structure and function (Mintzberg, 1984) depend on the adaptation and interaction with the environment. Namely, this approach is based upon the idea that organizations must adapt their structures, internal processes and behaviors to the contingencies they face (Fernández, 1999).

This framework stresses that the firm's structure or strategy varies depending on its contextual situation (Chandler, 1962). In its most rudimentary form, this theory argues that organizations adapt their structures to be maintained in accordance with their contexts and thus have better performance (Donaldson, 2001). Thus, the performance of a company should not be measured in terms of one organizational attribute, but rather as results from the interplay of attributes such as strategy, structure, management style, etc, within a given environment, which can be more or less hostile and uncertain (Khandwalla, 1972).

In summary, the central idea in the contingency perspective suggests that there is no single way to organize, and there is no strategy that can be applied to any firm (Galbraith, 1973). Namely, finding the best interaction between the key elements in the context of each organization leads to high performance (Garengo and Bititci, 2007; Hardgrave et al., 1999; Randolph et al., 1991).

The Contingency Theory is an important tool to analyze organizations from different targets. As stated by Sousa and Voss (2008), in recent years there has been a growing consensus in the field of organization study about the advantage of drawing insights from major theories like the contingency approach. This trend is linked to the confirmation that many problems in economic and management fields have an interdisciplinary nature (Buhman et al., 2005).

2.1. Contingency relationships between corporate entrepreneurship and performance

It is not difficult to find the relationship between CE and contingent perspective models. Entrepreneurship scholars have developed numerous typologies to describe alternate perspective of entrepreneurship. These classification systems typically depict differences in entrepreneurship as the result of various combinations of individuals, organizational or environmental factors that influence how and why entrepreneurship occurs as it does (Lumpkin and Dess, 1996 p. 135). Moreover, there is a consensus that the discovery and exploitation of entrepreneurial opportunities results from prior knowledge about markets and customers combined with the prior information on external problems (Shane and Venkataraman, 2000; Venkataraman, 1997).

At the firm-level, numerous entrepreneurship researchers have emphasized the importance of viewing the entrepreneurial behavior-performance relationship in a contingency framework (Covin and Slevin, 1991; Lumpkin and Dess, 2001; Wiklund and Shepherd, 2005). Factors such as environmental variables (Khandwalla, 1977; Miller and Friesen, 1983) or the structural and managerial characteristics (Mintzberg, 1984) of an existing firm, influence how an entrepreneurial orientation will be configured to achieve high performance. As stated by Lumpkin and Dess (1996), the entrepreneurship literature, in referring to the causes of entrepreneurship, often mentions factors such as managerial styles, social or motivational factors, and

environmental factors. These may be important corollaries to an entrepreneurial orientation that help explain a firm's performance. For instance, in their model of entrepreneurship as firm behavior, Covin and Slevin (1991) discussed the relationship of strategy, structure, and environment to the EO dimensions of innovativeness, proactiveness and risk-taking propensity.

Especially the environment has long been considered one of the critical contingencies in organizations theory and strategic management. Consequently, it is always highlighted as a critical contingency or contextual factor in the EO-performance relationship. Table 2 shows some examples of contingent variables used in seminal studies concerning environmental and organizational factors to explain the relationship between firm-level entrepreneurship and performance.

Table 2. Key variables exploring the CE-performance relationship in a contingent approach

Study	Contingent variables	
	Environmental factors	Organizational factors
<i>Covin and Slevin (1989)</i>	Environmental hostility	Organization structure (organic versus mechanistic), strategic posture (entrepreneurial versus conservative)
<i>Covin and Slevin (1991)</i>	Environmental conditions	Strategic posture, organizational and individual level variables
<i>Covin et al. (2006)</i>	Environment dynamism, environment hostility	Strategic decision-making, strategic formation mode, strategic learning from failure, firm size, and firm age.
<i>Lumpkin and Dess (1996)</i>	Dynamism, munificence, complexity, industry characteristics	Size, structure, strategy, firm resources, culture, top CEOs characteristics

Table 2. Continued

Study	Contingent variables	
	Environmental factors	Organizational factors
<i>Lumpkin and Dess (2001)</i>	Environmental dynamism, environmental hostility, industry life cycle	Strategic posture (two dimensions of EO)
<i>Wiklund and Shepherd (2005)</i>	Environmental dynamism	Strategic posture (EO), financial resource, size, age
<i>Yeoh and Jeong (1995)</i>	External environment (benign versus hostile), export channel structure (organic versus mechanistic)	Strategic orientation

Source: Self-elaborated

2.2. The role of environmental hostility

The relevance of the threatening environmental context in several dimensions of organizational structure (Lawrence and Lorsch, 1967) has been the starting-point for the recognition of the importance of external forces in unpredictable environments (See Table 3). Currently, it is acknowledged that external environmental factors may have a strong impact on an organization's performance in different ways. For example, economic influences as well as policy and regulatory conditions are commonly acknowledged as determinant of SME creation, viability and growth (Cooper, 1979; Covin and Slevin, 1989; Boskin, 1984), or, even, other environment dimensions such as dynamism, often called uncertainty (Miller and Friesen, 1983), level of industry stagnation, and environmental hostility (Khandwalla, 1977) also affect SME performance (Miller and Toulouse, 1986) and SME internationalization (Torkkeli et al., 2012).

In this doctoral dissertation one of the topics addressed is precisely environmental hostility. Environmental hostility represents the degree of threat to the firm posed by the multifacetedness, vigor and intensity of the competition. According to Miller and Friesen (1983), hostile environments, like dynamic ones, intensify challenges to the firm, and often complicate these challenges. However, Miller and Friesen's study also pointed out that, in contrast to dynamism, hostility makes for scarcer resources, slimmer profit margins, and, in general, less mobility.

Consistent with a contingency approach, Khandwalla (1972) stressed that business performance should not be measured only in terms of organizational attributes (structure, management style, etc.), but rather results from the fit of these dimensions within a specific environment characterized by some degree of hostility and uncertainty. Thus, the classification that would be frequently used in the literature stresses two different scenarios, hostile and benign environments. Hostile environments are described by Khandwalla (1976/77; 1977) as stressful, very risky, with few opportunities. In this sense, Covin and Slevin (1989) added that a hostile environment is characterized by intense competition, overwhelming business climate and relative lack of opportunity for exploitation. Conversely, a non-hostile or benign environment is one that has none of the characteristics above, but, instead, provides investment opportunities and has a favorable climate for business (Covin and Slevin, 1989; Khandwalla, 1977).

Table 3. **Environment – main definitions**

Study	Label	Characteristics
Lawrence and Lorsh (1967)	<i>Uncertainty</i>	Which is characterized by the rate of changes and innovation in the industry, as well as the uncertainty and unpredictability of the actions of competitors and customers
Chandler (1962); Khandwalla (1972)	<i>Environmental heterogeneity</i>	Which encompasses variations among the firm's market that require diversity in production and marketing orientations
Khandwalla (1976/77; 1977)	<i>Environmental hostility</i>	Like dynamic ones, intensify challenges to the firm, and often complicate these challenges. In contrast to dynamism, however, hostility makes for scarce resources, slimmer profit margin, and in general, less maneuverability.
Miller and Friesen (1982; 1983)	<i>dynamic and hostile environment</i>	When competitors' product change rapidly or when customer needs fluctuate

Source: Self-elaborated

3. Absorptive Capability and Organizational Learning Theory

Absorptive capability and organizational learning have been used in diverse and significant organizational phenomena. The importance of these approaches has been noted across the fields of strategic management (Lane and Lubatkin, 1998; March, 1991), organizational economics (Rogers, 2004), international business (Eriksson et al., 1997; Lane et al., 2001; Zahra et al., 2005), and so on. Moreover, we observed that most empirical studies show significant relationships between absorptive capability and organizational learning, and firm outcomes that pertain to creating a competitive

advantage. Table 4 provides a useful example and summarizes representative studies using absorptive capabilities and organizational learning approaches in different fields of organizational management.

The Learning Theory, in essence, suggests that an organization learns when its routines, systems, and policies assimilate activities and experiences (Grant, 1996). In this vein, Sapienza et al. (2005) pointed out that the greater a firm's attention to developing new knowledge and exploiting existing knowledge, the greater its learning is. This point of view is consistent with previous theory, which holds that the amount of information learned and the ability to apply the new external knowledge depend upon the intensity of effort in its absorption (Cohen and Levinthal, 1990).

It is acknowledged that competition is increasingly knowledge-based, as firms strive to learn and to develop capabilities faster than does the competition (Prahalad and Hamel, 1990; Teece et al., 1997).

Based on Cohen and Levinthal's (1990) definition, "absorptive capacity is the ability to recognize external information, assimilate this information, and apply it to commercial ends (p. 128).

In a firm-level perspective, the absorptive capacity depends on the absorptive capacities of its members. Indeed, Alvarez and Busenitz (2001) suggested that an entrepreneur's expanding knowledge base and absorptive capacity becomes an entrepreneurial firm's competitive advantage. However, absorptive capacity refers not only to the acquisition of information by a firm or its employees but also to the organization's ability to exploit it. In summary, Zahra and George (2002) highlighted four distinct but complementary capabilities that compose a firm's absorptive capability: "acquisition, assimilation, transformation, and exploitation" (p. 189). Thus, according to this approach, the firm's

absorptive capacity, allied to the ability to recognize and exploit external knowledge, might determine how successful the firm will be in obtaining entrepreneurial advantages.

In the international entrepreneurship context, the firm's effort to learn from its foreign presence, "international learning effort" (Sapienza et al., 2005), extends, and highlights the idea of an absorptive-based view and learning theory as a framework for theory and hypotheses regarding international business. Consistent with Johanson and Vahlne (1991), firms may learn directly from foreign-market experience and indirectly via observation of foreign companies or even from interactions with foreign partners. Thus, by entering international markets, firms acquire knowledge that can be used to build additional advantages. For instance, firms competing in international markets "draw from multiple knowledge bases in their research and development, manufacturing and marketing operation to learn new skills that augment current capabilities" (Zahra et al., 2000 p. 926).

Table 4. Absorptive capability (ACAP) and organizational learning (OLER): a brief of main studies

Study	Theoretical approach	Treatment/modeling	Outcome/effects
Cohen and Levinthal (1990)	ACAP	Model of firm investment in R&D predicting how absorptive capacity affects the determination of R&D expenditures.	<ul style="list-style-type: none"> ✓ R&D contributes to a firm's absorptive capacity; ✓ ACAP predicts innovative activities; ✓ Offered the most widely cited definition of ACAP, viewing it as the firm's ability to value, assimilate, and apply new knowledge.
March (1991)	OLER	He considers the relation between the exploration of new possibilities and the exploitation of old certainties in OLER.	<ul style="list-style-type: none"> ✓ Both exploration and exploitation are essential for organizations.
Lane and Lubatkin (1998)	ACAP; OLER; Resource-based view	ACAP as predictor of OLER (the study examined the role that partner characteristics play in the success of interorganizational learning (at a dyadic unit of analysis).	<ul style="list-style-type: none"> ✓ The ability of a firm to learn from another firm is jointly determined, particularly by the relationship between their knowledge-processing systems.
Autio et al. (2000)	OLER; Knowledge-base Theory	A model predicting International sales growth from knowledge intensity, international experience and the ability to learn by observation.	<ul style="list-style-type: none"> ✓ Knowledge about international markets as well as the efficiency by which such knowledge is learned is a key determinant of international growth.
Zahra et al. (2000)	OLER; International business	The study's model proposes that firm international expansion promotes technological learning, which in turn enhances performance.	<ul style="list-style-type: none"> ✓ Technological learning has a positive effect on firm performance; ✓ International diversity and mode of entry have a positive, direct effect on firm performance, in addition to their more indirect effect of increasing technological learning.

Table 4. Continued

Study	Theoretical approach	Treatment/modeling	Outcome/effects
Lane et al. (2001)	ACAP; Learning; International business	Test a model of international joint ventures learning and performance that segments ACAP into the three components proposed by Cohen and Levinthal (ability to: understand, assimilate and apply external knowledge).	✓ The findings offer a new perspective on international joint ventures learning and performance as well as a initial insights into how those relationship change over time.
Zahra and George (2002)	ACAP	Review and advance a model that connects the antecedents, moderators, and outcomes of ACAP.	✓ Ten years after Cohen and Levinthal's notion of ACAP, here authors redefined ACAP as a set of organizational routines (highlighted four capabilities: acquire, assimilate, transform, and exploit knowledge.
Rogers (2004)	ACAP; economic growth	A model to examine the importance of technological catch-up in explaining productivity growth.	✓ ACAP is a factor in explaining growth; ✓ New proxies of country's ability to access and learn technology from overseas.
Sapienza et al. (2005)	OLER; international business	A model to examine how firms' degree of internationalization, the age at international entry, and entrepreneurial orientation are associated with learning activities.	✓ Early internationalization is positively related to learning effort; ✓ Entrepreneurial orientation is positively related to learning effort.

Source: Self-elaborated

4. Social Network in Organizational Contexts

Approximately 30 years ago, an important new area of research within the organizational context emerged. The starting point of the study of social networks was drawn on a broader revitalization of the field of economic sociology (Hoang and Antoncic, 2003). Several scholars began to question the widely held view that entrepreneurs, as economic actors, were isolated and that the entrepreneurial process was distinct from other social phenomena. Instead, entrepreneurs were seen as intimately tied, through their social relationships, to a broader network of actors. Thus begins the task of researchers to examine the causes and consequences of embeddedness (Granovetter, 1985) in the entrepreneurial process. In this sense, a new concept, where firms are embedded in networks of social, professional, and exchange relationships with other individuals and organizations (Granovetter, 1985; Gulati et al., 2000), replaces the idea of firms as autonomous entities and highlights networks as vital when it comes to gaining access to opportunities, collecting the resources needed to build a new firm and obtain legitimacy (Birley, 1985; Johannisson, 1987; Johannisson et al., 1994), for their survival and growth (Gulati, 1998; Hite and Hesterly, 2001), or even for early and rapid internationalization (Chetty and Holm, 2000; Chetty and Wilson, 2003; Gassmann and Keupp, 2007).

The entrepreneur is embedded in a social network that plays a critical role in the entrepreneurial process (Aldrich and Zimmer, 1986). In this sense, Brass (1992) defines social networks as a set of actors (individuals or organizations) and a set of linkages between them. Networks have a major role, and in recent years studies focusing on networks and relations in and between individuals, groups and organizations have increased (e.g., Balkundi and Kilduf, 2006; Gassmann and Keupp, 2007; Hoang and Antoncic, 2003; Jack, 2010; Jack et al., 2010; Lechner and Dowling, 2003). Thus, the

value of networks is recognized as an integral part of the explanation of business success. According to Elfring and Hulsink (2003 p. 409): “a network is one of the most powerful assets that anybody can possess: it provides access to power, information, knowledge and capital as well as other networks.”

The volume of network research in management has increased radically in recent years, and networking is increasingly recognized as a major theme in entrepreneurship (Jack et al., 2010). “The boom in network research is part of a general shift, beginning in the second half of the 20th century, away from individualist, essentialist and atomistic explanations toward more relational, contextual and systemic understandings” (Borgatti and Foster, 2003 p. 991). Management research regularly considers networks and their effects on a wide range of organizational phenomena. Scholars employing the network perspective have generated a considerable body of organizational research exploring how networks of individuals, groups or firms relate to organizational outcomes.

Social network research in organizational contexts highlights topics such as social capital, embeddedness, organizational networks, board interlocks, joint ventures and inter-firm alliances (see Borgatti and Foster, 2003; Carpenter et al., 2012, for reviews). The trend towards network represents a major opportunity for the corporate entrepreneurship movement (Ripollés and Blesa, 2006). Network organizations provide many of the preconditions that are necessary for corporate entrepreneurs to thrive: a license to build relationships laterally, horizontally and with external parties, as a means of getting things done; a reasonable level of discretion to pursue an idea before having to justify it; and a greater openness in head office to new ideas (Birkinshaw, 1998 p. 356).

In summary, over the past three decades, scholars have devoted considerable attention to examining the antecedents and implications of networks in organizational contexts

(Kilduff and Brass, 2010). Specific ties reflect the interaction and interdependence that connect different actors. Namely, ties such as friendship, kinship, knowledge exchange, and so on (Phelps et al., 2012; Carpenter et al., 2012). Consistent with the arguments provided by network research in organizational contexts we can state that the field of organizational behavior moves away from an exclusive focus on individuals to consider people in organizations in terms of their embeddedness in social networks. Table 5 shows ten key reasons (arranged chronologically) why it is important to consider the social network from the corporate entrepreneurship perspective.

Table 5. Social network in CE: key reasons

Main idea		Study
1	<i>“The presence of colleagues/partners in the entrepreneurs’ personal networks is strongly related to all performance measures.”</i>	Ostgaard and Birley (1996 p. 48)
2	<i>“Networks provide many of the preconditions that are necessary for corporate entrepreneurs to build relationships.”</i>	Birkinshaw (1998 p. 356)
3	<i>“A firm’s network can be thought of as creating inimitable and non-substitutable value in several ways: as an inimitable resource by itself, and as a means to access inimitable resources and capabilities.”</i>	Gulati et al. (2000 p. 11)
4	<i>“Network theories emerge in virtually every traditional area of organizational scholarship, including leadership, knowledge utilization, innovation, profit maximization, entrepreneurship, and so on.”</i>	Borgatti and Foster (2003 p. 1005)
5	<i>“An important source of new ideas and lucrative opportunities may be the networks, in which the entrepreneur is actively participating.”</i>	Elfring and Hulsink (2003 p. 412)
6	<i>“A key benefit of networks for the entrepreneurial process is the access they provide to information and advice.”</i>	Hoang and Antoncic (2003 p. 166)

Table 5. Continued

	Main idea	Study
7	<i>“A focus on the social networks of organization leaders is likely to enhance our understanding of organizational behavior.”</i>	Balkundi and Kilduff (2006 p. 434)
8	<i>“The use of external relationships is considered an important development factor for the entrepreneurial firm.”</i>	Lechner et al. (2006 p. 515)
9	<i>“A large part of many people’s workday consists of interactions with others.”</i>	Kilduff and Brass (2010 p. 309)
10	<i>“Social networks are influential in explaining the processes of knowledge creation, diffusion, absorption, and use.”</i>	Phelps et al. (2012 p. 1115)

Source: Self-elaborated

5. Entrepreneurial Orientation

EO is usually recognized as part of strategic orientation (Grawe et al., 2009; Nazdrol et al., 2011). Strategic orientation is defined by Gatingnon and Xuereb (1997) as the strategic directions which are put into practice by a firm to produce continuous superior performance. Moreover, it has been argued that strategic orientation is synonymous with the term “competitive strategy” (Morgan and Strong, 1998), and previous studies had identified several aspects of strategic orientation such as entrepreneurial orientation, market orientation, and customer orientation, among others (Nazdrol et al., 2011 p. 714). As noted above, in this dissertation we have focused on EO.

EO refers to the strategy-making processes that provide organizations with a basis for entrepreneurial decisions and actions (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). Drawing on prior strategy-making processes and entrepreneurship research, measurement scales of EO have been developed and widely used, and their relationship with performance variables have been examined (for a holistic and synthetic view of this topic, we suggest Rauch et al., 2009).

The conceptualization and dimensions of EO have been discussed in the literature, and the classical dimension originated from the study of Miller and Friesen (1982; 1983), but subsequent studies have underlined the importance of studying organizational factors, such as firm resources, organizational structure, and top management team characteristics to refine the literature on EO and our understanding of the EO-performance relationship (e.g., Covin and Slevin, 1989, 1991; Lumpkin and Dess, 1996). These authors claim that the firm's entrepreneurial behavior is measured by the innovation in product or process (innovativeness), the evidence of proactiveness, and risk-taking propensity of the firm's CEO. Innovativeness refers to a firm's tendency to support new ideas and to foster creative processes that are aimed at developing new ideas. Proactiveness indicates a firm's tendency to take initiatives by anticipating and pursuing new business opportunities. Proactive firms act on future needs actively seeking new opportunities and furthermore they are often pioneer firms that first to enter the new markets (Nazdrol et al., 2009). Risk-taking reflects a firm's willingness to commit more resources to projects in which the expected returns are uncertain. Hence, risk-taking is the tendency to engage in high-risk project and managerial preferences for bold versus cautious actions in order to achieve the objective (Miller, 1983). Although, risk has various meanings, depending on the context in which it is applied (Lumpkin and Dess, 1996).

The concept of entrepreneurial orientation receives substantial conceptual and empirical attention and represents one of the areas of entrepreneurship research, where a cumulative body of knowledge is developing (Basso et al., 2009; Rauch et al., 2009), as illustrated by several papers published in numerous scientific journals (e.g., *Entrepreneurship: Theory and Practice*, *Strategic Management Journal*, *Academy of Management Journal*, *Journal of Management Studies*, etc).

Based on a close analysis of the seminal literature, we present an evaluation of the development of the construct. Table 6 summarizes *step-by-step* the description of the entrepreneurial orientation concept.

Table 6. Entrepreneurial Orientation – what we need to know to understand the concept

Step-by-step	Study	Contributions for the literature
<i>The starting point: Canadian contributions</i>	Khandwalla (1977)	The textbook <i>The Design of Organizations</i> discusses organizational attributes and concludes each chapter with a series of research questions, which have inspired numerous scholars of strategic management.
	Miller and Friesen (1982)	In their article <i>Innovation in conservative and entrepreneurial firms</i> , Miller and Friesen introduced the distinction between two types of strategic behavior: Some firms are seen as entrepreneurial, whereas others are seen as conservative.
	Miller (1983)	The paper <i>Strategy making and environment: the third link</i> , proposes three hypotheses related to the relationship between strategy-making and environment. In this paper the author proposes his definition of what will become the foundation of the EO approach, later adopted by Covin and Slevin (1989): “An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch” (Miller, 1983 p. 771).

Table 6. continued

Step by step	Study	Contributions for the literature
Development and consolidation of the construct: Covin and Slevin	Covin and Slevin (1989)	In the study <i>Strategic management of small firms in hostile and benign environments</i> , the authors discuss the concepts of “entrepreneurial” and “conservative” strategic postures based on two major imports: the three variables of the firm-level entrepreneurship phenomenon (Miller and Friesen, 1982; Miller, 1983) and the partial reuse of a questionnaire developed by Khandwalla (1977). Here was born the construct which would become known as “Entrepreneurial Orientation”, extensively used in entrepreneurship and strategy.
	Covin (1991), Covin and Slevin (1991), Covin et al. (2006)	In subsequent articles, Covin and Slevin use the term “EO” with reference to one of the two strategic postures that a firm may adopt in a given environment (highlighted in the research of 1989). Their seminal article, <i>A conceptual model of entrepreneurship as firm behaviour</i> (1991), recaps the previous elements and introduces a detailed description of entrepreneurial posture. Entrepreneurial behavior is one of the implementation channels of strategic behavior at the firm level.
Clarification attempt and an alternative measure of the construct	Lumpkin and Dess (1996, 2001)	In the first study, the authors, through an exhaustive review, propose to clarify the nature of the EO construct and also suggest an alternative model to measure it. Their objective is clearly stated: to establish a clear distinction between the concept of EO and entrepreneurship, comparably with the distinction established between content and process in the strategic management literature. The article entitled <i>Linking two dimensions of entrepreneurial orientation to firm performance</i> (2001), conceptually provides the difference between proactive and aggressive competition (thus far considered as a single dimension).
Assessment of past research: a review	Rauch, Wiklund, Lumpkin, and Frese, (2009)	This is the main review paper on the EO concept. They document, review and evaluate the cumulative knowledge on the relationship between EO and business performance. Extending beyond qualitative analysis, they carried out a meta-analysis exploring the magnitude of the EO-performance relationship. Analyses of 53 samples from 51 studies.

Source: Self-elaborated in accordance to Basso et al. (2009)

6. Innovativeness

Innovativeness relates to the firm's capacity to engage in innovation, that is, the introduction of new products or services, processes, or ideas in the firm's context. There is a growing recognition in strategic management and marketing literature that the capacity to innovate is among the most important factors that impact on business performance (e.g., Akman and Yilmaz, 2008; Alegre et al., 2009; Hult et al., 2004). But innovativeness as a key component in the success of firms had received attention long before. For instance, for Schumpeter (1934), organizational innovativeness is highlighted as an important factor for aggregate economic growth and performance over time. In fact, Schumpeter (1934) was among the first to emphasize the role of innovativeness in the entrepreneurial process. Then, in Schumpeter (1942), the author stressed an economic process of "creative destruction", by which wealth was created when existing market structures were disrupted by the introduction of new goods or services that shifted resources away from existing firms and caused new firms to grow.

Furthermore, in one of his most-cited texts, Drucker (1954) links innovativeness and market orientation, stating that "there is only one valid definition of business purpose: to create a customer...It is the customer who determines what the business is...Because it is its purpose to create a customer...Any business enterprise has two-and only two-basic functions: marketing and innovation" (p. 37).

Innovation is generally regarded as an important research topic because innovation provides the basis for the survival and success of the firm into the future (Hult et al., 2004). Nonetheless, the concept "innovativeness" (as opposed to a single innovation) has some advantages (Tajeddini et al., 2006). But, what is the difference between innovation and innovativeness?

Although a certain degree of overlap between those concepts may exist (Damanpour, 1991), it is possible to point out some distinctions. Moreover, while the concept of innovation is widely dealt with in research, the definition of innovativeness is rarely discussed (Tajeddini et al., 2006). It happens, perhaps because while the definition of innovation is less problematic for research that examines a single innovation, such as product or service (where the objective is simply to demonstrate that the phenomenon being studied is an innovation), it becomes more problematic when examining the concept of innovativeness because it is concerned with the full range of innovations developed (Emsley, 2005). Thus, in order to understand innovativeness, it is necessary to discuss the concept of innovation first.

Innovation is conceived as encompassing the generation, development, and implementation of new ideas or behaviors. An innovation can be a new product or service, a new process, a new structure or administrative system, or a new plan or program pertaining to organizational members (Damanpour, 1991). Hence, innovation is an idea, practice or object that is perceived as being new by an individual or other unit of adoption (Rogers, 1995).

Regarding innovativeness, it examines the whole range of innovations developed (Emsley, 2005; Tajeddini, 2006). That is, organizational innovativeness is more accurately represented when multiple, rather than single, innovations are considered (Damanpour, 1991). Innovativeness gives a more complete reflection of the number of innovations adopted in a given time-period. This concept refers to the poise of business to develop creative or novel internal solutions or external offerings (Lumpkin et al., 2006). In summary, innovativeness is the predisposition to engage in creativity through the introduction of new products or services as well as technological leadership via R&D in new processes (Rauch et al., 2009).

In this dissertation, the concept of innovativeness appears initially in essays 1 and 2 as part of EO construct and it was measured using a set of three questions (see Appendix 2). Then, in essay 3, we used the GEM adult population survey. The innovativeness construct is part of the GEM-available information and its dimensions refer to the poise of an organization to develop creative or novel internal solutions or external offerings (See Reynolds et al., 2005). Despite two different approaches to a single concept (in the same dissertation), the core of the measure in both own-designed questionnaire and GEM survey is the same. In our questionnaire this concept is captured rather well via: the tendency to engage in and support new ideas generation, novelty, experimentation and creative processes. Equally, in GEM survey the questions concerning innovativeness indicate the degrees of effort by the firm in an attempt for potential customers to consider their products or services new and unfamiliar and the technologies or procedures required by these products or services becoming generally available recently, as well as strategic innovation and market relationship.

In summary, innovativeness in both set of measures is the predisposition to engage in creativity through the introduction of new products or services as well as technological leadership via R&D in new processes.

CHAPTER III

ESSAY ONE – ENTREPRENEURIAL ORIENTATION, ENVIRONMENTAL HOSTILITY AND SME PROFITABILITY: A CONTINGENCY APPROACH

Abstract

This essay investigates the effect of the entrepreneurial orientation (EO) on SME profitability. The essay also proposes a contingency model to explore the moderating effects of environmental hostility on the relationship between EO and profitability. The study was conducted using a sample of 121 manufacturing SMEs in Spain. Results confirm the direct positive influence of EO on a firm's profitability. More importantly, the impact of EO on SME profitability is higher when there is a fit between EO and the external environment.

1. Introduction

It is well-known that there is a large body of literature regarding aspects of firm performance, however, concerning the findings, this literature provides diverse and often conflicting empirical results. Equally important, the strategy dimensions are recognized as important tools with great impact on firm performance (Aragón-Sánchez and Sánchez-Marín, 2005). In this sense, EO has emerged as a major construct within the strategic management and entrepreneurship literature over the years (Basso et al., 2009; Rauch et al., 2009). EO is a strategic construct whose conceptual domain includes certain firm-level resources and management-related preferences. EO is revealed through an organization's exhibition of innovativeness, proactiveness, and risk-taking (Covin et al., 2006).

Several authors, when referring to the firm's strategic posture, do it by using a Resource-based view (RBV) framework, presenting resources and capabilities as essential to gaining sustained competitive advantages (Barney, 1991; Porter, 1985; Wernerfelt, 1984). Consequently, these useful and valuable possessions, combined with other resources, are more likely to generate higher performance for the company (Teece et al., 1997). Thus, this theoretical approach has become one of the most widely used frameworks in the management literature (e.g., Alvarez and Busenitz, 2001; Ferreira and Azevedo, 2008; Teece, 2007).

Regarding the EO-performance relationship, several authors proposed and documented a positive relationship between them (e.g., Covin and Slevin, 1991; Lumpkin and Dess, 2001; Wiklund, 1999; Wiklund and Shepherd, 2005). Nonetheless, there are some studies that confirmed its purposes only partially (e.g., Lumpkin, et al., 2006; Madsen, 2007). Furthermore, some empirical, as well as conceptual, arguments suggest that EO is not equally suitable in all environments (Covin and Slevin, 1989; Robertson and Chetty, 2000; Wiklund and Shepherd, 2011). Namely, the magnitude of the relationship between EO and firm performance is contingent upon the external environment as well as upon internal organizational processes (Tang et al., 2008). Thus, the magnitude of the relationship seems to vary across studies. As stressed by Rauch et al. (2009), while some studies have found that businesses that adopt a strong EO perform much better than do firms that do not adopt an EO, other studies reported lower correlations between EO and performance or were even unable to find a significant relationship. Hence, besides the numerous studies, we can state that the discussion about this relationship is still open.

In this way, this chapter attempts to fill the research gap in line with suggestions of previous studies, such as: (1) by using potential moderator variables (Rauch et al.,

2009), (2) by testing the EO-performance relationship using objective measures of performance (Blesa and Ripollés, 2005; Chow, 2006) and (3) by considering measures from the financial reporting (Chow, 2006; Ferreira and Azevedo, 2008; Madsen, 2007).

In regard to measures of financial performance, both subjective (Covin, 1991; Covin and Slevin, 1989; Madsen, 2007; Tang et al., 2007; Wiklund, 1999) and objective measures (Richard et al., 2009; Zahra and Covin, 1995) have been studied, stating that there are many reasons for the increasing interest in understanding the phenomenon of profitability from an entrepreneurial perspective. However, some ambiguity still exists regarding the financial impact of EO (Richard et al., 2009).

Thus, the main objective of this empirical essay is to measure the effects of EO on SME profitability, as well as to explore the moderating effects of the environmental hostility in this relationship. To achieve our aim, we propose a complete analysis of the relationship between EO and SME profitability by using financial information over a three-year period.

To test the proposed hypotheses a sample of Spanish manufacturing SMEs was used.

Our findings support the belief that firms, in general, may gain an advantage through an entrepreneurial behavior. Equally important, the EO-environment fit may play an essential role in the firm's ability to improve its profitability.

Section 2 presents the conceptual framework, which was determinant to formulate the hypotheses, and reviews the related literature on EO-performance relationship. Section 3 describes the research methods. Analysis and results are presented in Section 4. Finally, in Section 5 the conclusions are presented and discussed.

2. Theoretical Framework, Previous Research and Hypotheses

2.1. Entrepreneurial Orientation as a resource

Adopting the Covin and Miles concept (1999), entrepreneurs are “an individual or individuals who champion new product ideas within a corporate context” (p.48). Entrepreneurs seek to identify new opportunities, respond to environmental changes, and take appropriate actions to achieve success. At the firm level, entrepreneurship is defined as entrepreneurial philosophy that permeates an entire organization’s outlook and operations, and it refers to the firm’s actions per se (Chow, 2006). Thus, EO has emerged as an important resource within companies, representing a widely exploited intangible asset in corporate entrepreneurship. Entrepreneurial values enhance the creation of new businesses within the existing businesses and the renewal or revival of ongoing businesses that have become stagnant or require transformation (Slater and Narver, 1995).

RBV (Barney, 1991; Wernerfelt, 1984) helps to explain how firms derive competitive advantages by channeling resources into the development of new products and processes, responding to changes that occur in its environment, assuming a proactive strategic posture, and so on. In turn, EO suggests a proclivity towards the creation of new products or services, proactiveness and risk-taking propensity (Miller, 1983; Miller and Friesen, 1982), which embodies a bold action-oriented position (Hult et al., 2004). “An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch” (Miller, 1983, p. 771).

A firm develops innovativeness if it performs product-market innovations. This dimension refers to the poise of an organization to develop creative or novel internal

solutions or external offerings (Lumpkin et al., 2006). In other words, innovativeness is the predisposition to engage in creativity through the introduction of new products or services as well as technological leadership via R&D in new processes (Rauch et al., 2009). Proactiveness refers to a posture of anticipating and acting on future wants and needs in the marketplace. It is a forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand. By considering that proactiveness involves the capacity of a firm to anticipate changes in its environments, we can state that firm generates a competitive advantage from this posture. Finally, entrepreneurial firms are defined as those willing to take on high-risk projects for the chance of high return, namely, a strong risk-taking propensity by top management under highly uncertain conditions (Covin and Slevin, 1989; Lumpkin and Dess, 1996).

EO and firm profitability

As pointed out before, EO refers to the processes, practices and decision-making activities that characterize the behaviors which a manager engages in to discover and exploit entrepreneurial opportunities (Lumpkin and Dess, 1996). Essentially, it refers to a firm's strategy orientation, capturing the specific entrepreneurial aspect of decision-making styles, methods, and practices (Chow, 2006).

EO reflects a strategic posture, as exhibited by multiple layers of management (Stevenson and Jarillo, 1990). In regard to the financial impact of EO, on the whole, the extant literature provides evidence that allows for a positive relationship. For example, as proposed by Lengnick-Hall (1992), organizations that pioneer the creation and introduction of new products or technologies can achieve superior financial performance. Moreover, firms, through innovativeness, develop a market niche with a new product/service, differentiate themselves and/or substitute incumbents with other

means that customers value (Wiklund and Shepherd, 2005), increasing the likelihood that a firm will realize first-mover advantages and generate extraordinary outcomes (Wiklund, 1999). In the same way, proactiveness is synonymous with taking the initiative and competing aggressively with other firms. Proactive firms anticipate wants and needs in emerging markets (Lumpkin and Dess, 1996), thus achieving profitable opportunities. Risk-taking involves taking bold actions by venturing into the unknown (Rauch et al., 2009), it reflects the tendency to assume relatively high levels of risk-seeking profitable opportunities in the face of uncertainty and the achievement of long-term profitability.

In summary, companies that have EO as an important resource to build competitive advantages will probably strengthen the relationship between behavior and performance. In this sense, prior research also supports the position that EO may impact firm profitability. For instance, Richard et al. (2009) found that EO is positively related to ROE in a sample of 579 US banks. In turn, Madsen (2007) notes that focus on entrepreneurial activities could be associated with better financial results in Norwegian SMEs. Hence, in accordance to stated arguments and previous literature we make the following hypotheses:

H1. There is a positive relationship between EO and SME profitability.

Namely:

H1a. The magnitude of EO is positively related to the magnitude of return on assets (ROA);

H1b. The magnitude of EO is positively related to the magnitude of return on sales (ROS);

H1c. The magnitude of EO is positively related to the magnitude of free cash flow (FCF).

2.2. The moderating role of environmental hostility – a contingency approach

It is acknowledged that the discovery and exploitation of entrepreneurial opportunities results from prior knowledge about markets and customers (Venkataraman, 1997). Moreover, new information about technology, combined with the prior information on market needs and external problems, leads to the discovery of entrepreneurial opportunities (Shane and Venkataraman, 2000). Thus, the external environment is always highlighted as a critical contingency or contextual factor in the EO-performance relationship.

As stated by Galbraith (1973), there is no single way to organize, and there is no strategy which can be applied to any organization. A contingency approach stresses that the firm structure or strategy varies depending on its contextual situation (Chandler, 1962; Lawrence and Lorsh, 1967). Hence, the correct alignment between key elements with the organization's context should lead better outcomes (Garengo and Bititci, 2007). In this sense, the relationship between EO and firm performance is often connected by considering environmental variables (e.g., Covin and Slevin, 1989; Robertson and Chetty, 2000; Tang et al., 2008; Wiklund and Shepherd, 2005).

Several authors stressed the importance of the fit between organization and environment. The importance of proper alignment of the strategy with the environment means that both entrepreneurial and conservative companies must develop characteristics that enable them to cope with their environments (Yeoh and Jeong, 1995). In this vein, Yamada and Eshima (2009) argued that the external environment may have a strong impact on small firms' viability and growth.

This stream of research draws on Khandwallas's contingency perspective (1972), who pointed out that the performance of a company should not be measured only in terms of organizational attribute (structure, management style, etc.), but rather by results from the fit of these dimensions within a specific environment characterized by some degree of hostility and uncertainty. Thus, the classification that would be used in the literature stresses two different scenarios, hostile and benign environments. As mentioned earlier (Chapter II, Section 6), hostile environments are described by Khandwalla (1976/77; 1977) as stressful, very risky, with few opportunities. In the same way, Covin and Slevin (1989) added that the hostile environment is characterized by intense competition, overwhelming business climate and relative lack of opportunity for exploitation. Conversely, the non-hostile or benign environment is one that has none of the characteristics above, but rather provides investment opportunities and has a favorable climate for business (Covin and Slevin, 1989; Khandwalla, 1977).

In fact, the classical study of contingent or contextual analysis of the EO-performance relationship is the research by Covin and Slevin (1989), who pointed out that the entrepreneurial strategy changes according to the external environment being hostile or benign. Entrepreneurial firms benefit especially in hostile environments (Covin and Slevin 1989). It is expected because the success of these firms is generated by their competitive efforts that seek to gain or maintain competitive advantage. In this way, Robertson and Chetty (2000) say that environments characterized by high levels of uncertainty are used to encourage greater levels of innovation and risk-taking, which would imply the adoption of an entrepreneurial posture. On the other hand, in benign environments the relationship between EO and performance may be less significant. Entrepreneurial behavior involves more risk than does a conservative behavior. Covin and Slevin (1989) argued that in a benign environment it is not necessary to take

decisions that create uncertainty or consuming effort or resources to maintain a firm's viability.

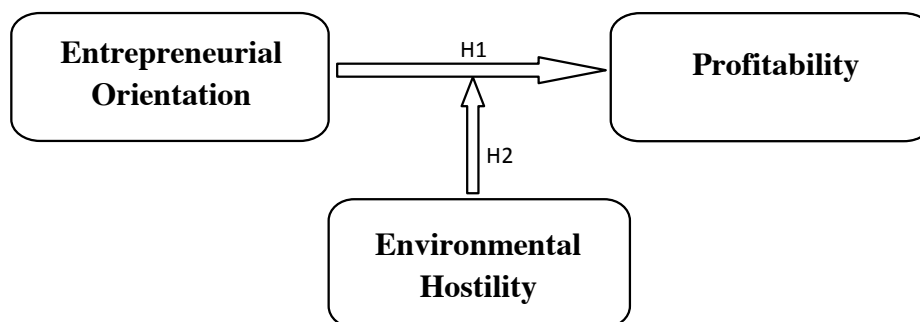
To summarize, the proposal is based upon the idea that there is a contingent relationship between EO, environment and profitability. Thus, the core focus of H2 is illustrated in Figure 1. So, the aforementioned theoretical arguments provide reasonable justification for advancing the following hypotheses:

H2. Business profitability will be greater or lower under the fit between EO and environmental hostility. Thus:

H2a. Entrepreneurial SMEs (high EO), operating in a hostile environment, will have better profitability than will entrepreneurial SMEs operating in benign environments;

H2b. Conservative SMEs (low EO), operating in a benign environment, will have better profitability than will conservative SMEs in hostile environments.

Figure 1. **EO and environmental hostility: impact on firm profitability**



3. Research Design

3.1. Sample and data collection

The companies included in this study were selected based upon three criteria: First, all firms develop manufacturing activities. Several studies in the literature have investigated manufacturing firms (e.g., Covin, and Slevin, 1989; Hoque, 2004; Kaynak,

and Kuan, 1993; Randolph et al., 1991; Robertson and Chetty, 2000). Second, all companies can be classified as SMEs. As indicated before, in Spain about 99% of the companies are SMEs. Moreover, these companies play an important and irreplaceable role in the economy of a country by generating employment and contributing to the GDP. Finally, as many questions refer to decisions or positions taken in the past few years, all companies have been active and are in business for at least the last five years.

The data were collected in two distinct stages. First, we used a questionnaire adapted from the model used in different studies (e.g., Covin and Slevin, 1989; Robertson and Chetty, 2000). The survey is designed to collect the necessary information, which leads to the independent variables *entrepreneurial orientation* and *hostile environment*. The questionnaire is presented using a 7-point Likert scale, and the adapted version was reviewed by a research specialist in strategy management and tested on a manager who participates in strategic decisions. After receiving all comments and suggestions, the questionnaire has been revised and the final version was sent by e-mail to the companies, focusing on the CEO involved in strategic decision-making processes. Although it may be considered imprecise because of the subjectivity in the responses, the use of personal information collected with the same level of authority within each organization reduces the variability of the data (Nasrallah and Qawasmeh, 2009). The selected companies belonging to five representative industries within the manufacturing sector are described in Table 7. The use of different types of firms within a single-sector sampling (manufacturing) is precisely done to capture the potential effects of external environmental forces.

Using the sampling frame of the Iberian System Analysis of Balance (SABI)³, a total of 1,144 firms were previously selected according to the criteria mentioned above. However, the questionnaires were sent to 703 firms because some companies did not report their e-mail, phone or website to contact. Of these 703 questionnaires, 51 were returned incomplete for the following reasons: the e-mail of potential respondent was incorrect or had changed, or the business had closed. Firms that did not respond to the initial request for data were contacted a second time via telephone one month after the initial contact, and then the questionnaire was sent again. Of the remaining 652 questionnaires, 138 were returned completed (83 primary and 55 secondary), indicating an overall response rate of 21.16% (138/652). The current study focused on 121 firms for which complete data were available on accounting information in the investigated years. The survey was carried out in the winter of 2009. The second step of data collection was performed through companies' publications and annual reports to make annual updates to the database of firms which answered the questionnaire. The financial-statement data are obtained from the SABI of 2007-2009.

Finally, to ensure the absence of bias in the data, we have evaluated the bias of non-response (a sample of 121 firms which did not respond to the questionnaire, has been compared with reference to the ROA and number of employees). The results revealed no significant differences between the two groups. Then, a comparison of the early respondents (i.e., those firms that returned the questionnaire before being contacted a second time) and the late respondents (i.e., those firms that returned the questionnaire only after having been asked a second time) revealed no differences (i.e., $p > .10$) in

³ Iberian System Analysis of Balance (SABI) is an online database with detailed financial information about Spanish and Portuguese companies.

terms of age, number of employees, or any of the research variables assessed in this study. These results suggest the absence of response bias.

Table 7. Industrial classification of samples selected and returned

Industry	Total number of firms	Samples selected	Returned incomplete	Responses received (valid)	% response rate
Food and beverage manufacturing	212	143	11	37 (33)	28,03
Textile and apparel industry	202	135	9	33 (30)	26,19
Pharmaceutical manufacturing	146	74	5	11 (10)	15,94
Non-metallic mineral products	297	184	13	18 (15)	10,53
Electrical equipment manufacturing	287	167	13	39 (33)	25,32
Total number of firms	1144	703	51	138 (121)	21,16

Source: Self-elaborated

3.2. Techniques for controlling Common Method Biases

It is acknowledged that different method biases influence the response process in behavioral and organizational research (Meade et al., 2007; Podsakoff et al., 2003). Attempting to control these potential influences, there are two primary ways: the design of the study's procedures and/or statistical controls (Podsakoff et al., 2003).

If the research interest is on the relationship between organizational behavior and organizational performance, according to Podsakoff et al. (2003 p. 887), the researcher can obtain the behavioral measures from key informants and the measures of firm performance from archival sources (i.e., accounting information). The main advantage of this procedure is that it makes it impossible for the mind-set of the informant to bias the observed relationship between the predictor and criterion variables, thus eliminating the effects of potential sources of common method biases such as *consistency motif* – respondents try to maintain consistency in their responses producing, thus, relationships that would not otherwise exist at the same level in real-life settings (Podsakoff and

Organ, 1986; Salancik and Pfeffer, 1977). Particularly in our study, this illusory correlation might appear in the perception about the relationship between entrepreneurial behavior and firm performance. Nonetheless, using objective measures of performance, we can minimize the potential effects of method biases produced by a common source or rater.

Despite the use of procedural techniques, such as the design of the study's procedures being able to reduce or completely eliminate the method biases' influence on the response process, an additional statistical control was also employed. One of the most widely used techniques to address the common method biases is the Harman one-factor test (Meade et al., 2007; Rhee et al., 2010). The basic assumption of this technique is that if a substantial amount of common method variance is present, a single factor will emerge from the factor analysis or the majority of the covariance will be concentrated in one of the factors (Podsakoff et al., 2003 p.889). As expected, the results yielded three factors which accounted for 77.91% of the total variance. Therefore, no single factor emerged from the Harman one-factor test, nor did any factor account for the majority of the variance. These results revealed little serious concern regarding common method biases, and provided support for the validity of our measurement.

3.3. Variables

Entrepreneurial Orientation

EO is a variable constructed from three distinct dimensions: innovativeness, proactiveness and risk-taking propensity. We applied the exploratory factor analysis to assess dimensionality and validity. Statisticians KMO of 0.94 and Bartlett's sphericity test ($p < .01$) support the idea of the validity of the implementation of factorial analysis and allow us to check whether there were significant correlations between variables. To

validate the construct and its dimensions, we carried out a confirmatory factor analysis highlighting the existence of a multidimensional construct (see the path diagram for this construct as well as, the model fit in Appendix 1). Prior research suggests the use of these dimensions and claims that while each dimension focuses on different aspects of strategic entrepreneurial orientation, they are related, thus allowing them to consider a single construct (e.g., Covin, 1991; Covin and Slevin, 1989; Wiklund and Shepherd, 2005).

Each dimension was measured using three sets of questions (see Appendix 2). The first dimension tries to identify the company trend towards innovation, while the second and third dimension measure the pro-activeness and the propensity for risk-taking, respectively. The higher the score (minimum 1 and maximum 7), the more entrepreneurial firm orientation is. The scale obtained an average of 4.165. The reliability of the dimensions was investigated by Cronbach's Alpha. On all occasions the reliability coefficient was greater than 70% (see Table 8).

Table 8. Scale reliability

dimension		Standardized Cronbach's Alpha
Innovativeness	3 items	0.917
Pro-activeness	3 items	0.865
Risk-taking	3 items	0.896

Source: Self-elaborated

Environmental Hostility (EH)

EH is measured with a three-item scale (See Appendix 3). This scale was developed by Khandwalla (1977) and was used in several research studies (e.g., Covin and Covin, 1990; Covin and Slevin, 1989; Dimitratos et al., 2004; Robertson and Chetty, 2000). The scores of respondents for each of the three questions are averaged to give a single index of EH. The higher the index (minimum 1 and maximum 7), the more hostile the

environment in which the company operates is. The scale obtained an average of 4.419. The reliability of the dimensions presented a Cronbach's Alpha of 0.876.

Financial Performance Measurement

Following the literature (e.g., Brush et al., 2000; Chen et al., 2009; Jokipii and Vahamaa, 2006; Nasrallah and Qawasmeh, 2009; Prior, 2003; Randolph et al., 1991), the measures of profitability are: ROA, ROS and FCF on total equity (FCF/TE_{t-1}). ROA is used as a measure of profitability in accounting income. ROS is used as an alternative measure of profitability (profit margin). The FCF ratio measures the real cash flow income. According to Griffin et al. (2010), the ratio of FCF is calculated according to the book value of total equity at the end of the prior year to control for the effect of company size. Table 9 summarizes the measures.

Table 9. Measuring profitability

Measures	Definitions
ROA	Operating earnings/Total assets
ROS	Operating earnings/net sales
FCF*	$FCF/Total\ equity_{t-1}$

Source: Self-elaborated * Calculating the FCF is presented below.

By using different measures we attempted to reduce the problems of using single measures of financial performance. For example, a firm with fully depreciated assets would tend to have a relatively higher ROA than would comparably performing firms with undepreciated assets (Randolph et al., 1991). Similarly, firms with high inventory turnover may have lower ROS figures than might others, but with a higher ROA. By including several measures, the chance of error caused by accounting practices is reduced (Chen, et al., 2009; Donaldson, 2001; Nasrallah and Qawasmeh, 2009).

Free cash flow measurement

The first concept of FCF in the literature comes from the Theory of Agency. Indeed, Jensen (1986) was the first who spoke about cash flow in excess, called by the author

free cash flow, and points out the destination of FCF as one cause of conflict between principal and agent. Similarly, Griffin et al. (2010) also define FCF as the net excess cash flow, which is especially required for new investments.

In this study, we assume a model proposed in previous studies (e.g., Jokipii and Vahamaa, 2006; Prior, 2003) for the calculation of the FCF. We understand that this model is closely connected with the movement of cash in addition to providing aspects that can be directly linked to the strategy adopted by the company, such as increasing or decreasing stocks, increasing or decreasing accounts with suppliers or clients and decisions on investments in fixed assets. The FCF measure is described in Table 10.

To calculate the FCF, we have used information in times T and $T-1$. Namely, to measure the change in trade receivables and creditors or changes in stock and fixed assets it is necessary to consider the accounting report from the preceding year.

Table 10. FCF measurement

	EBITDA
(-)	Financial expenses
(+/-)	Changes in trade receivables
(+/-)	Stock changes
(+/-)	Changes in creditors
(-)	Investment in fixed assets
=	Free cash flow
Model by Prior (2003)	

Control variables

To explain firm performance, the model requires information about firm size. In the literature on performance it is common to find variables used to monitor the effect of company size and the probable influence of economies of scale on profitability indicators (e.g., Brush et al., 2000; Chen et al., 2009; Dewenter and Malatesta 2001; Griffin et al., 2010; Kaynak and Kuan, 1993). To represent firm size, variables such as number of employees, total sales, and total assets have been introduced. Then, the

variable which best fits the model was number of employees, used in logarithmic form (lnSize). Also rates of leverage (gearing) receive special attention when explaining the firm's financial performance (Chen et al., 2009; Dewenter and Malatesta, 2001). We also include the variable leverage (Lev) to capture effects of capital structure; this ratio is calculated from the sum of total current debt and long-term debt divided by total assets. For the control variables (size and leverage), the average of the period (2007-2009) was considered.

4. Analysis and Results

According to the perception of the executives surveyed, companies were classified as entrepreneurial or conservative considering the magnitude of their entrepreneurial orientation. The environment was classified as benign or hostile, depending on the degree of hostility perceived.

The EO index is located between one and seven, with the highest score indicating more entrepreneurial behavior. The mid-point for the EO index was four. Thus, an entrepreneurial firm had an EO index greater than or equal to four, and a conservative firm had an EO index less than four. By using these cut-off points, from the 121 useable replies, 71 were classified as entrepreneurial firms, and 50 firms were classified as being conservative. The same approach was used to classify the level of hostility of the environment. Thus, the environment is considered to be hostile when the index is greater than or equal to four, and is considered benign when the index is less than four. At the moment the survey was done, a third part of the SMEs considered their environment as benign, especially companies in the food and beverage industry. Conversely, two-thirds of the SMEs saw their environment as hostile. For example, in

the pharmaceutical manufacturing industry, all companies considered their environment as stressful and very risky.

Table 11 summarizes the main statistics (i.e., mean scores and SDs) and the correlation matrix of key variables considered in the study. The correlation among the independent variables are all less than $r = .50$, suggesting that multicollinearity was not a serious problem in the regression analyses (Hair et al., 1998).

The research hypotheses were tested using multiple regression models. The analysis is structured in three steps. The first step is the base model, taking only the control variables into consideration (size and leverage). The influence of firm size is not significant in any model. However, leverage is significant to predict return on assets (ROA) and sales margin (ROS), but not significant to predict FCF.

Table 11. Summary of statistics and correlation coefficients for key variables

Variables	Mean	SD	ROA	ROS	FCF	EO	EH	lnSize	Lever.
ROA	.05	.150	1.00						
ROS	.05	.138	.711**	1.00					
FCF	.05	.176	.501**	.327**	1.00				
EO index	4.193	1.394	.330**	.248**	.331**	1.00			
EH index	4.377	1.306	.086	.049	.017	.292**	1.00		
lnSize	3.92	.855	-.028	.075	.024	.128	-.055	1.00	
Leverage	.483	.243	-.259**	-.340**	-.149	-.043	.043	-.103	1.00

Note: * $p < 0.05$; ** $p < 0.01$.

In the first model, we suggest a function [1] that attempts to verify the first hypothesis:

$$[1] \quad profitability_{it} = \beta_0 + \beta_1 \ln Size_{it} + \beta_2 Lev_{it} + \beta_3 EO_i + \epsilon$$

where:

profitability is the set of financial ratios (ROA; ROS and FCF), *lnSize* is a control variable representing the firm size, *Lev* is a control variable that represents the ratio of

leverage of the firm and *EO* is a construct used as an independent variable and assumes values between one and seven.

The model [1] shown in Table 12 (Step 2) suggests that overall *EO* has a significant and positive direct impact on SME profitability ($ROA = 0.332, p < .01$; $ROS = 0.233, p < .05$; $FCF = 0.329, p < .01$). These results reveal that the *EO* construct plays an important role in SME financial performance, presenting a positive effect on all of the ratios (supporting sub-hypotheses H1a, H1b and H1c).

Then, in the third step, we propose a function [2], which allows one to observe the financial performance variability by considering different scenarios in a contingent relationship between *EO* and *EH*. Four categories of dummy variables were used to examine Hypothesis 2 (H2a and H2b). Three categories were introduced in the function [2]. So, we omitted category *dCO_HE* (coded 1 for conservative firms doing business in a hostile environment, and 0 in other cases) from the function; nonetheless, the regression results are interpreted considering the category removed. As predicted, and not surprisingly, these conservative SMEs operating in hostile environments presented the worst performance among all firms in the sample.

$$[2] \quad profitability_{it} = \beta_0 + \beta_1 \ln Size_{it} + \beta_2 Lev_{it} + \beta_3 dEO_HE_i + \beta_4 dCO_BE_i + \beta_5 dEO_BE_i + \epsilon$$

where:

variable	definition
----------	------------

profitability is the set of profitability ratios (ROA; ROS and FCF);

<i>lnSize</i>	is a variable to prevent possible effects of firm size and is expressed by the average number of employees in the period (2007-2009) in logarithmic form;
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<i>Lev</i>	used as control variable and represents the ratio of leverage of the company, and is calculated from the sum of total current debt and long-term debt divided by total assets;
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- dEO_HE* dummy variable coded 1 for firms with an entrepreneurial orientation doing business in a hostile environment, and 0 in other cases;
- dCO_BE* dummy variable coded 1 for firms with a conservative orientation doing business in a benign environment, and 0 in other cases;
- dEO_BE* dummy variable coded 1 for firms with a entrepreneurial orientation doing business in a benign environment, and 0 in other cases.

By using this model we can consider the full sample in the regression analysis, which is statistically more consistent to support hypotheses H2a and H2b. The regression results using Model [2] are presented in Table 12 (Step 3).

As predicted in Hypothesis 2, the fit between EO and EH plays an important role in SME profitability. Namely, as Model [2] in Table 12 shows, the EO-EH relationship is significant and has a positive impact on SME profitability. For example, H2a – *SMEs with EO, operating in a hostile environment, will have better profitability than SMEs with EO in benign environments – Confirmed*. Further, entrepreneurial SMEs doing business in a hostile environment present higher performance in all ratios than do entrepreneurial SMEs doing business in a benign environment (e.g., ROA: *EO_HE* = .526 and *EO_BE* = .188; ROS: *EO_HE* = .463 and *EO_BE* = .145; FCF: *EO_HE* = .770 and *EO_BE* = .297).

By observing the performance of conservative firms, it is possible to analyze directly with the excluded dummy variable. The H2b predicted – *SMEs with a low EO, operating in a benign environment, will have better profitability than will SMEs with a low EO in hostile environments – Confirmed*. Conservative SMEs have higher financial performance in a benign environment than in a hostile one (*CO_BE* > *CO_HE*). For example, conservative firms operating in a benign environment present a ROA of 0.252 ($p < .05$) and a FCF index of 0.324 ($p < .01$), higher than do conservative firms in a hostile environment.

Table 12. Results of regression analyses

	ROA			ROS			FCF		
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Step 1:									
Controls									
Size(lnE)	-.056 (.016)	-.097 (.015)	-.070 (.015)	.040 (.014)	.011 (.014)	.029 (.013)	.009 (.019)	-.032 (.018)	-.011 (.016)
Leverage (DR)	-.265** (.055)	-.225** (.052)	-.239** (.051)	-.335*** (.049)	-.328*** (.048)	-.313*** (.047)	-.148 (.066)	-.139 (.063)	-.106 (.055)
Step 2: H1									
EO		.332*** (.009)			.233** (.008)			.329*** (.011)	
Step 3:									
Fit EO-EH									
dEO_HE			.526*** (.034)			.463*** (.031)			.770*** (.037)
dCO_BE			.252** (.039)			.218** (.036)			.324*** (.047)
dEO_BE			.188* (.044)			.145 (.040)			.297*** (.046)
Model fit									
R ²	.070	.178	.222	.117	.170	.237	.022	.129	.336
Adjusted R ²	.054	.157	.188	.102	.149	.204	.006	.107	.307
F value	4.454**	8.458***	6.554***	7.810***	7.994***	7.140***	1.353	5.779***	11.653***

Note: N = 121 * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. The entries in the table are standardized coefficients.

The numbers in brackets are standard errors.

5. Discussion and Conclusions

This essay addresses the impact of EO on SME profitability and key effects of external environment in a contingency model. We thereby fill a significant gap, namely, this study contains two important novelties with regard to previous research. First, our contribution consists of the variable to be explained, focusing the analysis on objective measures from book value of financial ratios, attending a limitation of past empirical research as stressed by Chow (2006). Second, three accounting ratios were used to measure SME profitability. Thus, besides traditional ratios such as ROA and ROS, we proposed FCF as an alternative measure to understand the variability in the cash flow in SMEs. Hence, if FCF is positive the company not only has met its commitments and operational requirements, but also money is left to reduce debt, pay dividends to their shareholders or expand its business. Otherwise, a negative FCF means that the company will sell part of its investment or increase its debt. Our findings confirm the existence of a positive and significant relationship between EO and FCF, as well as the importance of the influence of low versus high environmental hostility.

Overall, our findings provide more evidence about the existing relationship between strategic attributes and performance with certain contingencies from the firm's operating environment. A similar conceptual model has been applied in previous literature (Covin and Slevin; 1989; Robertson and Chetty, 2000; Yeoh and Jeong, 1995).

Consistent with previous findings, we pointed out a strong positive relationship between EO and performance (e.g., Moreno and Casillas, 2008; Tang et al., 2008; Wiklund and Shepherd, 2005). Our results also indicate that the effect of EO on business financial performance is greater or lower, according to high or low environmental hostility,

supporting, thus, findings highlighted in previous studies (e.g., Covin and Slevin, 1989; Lumpkin and Dess, 2001; Robertson and Chetty, 2000).

In general, evidence from this study underscores the importance of a firm's operational environment, as stressed in other studies but, nonetheless, contrary to that presented by Chow (2006), who confirms the link between EO and financial performance but has not found a significant interaction between environmental variables and EO concerning business profitability.

A central message from the evidence provided is that entrepreneurial SMEs have the ability to operate in both hostile and benign external environments (overall results highlighted that entrepreneurial SMEs are more profitable in general than conservative ones are). It can therefore be concluded that entrepreneurial firms have more freedom to make strategic choices than do conservative firms, supporting the view held by Robertson and Chetty (2000). Nevertheless, we have argued that conservative SMEs operating in a benign environment presented results as equally well as entrepreneurial SMEs in the same operating environment. Namely, these results lead us to conclude that the crucial need for product innovation, proactive behavior and risk-taking propensity is more clearly in firms which operate in hostile environments.

In conclusion, our findings emphasize that the strategic orientation of the firm should not be considered in isolation, but rather within its environmental context. In the current economic context, this finding represents an important implication for managers in manufacturing SMEs. Thus, in an uncertain environment where an atmosphere of high risk predominates, few opportunities, and with tremendous competitiveness, an entrepreneurial posture of the firm is specially recommended. This result could be explained by the characteristics required by the hostile environment (i.e., companies with an entrepreneurial profile, which often are the first to introduce new products,

services or administrative techniques, and typically assume a very competitive posture). Hence, the task for CEOs is to design and implement a culture that embodies product innovation, technological leadership via R&D, and a posture of anticipating and acting on future wants and needs in the marketplace.

CHAPTER IV

ESSAY TWO – THE EFFECTIVENESS OF ENTREPRENEURIAL ORIENTATION AND NETWORK RESOURCES IN TERMS OF SMEs GROWTH

Abstract

This essay presents the results of a survey of 121 manufacturing SMEs in Spain. The research question explores the effectiveness of two intangible resources: firm networks and entrepreneurial orientation, in terms of firm growth over a three-year period. Structural Equation Modeling confirmed the importance of these resources and pointed out the positive effect of network usage on entrepreneurial orientation development.

1. Introduction

Patterns and determinants of firm growth are one of the classic, but still most emphasized, topics in management studies. As underlined recently by Lee (2010), there is a large body of literature regarding various aspects of firm growth; however, concerning the pattern of firm growth, post-research provides diverse and often conflicting empirical results, encouraging the revival of this topic (e.g. Capelleras and Greene, 2008; Capelleras and Rabetino, 2008; Delmar et al., 2003; Wiklund, 1999). The resource-based view (RBV) emphasizes the role of core competences of firms and suggests that the best way to understand a firm, as well as to explain its performance, by considering it as a collection of productive resources specific to each firm, which allows it to compete successfully against other firms (Penrose, 1959), gaining a sustained competitive advantage and intricate gathering of resources that create barriers for competitors (Barney, 1991). Resources can be tangible or intangible assets that enable a

firm to conceive and implement strategies. Intangible resources consist; for example, of: knowledge, skills, behavior, and organizational networks, among others (Gassmann and Keupp, 2007; Grant, 1996b). These useful and valuable possessions, combined with other resources, are more likely to generate higher performance for the company (Teece et al., 1997).

Approximately three decades ago, both entrepreneurial orientation (EO) and organizational networks emerged as an important area of inquiry within entrepreneurship. The EO concept, already investigated in the previous essay, receives substantial attention where cumulative knowledge is developing (Basso et al., 2009; Rauch et al., 2009). This concept refers to the strategy-making processes that provide organizations with a basis for entrepreneurial decisions and actions. If, on one hand, EO can be a way for the firm to exploit opportunities and improve its growth, on the other hand, equally important firm networks may have some influence on continuous growth because they play a role in creating a sustainable competitive advantage (Gulati et al., 2000). Thus, the study of the firm's network resources has drawn considerable attention in the current literature (e.g., Greve and Salaff, 2003; Madsen, 2007; Ripollés and Blesa, 2005).

Organizational networks can be classified as a social resource (Burt, 1992). Thus, firm networks are formed by the use of a manager's own networks and the recognition of the network as a knowledge-based resource with the ability to influence the environment. As noted by Hansen (1995), entrepreneurial network researchers have tended to focus on the role that entrepreneurs' networks play in the process of the creation of new organizations. In fact, Ostgaard and Birley (1996) pointed out that a network, in this respect, provides the entrepreneur with support contact and credibility. Previous studies also confirmed the importance of networks for company growth (Hite and Hesterly,

2001; Johannisson et al., 1994; Ostgaard and Birley, 1996). However, the issue of the study is always focused on how network resources impact creation or growth in a new venture context.

In turn, entrepreneurial strategic orientation (Covin and Slevin, 1989) is a well-defined concept (Miller, 1983) and is widely studied (Rauch et al., 2009), so the vast majority of past studies have found a positive relationship between EO and firm performance (Madsen, 2007; Moreno and Casillas, 2008; Wiklund, 1999). Nevertheless, over the years the object of the study, generally, was the US and the North of Europe context (e.g., Covin et al., 2006; Lumpkin et al., 2006; Wiklund and Shepherd, 2005); only in recent years has it been subject of research in other contexts, such as emerging regions (e.g., Chow, 2006; Levenburg and Schwartz, 2008; Tang et al., 2007) or in another European context (e.g., Casillas and Moreno, 2010; Ferreira and Azevedo, 2008; Ripollés et al., 2007). EO still makes a contribution to the strategy and entrepreneurship field; one example is the recent number of publications involving this topic (e.g., Wales et al., 2011; Kreiser, 2011; Zhao et al., 2011). Furthermore, in any studies the limitations or suggestions represent opportunities to advance in the research. In this way, Rauch et al. (2009) highlighted that new proposals in methodology analysis and potential moderator variables are still needed. Another suggestion in the current literature encourages researchers to test the EO-performance relationship using objective measures of performance (Blesa and Ripollés, 2005; Chow, 2006; Madsen, 2007).

Once that the distinctive features of EO and firm networks have been described, this essay observes whether firm networks contribute to EO development in established SMEs. Then, we propose an analysis of the impact of these intangible resources on SME growth. Finally, through a multi-group analysis, we examine whether there are

differences between small-and medium-sized firms in terms of the proposed relationships. Using information of 121 manufacturing SMEs in Spain, we applied Structural Equation Modeling (SEM) to examine the involvement of each construct. Objective measures of growth performance over a three-year period have been used.

The essay begins with a brief summary of the literature regarding firm networks as a resource which may be linked to EO development. It will then present a summary of the literature on EO and its linking with firm growth. Still in Section 2, we present the main ideas about network resources and link them with firm growth, proposing both a direct and indirect causal effect. This subsection concludes by advancing testable hypotheses. In Section 3, we present the study's research design and sample. Section 4 gives a presentation of the essay's results. The chapter will conclude with a discussion of the findings.

2. Theoretical Framework, Previous Research and Hypotheses

2.1. Firm networks and EO development

The RBV perspective (Barney, 1991; Teece et al., 1997) suggests that some resources that are intangible can be characterized as inimitable and therefore valuable to the firm. In this context, a new concept where firms are embedded in networks of social, professional, and exchange relationships with other individuals and organizations (Gulati et al., 2000) replaces the idea of firms as autonomous entities and highlights the important role played by the development and use of networks for firm survival and growth (Gulati, 1998; Hite and Hesterly, 2001). Aldrich and Zimmer (1986) pointed out that the entrepreneur is embedded in a social network that plays an important role in the entrepreneurial process. So, in this scenario an important research topic within the field of entrepreneurship emerged, and the role of networks in the entrepreneurial process has

been widely studied in recent decades (Jack, 2010; Jack et al., 2010). Social networks can be defined as a set of actors (individuals or organizations) and a set of linkages between these actors (Brass, 1992; Hoang and Antoncic, 2003).

Entrepreneurs use their interpersonal and inter-organizational relationships to achieve relevant information (Ripollés and Blesa, 2006), advice, and in some cases solve problems (Johannisson et al., 1994). In this sense, these relationships are viewed as the media through which actors gain access to a variety of resources (Hoang and Antoncic, 2003). It reinforces the belief that not only performance, but also the conduct and behavior of firms can be more fully understood by examining the networks of relationships in which firms are embedded (Gulati, 1998). Thereafter, Gulati et al. (2000) indicated that the considerable and growing research in this field began to attest the importance of understanding the interfirm relationships and how the social context influences a firm's behavior. In other words, how the use of a leader's and organization's networks can strengthen characteristics such as innovation, proactivity, and a risk-taking propensity. Considering that networks are both cognitive structures in the minds of individuals and actual structures of relationships that link individuals (Balkundi and Kilduff, 2006), the potential synergy between firms and their social networks can generate capabilities in learning that play an important role in creating and increasing skills to innovate and make the first move by introducing new products and services. Furthermore, networks are vital when topics are: discovery of opportunities, securing resources and gaining legitimacy (Elfring and Hulsink, 2003). Likewise, "networks act as a buffer against shocks or surprises from the global market" (Madsen, 2007 p. 191). Members of social networks can directly influence the propensity to assume greater or lesser risk activities.

In addition, Ripollés and Blesa (2005; 2006) found a direct causal contribution of the entrepreneur's contact frequency with members of his/her families or social networks into a firm's entrepreneurial behavior. The authors argue that the entrepreneurs need a balanced personal network to better develop the entrepreneurial orientation. "To foster EO, the entrepreneurs need to access different resources to identify new entrepreneurial opportunities, as well as, the resources and competences needed to exploit these opportunities economically ahead of competitors, thus facilitating innovative and proactive performance, and a moderate risk-taking approach" (Ripollés and Blesa, 2005 p. 243). According to these results, the following general hypothesis about the relation between firm networks and EO can be addressed.

H3. A firm's emphasis on using networks will affect EO development positively.

2.2. EO and firm growth:

EO refers to the entrepreneurial strategic posture that characterizes the behaviors which a manager engages in to discover and exploit entrepreneurial opportunities (Lumpkin and Dess, 1996). Empirically, Miller and Friesen (1982), then Miller (1983) have used five items related to risk-taking and innovation to distinguish between entrepreneurial and conservative firms. "An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch" (Miller, 1983 p. 771).

A firm develops innovativeness if it performs product-market innovations. This dimension refers to the poise of an organization to develop creative or novel internal solutions or external offerings (Lumpkin et al., 2006). In other words, innovativeness is the predisposition to engage in creativity through the introduction of new products or services as well as technological leadership via R&D in new processes (Rauch et al.,

2009). Proactiveness refers to a posture of anticipating and acting on future wants and needs in the marketplace. It is a forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand. If proactiveness involves the capacity of a firm to anticipate changes in its environments and generate competitive advantage from these postures, the opposite of proactive behavior is passive and reactive behavior (Covin and Slevin, 1989). Finally, entrepreneurial firms are defined as those willing to take on high-risk projects for the chance of high return, namely, a strong risk-taking propensity by top management under highly uncertain conditions (Covin and Slevin, 1989; Lumpkin and Dess, 1996).

In the current literature, if, on one hand, several studies support that there is a positive relation between EO and firm performance (Covin and Slevin, 1991; Wiklund and Shepherd, 2005), on the other hand, some studies report lower correlations between EO and performance or were even unable to find a significant relationship (Lumpkin et al., 2006; Madsen, 2007). The long-term influence of EO on performance is somewhat more insecure, and few studies have used longitudinal data to analyze the phenomenon. Concerning the EO-firm growth relationship, it has generally been proposed that EO has a positive influence on firm growth (e.g., Brown et al., 2001; Covin and Slevin, 1991; Moreno and Casillas, 2008; Wiklund, 1999). Considering that entrepreneurial companies are defined as firms with innovativeness and that assume relevant risks to growth (Covin and Slevin, 1991), in the same way Brown et al. (2001) proposed that one of the important dimensions of a firm's entrepreneurial management is precisely its orientation toward growth.

Likewise, in Covin et al. (2006), the results suggest positive effects of EO on a firm's growth rate, but it depends on several strategic process-related variables such as

strategic decision-making participativeness, strategy formation mode, and strategic learning from failure. Therefore, EO and growth (measured by sales growth, in this study) were more positive-related among firms that employ autocratic decision-making and that exhibit an emergent strategy-formation process.

Equally important, in the EO-growth relationship is the sustainability of EO effects on firm growth. If, on one hand, it is consistently reported that EO is the key strategic engine to explore and exploit new opportunities, on the other hand, the long-term or lagged effects of EO on firm performance are still unclear. According to Madsen (2007), the influence of EO on performance is somewhat more insecure, and he added that very few studies have examined the long-term or lagged effects that might exist between sets of antecedents, entrepreneurship and performance.

In an attempt to improve the knowledge regarding the long-term effect of corporate entrepreneurship, Zahra and Covin (1995) collected data from three different samples over a seven-year period to assess the longitudinal impact of EO on growth revenue. The results suggest a positive impact and indicate that this posture is particularly effective among firms operating in specific environmental conditions.

Likewise, other studies have examined whether EO affects firm growth rates over an extended period of time. For example, Wiklund (1999), using data from Swedish small firms, has shown that there is a positive relationship between EO and performance (reflecting growth and financial performance), and this relationship also increases over time. Using data from Norway, Madsen (2007) also concluded that the sustained and increased EO level was positively associated with high performance (employment growth and performance compared with competitors). However, in Madsen's research the absolute level of EO does not have a positive association with firm performance.

In line with findings from previous research, Yamada and Eshima (2009), using longitudinal (two years) data from 300 small technology-based Japanese firms, have concluded that EO in Time 1 is positively related to firm performance (reflecting innovation, growth and profitability) in Time 2. Furthermore, EO did not show a statistically significant impact on a firm's performance when it maintains the same or even decreased level over time. The sustainability of the EO-performance relationship was only confirmed when the level of EO increased.

Recently, in the Spanish context, Casillas and Moreno (2010), incorporating the influence of family on EO dimensions, have highlighted the effects of EO on firm growth (the period used was four years), and their results suggest a positive and significant effect of innovativeness and pro-activeness on firm growth, constrained to the model without interaction of family involvement. However, their results do not support a positive relationship between risk-taking and growth rates, confirming that the influence of EO on performance can be somewhat more insecure, which confirms the need for more longitudinal research.

Finally, after this review it is possible to recognize the relevant relationship between EO and firm growth. However, in the recent literature there are few empirical studies which explicitly analyze this relationship, which measures the EO effects on firm growth in the long-term. Thus, following these arguments, and in accordance to evidenced literature, we created the basis of Hypothesis 4.

H4. SMEs growth in the long-term is more likely when the firm has a higher EO.

2.3. Firm networks and growth: direct and indirect causal effects

A number of scholars have asserted that several elements of networks can create advantages in a firm's environment (Gulati et al., 2000; Hite and Histerly, 2001;

Johannisson et al., 1994). Gulati et al. (2000) highlighted that strategic networks provide a firm with access to information, resources, markets, and technologies. Moreover, they noted that the conduct and performance of firms can be more fully understood by examining the network of relationships in which firms are embedded. For instance, entrepreneurs who use their customers and suppliers as sources of support in the gestation period are more likely to grow faster (Capelleras and Greene, 2008).

The private and invisible nature of some firm-specific resources renders ties inimitable, and a valuable advantage (Teece et al., 1997), thus it may also be important to firm performance (Madsen, 2007). In previous literature, a number of researchers have examined different aspects of a firm's network and in some cases related it to performance (e.g., Elfring and Hulsink, 2003; Hite and Hesterly, 2001; Lechner et al., 2006). Nevertheless, it is important to stress that network ties can have a dark side (Gulati et al., 2000). Sometimes, close ties with customers can cause performance disadvantages, as pointed out by Burt (1992), who stressed that cohesive networks are a source of more constraint than advantage in an emerging firm context. In this sense it is possible to identify considerable disagreement and conflicting results. For example, Birley (1985) found that social networks provide the main sources of help in assembling the resources needed; however, Birley's study did not find any significant relationship between growing and non-growing firms in a sample of new ventures. In the same way, Ostgaard and Birley (1996) tried to associate new venture growth and networking characteristics of the entrepreneur, but they found a complete lack of any significant relationship between the size of network and sales or profit growth. Nonetheless, when the absolute values of sales and profits were measured, they found some support for this relationship. The authors found more support for the relationship when examining the results for employment. In turn, Elfring and Hulsink (2003), use a case study to examine

how specific entrepreneurial processes are influenced by an embedded network of strong ties, and their findings point out the value of networks for discovering opportunities and gaining legitimacy. More importantly, these entrepreneurial processes, in turn, have an impact on a firm's performance. More recently, Madsen (2007) proposed that a firm's emphasis on building and using networks was positively associated with performance, but his findings only partly confirm the proposed hypothesis. Namely, some influence on performance compared to competitors, but not for employment change. So, in this scenario it is possible to observe that although the value of networks is an integral part of a firm's success, there is considerable confusion about the real role that networks play in the firm performance (Elfring and Hulsink, 2003; Hite and Hesterly, 2001).

One of the objectives in this chapter is to improve the understanding of the causal effect of networks on firm growth. Namely, how is SMEs growth affected by the firm's network? So, in this sense we propose a model which allows one to observe two aspects: a direct effect of network usage and the indirect effects of this practice through EO on firm growth. If networks are considered to be important for all types of companies particularly due to the fact that the economic environment is becoming increasingly competitive (Madsen, 2007), it is interesting to note that previous research on inter-firm networks has often focused on the initial phase of the firm's development, during the process of early growth (e.g., Hite and Hesterly, 2001; Lechner et al., 2006; Ostgaard and Birley, 1996; Ripollés and Blesa, 2005), addressing the distinctive role played by different types of networks in the first years after foundation. However, entrepreneurs continue to use their networks to provide themselves with business information, advice, and problem-solving (Johannisson et al., 1994). That is, the reliance on networks is not constrained to the start-up stage (Hoang and Antoncic,

2003). Thus, another contribution in this study is addressed in this way: In established SMEs, what is the value of the use of networks as an important resource?

As Birley (1985), Aldrich and Zimmer (1986) and Elfring and Hulsink (2003) pointed out, “A network is one of the most powerful assets that anybody can possess: it provides access to power, information, knowledge and capital as well as other networks” (Elfring and Hulsink, 2003 p. 409). Other features are linked with the relational mix (Lechner and Dowling, 2003; Lechner et al., 2006), namely different network types: social networks, co-operative networks, marketing information networks, reputation networks, and cooperative technology networks that, according to Lechner and Dowling (2003), enable growth in different stages of firm development. It can support the established firm and it can help SMEs beyond their early stages of development. Thus, the following hypotheses can be addressed:

H5a. SME growth is more likely when the firm consistently uses its networks as a resource.

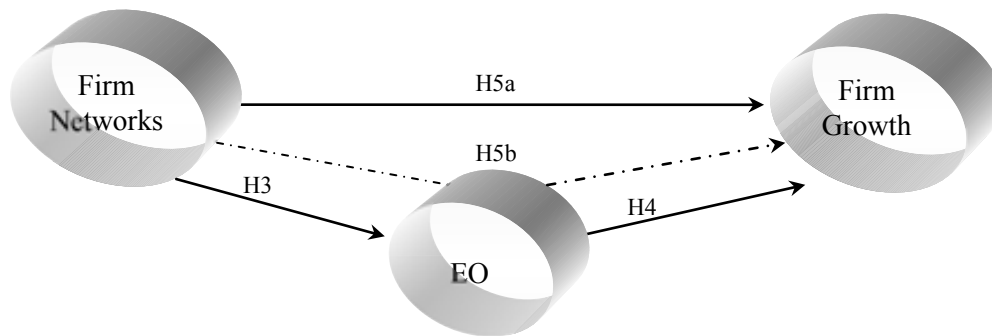
As pointed out before, many scholars suggest that firm networks can play an important role in the entrepreneurial process (Elfring and Hulsink, 2003; Balkundi and Kilduff, 2006; Gulati et al., 2000) and even stress that the repeated use of an entrepreneur’s personal contacts has a positive effect on entrepreneurial orientation (Ripollés and Blesa, 2005). In other words, network usage plays a positive role on EO development (H3). Furthermore, some literature confirms that EO is positively related to firm growth (Brown et al., 2001; Moreno and Casillas, 2008) – our proposal in H4. Considering this two-fold evidence, and the potential direct effect of networks on firm growth – our proposal in H5a, it can obviously be further argued that networks have an indirect effect on firm growth through the latent variable EO.

Therefore, we posit:

H5b. The relationship between networks and growth can be enhanced with a positive indirect effect through the mediator EO construct.

Our proposal is based on the idea that there are causal relationships between network usage, EO, and SME growth. Thus, the core focus from H3 to H5b is illustrated in Figure 2.

Figure 2. **Proposed model and relationships between firm networks, EO and growth**



2.4. Size as a moderator term

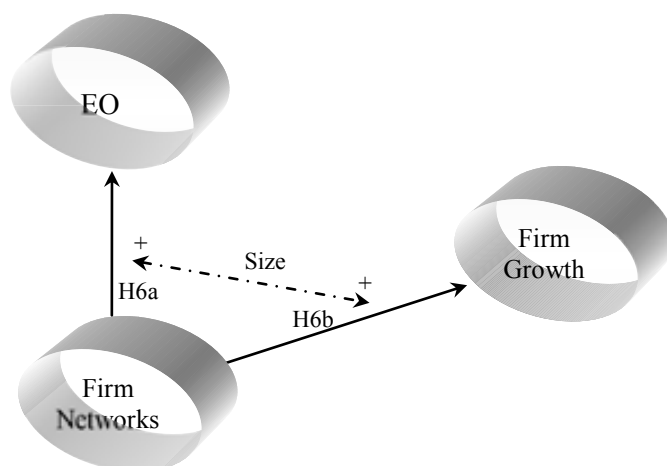
The theoretical argument which justifies the different moderator effect of firm size on the influence of network usage on EO development and firm growth (relationships proposed in Hypotheses 3 and 5) follows some findings in the literature. The conduct of firms is influenced in important ways by the strategic networks in which they are embedded (Gulati et al., 2000). In this sense, it can be intuited that the more developed the networks in number and in quality of the ties, the more beneficial to the firm. In order to go one step further, we try to identify if there are differences in how network usage affects EO development and firm growth, in terms of firm size. As Venkataraman and Van de Ven (1998) stated, the survival and growth of an entrepreneurial firm

depend on its ability to maintain and extend its networks of external relations. It is acknowledged that the role of the entrepreneurs, managers, and employees is critical in building external relations (Lechner and Dowling, 2003). In this vein, the larger the organizational team, the more hours are likely to be spent contacting their networks or making new contacts (Kamm and Aldrich, 1991). In this research, the construct of network includes, among others, the use of managers' own networks, as well as employees' networks as a source of information for the firms. To sum up, the number of managers or employees can influence the number of ties developed by firms and, in turn, be directly related to the degree of involvement in the use of networks and their effects on entrepreneurial behavior, as well as on firm growth. This leads to the following hypotheses:

H6a. The emphasis on using networks affects EO development more intensely in medium-sized firms than in small ones.

H6b. The emphasis on using networks affects firm growth more intensely in medium-sized firms than in small ones.

Figure 3. **The moderating role of size**



3. Research Design

As previously mentioned, in the first and second empirical chapters of this dissertation the same dataset was used, obtained through the same response process. Hence, actually it is the same research design used in the previous empirical essay, where the sample, data collection, control of response bias and common method biases are repeated.

3.1. Sample and data collection

To test the relationship between EO, network resource and firm growth, data were collected from a sample of SME Spanish firms.

Survey

All companies included in this study which develop manufacturing activities can be classified as SMEs, and have been active and are in the business for at least the last five years.

The data were collected in two distinct stages. First, we applied a questionnaire which has been adapted and designed to collect the necessary information, which leads to the constructs *entrepreneurial orientation* and *firm networks*. The questionnaire is presented in a 7-point Likert scale, and the adapted version was reviewed by a specialist researcher in strategy management and tested with a manager who participates in strategic decisions. After receiving all comments and suggestions, the questionnaire was revised and the final version was sent by e-mail to the companies, focusing on the CEO involved in strategic decision-making processes. Although it may be considered imprecise because of the subjectivity in the responses, the use of personal information collected with the same level of authority within each organization reduces the variability of the data (Nasrallah and Qawasmeh, 2009).

Using the sampling frame of the Iberian System Analysis of Balance (SABI), a total of 1,144 firms were previously selected according to the criteria mentioned above. However, the questionnaires were sent to 703 firms because some companies did not report their e-mail, phone or website to contact. Of these 703 questionnaires, 51 were returned incomplete for the following reasons: the e-mail of potential respondent was incorrect or had changed, or the business had closed. Firms that did not respond to the initial request for data were contacted a second time via telephone one month after the initial contact, and the questionnaire was sent again. From the remaining 652 questionnaires, 138 were returned completed (83 primary and 55 secondary), indicating an overall response rate of 21.16% (138/652). The current study focused on 121 firms, which had available data in the investigated years. The survey was carried out in the winter of 2009.

The second step of data collection was performed through companies' publications and annual reports to make annual updates to the database of firms which answered the questionnaire. The financial statement data are obtained from the SABI 2007-2009 database.

To ensure the absence of bias in the data, we have evaluated the bias of non-response (a sample of 121 firms, which have not responded to the questionnaire, was compared with reference to the ROA and number of employees). The results revealed no significant difference between the two groups. Then, a comparison of the early respondents (i.e., those firms that returned the questionnaire before being contacted a second time) and the late respondents (i.e., those firms that returned the questionnaire only after having been asked a second time) revealed no differences (i.e., $p > .10$) in terms of age, number of employees, or any of the research variables assessed in this study. These results suggest the absence of response bias.

Finally, in order to address concerns relating to common method biases the same process must be considered, and this is carefully explained above in Essay 1 (p. 54).

3.2. Variables

Entrepreneurial Orientation

EO is a variable constructed from three distinct dimensions: innovativeness, pro-activeness and risk-taking propensity. We applied the exploratory factor analysis to assess dimensionality and validity. Statisticians KMO of 0.94 and Bartlett's sphericity test ($p < 0.01$) support the idea of the validity of the implementation of factorial analysis and allow us to check whether there were significant correlations between variables. To validate the construct and its dimensions, we carried out a confirmatory factor analysis highlighting the existence of a multidimensional construct (see the path diagram for this construct, as well as, the model fit in Appendix 1). Prior research suggests the use of these dimensions and claims that while each dimension focuses on different aspects of strategic orientation, they are related, thus allowing them to consider a single construct (e.g., Covin, 1991; Covin and Slevin, 1989; Wiklund and Shepherd, 2005).

Each dimension was measured using three sets of questions (see Appendix 2). The first dimension tries to identify the company trend towards innovation, while the second and third dimension measure the pro-activeness and the propensity for risk-taking, respectively. The higher the score (minimum 1 and maximum 7), the more entrepreneurial firm strategic orientation is. The scale obtained an average of 4.165. The reliability of the dimensions was investigated by Cronbach's Alpha, Construct Reliability (CR) and AVE. On all occasions the reliability coefficient was greater than 70% (see Table 13).

Table 13. **Scale reliability**

Dimension		Cronbach's Alpha	CR	AVE
Innovativeness	3 items	0.917	0.918	0.78
Pro-activeness	3 items	0.865	0.965	0.70
Risk-taking	3 items	0.896	0.984	0.74

Source: Self-elaborated

Firm Networks

Networks were measured through the four-item scale in accordance to Borch et al. (1999) and Madsen (2007) – see Appendix 3. The first item asks about the use of the manager's own networks, the second item deals with the use of networks as a knowledge resource, and the third and fourth items collect information about the use of networks to influence the environment and the use of employees' networks as an information source, respectively. The higher the index (minimum 1 and maximum 7), the more important and used this intangible resource is for the firm. The scale obtained an average of 3.884. The reliability of the dimensions was presented: Cronbach's Alpha of 0.945, CR of 0.948 and AVE of 0.82.

Firm Growth

To measure firm growth, we used objective measures. Using information from the firm's annual balance sheets, firm growth has been measured first by calculating the sales growth for each company for the period 2007-2009, in accordance with previous studies (Delmar et al., 2003; Evans, 1987; Lee, 2010; Moreno and Casillas, 2008). To measure the dependent variable by annual sales growth between 2007-2009, we used the following formula, in accordance with Evans (1987) and Lee (2010), $(\ln S09 - \ln S07)/3$, where $\ln S09$ and $\ln S07$ are the logs of the real firm sales in thousands of Euros for 2009 and 2007, respectively. The second indicator has been measured by calculating the change of the number of employees (Capelleras and Greene, 2008; Capelleras and Rabetino, 2008; Ferreira and Azevedo, 2008) which took place from the

years 2007 to 2009 in logarithmic form $(\ln E09 - \ln E07)/3$. Finally we also calculated the assets growth in the same period (2007-2009). To measure the dependent variable by annual assets growth between 2007-2009, we adapted the same formula used to calculate sales growth and employment growth $(\ln A09 - \ln A07)/3$, where $\ln A09$ and $\ln A07$ are the logs of firm assets in thousands of Euros for 2009 and 2007, respectively.

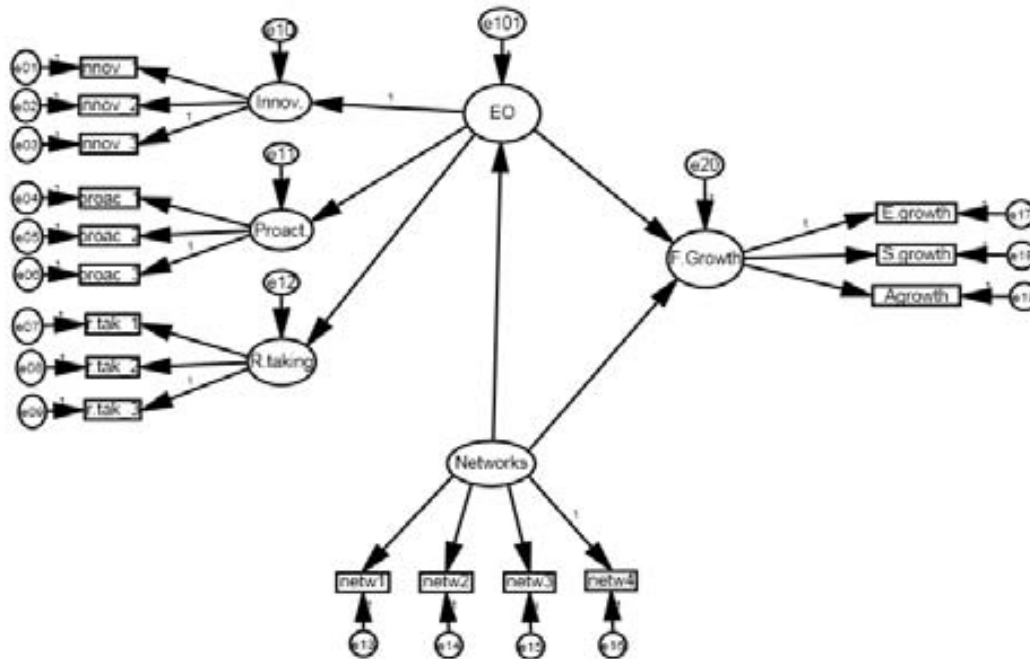
In spite of the potential existence of correlation among growth measurements we opted for more than one measure of growth because, according to Delmar et al. (2003), firms do not grow in the same way, and this implies that the researchers should measure different forms of growth with different growth measures. So, we understand that a more refined interpretation of the results is also possible. In order to develop just one construct to firm growth, considering the information from the three growth rates discussed above, we carried out an exploratory factor analysis to verify whether we could treat the information as a single construct. The reliability of the dimensions was presented: Cronbach's Alpha of 0.761, CR of 0.765 and AVE of 0.52.

4. Analysis and Results

All hypotheses were tested via structural equation modeling (SEM) using Amos Graphics. SEM can be understood as a combination of confirmatory factor analysis (CFA) and multiple regression (Schreiber et al., 2006). This multivariate statistical model extends the possibility of relationships among the latent variables. A structural model displays the interrelations among latent constructs and observable variables in the proposed model as a succession of structural equations. The research model is illustrated in Figure 4. The model-fit indices suggest that the overall adjustment is correct. The Chi-square statistic measures the distance between the original data matrix and the matrix estimated by the model, so it shows a value of 159.56 ($p < .001$). Despite

the importance of Chi-square in order to make statements regarding significance or hypothesis testing, this inferential statistic sometimes presents problems. For example, Chi-square is very sensitive to sample size. Usually, in samples which are large enough for the estimates, Chi-square presents a significant probability level, which is not good for the adjustment. "...It is the case that as N increases, Chi-square blows up. A Chi-square will almost always be significant (indicating a poor fit even with only modest sample size" (Iacobucci, 2010 p. 91). To resolve this problem, we considered the statistic adjusted by its degrees of freedom, and our model has presented an index of 1.628 (159.56/98). There is a consensus that an adjusted Chi-square (Chi-square/degrees of freedom) of less than 3.0 presents a reasonable fit (Iacobucci, 2010; Kline, 2004). Moreover, GFI (0.869) and the adjusted GFI (0.818) explain how well our data fit to the proposed theoretical model. Additionally, the comparative fit index (CFI) with a value close to 1 (0.963) indicates a very good fit. With regard to RMSEA (0.072) and RMR (0.062), both are within the range of accepted values and indicate a close fit of the proposed model in relation to degrees of freedom and the sample variances and covariances, respectively. Finally, the critical N (Hoelter, 1983) suggests a sample size which must be reached in order to accept the setting of a given model on a statistical basis, so in our case the sample size should be bigger than 101 (significance level of .01) or 92 (significance level of .05) and the number of observations was 121.

Figure 4. **Proposed model to SEM**



The results of the relation between variables in the model are displayed in Table 14. The analysis of the hypotheses presents significant values and confirms the three previous relationships in the proposed model. The first finding (Hypothesis 3 – the positive effect of a firm’s networks on EO development) shows that when the SMEs use their networks as a resources source, they increase the likelihood of increasing their entrepreneurial posture (standardized $\beta = .365$, $p < .01$), which supports this hypothesis. Hypothesis 4 shows that an increase in a firm’s entrepreneurial orientation has a positive relationship with growth ($p < .05$). In other words, if we consider the standardized regression weights, it is possible to state that when EO goes up by 1 standard deviation, firm growth goes up by .193 standard deviations. With regard to Hypothesis 5, which examines the direct and indirect causal effects of networks on SME growth, the estimates highlight that SME growth is directly and positively affected by the use of networks (standardized $\beta = .657$, $p < .01$). Equally important, besides this direct effect, we have hypothesized that the relationship between network usage and firm growth was

mediated by EO. The result (standardized indirect effects .066). In short, with mediation analysis, a partial moderating effect of the EO construct on networks-growth relationship can be observed. This indirect effect strengthens the role that networks play in firm growth and can be observed in the total effects index of .723 (.657 + .066). In this estimate, the study takes advantage of using SEM, which allows for a simultaneous and more efficient analysis of the proposed direct and indirect relationships without the need to fit a series of regressions to estimate an indirect effect through a mediator (Iacobucci, 2010). Table 14 presents a summary of the support received by the hypotheses. In all cases, the standard error (S.E.) and critical ratio (C.R.) are also shown.

Table 14. **Hypotheses estimates**

Hypothesis	Estimate	S.E.	C.R.	p
H3 confirmed	.365	.101	3.617	***
Networks→EO	(.343)			
H4 confirmed	.011	.005	2.266	**
EO→Firm growth	(.193)			
H5a confirmed	.040	.006	7.050	***
Networks→Firm growth	(.657)			
H5b confirmed	-			
<i>Indirect effect</i>	(.066)			

The numbers in brackets are standardized regression weights. ** $p < 0.05$ *** $p < 0.01$; S.E. standard error; C.R. critical ratio.

Multigroup analysis

With regard to multigroup analysis, it was performed to test a moderating effect of size in both network-EO and network-firm growth relationships (H6a and H6b). First, the sample was divided into two groups of firms based on their number of employees. This procedure gave one group of small firms (minimum 10 and maximum 49 employees) and another group of medium-sized firms (minimum 50 and maximum 249 employees). The *t*-test confirmed the significant difference of network usage on EO development between small and medium-sized firms; however, these differences were not reflected in the relationship of network usage on firm growth. As can be seen in Table 15, the proposed

influence of networks on EO is stronger in medium-sized firms than in small ones (H6a confirmed), whereas the effect of networks on firm growth does not present significant differences between both groups (H6b not confirmed).

Table 15. Multigroup analysis: small and medium-sized firms

Direct causal effect	Group 1 – Small		Group 2 – Medium		
	Estimate	P	Estimate	P	z-score
Networks→EO	0.166 (0.224)	0.137	0.785 (0.511)	0.000	2.871***
Networks→Firm growth	0.055 (0.694)	0.000	0.035 (0.647)	0.000	n.s.

The numbers in brackets are standardized regression weights. *** $p < 0.01$; n.s. non-significant differences.

5. Discussion and Conclusions

As argued by Capelleras and Rabetino (2008 p. 95), growth is a complex and multidimensional phenomenon and cannot be adequately explained from a single perspective. However, on the basis of our findings and analyses, we have provided some evidence with suggestion how to turn intangible resources, such as entrepreneurial orientation and network usage into the determinants of SME growth.

Firstly, we understand it is relevant to point out some peculiarities of the results found. The companies' annual reports are from 2007 to 2009 so, when the growth measurements were observed in different periods (2007-2008 and 2008-2009) we have seen that, especially in the second period, many SMEs have shown negative growth in terms of sales and number of employees, probably influenced by the peculiar environment of the economic crisis in which our research is inserted. It would be explained by a stochastic factor, namely, that Spanish economy was more affected by the economic crisis from 2008 on, and it would be reflected in the growth rates presented by SMEs. In this way, Hart and Oulton (1996) highlighted that, superimposed

upon all of the systematic forces, is a large stochastic factor such as wars, terrorism, economic crisis and so on.

Returning to our research questions and aims stated in Section 1, the first objective using these SME data was to reply whether network usage affects the EO development in these Spanish firms or not. We argued that by incorporating firms' network usage in our analysis, we would achieve a better understanding of the development of entrepreneurial posture within organizations. Early discussion of this relationship has been presented by Ripollés and Blesa (2005), who consider the usefulness of the information from the entrepreneur's personal networks as a valuable resource for EO development. In a similar vein, the findings attest to a positive effect of firm networks on the proclivity of a firm exhibiting higher levels of EO. In this sense, in part, the results reinforce previous research. Furthermore, we used a wider network perspective, namely, not only an entrepreneur's networking activities, but also attempting to capture the total networking activities going on in the firms as a whole. That is, firm networks as a wide construct measured from the use of a manager's own networks, network as a knowledge-resource, the use of networks to influence the environment and employees' networks as an information source. Likewise, we have found significant differences in this relationship when considering small and medium enterprises separately. A multi-group analysis has enabled us to illustrate that networks play a stronger role in EO development in medium-sized companies than in small ones, probably driven by personal networks within the network resources of companies.

The second purpose in this essay was to highlight how firm growth is influenced by entrepreneurial orientation. In this way, our research is consistent with findings around the EO-performance relationship, supporting a positive effect of entrepreneurial posture

on firm growth (Covin et al., 2006; Moreno and Casillas, 2008; Wiklund, 1999). Moreover, it also provides more empirical findings based on longitudinal approach.

This essay has also examined the effectiveness of network usage on firm growth. First, it has been argued that networks directly impact SME growth with a positive causal effect. Second, it has been argued that the relationship between networks and firm growth is enhanced by the presence of an indirect effect through EO (i.e., the EO construct positively moderates the relationship between network usage and firm growth). Moreover, our study stressed empirically what has been pointed out by Hoang and Antoncic (2003). Hence, the reliance on networks is not constrained to the start-up stage. In established firms as well, networks remain a source of business information, advice, and problem-solving. This has been reflected in the results that we have obtained with a sample of established SMEs.

The result of this effort provides some implications for academics, business managers and public-support policy. For academics, as discussed previously, this study attempts to contribute to the literature by identifying the effects and supporting the relations proposed and explained before. For business managers, it is important to know the effectiveness of network usage as an important resource in order to capture information, influence the environment, improve the proclivity of higher levels of EO and thus achieve high levels of growth. For public policy-makers, the findings indicate that the social network approach, as well as entrepreneurial spirit in companies' environments, can be valuable to society as a whole because they represent more than just entrepreneurship topics and have a direct influence on potentially successful firms. Particularly in the Spanish context, they make it easier for public-support agencies to identify SMEs with resources and potential growth. Results of this practice, are

businesses with higher growth rates, while at the same time generating more richness and employment.

CHAPTER V

ESSAY THREE – INNOVATIVENESS AND EXPORTS IN SMALL FIRMS: EXAMINING THEIR MUTUAL EFFECTS

Abstract

Globalization pushes companies to operate abroad and a successful innovative posture could be a key to access the export market in a global economy. In turn, innovativeness reflects the tendency to new-idea generation, novelty, and creative processes, which may be explained by experiences and knowledge acquired in international markets. Based on the Spanish GEM dataset, our study investigates the mutual effects between innovativeness and exports. Ordinal and logistic regression analyses were used for their evaluations. Our findings show that an innovative behavior may push small firms to go abroad, as well as increasing their sales in foreign markets. Equally important, the findings also suggest that export propensity influences small firms to innovate. The essay ends with a discussion and conclusions.

1. Introduction

It is generally agreed that export activities are an important issue at the micro level for the growth and expansion of a business (Knight and Cavusgil, 2004; Leonidou and Katsikeas, 1996), as well as at the macro level for the generation of wealth for the nation (Da Rocha et al., 2009; Roper and Love, 2002). Unsurprisingly, it is one of the most popular topics in business management and international entrepreneurship (IE) literatures (e.g., Cassiman and Golovko, 2011; Dejo-Oricain and Ramírez-Alesón, 2009; Fariñas and Martín-Marcos, 2007; Golovko and Valentine, 2011; Lages et al., 2009; Ripollés et al., 2007). In turn, there is a consensus in strategic management and IE

that one of the keys to generate a competitive advantage in a global economy is through innovativeness (Flor and Oltra, 2005; Hult et al., 2004; Rhee et al., 2010; Tajeddini et al., 2006). Innovativeness reflects the propensity of a firm to actively support new ideas, novelty, experimentation, and creative solutions in pursuit of a competitive advantage (Lumpkin and Dess, 1996). Nowadays most small firms seem to get into the international market more rapidly than before (Andersson et al., 2004), and they are more concerned with adopting strategies that involve activities in the foreign marketplace (McDougall and Oviatt, 2000; Rialp et al., 2005).

In the European business context, characterized by small domestic markets associated with the situational uncertainty and the current economic crisis, large economies are facing difficulties due to recessions in their domestic markets. Thus, one of the avenues for small firms to gain market share and insure their survival may be in operating abroad (Dejo-Oricain and Ramírez-Alesón, 2009). In this sense, a large number of scholars examine the relationship between innovation and export performance (e.g., Caldera, 2010; Cassiman and Golovko, 2011; Kirbach and Schmiedeberg, 2008; Lachenmaier and Wobmann, 2006), or even, the complementarity between innovation and export for SMEs' growth (Golovko and Valentine, 2011). However, until now, there have been few empirical studies examining the mutual effects between innovativeness and export-related activities (See Damijan et al., 2010; Filipescu et al., 2009; Monreal-Pérez et al., 2012), and the relationship between innovativeness and its key drivers remain underexplored (Hult et al., 2004; Rhee et al., 2010). Furthermore, there is no study examining each dimension of innovativeness and their impacts on firm's exports separately⁴. In addition, the innovativeness concept gives a more

⁴ We considered the importance of the innovatory uniqueness (product's distinctiveness) besides product/service and process innovation.

complete reflection and embraces a range of innovations adopted in a given time-period (Damanpour, 1991; Tajeddini et al., 2006).

Consistent with the resource- and learning-based view, we focus on the relationship between innovativeness and export activity. Thus, this allows us to contribute to the literature by examining the impact of small firms' innovativeness on the decision to operate abroad, as well as on their export performance. At the same time, and equally important, we draw on learning-by-exporting (Salomon and Shaver, 2005). Hence, our study responds to calls by scholars who have encouraged more research on the role of export propensity on firm innovation (e.g., Damijan et al., 2010; Salomon and Shaver, 2005).

The remainder of this essay is organized as follows: Section 2 provides the theoretical framework, a brief overview of previous studies and the hypotheses proposed; Section 3 specifies the research design and describes the main data sources; Section 4 presents the estimation results, and Section 5 provides discussion about it and concludes.

2. Theoretical Framework, Previous Research and Hypotheses

2.1. Innovative capability as a resource: from innovativeness to foreign markets

In the Resource-based view (RBV) perspective, the capacity of firms to generate sustainable competitive advantages depends on their particular set of resources. In this sense, the resources that generate competitive advantages must fulfill four conditions: they must be valuable, scarce, inimitable and non-substitutable (Barney, 1991). Thus, the best way to understand a firm is by considering it as a collection of productive resources specific to each firm, which allows it to compete successfully against other firms (Penrose, 1959). In the context of innovative behavior, RBV helps to explain how knowledge and the resultant organizational capabilities are developed and leveraged by

firms (Knight and Cavusgil, 2004). Whereas resources in SMEs are essentially intangible (Gassmann and Keupp, 2007), a KBV (Grant, 1996b) is especially suitable as a conceptual support. The KBV has emerged from the RBV by focusing on intangible resources, rather than on physical assets (Gassmann and Keup, 2007 p. 353). The differential endowment of resources is an important determinant of organizational capabilities and performance (Barney, 1991; Teece et al., 1997). Indeed, organizational capability is the outcome of knowledge integration (Grant, 1996a). It points out that innovative capability does not come from exploiting external technologies, which are easily accessible for competitors and therefore insufficient for sustaining a competitive advantage but, rather, it comes from the generation of internal innovation by generating new resources and building basic technological competences (Barney, 1991), as well as accumulating intangible resources, namely, knowledge (Prashantham, 2005).

In international business, knowledge provides particular advantages that facilitate foreign-market entry and operations (Gassmann and Keupp, 2007; Johanson and Vahlne, 1991; Knight and Cavusgil, 2004). Namely, knowledge is used to refer to the capacity of the firm to apprehend and use relationships among informational factors to achieve intended ends (Autio et al., 2000). In this vein, innovating firms develop their own unique knowledge and result capabilities that engender organizational performance and, therefore, new product-market development in innovative firms is fluid and dynamic, with ongoing market expansion. Likewise, firms leverage technology to innovate in the creation and improvement of products, as well as the adaptation of products for foreign markets which can also drive the global-market entry. Indeed, technological resources can generate a double competitive advantage for a firm, in lowering costs by creating new and more efficient production processes, and in

differentiation by means of product innovations (López Rodríguez and García Rodríguez, 2005).

Moreover, as emphasized by Rialp et al. (2005), one of the factors that appear to engender or facilitate the early internationalization is precisely: “high value creation through product differentiation, leading-edge technology products, and technological innovativeness” (p. 160).

When firms begin their internationalization process, they typically move through different stages, such as exporting operations, joint venturing or foreign direct investment, among others. In this study, we concentrate our analysis only on export activities (i.e., when we talk about international activities, we are referring exclusively to exports). Particularly for small firms, export activity is the most important strategy for internationalization (Knight and Cavusgil, 2004; Leonidou and Katsikeas, 1996). In turn, the propensity to innovation might be an important factor in explaining the entry into the export market (Basile, 2001; Cassiman and Golovko, 2011).

Conceptually, an innovative strategic posture is thought to be linked to firm performance because it increases the chances that a firm will realize first-mover advantages and capitalize on emerging market opportunities (Wiklund, 1999). Innovative firms, through the creation and introduction of new products and technologies, develop a market niche with new products/services, differentiate themselves and/or substitute incumbents with better quality, cheaper prices or other means that customers value (Richard et al., 2009; Wiklund and Shepherd, 2005). Innovation could be recognized as a key success factor in an increasingly competitive, global economy (Akman and Yilmaz, 2008). In this way, there is a large volume of empirical literature testing the effect of innovative activity on international business (e.g., Caldera, 2010; Cassiman and Martínez-Ros, 2007; Kirbach and Schmiedeberg,

2008; Lachenmaier and Wobmann, 2006; Podmetina et al., 2009; Roper and Love, 2002; Wakelin, 1998).

For instance, Podmetina et al. (2009) highlighted the importance and the significant impact of innovation activities, competition and new products development on the internationalization, as well as on export intensity of companies in Russia. In the same way, Kirbach and Schmiedeberg (2008) have offered an interesting analysis of the export behaviour, when comparing firms in West and East Germany; so, their estimations confirmed a strong relationship between innovations and international operations, as well as structural differences, between West and East German firms.

In the context of Southern Europe, the last ten years have seen a proliferation of studies attempting to explain the innovation-export relationship. For example, Caldera (2010), using a compiled data from the *Encuesta sobre Estrategias Empresariales* (ESEE) – Spain, stressed a positive effect of firm innovation on the probability of participation in export markets. In turn, using Spanish manufacturing data, López Rodríguez and García Rodríguez (2005), stated that product innovations, patents and process innovations have positive and significant effects on both the decision to export and international business intensity. Likewise, Cassiman and Martínez-Ros (2007) stressed the importance of innovation on exports and pointed out that product innovations are a more important determinant of export growth, while process innovations are a more important driver of export propensity. More recently, Cassiman and Golovko (2011) emphasize that product innovation improves productivity levels, which pushes firms to enter the export markets, as well as being directly related to the probability of export in a firm's operations. According to these results, the following hypotheses can be addressed:

H7a. The greater innovativeness of the firm, the more likely it is export-oriented.

H7b. The greater innovativeness of the firm, the higher the percent of their sales abroad is.

2.2. Learning-by-exporting: from export activities toward innovativeness

As indicated before, there is growing recognition about the relationship between innovative behavior and export activities. Likewise, recent literature on IE has followed this line of research, but analyzing the reverse relationship or even the reciprocity between both innovative behavior and export activities. Hence, at the same time, the effects of export activity on firms' innovativeness might be investigated from the perspective on learning-by-exporting. It is acknowledged that the ability of a firm to recognize the value of new and external knowledge with an absorptive capacity (Cohen and Levinthal, 1990; Lane and Lubatkin, 1998; Zahra and George, 2002) is a critical component to learning and innovation.

Despite not being a longitudinal study, in this research we assume to be consistent with prior studies (Eriksson et al., 1997; Sapienza et al., 2005) that there is a learning effort in foreign markets by companies. Thus, companies may learn directly from foreign-market experience and indirectly via observation of foreign companies (Johanson and Vahlne, 1991). External contacts can help firms learn new capabilities and may provide access to resources and knowledge (Anand and Khanna, 2000; Chetty and Wilson, 2003; Keupp and Gassmann, 2009). That is, firms could learn from foreign markets and their foreign presence (Sapienza et al., 2005).

Thus: Does export make companies more innovative? Specifically, is it possible to have or achieve a positive effect of export intensity on a firm's innovativeness? Consistent with the learning-based view, obviously this is a potential option. Despite, not having extensive literature examining the reverse relationship, some authors stress that

international trade makes firms more innovative (e.g., Filipescu et al., 2009; Monreal-Pérez et al., 2012; Podmetina et al., 2009; Salomon and Shaver, 2005), perhaps because these companies must innovate to remain in foreign markets (Hitt et al., 1997). Likewise, internationalized firms tend to transfer their experience from international operations into increased innovativeness in the domestic market (Filipescu et al., 2009; Molero, 1998).

In this way, authors agree with the statement that “the fact of developing international activities has influenced, in a positive way, technological innovation” (Filipescu et al., 2009 p. 147). Furthermore, these two features (internationalization and the innovation process) reinforce each other to extent that today’s economic analysis has to consider both of them simultaneously when trying to account for any new dynamic of the firms operating at the international level (Molero, 1998).

Consistent with the learning-by-exporting view, and in accordance with previous research, the following hypothesis can be addressed.

H8. Export propensity affects positively the firm’s innovativeness.

3. Research design

3.1. Database

The sample used in this essay was taken from the Spanish Global Entrepreneurship Monitor (GEM) by considering the adult population survey for the years 2007 and 2008. GEM is a research program, initiated in 1998 and it provides the required fundamental knowledge by assembling relevant harmonized data on an annual basis (See Reynolds et al., 2005).

This database contains various entrepreneurial measures that are constructed on a survey basis. In our research, the unit of analysis is the firm-specific level (considering only individuals who own or manage a business at the moment of the survey). Thus, the final sample included usable responses from 977 firms (2007) and 1,449 firms (2008). The sample of these companies corresponds to owners/managers, which means people who own and manage a business. In both years, the characteristics of the sample are similar. The reporting companies had a mean of 5.66 employees (2007) and 4.72 employees (2008), and about two-thirds of the companies operated in the domestic market, while about one-third of the companies had at least 1% or more of their total sales from exports. For more information about sample characteristics, Table 16 reports export, innovativeness and firm-specific characteristics.

Table 16. Firm characteristics

		2007		2008	
Export		<i>N</i>	%	<i>N</i>	%
export propensity	<i>export</i>	391	40.02	544	37.54
	<i>no export</i>	586	59.98	905	62.46
export intensity	<i>low</i>	244	62.40	349	64.15
	<i>medium</i>	62	15.86	75	13.79
	<i>high</i>	85	21.74	120	22.06
Innovativeness					
innovate in products or services	<i>new to all or some</i>	398	40.74	580	40.03
	<i>not new</i>	579	59.26	869	59.97
technology available	<i>less than 5 years</i>	333	34.08	471	32.51
	<i>more than 5 years</i>	644	65.92	978	67.49
uniqueness of product or service	<i>product's distinctiveness</i>	295	30.19	413	28.50
	<i>no distinctiveness</i>	682	69.81	1,036	71.50
Firm-specific characteristics					
size	<i>1-9 employees</i>	842	86.18	1,266	87.37
	<i>10-49 employees</i>	135	13.82	183	12.63
age	<i>less than 10 years</i>	376	38.49	568	39.20
	<i>more than 10 years</i>	601	61.51	881	60.80
industry	<i>extractive</i>	89	9.11	155	10.70
	<i>manufacturing</i>	331	33.88	481	33.20
	<i>service</i>	167	17.09	222	15.32
	<i>consumer-oriented</i>	390	39.92	591	40.79

Source: Self-elaborated

3.2. Variables

Export Intensity:

It is the dependent variable in the first part of our analysis. This variable corresponds to the foreign sales rate divided by the total sales in a given period (Pan and Chi, 1999). In fact, according to Katsikeas et al. (2000), this is the main criterion to measure export performance. Thus, we create a categorical variable which assumes the value of 1 if the company does not export, a value of 2 if the rates of exports are between 1% and 25% (low), value 3 if the rates of exports are between 26% and 50% (medium), and a value of 4 if the rates of exports are 51% or more (high). Our classification is supported in Acs and Amorós (2008), who capture the importance of “entrepreneurial export orientation” considering as a “relatively high foreign market rate”, more than 50% of customers in other countries. The purpose is to generate an ordinal classification attempting to identify firms that do not export, and firms with a significant proportion of their revenues derived from foreign sales.

Export propensity:

Dichotomous variable used with the aim of identifying the companies with some experience selling in foreign markets. Thus, the variable measures whether the firm has an export-oriented behavior or not. If 1% or more of the sales goes abroad, this variable assumes the value of 1. Otherwise, if the firm does not sell abroad, this variable assumes the value of 0. A similar measurement has been used by Gonzalez-Pernía and Peña-Legazkue (2011).

Innovativeness:

There are several methods by which to classify innovation, and the research by Downs and Mohr (1976) could be a good example; however, in accordance with Lumpkin and Dess (1996), the most useful classification of innovativeness is through product-market innovation and technological innovation. The innovativeness construct is part of the GEM-available information and its dimensions refer to the poise of an organization to develop creative or novel internal solutions or external offerings (See Reynolds et al., 2005). In other words, innovativeness is the predisposition to engage in creativity through the introduction of new products or services as well as technological leadership via R&D in new processes. The questions concerning innovativeness indicate the degrees of effort by the firm in an attempt for potential customers to consider their products or services new and unfamiliar and the technologies or procedures required by these products or services becoming generally available recently. Another factor that may help explain firm innovativeness, especially in a strategic vision, is precisely the uniqueness of products or service, namely, offer products and services that are either “totally new” or “radically different” from existing products (Sharma and Blomstermo, 2003). Thus, many other businesses offering the same product or service to our potential customer, lack of innovatory uniqueness. Otherwise, few or no other businesses offering the same or very similar product or service, presence of innovatory uniqueness. The uniqueness of innovation can generate competitive advantage and it is another basis for the rapid internationalization of the SME (Gassmann and Keupp, 2007).

Considering the available information in the GEM database, we used it in two different steps: First innovativeness as an independent variable; in order to capture the importance of innovation propensity, we created a categorical variable for each innovativeness item. Thus, from the questions concerning innovativeness (See Table

17), *product or service innovation* assumes the value of 1 for very innovative; value 2 for innovative, and a value of 3 for non-innovative. Likewise, *technological innovation* assumes a value of 1 for companies which use technologies available less than a year ago (extremely new), value 2 for technologies available between one and five years ago (new), and a value of 3 for technologies available more than five years ago (not new). Regarding the *uniqueness of products or services*, we used a dichotomous variable. It assumes a value of one (1) when there are no or few other businesses offering the same product or service to their potential customer, and a value of zero (0) if there are many other businesses offering the same product or service to their potential customer.

Second innovativeness as a dependent variable. Here, *product or service innovation* and *technological innovation* were adjusted, and a dichotomous variable was created for each innovativeness item. Thus, *product or service innovation* assumes the value of one (1) for firms which do all or some in an attempt for potential customers to consider their products or services new and unfamiliar; otherwise, they assume the value of zero (0). Likewise, *technological innovation* assumes the value of one (1) for firms with technology available for less than five years; otherwise, they assume the value of zero (0).

Table 17. Questions capturing innovativeness

Innovation product or service	Will/ do all, some, or none of your potential customers consider this product or service new and unfamiliar?
Technology available	Were technologies or procedures required by this product or service generally available: less than a year ago? Between one and five years? More than five years ago?
Uniqueness of product/service	Right now, are there no, few, or many other businesses offering the same product or service to your potential customer?

Source: Self-elaborated in accordance to Reynolds et al. (2005)

Control variables:

Firm size

We first include a variable to capture size as an internal resource, considering that firm-specific factors might provide firms with a competitive advantage (Barney, 1991). Thus, firm size is expected to have a positive relationship to exports because larger firms have more resources with which to enter foreign markets (Fariñas and Martín-Marcos, 2007; Wakelin, 1998). In the same way, firm size is expected to have a positive relationship to firm innovativeness. Firms might have an excess workforce capacity with which to produce new products (Salomon and Shaver, 2005). Furthermore, innovating exporters tend to be larger than non-innovating ones (Damijan et al., 2010). Size was measured by the natural log of the number of employees (Andersson et al., 2004; Cassiman and Golovko, 2011) reported in year of the GEM survey.

Firm age

We measured firm age as the number of years that the firm has been operating (Caldera, 2010; Monreal-Pérez et al., 2012). Firm age is an additional characteristic that may differ between exporters and non-exporters. Exporters usually are older than non-exporters (Fariñas and Martín-Marcos, 2007). Age has been introduced to the model in logarithmic form.

Industry

We control for industry sector because firms in specific industries may be more inclined to exporting or innovativeness. Likewise, firms in more knowledge-intensive industries may be more inclined to exert learning effort (Sapienza et al., 2005). For instance, we expected consumer product-oriented firms to develop more new products (Salomon and Shaver, 2005), and bet on new technologies. The dataset assigned four standard

categories that are derived from the standard industrial classification – SIC-code (extractive, manufacturing, business service, and consumer oriented). The industry variable was coded with categorical variables, and extractive is the omitted category serving as the base case in regression analyses.

4. Analysis and Results

4.1. The choice of specification

The overall aim of the study is to examine whether innovativeness affects exports and whether the export propensity affects the innovative activities. In order to meet this overall aim, we address two main research objectives. First, we investigate the influence of innovativeness on the internationalization of small firms through export activities, and how the propensity to innovate in products or services as well as technological innovation affects the proportion of foreign sales (export intensity). The second research objective is to investigate whether firms with export propensity (those which have a proportion of their revenue derived from foreign sales) are more innovative in products or services, as well as their technology or procedures necessary to their activities having been recently available. As stated in Section 3, by using data from two years, we have provided some evidence from cross-sectional analyzes of 2007 and 2008.

Tables 18 and 19 show means, standard deviation and correlation between the variables. As can be observed, the magnitude of the correlation between independent variables in both ordinal and logit regression models do not represent problems of multi-collinearity. In fact, the correlation between innovation in products or services and technological innovation was expected, but the correlation value is not higher.

4.2. Export intensity

In order to test Hypotheses 7a and 7b, we applied an Ordinal Logistic Model, or PLUM (Polytomous Universal Model). Given that the multinomial regression model ignores any ordering of the values of the dependent variable, and our dependent variable presents a clear ordering of the values, we apply a model that incorporates the ordinal nature of the dependent variable. In the ordinal logistic model, the event of interest is observing a particular score. For example:

$$rating_1 = prob(score\ of\ 1) / prob(score\ greater\ than\ 1)$$

$$rating_2 = prob(score\ of\ 1\ or\ 2) / prob(score\ greater\ than\ 2)$$

$$rating_3 = prob(score\ of\ 1,\ 2\ or\ 3) / prob(score\ greater\ than\ 3).$$

The last category does not have an odds associated with it since the probability of scoring up to and including the last score is 1. Thus, defining the event, we can write the equation as $\emptyset_j = prob(score \leq j) / prob(score > j)$.

Table 18. **Summary statistics and correlation for key variables: Ordinal regression 2007 and 2008**

Variables	2007									2008								
	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1)i.prod/serv.	1.637	.9385	1.00							1.539	.7263	1.00						
(2)proc.innov.	1.543	.7217	0.124***	1.00						1.386	.6001	0.143***	1.00					
(3)exp.inten.	1.446	.6694	0.096**	0.114**	1.00					1.592	.9178	0.055**	0.145***	1.00				
(4)uniqueness	0.301	.4593	0.073**	0.135***	0.031	1.00				0.503	.2188	0.076**	0.116***	0.029	1.00			
(5)employees ^{ln}	1.098	.9797	0.081**	0.080**	0.039	-0.036	1.00			1.065	.9215	0.066**	0.092**	-0.015	-0.027	1.00		
(6)age ^{ln}	2.482	.6637	-0.045	-0.058*	-0.037	0.004	-0.008	1.00		2.497	.6763	-0.043	-0.064**	-0.064**	-0.043*	0.033	1.00	
(7)industry	2.878	1.043	0.060*	0.062*	-0.002	-0.001	-0.010	-0.075**	1.00	2.861	1.072	0.036	-0.042	-0.020	-0.025	-0.063*	-0.048*	1.00

Note: * $p < 0.05$; ** $p < 0.01$. ^{ln} logarithmic form.

Table 19. **Summary statistics and correlation for key variables: logit regression 2007 and 2008**

Variables	2007								2008							
	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)
(1)i.prod/serv.	.4073	.4915	1.00						.4002	.4901	1.00					
(2)proc.innov.	.3408	.4742	0.137**	1.00					.3250	.4685	0.112**	1.00				
(3)exp.prop.	.4002	.4901	0.134**	0.113	1.00				.3754	.4844	0.105**	0.058**	1.00			
(4)employees ^{ln}	1.098	.9797	0.070*	0.048	0.075**	1.00			1.065	.9215	0.070*	-0.008	0.044*	1.00		
(5) age ^{ln}	2.482	.6637	-0.072*	-0.046	-0.055*	-0.008	1.00		2.497	.6763	-0.075**	-0.081**	-0.059**	0.033	1.00	
(6) industry	2.878	1.043	0.074*	0.017	0.052*	-0.010	-0.075*	1.00	2.861	1.072	0.034	-0.031	0.049*	-0.063**	-0.048*	1.00

Note: * $p < 0.05$; ** $p < 0.01$. ^{ln} logarithmic form.

Table 20 presents the estimated coefficients for the model. The estimates labeled *rating* are the threshold (the intercept equivalent terms), and it is possible to observe an increasing estimated coefficient according to increasing the scale.

As for the control variables, it is observed that firm size is significant with a positive sign in every test. With respect to the firm age, findings confirm that age is positively related to export activity only in 2008. For a continuous variable, a positive coefficient means that as the values of the variable increase, the likelihood of larger scores increases.

As expected, especially the size of the company increases the probability of having higher export activities. These results are consistent with previous research (e.g. Monreal-Pérez et al., 2012), “exporters tend to be larger than non-exporters” (Salomon and Shaver, 2005 p.440). In regard to the industrial sector, however, only a marginally significant difference has been observed among these four standard categories.

By observing the innovativeness variables, in each relationship we can verify that there is a significant influence in a positive way on export intensity. Thus, the results for many of the variables are as expected. Considering the role of the product/service innovation, our findings show that firms which apply their efforts to convince customers to recognize the company’s output as new and unfamiliar raise the probability of exporting and even increase the export intensity. Looking at the findings in 2007 and 2008, the coefficients are very similar and in both years confirm a positive relationship. For instance, (2007: all = 1.611 $p < .01$; some 1.447 $p < .05$ and 2008: all = 1.660 $p < .01$; some 1.512 $p < .01$). Regarding the used technology (*proc. innovation*), we also found a positive influence on export activities. Namely, in small firms were technologies or procedures, required by their activities being generally available less than a year ago, was the result as expected. For instance, looking at the result in 2007 (extremely new =

1.451 $p<.05$). Equally important, there are statistical differences between businesses with technology available less than five years or more than five years in regard to exporting. For instance, looking at the result in 2008 (new = 1.197 $p<.10$). The next specification uses an alternative measure of perceived strategic innovation. As mentioned above, the uniqueness of products or services is present if the firm has no (or has few) competitors offering the same product or service to their potential customers. The results are in accordance with those expected, that is, a small firm without competitors offering the same product or service increases its likelihood of being oriented to foreign markets (*Product's distinctiveness* 2007: 1.309 $p<.05$ and 2008: 1.283 $p<.05$).

Table 20. Ordinal logistic regression to export intensity: A cross-sectional analysis for the years 2007 and 2008

		2007		2008	
		Model 1	Model 2	Model 1	Model 2
rating					
= 1		.551 (.345)	.945 (.356)	.179 (.267)	.556 (.280)
= 2		1.897 (.352)	2.325 (.364)	1.542 (.271)	1.941 (.285)
= 3		2.521 (.359)	2.957 (.371)	2.088 (.276)	2.495 (.291)
control					
<i>size</i>	log_empl.	1.180** (.076)	1.175** (.076)	.145** (.066)	1.135** (.066)
<i>age</i>	log_age	.866 (.083)	.890 (.085)	.841** (.066)	.874* (.070)
<i>industry</i>	manufacturing	1.245 (.318)	1.140 (.294)	.792 (.148)	.759 (.143)
	service	1.145 (.320)	1.045 (.296)	.950 (.200)	.911 (.193)
	consumer-oriented	1.710** (.427)	1.574* (.396)	1.090 (.196)	1.054 (.191)
	extractive ^{o,c}	o.c.	o.c.	o.c.	o.c.
innovativeness					
<i>iProd/Serv.</i>	all		1.611*** (.237)		1.660*** (.263)
	some		1.447** (.283)		1.512*** (.114)
	no		o.c.		o.c.
<i>Proc.innov.</i>	extremely new		1.451** (.220)		1.255* (.154)
	new		1.591** (.325)		1.197* (.259)
	no new ^{o,c}		o.c.		o.c.
<i>uniqueness</i>	product's distinctiveness		1.309** (.182)		1.283** (.150)
					o.c.
Model fit					
	N	977	977	1,449	1,449
	Chi2 (df)	18.01(5)	47.46 (10)	15.55 (5)	45.49 (10)
	Prob > Chi2	0.0029	0.0000	0.0082	0.0000
	PseudoR2(Nagelkerke)	0.0089	0.0233	0.0054	0.0158

Note: Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. The numbers in brackets are standard errors. ^{o,c}omitted category and the parameter is zero because it is redundant.

As mentioned earlier, an analysis using a PLUM incorporates an ordinal nature of the dependent variable and showed a positive relationship between innovativeness and the export propensity, as well as increasing the export intensity. Hence, Hypotheses H7a and H7b receive support.

4.3. *Innovativeness*

In order to explore whether export propensity can explain company innovativeness, we need to deploy a procedure that can estimate the probability of the expected event (i.e., innovate). Given that we have binary-dependent variables, logistic regression is more appropriate. Logistic regression is a statistical analysis aimed at predicting and exploring a binary categorical variable (Andersson et al., 2004). Logistic regression differs from multiple regression analysis in that it directly predicts the probability of an event occurring (Hair et al., 1998), and hence enables us to identify whether export propensity is relevant in categorizing firms as innovative or not. Table 21 displays the results of the logistic regression.

The Chi-square test of both the *i.prod/serv* and *proc.innov* complete models was significant and indicates that a significant relationship exists between the entire set of independent variables and dependent variables. Table 21 displays the odds ratio, the significance at the corresponding level, and the standard deviation. The predicted values of dependent variables concern the “log odds” that an event will occur, and the interpretation is thus analogous to that of linear regression (Hair et al., 1998). A positive coefficient implies that an increase in those variables represents a higher likelihood of innovativeness.

The results for the control variables are as expected. Size clearly plays an important role in a firm’s product or service innovation. We found that larger firms tend to be more

innovative in product or service, however, there is no statistical difference concerning the process innovation. With respect to age, by observing the odds ratio (smaller than one) this finding might be considered as a negative coefficient. Thus, age seems to have an inverse relationship with innovativeness. In regard to the industrial sector, unsurprisingly, firms in an extractive industry tend to be less innovative than firms in other industries. Furthermore, these differences between industries are more evident in products or service innovation.

Concerning H8, we assessed if the change in the binary variable (i.e., export propensity yes/no) improved product or service innovation and process innovation. The results in Table 21 report that export propensity has a positive and significant effect on a firm's innovativeness. In both product or service innovation and process innovation, the probability that the event will occur is higher in exporters than in non-exporters. Moreover, our results confirm that export propensity has high explanatory power in both 2007 and 2008. I.e. (findings 2007: i.prod/serv 1.675 $p<.01$; proc.innov. 1.596 $p<.01$; findings 2008: i.prod/serv 1.525 $p<.01$; proc.innov. 1.288 $p<.05$). Finally, Hypothesis 8 is also supported.

Table 21. **Logit regression to innovativeness: A cross-sectional analysis for the years 2007 and 2008**

		2007				2008			
control		i.prod/serv		Proc.innov.		i.prod/serv		Proc.innov.	
		Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
size	<i>Log_empl.</i>	1.147** (.076)	1.128* (.076)	1.102 (.075)	1.084 (.074)	1.173** (.068)	1.162** (.068)	.976 (.060)	.969 (.059)
age	<i>log_age</i>	.824* (.082)	.838* (.084)	.874 (.090)	.889 (.092)	.800** (.64)	.813** (.066)	.767** (.064)	.775** (.065)
industry	<i>manufacturing</i>	1.788** (.480)	1.755** (.474)	1.284 (.339)	1.256 (.333)	1.533** (.305)	1.583** (.317)	1.163 (.230)	1.182 (.235)
	<i>service</i>	2.195** (.637)	2.175** (.635)	1.417 (.407)	1.396 (.403)	1.678** (.374)	1.699** (.381)	.931 (.211)	.934 (.212)
	<i>consumer-oriented</i>	2.036** (.538)	1.908** (.509)	1.257 (.327)	1.177 (.309)	1.519** (.296)	1.516** (.297)	.920 (.179)	.915 (.179)
	<i>extractive^{o.c}</i>	o.c.	o.c.	o.c.	o.c.	o.c.	o.c.	o.c.	o.c.
Hypothesis	<i>Export propensity</i>	1.675*** (.226)		1.596*** (.221)		1.525*** (.170)		1.288** (.149)	
Model fit									
	N	977	977	977	977	1449	1449	1449	1449
	LR Chi2 (df)	18.98(5)	33.60(6)	5.88(5)	17.25(6)	22.33(5)	36.63(6)	13.30(5)	18.06(6)
	Prob > Chi2	0.0019	0.0000	0.3185	0.0084	0.0005	0.0000	0.0208	0.0061
	Pseudo R2	0.0144	0.0254	0.0047	0.0138	0.0114	0.0188	0.0073	0.0099
	Correctly classified	59.06%	59.37%	65.92%	65.92%	60.04%	61.35%	67.43%	67.49%

Note: Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. The numbers in brackets are standard errors. ^{o.c} omitted category and the parameter is zero because it is redundant.

5. Discussion and Conclusions

The purpose of this essay has been to investigate the role of innovativeness on firm export behavior as well as a reverse effect of export propensity on innovation activities. Particular emphasis has been placed on innovation in product or service, process innovation, uniqueness of products or services and foreign sales. Overall, our results seem to suggest that there are simultaneous effects between innovativeness and export activity in both 2007 and 2008, through cross-sectional analyzes in these years. By considering the relationship between innovativeness and export activity, our research has found a positive influence of all proposed variables on export intensity. This implies that the propensity to innovate could change the behavior of small firms, that is, when small businesses are committed to innovation, this increases the likelihood of selling to foreign markets, and even the level of their foreign sales. In this vein, our findings support the view held by Wakelin (1998), who found considerable differences in the reaction of innovating and non-innovating companies, stressing that they behave differently in terms of export. Indeed, across our analysis, we confirmed the importance of SMEs sell products and services that are either totally new or different from existing products. Thus, we can state that the uniqueness of products and services is another basis for internationalization.

Moreover, our empirical results provide support for the direction of a number of recent arguments. For instance, Cassiman and Golovko (2011) argued that product innovation has an important moderating effect on the positive association between exports and productivity (p.68). Analyzing German manufacturing, Kirbach and Schmiedeberg (2008) found a strong impact of product innovations on the decision to export, and they suggested that innovating firms are more likely to export and tend to realize a larger share of revenue on the international market (p. 448).

In turn, the positive association between export propensity and a firm's innovativeness observed in the second part of the analysis confirms that firms do increase product and technology innovation if they are export-oriented. This observed superior innovativeness may be related to the firm's ability to get new knowledge in its exports markets. Thus, our findings might be consistent with the existence of learning-by-exporting emphasized in recent literature (Salomon and Jin, 2008; Salomon and Shaver 2005).

By balancing prior results and our contribution, we can state that our study contributes to the literature and also presents some implications for practice. For academics, this study adds to the stream of research that explains the antecedents of the decision to export. We take a different perspective, providing evidence from each innovativeness dimension, namely considering the influence of innovation in product and service as well as in technology, and the innovatory uniqueness. In summary, the firm's ability to innovate in product or service constitutes an essential driver to face international challenges, and associated with technological innovation impels small firms to operate abroad. Equally important, the innovatory uniqueness concerning the market relationship should be interpreted as further evidence of the degree of innovation at the moment of entering the international market because the fewer or no other businesses offering the same product or service to customers, the more innovative the firm's outputs are. Moreover, we contribute to research in a dimension still under-exploited (i.e., the effect of export propensity on a firm's innovativeness). Hence, the theoretical contributions of this essay lie in the extension of innovativeness research with an emphasis on export propensity.

For business managers, it is important to know that firms possessing and innovating in technological resources will have a superior capacity to gain access to international

markets as well as to increase their sales overseas. Equally important for CEOs, our results suggest that exporting is more than just a decision to increase sales and reach other markets. Learning by the experience in foreign markets, firms might also increase their capacity to innovate. Thus, if globalization pushes companies to enter foreign markets and acquire specific knowledge in order to implement technology and business innovation (Podmetina et al., 2009), hence the ability of a firm to assimilate, learning and applying their export experience to commercial ends is critical to their innovative capabilities.

CHAPTER VI

CONCLUSIONS, CONTRIBUTIONS AND IMPLICATIONS OF THE DISSERTATION

The present doctoral dissertation advances our understanding about some relationships in the field of entrepreneurship. Moreover, it has important implications for the literature, management and public policy. Nonetheless, it has several limitations, but also several other possibilities for future research avenues. In this chapter we provide the final remarks of the study through a summary of the dissertation, contributions of the dissertation, implications of the dissertation and limitations and suggestions for future studies. It is hoped that this thesis provides new features, as well as reinforcing the findings of previous research.

1. Summary of the Dissertation

The present dissertation has been designed with three interdependent essays. Each essay with its research questions, methodology of analysis and empirical results.

Our primary objective in this doctoral dissertation is to highlight how SME performance is influenced in important ways by EO. Consistent with previous literature, we argued that incorporating external environmental effects and strategic networks into our analysis leads to a more comprehensive view of the entrepreneurial behavior of firms. Thus, this research complements and reinforces existing studies, and suggests that the SMEs, which have better profitability and grow more, are entrepreneurially oriented, adjust their strategy to the environment and use their networks to develop entrepreneurial orientation and grow.

Secondly, recognizing the important role of innovativeness in the business context, and consistent with the increasing interest in investigating the relationship between innovation and international business (e.g., Cassiman and Golovko, 2011; Kirbach and Schmiedeberg, 2008; Lachenmaier and Wobmann, 2006; Lages et al., 2009; Podmetina et al., 2009), the third empirical chapter proposes an essay testing the mutual relationship between innovativeness and export intensity. We show that there is a strong positive association between a firm's innovativeness and export intensity, and that, when small international firms have experience selling in foreign markets, they increase the likelihood of being involved in innovative activities.

2. Contributions of the Dissertation

In the Introduction chapter of this dissertation, we focused our attention on two critical aspects in entrepreneurship: entrepreneurial, and innovative behavior. Moreover, we noted that our research is inserted in a corporate entrepreneurship context. The entrepreneurial orientation, as well as the innovativeness of small and medium-sized firms and their influence on the performance of them, is the main topic in this dissertation.

Considering the increasingly environmental hostility in Spain and elsewhere over the last few years, our research contributes by offering an analysis which highlights the importance of the proper alignment of the EO with the environment. Thus, in the first empirical essay, our findings recommend that it is essential to identify the strategic posture which may reflect firm strengths to achieve competitive advantage and, consequently, improve financial performance. In the second empirical essay, our study contributes by offering evidence on the EO-growth relationship, simultaneously providing empirical evidence on the relationship between network usage, EO

development and SME growth. A further quantitative essay contributes by offering evidence on the simultaneous relationship between innovativeness and export intensity. Thus, in the third essay, our contributions are focused on the effectiveness of innovativeness as a driving force of international expansion, as well as the mutual effects of export propensity on a firm's innovation.

On a summarized level, Table 22 reinforces the main contributions of this dissertation through the hypotheses tested in our study.

Table 22. **Summary of the contributions through hypotheses**

Essay	Hypotheses	Result
1	H1. There is a positive relationship between EO and SME profitability.	<i>Confirmed</i>
	H1a. The magnitude of EO is positively related to the magnitude of return on assets (ROA); H1b. The magnitude of EO is positively related to the magnitude of return on sales (ROS); H1c. The magnitude of EO is positively related to the magnitude of free cash flow (FCF).	
	H2. Business profitability will be greater or lower under the fit between EO and environmental hostility.	<i>Confirmed</i>
	H2a. Entrepreneurial SMEs (high EO), operating in a hostile environment, will have better profitability than will entrepreneurial SMEs operating in benign environments; H2b. Conservative SMEs (low EO), operating in a benign environment, will have better profitability than will conservative SMEs in hostile environments.	
2	H3. A firm's emphasis on using networks will affect EO development positively.	<i>Confirmed</i>
	H4. SMEs growth in the long-term is more likely when the firm has a higher EO.	<i>Confirmed</i>
	H5a. SME growth is more likely when the firm consistently uses its networks as a resource.	<i>Confirmed</i>
	H5b. The relationship between networks and growth can be enhanced with a positive indirect effect through the mediator EO construct.	
	H6a. The emphasis on using networks affects EO development more intensely in medium-sized firms than in small ones. H6b. The emphasis on using networks affects firm growth more intensely in medium-sized firms than in small ones.	<i>Partially confirmed</i>
3	H7a. The greater innovativeness of the firm, the more likely it is export-oriented.	<i>Confirmed</i>
	H7b. The greater innovativeness of the firm, the higher the percent of their sales abroad is.	
	H8. Export propensity affects positively the firm's innovativeness.	<i>Confirmed</i>

Source: Self-elaborated

3. Implications of the Dissertation

By bringing together and integrating different elements of entrepreneurship, strategic management and business performance, this dissertation has important implications for the literature, management and public policy, as described in Table 23.

3.1. Implication for the literature

This doctoral dissertation contributes to the literature on entrepreneurship and strategy management by investigating the impact of a firm's resources and capabilities such as EO, social networks and innovativeness on its performance. Furthermore, in the present dissertation we have focused on EO as one important dimension of RBV and its impact on profitability and the growth of small firms. To better comprehend the effect of EO on performance, we emphasized several areas where such an understanding can complement and extend traditional strategy frameworks and perspectives. For instance, we showed how overall business performance has been affected by EO, considering such elements as environmental hostility and network usage.

Furthermore, our findings attempt to contribute to the literature by using a wider network perspective to capture the total networking activities going on in the firms as a whole. By identifying the effects of network usage on EO development, we achieve a better understanding of the rise of entrepreneurial conduct within SMEs. Thus, a network perspective can also provide new insights for strategy for scholars who are proponents of a resource-based view of the firm.

Finally, we also added empirical evidence to the stream of research that explains the antecedents of the decision to export. In this sense, we argue that innovativeness leads to the decision by small firms to sell abroad, as well as increasing their export intensity. Our findings have provided evidence not from a single innovation dimension, but rather

by considering the innovativeness dimension. Namely, we can state that, while most of the studies analyze a single innovative project (i.e., product innovation, technology innovation, investments in R&D, etc), our findings give a more complete reflection of the number of innovations adopted in a given time-period.

Regarding methodological contributions, this dissertation makes a significant contribution by employing objective measures of performance that, even if not a novelty, in this field of research there is a lack of studies which emphasize the use of objective measures of profitability and growth. In addition, we employed distinct measures of performance, culminating with the use of accounting information over a three-year period. Moreover, diverse econometric methods were applied in order to reach a better understanding of the phenomena.

3.2. Implication to management

From a practical perspective, this dissertation provides meaningful lessons for managers and business professionals.

Firstly, this dissertation points out that entrepreneurial SMEs seem to have more capability to operate in both a hostile and benign environment without compromising their outcomes. Hence, the task for CEOs is to design and implement a culture that embodies product innovation, technological leadership via R&D, and a posture of anticipating and acting on future wants and needs in the marketplace. It highlights the necessity of firms to develop superior EO, especially in hostile environments, because it is where a greater degree of creativity, innovation and risk-taking are demanded.

Secondly, we argue that it is important to know the effectiveness of network usage as a main resource in order to achieve information, influence the environment, and improve the proclivity of higher levels of EO and growth. That is, business managers should

recognize the importance of an embedded network of strong ties to secure crucial resources, which might promote entrepreneurial behavior and also have an impact on a company's growth.

Finally, we have also showed that more innovative businesses are more likely to operate beyond their borders. Equally important, the export propensity makes businesses more innovative. That is, on the one hand, our findings emphasize that product or service innovation, and the technology available in the process, has an important effect on sales abroad. Thus, managers should choose to engage in innovative practice, investing in new technology, R&D, and continuous improvement. To achieve successful innovativeness, CEOs must seek advantages from the latest technologies. On the other hand, our dissertation points out the positive relationship between export propensity and innovativeness observed in the group of small firms with foreign sales. In this sense, our recommendation is that managers in international small firms must consider the existence of learning-by-exporting, which could be particularly relevant for this group of firms to achieve higher levels of innovation.

3.3. Implication to public policy-makers

For public policy-makers, our findings indicate that the social network approach, as well as entrepreneurial spirit in SMEs, can be valuable to society as a whole because they represent more than just entrepreneurship topics and have direct influence on potentially successful firms. Particularly in the Spanish context, they make it easier for public-support agencies to identify SMEs with resources and potential growth. Results are businesses with higher growth rates, while at same time generating more wealth and employment.

Furthermore, our findings concerning the role of innovativeness in driving the small firms' internationalization through exports appear to be relevant from the public-policy perspective. By considering that export activities are important at the micro level for small firm growth and expansion, as well as at the macro level for the generation of wealth for the country, in the Spanish case, despite large investments made by governmental agencies in export promotions since the 1990s, the growth of productivity has been one of the lowest among the EU countries (Cassiman and Golovko, 2011). Our findings show that innovativeness might be responsible for both entry into the international marketplace and increasing foreign sales. Hence, public policies should be addressed also to facilitate/promotion innovativeness and raise performance.

Table 23. **Summary of the implications in different ways**

Implication for the Literature	Implication to Management	Implication to Public Policy
<ul style="list-style-type: none"> - Develops a description of EO as an important dimension of RBV; - offers a holistic perspective of SME performance (profitability, growth and export intensity); - examines environmental hostility as a moderating element in SME profitability; - offers a wide perspective of network usage; - empirically demonstrates the influence of network usage on EO development; - contributes to empirical studies emphasizing the mutual relationship between innovative projects and export activities; - by using objective measures of performance and distinct accounting information; - by using diverse econometric methods. 	<ul style="list-style-type: none"> - By recommending the entrepreneurial posture as an important tool, particularly in hostile environments; - by recommending the continued and consistent use of networks to secure crucial resources; - by recommending innovative practices such as product and service innovation, investment in new technologies and continuous improvement; - by recommending the commercialization of products and services radically different from existing ones, betting, thus, for the innovatory uniqueness; - by recommending the use of the international experience through export activities to implement innovative projects. 	<ul style="list-style-type: none"> - Reinforces the social network and the entrepreneurial spirit of the SMEs to obtain potential growth, thus generating wealth and employment; - encourages and helps SMEs to become more competitive in the international marketplace; - reinforces the ability of small businesses to assimilate and acquire knowledge in foreign markets and apply it to the promotion of innovation.

Source: Self-elaborated

4. Limitations and Future Research Lines

4.1. Essay One

This essay advances our understanding of the complex EO-performance relationship, however, it should be emphasized that this research does have some limitations. First, an aspect that should be considered is that this study was realized with a specific sample of SMEs and in a specific region of Spain, so results may vary in other contexts or industries. It would be interesting to reproduce similar studies in distinct contexts, but more important should be a cross-cultural study. Second, there is a possibility of endogenous problems. That is, in this study we have focused on the EO-performance relationship; it is possible that the companies' (more or less) entrepreneurial behavior was affected by the resources or circumstances of each organization. In this way, an alternative would be to measure the EO in a particular period and apply the results of the following periods as performance indicators. Finally, another limitation to emphasize is concerned with the independent variable EO that was measured in a specific period. That is, keeping track of the EO variable could be an interesting extension of the research because it would make it possible to see the sustainability of the impact of EO on firm performance, as well as the changes in entrepreneurial orientation over time.

In general, the present results are encouraging to entrepreneurship scholars. Thus, another observation to future research is that examining the EO-performance relationship in different countries with additional moderating variables, as well as additional cultural hypotheses, can be interesting to research in this field. For example, specific EO dimensions (such as competitive aggressiveness) may be less valid in certain cultural contexts that frown upon high competitiveness.

We have also seen that SMEs have different FCF levels according to their entrepreneurial posture and operating environment. Thus, we also suggest that an interesting extension of this study would be a cross-time analysis based on strategic investments made by entrepreneurial companies, which present a high FCF rate, in order to assess whether these companies correctly invest their cash flow in excess, connecting the literature on entrepreneurship and the concept of agency problem by Jensen (1986).

Future research will hopefully test this EO-EH-performance relationship using novel methodologies, such as Structural Equation Modeling or similar (e.g., Moreno and Casillas, 2008), to measure the relationships between these constructs, which would also allow for the approach of new hypotheses to be tested.

4.2. Essay Two

The interpretations of the findings of this essay are also subject to limitations. First, we have to consider that there are, inevitably, limitations involved in the measurement of some constructs. For example, the research design is marked by single respondents per organization. Second, despite the study presenting an analysis of growth in a three-year period, the variables that originate the firm networks and EO constructs were observed in a single period. Third, the study assumes that EO consists of three primary dimensions. Finally, the findings do not consider whether firms grow by aspects such as merger and/or acquisition, or not.

Despite the exhaustive literature on EO, this construct represents a fruitful topic of entrepreneurship research, and future studies should continue testing the longitudinal EO approach that provides dynamism to the analysis. Future research should also consider the possibility of observing EO sustainability and its effect over time (Madsen,

2007). Once we know a bit more about the mediating role of EO on the network-growth relationship, we may examine the impact of EO on network development considering each traditional dimension or even including the impact of other potential EO dimensions, such as autonomy and competitive aggressiveness. In this sense, it would be interesting to take a look at some recent studies, which provide insights into the impact of EO on knowledge acquisition (Kreiser, 2011), the relationship between EO, experimental learning and acquisitive learning (Zhao et al., 2011).

4.3. Essay Three

This essay is subject to several limitations that typify behavioral research and we suggest caution in interpreting its findings. Nevertheless, there are several other possibilities for future research in line with our results. The main issue is the need of understanding the causal relationship between innovation and export behavior. We observed that there are mutual effects between innovativeness and export activities; however, a potential limitation is that the cross-sectional design of the study cannot guarantee the direction of causality among variables. Nonetheless, the central hypotheses were based on solid theory, and it makes researchers imagine a relationship in both directions. Future research could examine using panel data for the prediction that a firm's innovativeness enhances its probability of exporting or even increases its sales abroad (e.g., Cassiman and Golovko, 2011; Monreal-Pérez et al., 2012). Moreover, it is acknowledged that firms learn more when they exert significant effort in processing new external knowledge (Sapienza et al., 2005). In this sense, future studies should include a longitudinal perspective observing the effects of learning-by-exporting on a firm's innovativeness (e.g., Damijan et al., 2010; Salomon and Shaver, 2005). It would enable us to clarify these relationships.

Regarding the models, we controlled the potential variables that may have influence on export, such as a firm's size, age and industry. However, another potential limitation of this study is that we have not considered the possible foreign ownership of the firms and, as stressed by Basile (2001), foreign ownership can make entry abroad easier.

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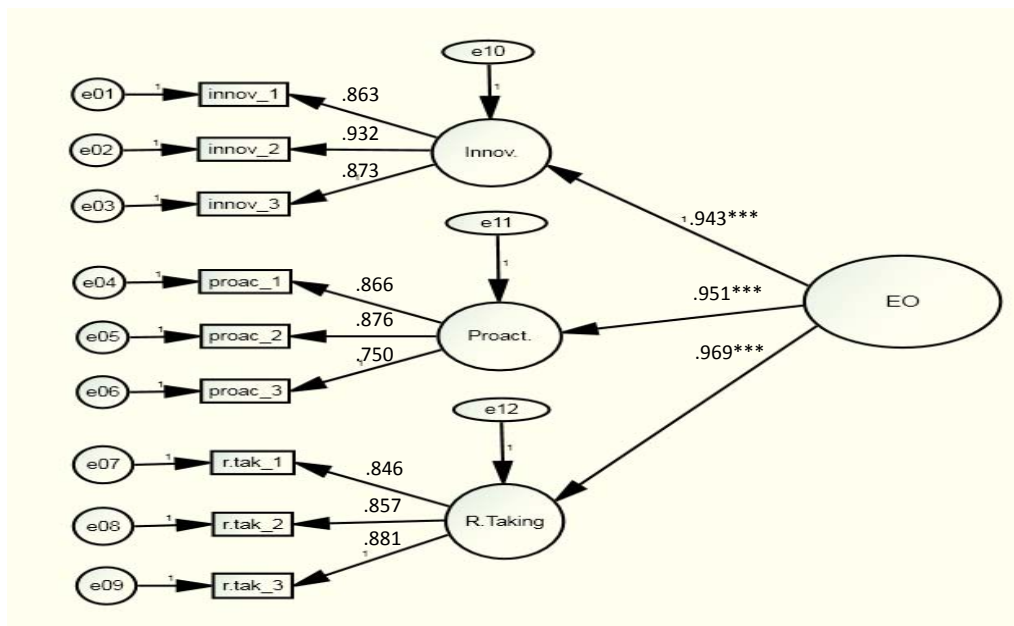
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APPENDIX

Appendix 1. Confirmatory factor analysis – EO

Model fit – EO construct		
	Recommended level	CFA level
CFI	Close to 1	0.999
GFI	Close to 0.9	0.957
AGFI	Close to 0.9	0.919
RMR	Less than 0.08	0.062
RMSEA		0.015

Chi-square 24.60 df. 24 probability level = .427.



Appendix 2. EO scale measurement

	No. of items	Type of measure
<u>Innovativeness</u>	3	
Strong emphasis on marketing products and services that have recently been developed through R&D.		Likert 1-7
New lines of products or services.		Likert 1-7
Changes in product or service lines.		Likert 1-7
<u>Proactiveness</u>	3	
Typically initiates actions to which competitors then respond.		Likert 1-7
Often is the first to introduce new products, services, administrative techniques, operating technologies, etc.		Likert 1-7
Typically adopts a very competitive posture.		Likert 1-7
<u>Risk-taking</u>	3	
Strong tendency for high-risk projects (high return).		Likert 1-7
Believes that bold acts are necessary, to achieve objectives.		Likert 1-7
Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.		Likert 1-7

Appendix 3. EH scale measurement

	<i>No. of items</i>	<i>Type of measure</i>
<i>Environmental hostility</i>	3	
How would you characterize the external environment (both domestic and international) within which your firm operates?		
Very safe/risky		Likert 1-7
There is an abundance/very few marketing opportunities and investment		Likert 1-7
An environment that my firm can control and manipulate/dominating environment which my firm's initiatives count for very little against tremendous competitive.		Likert 1-7

Appendix 4. Firm network scale measurement

	<i>No. of items</i>	<i>Type of measure</i>
<i>Network resources</i>	4	
Use of manager's own networks.		Likert 1-7
Use of networks as a knowledge resource.		Likert 1-7
Use of networks to influence the environment.		Likert 1-7
Use of employees' networks as an information source.		Likert 1-7