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Entrepreneurship, Innovation and Economic Crisis

Lessons for Research, Policy and Practice

Springer

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Preface

This book presents, in the corresponding chapters, 18 original contributions related to entrepreneurship, innovation, and the economic crisis. There is a broad diversity of approaches but all the chapters directly or indirectly cover the three topics, either because the treatment of entrepreneurship includes innovation as does the literature, or because the process required to obtain innovation is a form of management that involves proactiveness and risk-taking (and consequently entrepreneurship); and as regards the economic crisis, because it is present in the 18 chapters as an deliberate object of research or as a research context whose results are applicable to the crisis.

Although entrepreneurship and innovation can be considered independent concepts for some research aims, they are closely linked (Lassen et al. 2006). Shane (2012: 15) states that the concept of entrepreneurship includes "the Schumpeterian (…) notion that entrepreneurs also exploit those potentially profitable opportunities by creatively recombining resources," that is, by innovating. He goes on to say that "Entrepreneurship involves more than the (…) process of discovering opportunities for profit. It also involves coming up with a business idea about how to recombine resources to exploit those opportunities" (Ibid. 17–18).

Thus when an entrepreneur makes new combinations of factors, Covin and Slevin (1986, 1991) indicate that this form of entrepreneurship is characterized by innovativeness, proactiveness, and risk-taking, which broadly implies an orientation towards the development of new products and services, technologies, administrative techniques, new forms of organizational design and incentives, and new strategies. All of these innovations can be incremental or radical (Lassen et al. 2006; Robsonet et al. 2009) and are carried out in a complex context that involves "innovation, venturing and strategic renewal" (Zotto and Gustafsson 2008: 97).

While economic crises are permanently important in general economic studies of economic cycles (Kalecki 1968), business management and entrepreneurship become increasingly important in crisis situations and make innovation, with its varied technical or organizational aspects, a key component of success for private companies and the economy in general. However, the relationship between economic crisis and entrepreneurship is not well established in the literature. As Peris-Ortiz et al. state in the first chapter in this book, "[f]or some authors such as Filippetti

and Archibugi (2010) situations of weak growth, recession or stagnation of GDP, may promote discovery and innovation opportunities, while for others the economic slowdown adversely affects entrepreneurship, reducing opportunity discovery and innovation investment (Klapper and Love 2011). In a broad conception of entrepreneurs (Wennekers et al. 2005), it seems clear that the destruction of industry, typical of a slowdown or drop in GPD, implies a decrease in the number of entrepreneurs or in their activity. But this empirical finding concerns all the entrepreneurs that form the economic basis of a country, and does not distinguish how the canonical characteristics of entrepreneurs can moderate this general slowdown in entrepreneurial activity."

Regardless of the difficulties for empirically establishing the relationship between entrepreneurship and economic crisis there is, however, no doubt about the advisability of entrepreneurship and innovation for overcoming crisis situations. Chapter 5 in this book shows that the positive relationship between innovation and performance tends to reinforce itself in times of crisis and fuels the way out of recession.

Finally, if, as we have argued above, entrepreneurship includes some form of innovation, most of the chapters in this book can be situated in some part or other of Shane and Venkataraman's (2000) definition of the concept. According to Shane and Venkataraman (2000: 218) the study of entrepreneurship involves "the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them." Sources of opportunities are found in a firm's economic environment and/or in its capacity to achieve new combinations of factors that can produce technical or organizational innovations. The technical and legal framework for granting credit and possible improvements to it form part of external opportunities (Chap. 15).

Chapters 1 and 5 explicitly address the topics of entrepreneurship, innovation, and economic crisis. Chapters 4 and 18 deal with new combinations of factors that create opportunities based on strategic or organizational innovations. Chapter 4 proposes innovation in business to business markets based on the firm's resources and capabilities (resource-based view) and customer retention; and the second assesses the advisability of integrating R&D activities, considering the relations between uncertainty, specificity assets, and risk of opportunistic behavior (Transaction Cost Economics). On the lines of Chap. 4, Chap. 7 takes a more general approach based on a firm's core competencies and verifies whether competency-based management obtains better performance. Chapter 8 confirms the positive relationship between cooperative consumer-company behavior and level of trust; and Chap. 17 complements the research in Chap. 18 by examining the advisability of keeping R&D activities outside the company in a situation of economic crisis. Chapter 14 emphasizes the importance of achieving consumer confidence, as part of a customer relationship marketing (CRM) strategy, and evaluates the incorporation of the main elements of Transaction Controls Monitoring as organizational innovations that facilitate trust and customer retention. And Chap. 10 examines the advisability of the company applying unexploited potentialities to new product development (NPD) in response to the economic crisis.

The nine chapters mentioned in the above paragraph correspond, in Shane and Venkataraman's definition, to "the processes of discovery, evaluation, and exploitation of opportunities" and they refer explicitly to innovation or strategic and organizational changes that involve innovation. The economic crisis is always present in the research, either as the context of the research whose results are applicable to the crisis or as one of the research objectives.

Chapters 6, 13, and 16 correspond to the last part of Shane and Venkataraman's definition of entrepreneurship and, using different approaches to the individual entrepreneur, examine the relationship between risk and income for self-employed accountants in Germany (Chap. 13), analyze the profile of young entrepreneurs in Spain in a time of economic crisis in the health, beauty, and sports industries (Chap. 6), and in the same direction but with a more general approach, Chap. 16 looks at the profile of young entrepreneurs in Spain in a time of recession.

Finally, Chaps. 2, 3, 9, 11, and 12 refer to the determinants of entrepreneurial activity. Determinants may be external, such as a rural or urban location, or the existence of networks (Chap. 2); or the action of institutions providing flexible training, culture, and creativity related to certain industries (Chap. 11). Determinants may also be internal when they correspond to the entrepreneur's culture and values (Chap. 3), company capital, or the characteristic relationships in family firms (Chaps. 9 and 12).

Taken as a whole, we hope that these chapters will establish a broad useful overview of entrepreneurship, innovation, and crisis for academics, politicians, and entrepreneurs. The diverse approaches to the topics are one of the book's most significant contributions.

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Chapter 1
Entrepreneurship and Innovation in a Context of Crisis

Marta Peris-Ortiz, Vicenta Fuster-Estruch, and Carlos Devece-Carañana

Abstract There is no consensus in the literature on the effects of an economic crisis on entrepreneurial activity. Some authors consider that situations of weak growth, recession, or stagnation may favor discovery of opportunities and innovation; whereas others claim that economic slowdowns have a negative effect on entrepreneurial attitude, reducing discovery of opportunities and investment in innovation. This chapter, by relating entrepreneurs with their experience, specific business management skills and knowledge, their innovation practices, attitude, and perception of opportunities, postulates that entrepreneurs with these characteristics and practices, embodying entrepreneurship in the fullest sense, will maintain an entrepreneurial attitude in situations of economic crisis. The study is based on Global Entrepreneurship Monitor data which show a positive, significant relationship between this type of entrepreneur and entrepreneurial performance during the economic crisis.

1.1   Introduction

Based on data from the Global Entrepreneurship Monitor (GEM) 2009, obtained in a context of economic crisis in Spain, this research seeks to establish whether entrepreneurs, that are characterized by the recognition of opportunities and innovation initiatives, maintain an attitude of entrepreneurial orientation in a situation of stagnation or weak growth of the economy.

There is no consensus in the literature on the effects of the economic crisis on entrepreneurial activities. For some authors such as Filippetti and Archibugi (2010) situations of weak growth, recession, or stagnation of GDP may promote discovery

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and innovation opportunities, while for others the economic slowdown adversely affects entrepreneurship, reducing opportunity discovery and innovation investment (Klapper and Love 2011). In a broad conception of entrepreneurs (Wennekers et al. 2005), it seems clear that the destruction of industry, typical of a slowdown or drop in GPD, implies a decrease in the number of entrepreneurs or in their activity. But this empirical finding concerns all the entrepreneurs that form the economic basis of a country, and does not distinguish how the canonical characteristics of entrepreneurs can moderate this general slowdown in entrepreneurial activity.

Thus, discovery of opportunities for certain entrepreneurs in an economic crisis is not incompatible with less entrepreneurial activity. It depends on the concept of entrepreneur (and the type of entrepreneur) we are considering. Entrepreneurs with a strong entrepreneurial profile with specific business management knowledge and skills, an ability to detect opportunities, and a willingness to introduce innovation practices are expected to maintain their entrepreneurial attitude and expectations of growth even in an economic crisis.

This is the core of this investigation, in which the main objective is to determine whether, in times of crisis, entrepreneurs with a strong entrepreneurial profile find more difficulties in starting a business or if they have better or worse expectations of business growth. In other words, this research studies whether entrepreneurs with a clear profile of entrepreneurship, as noted in the previous paragraph, maintain their entrepreneurial orientation in times of economic crisis.

The structure of this work is as follows. The next section provides the theoretical framework and the hypotheses, developing the two basic characteristics of entrepreneurship: intuition, willingness or ability to discover opportunities, and capacity to create those opportunities. We then discuss the empirical methodology employed, present the empirical study, and finally we discuss the results, highlighting the contributions, limitations, and future research of the work.

1.2 Theoretical Framework and Hypotheses

Some of the literature on entrepreneurship has identified the individual or social characteristics that characterize the entrepreneur, including desire for personal fulfillment, need for power and wealth, desire for independence and autonomy, and improvement of the cultural and social status of the family. But the most important individual characteristics that place entrepreneurial behavior within the entrepreneurship function are related to the entrepreneur's natural tendency to be open to the environment and external challenges, willingness to take risks, cognitive abilities, and creativity (Baum and Bird 2010; Cuervo 2005). These characteristics are linked to the ability to discover opportunities, as a fundamental aspect of entrepreneurship.

For Shane and Venkataraman (2000) and Shane (2012), this is the specific research field of entrepreneurship, from which scholars can make contributions to the field of management. In the words of Shane and Venkataraman (2000: 218) what characterizes the economic entrepreneurship is "the study of sources of Opportunities,

the Processes of discovery, evaluation, and exploitation of Opportunities, and the set of Individuals who discover, Evaluate, and exploit them." Consequently, the authors say (Ibid: 218), "we define the field of entrepreneurship as the scholarship examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited." This concept of entrepreneurship, with different variants, is developed by many other authors (Cuervo 2005; Shane et al. 2003).

In line with this approach, which emphasizes the ability to discover opportunities as the fundamental characteristic of entrepreneurship, we formulate the following hypothesis:

H1

Opportunity recognition ability increases entrepreneurship in a context of economic crisis.

The article by Shane and Venkataraman, however, opens the door to broader considerations about entrepreneurship. Economic entrepreneurship is characterized by "the discovery and exploitation of profitable opportunities" (Shane and Venkataraman 2000: 217), and the "new means-ends relationship" (Ibid: 220) or new combinations of factors (Schumpeter 1934). That is, the entrepreneur has to discover the opportunity, but must also organize the productive means to exploit it.

This link between discovery and exploitation of opportunities introduces the concept of corporate entrepreneur in economic entrepreneurship. Corporate entrepreneurs, thanks to the knowledge and experience gained from the relationship with their company and industry, discover opportunities and implement their exploitation or introduce organizational innovations and means-ends relations (Hayton 2005; Lounsbury and Glynn 2001). For entrepreneurs in this corporate context, the most relevant personal characteristics are the feeling of being the author of the improved results, obsession with things that are considered important, and a tendency to develop charisma or leadership (Baum and Bird 2010; Cuervo 2005).

So what characterizes entrepreneurship is not only the discovery of opportunities through innate or socially acquired conditions of individual entrepreneurs, it is also their ability to create new opportunities, manage, and implement different combinations of factors (Schumpeter 1934). These factors involve new combinations of innovative technologies, products, services, and markets, which lead us to formulate the second hypothesis of this research:

H2

The practice of innovation in technologies, products, and services increases entrepreneurship in a context of economic crisis.

In addition to the factors expressed in our two first hypotheses, knowledge and skills to start a business are considered essential in the entrepreneurship literature and research, both as individual characteristics of entrepreneurs and as a key element in the discovery of opportunities in the field of corporate entrepreneurs. Experience

and knowledge improves intuition (Kirby 2003) and facilitates the discovery or identification of opportunities. Furthermore, the corporate entrepreneur's decision to start a new entrepreneurial activity is based on past experiences and knowledge that assure the desirability and feasibility of the activity (Krueger 2000, 2007).

So the experience, knowledge, and skills acquired to undertake a new business or develop a new opportunity are relevant factors to be considered. Consequently, we formulate the third hypothesis of this research:

H3

The entrepreneur's experience, skills, and knowledge required for setting up a business increase entrepreneurship in a context of economic crisis.

In this study the dependent variable in all the hypotheses is the extent of entrepreneurship in a context of economic crisis. Here it is important to define the concept of entrepreneurship and how it is to be operationalized. Entrepreneurship here is defined as a result of the final stage in the entrepreneurial function, that is, the entrepreneur's expectation of starting a new business or growing a current business.

As already noted, there is no consensus in the literature on the effects of an economic crisis on entrepreneurial activities. The crisis may encourage discovery of innovation and opportunities for entrepreneurs with a strong entrepreneurial profile, and, in contrast, may slow entrepreneurial action for those who are less able to discover opportunities, have less knowledge or skills to create the opportunity, or more risk aversion. The outcome will depend on a reality not present in previous studies: the entrepreneurship of Spanish entrepreneurs.

The empirical research presented below, within the limitations of the data available in the GEM survey, attempts to confirm the above hypotheses.

1.3   Methodology

1.3.1   Sample and Data

We used a secondary data source to test our hypotheses. The database selected was the "Individual level data GEM 2009 APS Global" from the Global Entrepreneurship Research Association (GERA). The GEM project is an annual assessment of the entrepreneurial activity, aspirations, and attitudes of individuals across a wide range of countries. This GEM initiative was initiated in 1999 as a partnership between London Business School and Babson College.

The year selected from the database for carrying out our study was 2009, and the analysis was focused on Spain. In this year, Spain was immersed in an economic recession, closing the year with an unemployment rate of 18.8 %. Spain has had the highest unemployment rate in the OECD since 2009. The GDP suffered a decline of 3.6 % and Spain's fiscal deficit was 11.2 % of GDP by the end of the year. Greater

job instability also led to a decline in consumption, with a 1.5 % decline in the second quarter, although it moderated its decline in the third and fourth quarter.

Four hundred and eighty seven cases were selected from the GEM database where the indicators form our variables. All the considered indicators were fulfilled in 206 cases. We were concerned about the possible self-selection bias but no differences were found between the sample selected and the whole sample in the indicators considered.

1.3.2   Measures

The indicators selected from the GEM database for measuring our variables are shown in the Appendix. For the "Innovation" variable we considered three binary items (see Appendix) regarding innovation in technology and products. Due to the clearly different components of the innovations considered, this scale is conceptualized as a formative scale (Podsakoff et al. 2006), and we added these three indicators to form the "Innovation" variable.

The "Experience and Skill" variable was also formed by adding two binary indicators ("suskill" and "suskilyy", see Appendix). The "Opportunity Recognition" variable was also formed by adding two binary items, one about local opportunity recognition ("opport" indicator) and the other about general opportunity recognition ("opportyy" indicator, see Appendix).

Although entrepreneurship is a latent construct, according to Covin and Wales (2012), there are several perfectly valid measurement options for its operationalization if they are consistent with the entrepreneurship conceptualization. We can find in the literature different strategies, unidimensional vs. multidimensional entrepreneurship measurement models, as well as formative versus reflective scales. In our study, we consider two different aspects to be included in the entrepreneurship conceptualization, the expectation of growth of the present business, compared to one year ago, and the possibility of starting a new one. In order to include these aspects in the entrepreneurship scale, and constrained by the use of a secondary data source, we measured entrepreneurship as the addition of the indicators "sugrow" and "sustart" (see Appendix), both of them measured in the GEM database on a five-point Likert scale.

1.3.3   Control Variables

We controlled for three variables that could potentially affect entrepreneurship: gender, age, and education. Gender is measure with a binary index (1 = male; 2 = female). Gender can influence important factors in entrepreneurship such as the need for self-realization, unemployment, or career dissatisfaction (Arenius and Minniti 2005; Marques et al. 2011). Age is an essential control variable to be

Table 1.1 Means and standard deviations

	N	Min	Max	Mean	S.D.
Gender	487	1	2	1.34	0.476
Age	486	18	64	38.39	10.07
Education	485	0	6	3.82	1.27
Experience and skills	242	0.00	2.00	1.8760	0.48
Innovation	467	0.00	3.00	1.1820	0.93
Opportunity recognition	221	0.00	2.00	0.90	1.00
Entrepreneurship	481	2.00	10.00	4.64	2.15

Table 1.2 Correlations

	1	2	3	4	5	6
1. Gender						
2. Age	−0.079					
3. Education	0.026	−0.005				
4. Experience and skills	−0.096	0.064	0.138*			
5. Innovation	−0.007	−0.033	0.087	−0.007		
6. Opportunity recognition	−0.091	−0.042	0.050	0.071	0.017	
7. Entrepreneurship	−0.043	−0.064	0.102*	−0.034	0.176**	0.255**

$*P < 0.05$; $**P < 0.01$

considered when dealing with a subjective scale since nascent entrepreneurs could rely significantly on subjective and often biased perceptions rather than on objective expectations of success (Arenius and Minniti 2005). Finally, education is an important factor in opportunity recognition (van der Sluis et al. 2005) and can be strongly correlated with experience and skill. We measure education with the GEM indicator "harmonized educational attainment" with 8 possible levels (0 = pre-primary education; 1 = primary education or first stage of basic education; 2 = lower secondary or second stage of basic education; 3 = lower secondary or second stage of basic education; 4 = upper secondary education; 5 = post-secondary non-tertiary education; 6 = first stage of tertiary education; 7 = second stage of tertiary education).

Table 1.1 shows the means, standard deviations, maximums, and minimums of the study variables. Table 1.2 shows the correlations about the degree of agreement or disagreement with each component using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree).

1.4 Results

We conducted hierarchical regression analyses in order to evaluate the hypotheses. In all the models (Table 1.3) entrepreneurship was the dependent variable. In Model 1 (Table 1.3) we tested the influence of the control variables first by regressing entrepreneurship on the three control variables. None of the regression coefficients were statistically significant ($p < 0.05$). Nevertheless, age was significant at a

Table 1.3 Stepwise regression

	Independent variables	Model 1	Model 2	Model 3	Model 4
C.V:	1. Gender	0.042	0.039	0.054	0.070
	2. Age	−0.099	−0.098	−0.091	−0.079
	3. Education	0.118	0.121	0.108	0.097
	4. Experience and skills		−0.024	−0.013	−0.032
	5. Innovation			0.202**	0.203**
	6. Opportunity recognition				0.232***
	F	1.639	1.253	2.761*	4.409***
	Adjusted R2	0.009	0.005	0.041	0.091
	Change in R2		0.115	8.604*	11.895*

The dependent variable in all the models is "Entrepreneurship." Table entries are standardized regression coefficients

*$p<0.05$; **$p<0.01$; ***$p<0.001$; $N=206$

$p=0.094$. All the control variables were kept in the rest of the models despite their low influence on the dependent variable.

In Model 2, the "Experience and Skills" variable was introduced in the regression model with no significant results. Besides, its effect overlaps with the education control variable, already expected because of their high correlation (see Table 1.2).

In Model 3, the explanatory variable "innovation" was introduced. Its standardized coefficient is significant at $p<0.01$ and the change in R2 of Model 3 in relation to Model 2 is significant at $p<0.05$, although the adjusted R2 of Model 3 remains still low (0.04).

Finally, in Model 4, the "opportunity recognition" variable was introduced. Its standardized coefficient is significant at $p<0.001$, and the F of the model is significant at $p<0.001$ and the change of R2 in relation to Model 3 is significant at $p<0.05$. The "innovation" variable in Model 4 remains significant at $p<0.05$. The adjusted R2 of Model 4 is 0.091, with the final model explaining 10 % of the variance of the dependent variable "entrepreneurship."

1.5 Discussion and Conclusions

The issue of whether entrepreneurial activity slows down or is reinforced in times of economic crisis has not been resolved in the entrepreneurship literature. If we unite the concept of entrepreneur to the creation or destruction of the business structure, characteristics of economic booms, and depressions, the obvious quantitative result is that entrepreneurship declines with the crisis. However, if we refer to entrepreneurs who fully embody the characteristics of entrepreneurship (not directly quantifiable latent variable) empirical studies are scarce and therefore the issue is still open to debate. In this study the latent variable entrepreneur is identified by the independent variables acquired experience and knowledge for starting a business, practice in technology or product innovation, and ability to recognize opportunities.

The general hypothesis of this study, summarized in the three hypotheses, is that a strong entrepreneurial profile (acquired experience and knowledge to start a business, practice in technological or product innovation, and capacity to recognize opportunities) is associated to entrepreneurial expectation, which entrepreneurs maintain during an economic crisis (2009, Spain). If this is fulfilled, we will show that entrepreneurs with relevant entrepreneurship characteristics are significantly related to entrepreneurial activities during an economic crisis or at least have greater entrepreneurial expectation than other entrepreneurs, whatever may happen quantitatively with the business structure and entrepreneurs in general. In the study sample, the empirical findings indicate that for entrepreneurs with a strong profile according to the studied characteristics, the economic crisis has brought about a statistically significant difference in their entrepreneurial activity in relation to the mean. Therefore, they have more expectations of starting new businesses or of obtaining greater growth than entrepreneurs with a weak profile.

These results are, however, more marked according to the characteristic analyzed. Thus, experience and skills (H3) have hardly any influence on improved entrepreneurial expectations after a year of crisis and this low influence (the correlation with entrepreneurship is significant at $p < 0.05$, see Table 1.2) is completely masked by the control variable education (see Model 2, Table 1.3). However, the regression coefficients in Table 1.3 (Model 4), for Innovation (0.203; $p** < 0.01$) and opportunity recognition (0.232; $p*** < 0.001$), indicate a positive and significant relationship between these characteristics of entrepreneurs and their entrepreneurial performance during the economic crisis, thereby corroborating hypotheses H2 and H1. Hypothesis H3, corresponding to acquired experiences, skills, and knowledge for starting a business, is not significant (Table 1.3, Model 4), contravening the logic of the study on this point. However, as regards the significant variables innovation and opportunity recognition, the level of variance explained by the model is 10 %, a very significant value taking into account the many variables that influence expectations of growth in a given business or the possibility of creating a new one outside the entrepreneurial function.

The information in the independent variables in this study, based on binary items, may not have enabled sufficiently accurate comparison of entrepreneurs with higher scores in experience and knowledge, technological and product innovation, or recognition of opportunities.

A first conclusion of this work is that the latent variable defined in the theoretical framework, the entrepreneur with a clear entrepreneurship profile, is an important object of study, which would allow a distinction between two types of entrepreneurs. A second conclusion is that the empirical study confirms a positive significant relationship between entrepreneurs with the characteristic features of entrepreneurship and their entrepreneurial activity in times of crisis, which is particularly significant bearing in mind the complexity of the explained variable.

Consequently, in future studies, the authors will extend this study to an international context, enlarging the database in order to compare more accurately the degree of significance between entrepreneurs' entrepreneurial characteristics and their behavior in unfavorable or adverse economic situations.

Appendix

GEM indicator	Variables and indicators	Range
Control variables		
gender	What is your gender?	1–2
age	What is your current age (in years)	18–99
uneduc	Unharmonized educational attainment	0–7
Experience and skills		
suskill	You have the knowledge, skill, and experience required to start a new business	0–1
suskilyy	Has the required knowledge/skills to start a business	0–1
Innovation		
teayyntc	New technology	0–1
teanpmwk	New product or limited competition	0–1
teayynwp	Product is new to all or some customers	0–1
Opportunity recognition		
opport	In the next six months there will be good opportunities for starting a business in the area where you live	0–1
opportyy	Sees good opportunities for starting a business in the next 6 months	0–1
Business growth expectancies		
sugrow	Compared to one year ago, your expectations for growth are now…	1–5
sustart	Compared to one year ago, starting a business now is…	1–5

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Chapter 2
Technological vs. Professional Services and Location Influences on KIBS Innovative Capacity in Times of Crisis

João J.M. Ferreira, Mario Raposo, and Cristina I. Fernandes

Abstract This research seeks to ascertain the extent to which the innovative and competitive capacities of knowledge intensive business services (KIBS) companies are influenced by the service type (technological vs. professional) and their respective location (rural vs. urban) in times of crisis. Through recourse to structural equation models, the results demonstrate that innovative capacities are strongly dependent both on the type of service and the respective company location. We found that urban technological KIBS companies display greater innovative capacities and better financial performance than their professional service peers. Furthermore, networks were identified as the key explanatory factor behind these innovative capacities.

2.1 Introduction

Entrepreneurial activities, in conjunction with all the factors perceived as driving them, and their influence on regional economic development have been the subject of studies by a diverse range of authors (Birley 1985; Storey 1994; Acs 2002; Henrekson and Johansson 2010). Correspondingly, the National Commission on Entrepreneurship (NCOE) White Paper (2001) identifies innovation as the greatest contribution made by entrepreneurship at the local level. As far as the relationship between entrepreneurship and economic growth is concerned, many authors have deemed it a fundamental factor to economic growth and perceiving the role of

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entrepreneurs as highly important in the creation of employment and fostering innovation (Thurik and Wennekers 2004; Welter and Lasch 2008). As a result of research conducted in recent decades, and the increasingly unfavourable economic conjuncture, entrepreneurship promotion has come to occupy a central role in the twenty-first century economic paradigm (Shane and Venkataraman 2000).

The effective implementation of innovation has gained increasing recognition as a synonym for building sustained competitive advantage and thereby boosting organisational performance (Koc and Ceylan 2007). Innovation stems from the flexibility of companies able to choose between different options for the satisfaction of consumer needs (Banbury and Mitchell 1995) through sustained strategies and based upon the resources and capacities existing in companies, which not only enable them to meet such needs today but earn the revenues necessary to do so into the future (Lemon and Sahota 2004). Despite the existence of many voices defending the scope of the importance and the role Knowledge Intensive Business Services (KIBS) play in regional economic dynamics (Muller and Zenker 2001), there remain very few studies making any approach to innovative activities ongoing in this service sector (Koch and Strotmann 2008). The location of KIBS within the urban environment, their sensitivity to the general agglomerative effects of economies (Wernerheim and Sharpe 2003) and their trends towards forming spatial clusters (Coe 1998; Keeble and Nachum 2002) have been documented through recourse to various methodological tools. This research aims to ascertain the extent to which the KIBS innovative capacities are influenced by the service type (technological vs. professional) and their respective location (rural vs. urban) in times of crisis.

Our research is structured as follows, following this introductory section; we carry out a review of the literature relevant to the KIBS role in innovation, the innovative capacities and the locations of KIBS. We then set out the methodology adopted, which we described in the sample above, the statistical methods and the variables utilised. This is followed by analysis and discussion of our results before putting forward our final considerations.

2.2 Theoretical Background

2.2.1 Innovation Drivers

Innovation is perceived as a driver of progress, competitiveness and economic development (Romer 1994; Johansson et al. 2001). However, innovation represents a highly complex process with small- and medium-sized companies encountering obstacles to innovation and only able to make significant progress when cooperating with other entities optimised at deploying their internal knowledge in combination with the specific skills of their partners (Muller and Zenker 2001). Kleinknecht (1989) identifies the following key barriers to innovation: (1) a lack of financial capital; (2) a shortage of management level qualifications; and (3) difficulties in obtaining the technological information and know-how necessary to innovation. Greater utilisation of information flows is essential to the creation of organisational

capacities and has led to the establishment of the core foundations to organisational success (Cohendet and Steinmueller 2000). In turn, Bughin and Jacques (1994) propose that the major obstacle to innovation is not so much related to companies experiencing some kind of short sightedness but rather fundamentally due to the incapacity of companies to adopt that which they term "the key principles to management": (1) marketing and R&D efficiency; (2) synergies between marketing and R&D; (3) communication capacities; (4) organisational and innovation management excellence and (5) the protection of innovation. This suggests that internal R&D, at least in the case of the majority of companies, proves insufficient for them to identify, leverage and maximise their innovation potentials. We correspondingly propose the following six research hypotheses:

H1: Difficulties in accessing financing produce a negative impact on innovative capacities
H2: Difficulties in demand (limited client base) produce a negative impact on innovative capacities
H3: Shortages in qualified human resource skills produce a negative impact on innovative capacities
H4: Organisational related difficulties produce a negative impact on innovative capacities
H5: Cooperation related difficulties produce a negative impact on innovative capacities
H6: KIBS innovative capacities have a positive impact on financial performance

New products require new capacities and, in a final analysis, a new combination of already existing competences (Koch and Strotmann 2008). These new competences represent a precondition for generating new products and services and may be considered the result of the acquisition, assimilation and dissemination of new knowledge (Cohen and Levinthal 1990) and that understood as the innovative capacity. Specific innovative capacities result from individual competences, already acquired knowledge and the specific skills of companies as well as recourse to diverse means of knowledge (Cohen and Levinthal 1990; Schmidt 2005). Very often and in particular at innovative small and medium-sized companies, idiosyncratic internal capacities are particularly related with the profile of the respective entrepreneur, hence bound up with his/her experiences, motivations, networks, creativity, strategic orientation as well as the prevailing innovation activities (Webster 2004). Hence, we arrive at our next research hypothesis:

H7 a: The entrepreneurial profile influences innovative capacities (Length of Service)
H7 b: The entrepreneurial profile influences innovative capacities (Years of Experience)

Recently, research has shown particular interest in detailing and highlighting the company characteristics and factors that drive innovation (Lemon and Sahota 2004; Tidd and Bessant 2009). Some studies maintain that the emergence of new ideas, clearly fundamental to any company innovative capacity, only arise out of the creation of knowledge (Cohen and Levinthal 1990; Koc and Ceylan 2007). Interlinked

with this importance attributed to new ideas comes the relevance of its appropriate conveyance and application within the scope of the company so that ideas may be shared and thereby foster the likelihood of innovation (Tidd and Bessant 2009). The internal company environment proves a mitigating factor across the dimensions of organisational structure and development, establishing a suitable innovation strategy and communicating this to employees and all fundamental factors for innovation (Lemon and Sahota 2004). An organisational culture that nurtures creativity and the spread of knowledge between the different employees with distinct capacities will enable a company to generate solutions while simultaneously leveraging potential synergies (Lemon and Sahota 2004). From the perspective of Tidd and Bessant (2009), a company's innovative capacity may be measured based upon factors related to strategy, organisation, learning, process and networks. Within this framework, we correspondingly set out the following four research hypotheses:

  H8: Strategy has a positive influence on innovative capacities
  H9: The organisation has a positive influence on innovative capacities
H10: Learning has a positive influence on innovative capacities
H11: Process has a positive influence on innovative capacities
H12: Networks have a positive influence on innovative capacities

2.2.2   KIBS Innovative Capacities and Location

According to the OECD (2007), the motivation underpinning such support should be based upon studies of the differences between regional innovation hence enabling policies to be put into practice enabling lesser developed regions to boost their performances particularly in terms of innovation. Nevertheless, there still remain relatively few such studies examining the impact of the innovation processed by KIBS at the regional level (Shearmur and Doloreux 2008). Studies done thus far on KIBS have focused on: (1) the impact that they have on employment (Shearmur and Doloreux 2008); (2) the impact on the growth of cities (Simmie and Strambach 2006; Aslesen and Isaksen 2007); (3) the proximity effect on the transfer of knowledge and their clients (Aslesen and Jakobsen 2007); (4) the innovation effect on the transformative industry and its cooperative relationships with KIBS (Aslesen and Isaksen 2007) and (5) on the relationship between the surrounding host innovation systems (Koch and Stahlecker 2006). This research seeks to narrow that shortcoming by simultaneously focusing on analysis of the innovative and competitive capacities of these KIBS types in conjunction with their location. Within this context, we put forward the following two research hypotheses:

H13 a: Urban Professional KIBS display greater innovative capacities than the rural
H13 b: Urban Technological KIBS display greater innovative capacities than the rural
H14 a: Urban Professional KIBS attain better financial performances than the rural
H14 b: Urban Technological KIBS attain better financial performances than the rural

2.3 Methodology

2.3.1 Sample

A questionnaire was drafted and applied to a final sample of 500 Portuguese KIBS firms during the October of 2012. These firms were selected according to their CAE (REV.3) and NACE (REV 2) codes, in accordance with other research projects (Freel 2006; Shearmur and Doloreux 2008) The final sample of 500 KIBS companies was thereby structured as follows (Table 2.1): p_KIBS (65.6 %, 328 companies) and t_KIBS(34.4 %, 172 companies). Of the total of these companies, 18.6 % were located in rural regions (93 companies) and 81.4 % in urban environments (407 companies).

2.3.2 Structural Modelling Results

Table 2.1 portrays the estimate results, confidence intervals at 95 % (CI) and structural model p-value. The methodology applied for estimation was that of maximum likelihood with bootstrap. Analysing the adjustment quality (Table 2.2) according to the Averages Comparative Fit Index—CFI, Incremental Fit Index—IFI, Normed Fit

Table 2.1 Structural modelling results (standardized regression weights)

				CI 95 %		
			Estimate	Lower	Upper	p
NET	←	LEAR	0.38	0.27	0.47	<0.01
NET	←	STR	0.23	0.14	0.32	<0.01
INNOV	←	NET	0.12	0.05	0.19	<0.001
INNOV	←	TU	0.20	0.12	0.28	<0.001
INNOV	←	LENGTH	−0.12	−0.18	−0.06	<0.01
INNOV	←	YEARS	0.09	0.02	0.15	<0.01
INNOV	←	PU	0.21	0.13	0.28	<0.001
INNOV	←	DIF	−0.19	−0.24	−0.13	<0.001
TURN	←	TU	0.13	0.02	0.26	<0.01
TURN	←	INOV	0.74	0.59	0.81	<0.01
TURN	←	LENGTH	0.22	0.11	0.33	<0.001

Note: *NET* network, *LEAR* learning, *STR* strategy, *INNOV* number of innovation, *TU* urban t_Kibs, *PU* urban p_Kibs, *DIF* organisational difficulties, *LENGTH* length of service, *YEARS* years of service

Table 2.2 Structural modelling adjustment averages

Chi	df	p-Value	CFI	IFI	NFI	RMSEA
198.238	34	0.000	0.905	0.910	0.902	0.074
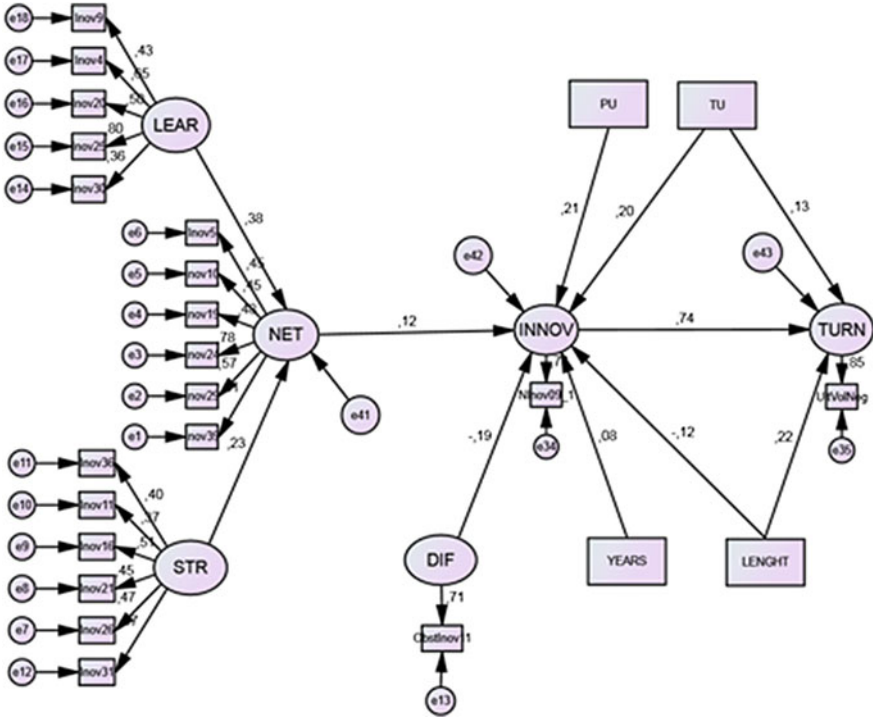
Fig. 2.1 Structural model

Index—NFI and Root-Mean-Square Error of Approximation—RMSEA concludes that, in addition to the statistical significance of all coefficients subject to testing, adjustment is good.

The model under study, represented in Fig. 2.1, presents the standardized factorial weightings for the final simplified model.

The variables bearing a statistically significant direct influence on the number of product innovations are length of service in years ($\beta=-0.12$; 95%CI: -0.18, -0.16; $p<0.01$), an urban environment location and being a technologically ($\beta=0.20$; 95%CI: 0.12, 0.28; $p<0.001$) or a professionally ($\beta=0.21$; 95%CI: 0.13, 0.28, $p<0.001$) focused KIBS company, the network factor in innovative activities ($\beta=0.21$; 95%CI: 0.05, 0.19; $p<0.001$), and the length of experience of the company manager/owner ($\beta=0.09$; 95%CI: 0.02, 0.15, $p<0.001$).

Analysing the direct, indirect and total effects of the diverse variables subject to analysis in terms of numbers of innovations, we find the factors Learning and Strategy generated no direct and statistically significant impact, however, as they influence the Networks factor, with the latter holding a statistically significant impact on innovation levels, there is an indirect effect of 0.09 (H12) for the afore-mentioned two factors (learning and strategy). An average increase of one point in the level of alignment between the Learning and Strategy factors causes, and as

mediated by the Networks factor, an increase of 0.14 and 0.09 innovations, respectively. It may thus be concluded that the Networks factor generates a positive impact on KIBS innovative capacities. This thereby corroborates other studies that point to the founding and running of networks as essential to the development of innovation (Moritra and Krishnamoorthy 2004). The length of manager experience also holds a direct impact and total of 0.04 this reflects how an additional year of experience fosters an average increase of 0.04 innovations (H7b). Hence, the fact that an entrepreneur or owner has built up greater experience in the sector implies that they shall seek to foster innovation into the future.

As defended by various authors, entrepreneurial characteristics are fundamental to the existence of innovation within organisations (Webster 2004). The variable associated to location and given that the results demonstrate that whether KIBS are urban and professional generates a (total) direct impact of 0.46 and it may thus be inferred that a company's location in an urban environment and engaged in professional sector activities leads to a rise of 0.48 in innovations. The urban professional and technological KIBS have a greater innovative capacity as confirmed hypotheses H13a and H13b. Finally the H14b is checked indicating that the urban technological KIBS tees significantly better financial performance.

Aslesen and Isaksen (2007) have proposed urban technological KIBS companies hold greater innovative capacities (even while the gap is not especially large) than their professional KIBS peers, as identified by Freel (2006). The variable related to difficulties in terms organising innovation (H4) has a significantly direct negative impact, -0.21, on the number of innovations. An average rise of one unit attributed to difficulties in organising innovation causes an average slide of 0.21 in innovations. Thus, we find that KIBS companies experiencing internal difficulties in terms of how they handle innovation processes turn in lower levels of overall innovative capacity. As defended by Bughin and Jacques (1994), this is one of the key management principles that companies experience great difficulty in overcoming in the field. Length of service also generates a directly negative effect on innovations of -0.02. Hence, for every extra year of employee company service, there is an average decline of 0.02 in the number of innovations. The fact that the company has a strong or at least established track record may lead to a propensity to drive less innovation.

The variables that have a direct and statistically significant influence on turnover (Table 2.1) are the number of innovations in 2009 ($\beta = 0.74$; 95%CI: 0.59, 0.81; $p < 0.01$), its location in an urban environment and being a technologically based company ($\beta = 0.20$; 95%CI: 0.12, 0.28; $p < 0.001$). The variable applied to urban technological KIBS returns a direct effect of 0.48 on turnover and an indirect effect of 0.53 (total effect of 1.01) and we may correspondingly deduce that where a company is located in an urban context and focused upon the technological sector, its average turnover rises by over 1,010.00 € thousand than would otherwise be the case. The number of innovations also generates a direct impact on estimated turnover of 1.11, which indicates that the increased innovation on average generates additional turnover of 1,111.00 € (H6). Thus, we can conclude that urban technological KIBS firms return a financial performance better than urban professional

KIBS companies. Taking into consideration financial performance is a means of measuring the competitive capacities of a company, we may assume that technological KIBS entities are more competitive given that they not only turn in better financial performances but also prove more innovative.

2.4   Conclusions

We would also wish to emphasise that, despite the prevailing financial and economic difficulties experienced, these KIBS companies did not identify such circumstances as impacting on innovation even though internal organisational issues did. We may thus assume that such difficulties relate to the company encountering certain shortcomings at the organisational level and on occasion resulting in lower levels of innovative capacity.

Bughin and Jacques (1994) also hold that this is one of the key management principles that companies find most difficult to implement. Finally, as regards the competitive level of KIBS as described by the average of their financial performance through turnover, we demonstrate that technological KIBS beyond returning better financial performances than their professional counterparts, also display better innovation capacities. Hence, we may argue that technological KIBS companies are effectively more competitive than professional KIBS. However, the location (urban vs. rural) held no influence in these terms. In Portugal, there are not many KIBS firms located in rural areas and this might result, when analysing them in terms of the remainder of the sample, the urban located KIBS, in a lack of statistical significance as is the case in our study, thereby restricting the applicability of these particular results.

An implication within this scope applies to the terms and conditions of public policies. The authorities need to better understand the complex environment and difficult that companies currently face. Only thus is there any real likelihood of adopting the appropriate policies tailored to the private sector realities of the twenty-first century. Given the looming scale of change, we must adopt new measures and new policies and we believe that funding and financing the founding of such companies does contribute towards regional development and particularly in areas where the rural/urban dichotomy remains so pronounced as well as for the competitiveness of those companies interacting with these KIBS.

Additionally, some scholars preserve that in times of crisis, not all firms within an industry have the capacities to survive the economic slowdown or to adapt to the new economic reality (Caballero and Hammour 1994; Latham and Braun 2011). However, as the disruptive nature of economic recessions on company viability and competitiveness is completely recognised by practitioners and academics alike, comparatively little research has addressed how entrepreneurs can successfully pilot these insidious actions. What are the influential implications of global recession on the innovative capacity of KIBS enterprises? We therefore believe that the results of this research provide a deeper and more detailed insight into this sector hitherto subject to so little researched.

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Chapter 3
Antecedents and Consequences of Entrepreneurial Orientation of Spanish Exporting SMEs in Time of Crisis

Antonio Navarro-García and José Luis Coca-Pérez

Abstract This paper reports the findings of a study to investigate to antecedents—decision maker factors—and consequences—export performance—of export entrepreneurial orientation among a sample of Spanish exporting small and medium enterprise-SMEs. This aim is achieved in the context of the Spanish economic crisis. Responding to the repeated calls in the literature for multidisciplinary research frameworks, the paper examine the relationships between characteristics and values of export managers on export-entrepreneurial orientation and export performance. A sample of 196 exporting SMEs from multiple sectors was analyzed using structural equation modeling—PLS. The findings suggest that: (a) the positive influence of certain features of managers—international experience, language proficiency, specific experience about export activities—and proactive value systems on export-entrepreneurial orientation; (b) the positive influence of export-entrepreneurial orientation on export performance. The paper concludes by offering useful recommendations to export managers.

3.1 Introduction

Adaptations to environment are even more needed to ensure the survival of organizations in an economic crisis period. These adaptations may require complex and innovative decisions. In this context, success (or failure) of firms operating in a given environment depends on the entrepreneurial orientation of the organization (Morgan

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and Strong 2003) The focus of this research stream has been confined to domestic markets (Cavusgil and Zou 1994), and it has been scarcely developed in the field of international markets (Ibeh 2003). According to this gap, it is necessary to develop studies analyzing the antecedents and consequences of entrepreneurial orientation in the context of international marketing. This is the main objective of this paper, focusing on exports as the traditional way of accessing to foreign markets.

In this context, export entrepreneurship is viewed in this paper as the process by which individuals, either on their own or inside organizations, engage in proactive and aggressive pursuit of exporting-related product-market innovations and opportunities without regard to the environmental disincentives which they face (Ibeh 2003). The export-entrepreneurial orientation construct, as used in this paper, is a characteristic specific to the firm, as well as to the individual decision makers within it. This perspective is particularly important given the high incidence of single or few decision makers among exporting SMEs (Hessels and van Stel 2011).

3.2 Antecedents and Consequences to Export Entrepreneurial Orientation

3.2.1 Antecedents: Export Manager's Characteristics and Values

Managers have mental models that influence how they interpret changes in their environment, affecting actions and decisions that they have to take (Johnson and Hoopes 2003; Nadkarni and Barr 2008). Personal characteristics exert a major influence in the formation of these beliefs and mental models (Hambrick 2007; Ribeiro and Castrogiovanni 2012). In the case of export activity, Leonidou et al. (1998) point out the influence of personality features of managers on exporting. These managerial characteristics can be general (e.g., age, education) or more specific (e.g., experience in export activities). The latter can apply more influence to value systems, attitudes, and behaviors associated with export activity (Katsikea and Skarmeas 2003). In this context, Axinn (1988) noted that international experience of managers encourages the formation of values to promote changes, reinforcing the development of an entrepreneurial culture in relation to the export activity. Similarly, the language skills and, particularly, experience in foreign trade increase managers' confidence in the development of international business. In addition, these features encourage international mobility, improve relations with foreign distributors and favor the detection of business opportunities in foreign markets (Gomez-Mejia 1988; Leonidou et al. 1998). All this facts will foster the adoption of more entrepreneurial orientation by the managers responsible for the export activity. This is very important in times of crisis. These arguments support the following hypotheses:

> H1: *Managers of exporting SMEs possessing managerial characteristics associated with greater international experience, language skills and specific experience in export activities positively influences the adoption of entrepreneurial orientation to export activity in times of crisis.*

In the order hand, values are relatively stable criteria that people use to evaluate their own and others' behavior across various situations and are a crucial element for the subjective appraisal of events (Finkelstein et al. 2008). Therefore, understanding managers' value systems is important in light of the growing evidence revealing that the way managers interpret a market situation directly affects the solutions considered, resources committed, and changes made in terms of strategic decisions (White et al. 2003). This is consistent with the view that managers' values should be considered key determinants of entrepreneurial orientation (Carpenter et al. 2004). In this context, the individual values are usually a reflection of corporative culture and an essential element. They explain people's attitudes and behaviors (Hambrick 2007).

From the point of the continuum that the inventory of human values is (Schwartz 1992), two positions are emphasized from the managerial perspective (Sousa et al. 2010): (a) conservative approach/self-enhancement characterized by a predominance of an individualistic vision, status quo maintenance and reluctance to make changes. In this point of view the predominant values are: security, conformity, tradition, power, and achievement. This position involves applying a traditional logic reflecting a reactive culture in problem solving, decision making, entrepreneurial attitudes and behaviors (Schwartz and Bardi 2001). Their impact is often negative in the speed of response and adaptation to the consumers' wishes (Kohli and Jaworski 1990), motivation to innovate (Steenkamp et al. 1999), market diversification (Krasnikov and Jayachandran 2008), and export performance (Sousa et al. 2010); (b) proactive approach/openness to change/self-transcendence characterized by a predominance of the collective vision, openness to changes, and willingness to accommodate them. Values such as, excitement, novelty, challenge in life, control, autonomy in action, and independence of thought dominate in this approach. In this case, the preponderance of a proactive value system in managers positively affects attitudes and perceptions associated with export activity. In this way, the proactive approach can make greater the willingness of the company to increase export entrepreneurship in times of crisis (Navarro et al. 2013). These arguments lead us to propose the following research hypotheses:

> H2: *In times of crisis*, *the dominance of a proactive system of values* (*openness to change and self-transcendence*) *in managers of exporting SMEs positively influences the export entrepreneurial orientation*.

3.2.2 Consequences: Export Performance

In our study, export performance is measured as a construct consisting of two dimensions: qualitative (satisfaction with export performance) and quantitative (growth in export sales over 3 years).

Firms, in general, attempt to adopt entrepreneurial postures in the hope that this behavior will lead to better performance (Yeoh and Jeong 1995). In export arena, entrepreneurial exporters tend to acquire more information about foreign markets, possess greater managerial desire to export, products tend to be more unique, and have greater marketing or technological advantage (Johnston and Czinkota 1985). Moreover, entrepreneurial exporters tend to have more direct contact with their
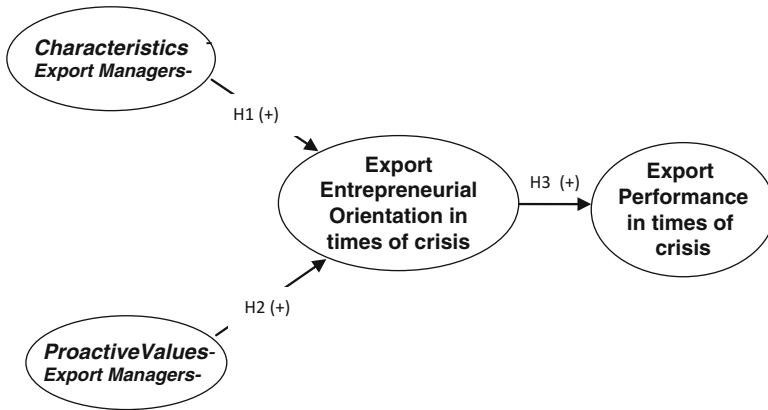
Fig. 3.1 Graphical description of the model

overseas buyers, export involvement of the CEO, greater emphasis on product quality, market diversification, sophisticated planning techniques, and quality control activities (da Rocha et al. 1990). Thus, all this will lead to better export performance. These arguments support the following hypotheses:

H3: *In times of crisis*, *export entrepreneurial orientation has a positive influence on export performance*.

Figure 3.1 shows the theoretical model proposed in this research.

3.3 Methodology

3.3.1 Measurement Scales

MacKenzie et al. (2005) recommendations for distinguishing formative and reflective variables have been taken into account in the multi-item measures of the study. First, we captured manager characteristics as first-order reflective constructs. Three personal characteristics of export managers were taken into account: (a) international experience (Axinn 1988; Gray 1997), (b) specific experience in export activities (Leonidou et al. 1998), (c) language skills (Gomez-Mejia 1988).

Second, we captured export managers' values as second-order reflective construct. The Schwartz's (1992) Value Inventory and the contributions of Sousa et al. (2010) have been considered for the construction of the scale: proactive values of export managers. This scale is composed of five reflective dimensions. The first three dimensions, stimulation (five items), self-direction (four items), and hedonism (four items) are a reflection of openness to change of export managers. The two remaining dimensions, benevolence (three items) and Universalism (four items), reflect the self-transcendence of export managers. Third, the export entrepreneurial orientation is conceptualized as a latent construct comprising three dimensions: innovativeness, risk taking, and

proactiveness (Yeoh and Jeong 1995). Innovativeness involves seeking creative or unusual solutions to problems and needs in export activity. This dimension includes product innovations, development of new markets, and new processes and technologies for performing organizational function. The risk taking dimension refers to the willingness of management to commit significant resources to opportunities in the face of uncertainty. Proactiveness is defined in terms of the export firm's propensity, aggressively and proactively to compete with its rivals in foreign markets. Finally, export performance has been considered as a second-order formative construct, with two formative dimensions (qualitative and quantitative export performance). Following Rose and Shoham (2002), qualitative export performance was measured through export managers' satisfaction with the effectiveness of a marketing program in terms of five objectives: growth of export sales, image of firm in foreign markets, profitability of export business, market share, and international expansion. Quantitative export performance was measured with the variables export sales growth in 3 years (Cavusgil and Zou 1994). Measurement scales used are five point Likert type.

3.3.2   Data Collection and Analysis Techniques

We performed an empirical study of Spanish SMEs export firms. We used a multi-industry sample to increase observed variance and reinforce the generalization of the findings (Morgan et al. 2004). The sample of firms was obtained from the database of exporters of the Spanish Institute for Foreign Trade (ICEX). Keeping sectorial proportionality, questionnaires were sent, mainly via e-mail, to 1,200 managers responsible for exports between April and June 2012. One hundred ninety-six valid questionnaires were obtained, representing a response rate of 16.3 %, which is in the range between 15 and 20 % considered as an adequate response rate to a questionnaire sent to senior executives (Menon et al. 1996).

   To analyze data and evaluate the relationships between the different constructs, we chose structural equations modeling via PLS (partial least squares), in view of the characteristics of the model and sample. We used the statistics package SmartPLS 2.0 M3 to carry out the empirical analysis.

3.4   Results

To interpret and analyze the proposed model using PLS, the analysis went through two distinct stages (Barclay et al. 1995): (1) evaluation of the measurement model; and (2) analysis of the structural model. This sequence ensures that the proposed measurement scales are valid and reliable before testing the hypotheses. For the reflective scales, the factor loadings were all above the recommended 0.7 (Carmines and Zeller 1979). The composite reliability and average variance extracted (AVE) values also exceeded the recommended values of 0.7 and 0.5, respectively (Fornell and Larcker 1981). Thus, the results support the convergent validity of the reflective scales considered in this study (Table 3.1).

Table 3.1 Evaluation of measurement model

Construct/dimension/	Variance inflation factor	Weight	Factor loading	Composite reliability (pc)	Average variance extracted
Export managers characteristics (reflective construct; three items)				0.827	0.620
Proactive export managers values (second-order reflective construct)				0.818	0.523
Stimulation (first-order reflective construct; five items)			0.781	0.913	0.678
Self-direction (first-order reflective construct; four items)			0.806	0.938	0.791
Hedonism (first-order reflective construct; four items)			0.798	0.899	0.695
Benevolence (first-order reflective construct; three items)			0.756	0.884	0.718
Universalism (first-order reflective construct; four items)			0.789	0.898	0.690
Export entrepreneurial (second-order reflective construct)				0.835	0.709
Innovativeness (first-order reflective construct; six items)			0.806	0.903	0.608
Proactiveness (first-order reflective construct; seven items)			0.864	0.893	0.680
Risk taking (first-order reflective construct; six items)			0.970	0.977	0.879
Export performance (second-order formative construct)				n.a.	n.a.
Quantitative Export Performance (reflective construct)	2.040	0.299		0.873	0.697
Crev_2009			0.777		
Crev_2010			0.898		
Crev_2011			0.824		
Qualitative Export Performance (reflective construct)	1.981	0.850		0.926	0.715
SAT1			0.882		
SAT2			0.808		
SAT3			0.900		
SAT4			0.817		
SAT5			0.817		

n.a. Not applicable

Table 3.2 Parameters from hypothesis tests

Hypothesis	β	t-Value	Supported
H1: Export manager characteristics–export entrepreneurial orientation	0.236	2.365***	Yes
H2: Proactive export manager values–export entrepreneurial orientation	0.408	6.402***	Yes
H3: Export entrepreneurial orientation–export performance	0.388	6.088***	Yes

Notes: *ns* no significant (one-tailed t(999) test); ***$p < 0.001$

After having ensured the convergent of the measurement model, we tested the relationships between the different variables. We started by calculating, using the bootstrap method (1,000 subsamples), the different statistical parameters (Table 3.2). Although many researchers opt for 500 subsamples in their studies, and this is sufficient, in the current work we decided to use 1,000 to reduce the randomness (Davidson and MacKinnon 2000). The hypothesis tests considered the sign and significance of t-values in each relation (β coefficient). The variance explained values of the different endogenous constructs are given in the discussion section.

3.5   Discussion and Conclusions

The discussion is organized around the main objectives of this research. The first of these is the validation of the proposed theoretical model. This model offers a suitable framework to explain how characteristics and managerial values play a key role in entrepreneurial orientation of exporting SMEs in times of crisis, conditioning the export performance. Focusing on the relationships between variables and taking the global model as a reference, a number of conclusions can be drawn.

Firstly, in times of crisis, the international experience, language skills, and specific experience in export activities of managers influence significantly with regard to set up a entrepreneurial culture in exporting SMEs, confirming H1 ($\beta = 0.236$, t-value $= 2.365$). Managers have values and mental models that influence how they interpret the changes in their environment, affecting the actions and decisions they have to take (Johnson and Hoopes 2003; Nadkarni and Barr 2008). However, personal characteristics exert a fundamental influence in the formation of these values and orientations (Hambrick 2007; Katsikea and Skarmeas 2003). Thus, international experience of managers encouraged the formation of values likely to changes, reinforcing the development of an entrepreneurial culture in relation to the export activity (Axinn 1988) and decreasing risk aversion associated with exporting (Gray 1997).

Secondly, entrepreneurial orientation of exporting SMEs, which has an explained variance of 33.5 % ($R2 = 0.335$), is affected significantly for the proactivity showed by managers responsible for the export activity, from the point of view of values

($\beta = 0.408$, p-value $= 6.402$), confirming H2. In this context, it is recommended to exporting SMEs to encourage a proactive culture with regard to export activities. This is very important in times of crisis. This culture is based on a system of values for openness of changes, joint instead of individual decision making, reduction of psychological barriers to exports, etc. (Navarro et al. 2013).

Finally, the dimensions and scales proposed to assess the export performance are appropriate, and they are conceived as multidimensional constructs (second-order formative construct). Export performance has a variance explained of 18 % ($R2 = 0.180$) and is influenced positively by export entrepreneurial orientation ($\beta = 0.388$, t-value $= 6.088$), thus confirming H3. In this context, managers of exporting SMEs should encourage the development of positive and entrepreneurial attitudes towards export activity. A large exporter compromise is essential in exporting SMEs, since it facilitates the development of entrepreneurial behaviors of adaptation to the environment in times of crisis. The result is the facilitation of the adaptation of product attributes, price, promotion, and communication to the exigencies and demands of foreign markets. This may increase the satisfaction and loyalty of foreign clients, driving sales growth and manager satisfaction with export performance (Rose and Shoham 2002; Sousa 2004).

In summary, this paper contributes significantly to fill an important gap in the research field of exporting SMEs. Concretely, the study demonstrates the positive relationships between managers' characteristics and values on entrepreneurial orientation and export performance in times of crisis.

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Chapter 4
Fighting Against the Economic Crisis: Innovation in B-to-B Markets Through Co-creation

Michael W. Preikschas, Pablo Cabanelas, and Klaus Rüdiger

Abstract The special characteristics of industrial markets favour customer involvement in product development. Besides the influence in the development process, its participation fosters opportunities for managers in terms of innovation, value co-creation and customer retention. Based on the social exchange theory and resource-based view, the present research discusses a theoretical model that can promote dynamic capabilities and increase customer retention through value co-creation. The special characteristics of industrial markets favour customer involvement in product development. Besides the direct influence in the development process, participation increases the opportunities open to managers in terms of value co-creation and customer retention.

4.1 Introduction

Customer relationship management (CRM in advance) is a recurring topic in recent industrial marketing studies. Firstly, because it offers a way of compensating the saturation in industrial markets, especially in a context of economic recession. Secondly, several characteristics of Business-to-Business (B-to-B in advance) markets, such as long-term relationships, derivative needs, interaction purchase processes and professionalism, make possible the inclusion of customers as an active

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participant in product development (Wilkinson 2008). Thirdly, because the closer a business relationship is, the higher the benefits will be (Ulaga and Eggert 2006); customer retention (rather than acquisition) becomes an increasing priority as companies try to reach their full financial potential (Gupta et al. 2004).

After retaining a customer, the next point an industrial company should strive for is to achieve the involvement of the customer in the development and innovation process. Companies desiring to exploit their unique resources in innovative ways need to tap into the resources offered by other organisations, in this case the knowledge and experience of their industrial customers (Ford et al. 2011). This inclusion can only be mutually beneficial because the competitiveness of industrial firms is closely linked to the capabilities of their suppliers (Håkansson et al. 2004). The latter are also a rich source of new ideas and innovation, since they may suggest different solutions which the firm could never have previously imagined. This cooperation may then lead to the creation of dynamic capabilities based on a higher added value (Wilkinson 2008; Cabanelas et al. 2013). The challenge is to increase the advantageous cooperation while managing the relationship to the mutual benefit of both partners (Ford et al. 2011).

However, we are dealing with a topic that still needs more research because previous studies analysing the relationship between innovation, customer retention and a company's economic success have led to ambiguous findings. While some studies found a correlation linking customer retention to increased profitability (Gupta et al. 2004), other evidence shows that retaining customers does not necessarily augment a company's commercial success (Krafft 2007). Thus, in order to achieve financial success, a company needs to strike a balance between the effort required in maintaining customer relations and the effectiveness of the same in increasing profitability. Furthermore, most existing studies about customer retention analyse the problem from the customers' perspective (Narayandas and Rangan 2004); there is a shortage of studies which investigate independent variables from the suppliers' point of view. And often the dimensions included in the analysis are insufficient; a comprehensive evaluation of a company's overall situation may have a great influence on the decision of whether to continue a business relation (Bolton et al. 2008).

Thus there is a lack of research in CRM relating to customer retention and co-creation (Mithas et al. 2005); including innovation, and customer knowledge, integration and interaction from the suppliers' point of view. In the light of these shortcomings, the current research will theoretically address several research questions to develop a model applicable to customer retention and co-creation: Can a manufacturer positively influence customer retention by involving the customer at an early stage in a development project? Is it possible to create value and dynamic capabilities (e.g. innovation) through cooperation? Which customer retention variables will be most affected by this involvement? Thus addressing these questions will be the main focus of this research project, where customer interaction, involvement and knowledge, and innovation have much to contribute to the market orientation of companies. To this end, the research will develop an eclectic approach built on social exchange theory and a resource-based view (RBV) of the firm.

The paper is divided into five sections. The first explains the theoretical research background. The second analyses the special characteristics of industrial markets that are central to the third section concerning customer interaction and integration, and the subsequent value co-creation and customer retention. The fourth section focuses on the implications and the model developed from the literature review while the fifth closes the paper with a discussion and conclusions.

4.2 Theoretical Background

The management of B-to-B is so complex that it cannot be explained simply by using just one background theory (Narayandas and Rangan 2004). From our point of view, the foundations behind the retention of industrial customers are based on two main theories: the 'Social Exchange Theory' and the 'Resource-Based View of the Firm' (and its derivative approach known as 'Dynamic Capabilities'). However the application of these theories may involve other theoretical contributions: the scarcity of resources and power ('Resource Dependence Theory'), the interaction between different partners ('Inter-organisational Theory'), the institutionalisation of relationships ('New Institutional Economic Theory') and the inherent opportunity cost of relations ('Transaction Cost Theory'). Thus we aim to build up an eclectic approach to industrial customer retention, with the main focus on the former theories.

'Social Exchange Theory' is based on propositions by Thibaut and Kelley (1959), who investigated the exchange and mutual behaviour in interpersonal relations of at least two individuals. This social exchange, from the marketing point of view, includes the exchange of products or services; thus can also be applied to inter-organisational business relations. The partners participating in a relationship usually assess its rewards and costs based on the principles of the 'social exchange theory'. If an interaction shows social and economic advantages, it will lead to the intended customer loyalty (Briggs and Grisaffe 2010). In a B-to-B relationship, interaction on a regular basis leads to certain codes of conduct and standards, creating a relationship of predictability and obligations (Thibaut and Kelley 1959). These codes of conduct regulate aspects such as communication or synchronisation of concrete acts and expectations, leading to reduced interaction costs and finally to an improved interaction result (Ramani and Kumar 2008). Thus the 'Social Exchange Theory' helps us to understand the development of long-term relations, the value-creation process and the consequential customer retention (Reinecke and Hahn 2003). The interaction would only be successful if all parties create a significantly larger benefit than the costs involved in the value creation. Thus, active and voluntary participation of customers is basic.

The RBV holds that existing differences in performance can be attributed to the possession of a series of unique strategically valuable resources (Barney 1991; Peteraf 1993). Particularly, the cooperation facilitates access to new resources and favours the innovation and a greater adaptation to highly dynamic environments. In short, co-creation gives access to intangible skills and resources which are present outside the traditional environment, offering advantages to accessing information

and opportunities, thus providing benefits which an organisation acting on its own would have difficulty accessing (Gulati 1999). Cooperation with customers and the subsequent co-creation tap into a resource called 'customer knowledge', empowering a virtuous cycle of: closeness, learning, anticipation of demands, long-term relationships, customer loyalty retention and value (Mithas et al. 2005). In this paper we also apply a derivative approach of the RBV known as Dynamic Capabilities (Eisenhardt and Martin 2000).

The value creation, as the process by which the resources of two companies are combined in order to achieve something that one of the parties could not achieve on its own, is built on both theories. Since the customers are actively co-creating value with their suppliers, making use of each other's resources and the interaction are basic prerequisites. Thus, the innovative capabilities and the social interactions that take place in parallel with business have an important role in the evolution and length of relationships and in the use and value of resources (Johnson et al. 2008). This is possible because of the differential nature of B-to-B markets.

4.3   The Differential Nature of B-to-B Marketing

The identification of the special characteristics of the B-to-B environment is basic for those companies operating in those markets (Homburg and Rudolph 2001).

Derivative needs: Since there is a link between the value-added chains of provider and customer, any change in the processes can affect costs and values, and a competitive advantage can arise (Kleinaltenkamp 2000). Then, the exchange process is complexer because the provider has a good position to offer an added value for his customer through cooperation; the question is how the provider can help the customer to create an acknowledged competitive advantage which can benefit the other members of the whole value chain.

Longevity of relationships: Business relationships in B-to-B markets are interaction processes that led by personal contacts and long-term business perspectives with an economic target. The purchasing processes are usually long and time-consuming, but once decided the demand cycles are frequent and long-term. It offers time to comprehend customer needs and its evolution.

Organisational buying behaviour: The organisational buying behaviour is more focused on organisational targets than on subjective goals; the purchase decisions are usually multi-personal and consequently more rationalised, often including various departments to professionally justify the decisions (Backhaus 1999), therefore are more formalised and require a longer framework. Sometimes originate the apparition of buying or selling centres which manage interactions with suppliers.

Professionalism: The decisions in industrial markets are usually taken by people with specific formation or knowledge in the product or service. Since the deciders are not usually the owners of the firm, they have to explain the reasons of their decisions; the procedure needs a high involvement and professional research interviews.

Structure of phases: Since the industrial goods purchasing processes can have important consequences in terms of time and money, and since past research has found evidence that process satisfaction is often more important than product satisfaction in industrial markets (Tanner 1996), the process requires good coordination, verification and structuring.

Globalisation of markets: The customers of industrial markets are very often international. The reasons are usually overcapacities, domestic markets saturation, fast product changes, and increasing efforts for research and development. The international markets include different challenges, new competitors and different customers with new expectations, culture and information.

Transparency of markets: The scarce number of customers leads to a higher dependency of them and leads to an increased dependency on the information about the competition (Kleinaltenkamp 2000). As a consequence, customers can easily change their provider and also spread negative/positive feedback by word-of-mouth to other customers.

4.4   Integration and Interaction: Co-creation and Customer Retention

4.4.1   Customer Integration

During the product development process, firms operating in industrial markets need to integrate external factors. The result is a multistage process with two defined steps: pre-combination, the provider autonomously creates a potential achievement, and final-combination, creation of the product including internal and external requirements (Reichwald and Piller 2006). Therefore, the product can be purely developed in co-operation with the customer, combining customer information and knowledge, with the provider's capabilities. During this process the customer integration is achieved via information and knowledge exchange; then, the systematic collection and evaluation of customer information to create products that meet customers' expectations is an essential criterion for success. If both partners contribute in the integrated development, it would be a win-win process. The goal is reaching the 'interactive value creation', that means co-operation, social exchange and resource and capabilities sharing during the different phases of the value creation process.

4.4.2   Customer Interaction

The interactive value creation highly depends on the integration of external factors and on the communication between customer and provider during the product development process. By definition, the interaction needs the contact between at least two

individuals, a chronological order of actions and reactions, and the attention of involved parties to meet the partners' needs. It should include procedures to stimulate partners in the achievement of joint-activities and, in consequence, joint-values. The change of paradigm that highlights the cooperative nature of value creation instead of the autonomous one is associated to this idea (Payne et al. 2008). However, despite the co-creation concept gaining increasing attention in academic circles, there are still many challenges for which academics need to come up with solutions.

4.4.3   Value Co-creation via Customer Integration

Value co-creation involves dialogue and interaction between customers and suppliers during the product design, production, delivery and consumption phases (Payne et al. 2008). Through joint activities and sharing of resources, firms can develop products or services that one company could not have created on its own (Freiling 2004). This option calls for considerable collaborative effort and active partnership, where each partner is prepared to increase benefits or reduce sacrifices through monetary or non-monetary incentives. In consequence, co-creation assumes that the value is co-developed jointly and reciprocally through interaction between the provider and beneficiary through the pooling of resources and expertise. This approach contradicts the basic tenet of traditional economic theory that makes a distinction between the roles of the customer and the supplier, and views dependency negatively (Prahalad and Ramaswamy 2004). However, combining the resources of different companies in industrial relationships enables partners to achieve goals which could not otherwise be achieved alone: Value is co-created through reciprocal and mutually beneficial relationships (Vargo et al. 2008).

Prahalad and Ramaswamy (2004) identified four steps for effective value co-creation processes. The first is dialogue, which allows customers to contribute their views to the development process. The second is access, although it is not necessary to own a resource or capability to achieve this. The third is risk assessment, the likelihood of harming the customer–supplier relationship. The fourth is transparency: partners no longer expect opaqueness of prices, costs and margins, and thus the information asymmetry disappears. Furthermore, firms need to commit themselves to the co-creation culture and the development of joint capabilities and cooperative innovations with their partners (Ramaswamy 2009); and the managerial culture should fully endorse the co-creative structure. In addition, value co-creation also presupposes cross-functional interaction and cross-firm working groups, to be accompanied by the definition of procedures, design of tools and measurement of the potential financial impact of identified initiatives (Cabanelas et al. 2013).

The sudden appearance of co-creation on the marketing scene makes the customer—a traditionally uncontrollable force—into a key resource for developing dynamic capabilities, such as innovative or personalised solutions. The customer is now a primary integrator of resource and a core component of the value creation process.

4.4.4 Dynamic Capabilities

Among the major effects of co-creation, the development of dynamic capabilities may be highlighted. Eisenhardt and Martin (2000, p. 1107) define dynamic capabilities as 'a firm's processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change'. They need the identification of organisational and strategic routines to achieve new resources to initiate market changes (Eisenhardt and Martin 2000). The relationships and the knowledge blend between supplier and customer favour the emergence of immaterial advantages related to learning processes, dissemination of knowledge and fostering innovation (Omil et al. 2011). Thus the generation of dynamic capabilities is highly dependent on the ability to cooperate and effectively combine different forms of knowledge among agents (Cabanelas et al. 2013). Such impulses to learn, innovate and develop capabilities should be themselves an important incentive for increased cooperation and a key motivation to the firm master customer retention.

4.4.5 Customer Retention

Customer retention may be conceptualised as a system of activities established by the supplier to improve transaction activities that is based on the positive attitude of the customer and that results in a readiness for repurchasing. It then requires the repetition of different kinds of transactions (such as information, goods or money) between two partners based on prior behaviour and future expectations. While previous behaviour includes purchasing behaviour, future perspectives including the repurchasing potential, other potential product acquisitions (cross-selling), price tolerance, customer satisfaction and the recommendation potential (goodwill). Our research tries to explain theoretically how previous behaviour can affect the future prospects after co-creation in industrial markets. This is based not on reason but on the potential benefits that customer retention can offer to these companies.

4.5 Discussion: Model and Theoretical Propositions

The characteristics of industrial markets include the challenges and opportunities which managers have to contend with in order to retain customers. The interaction over time during long-term relationships, product specifications which may have to be modified due to deviating requirements, the exchange of information during the decision-making process and the buying behaviour and professionalism—all these allow the integration of the customer in the development process. The company can then comprehend customer needs and acquire resources in the form of customer
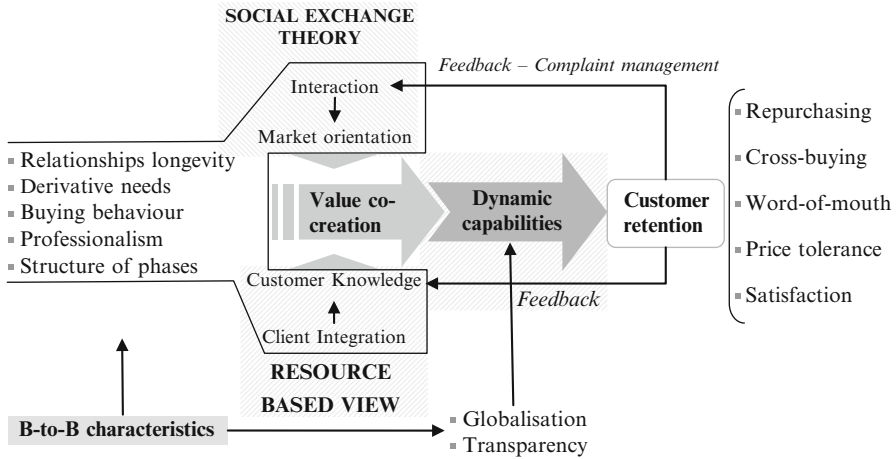
Fig. 4.1 Value co-creation, dynamic capabilities and customer retention

knowledge that can be used in the cooperative creation of products and services. Once the co-creation process begins, the customer–supplier exchange nurtures a spiral of benefits in the form of dynamic capabilities: learning, innovation and adaptation. Having achieved dynamic capabilities, customer retention becomes easier because the company's supplier, having developed customised and innovative products (through a multidisciplinary approach), is now better adapted to their needs and inspired by the success of having worked jointly on a common project. The potential benefits are likely to be in terms of repurchasing behaviour, cross-buying (where possible), recommendations, higher price tolerance and satisfaction. Furthermore, the process enables a continuous feedback through interaction and complaint management. Thus benefits of customer retention are to be expected where the co-creation process is properly managed by the company's decision makers (Fig. 4.1).

From the model (Fig. 4.1) a number of propositions arise that need to be validated empirically in future research:

1. *The interaction allows a better understanding of customers' demands that can be internalised in the firm through co-creation activities.*
2. *The integration of customers in the development process provides key resources to a firm for value creation.*
3. *Co-creation fosters the development of dynamic capabilities that potentially increase the customer retention.*

The propositions would need an organisational culture of retaining customers based on value creation through cooperation. This could ultimately lead to an increased market share, higher profitability and more innovation, and better overcome the economic crisis.

4.6   Conclusions

CRM provides a positive response to the competitive environment which companies are facing today. If managers can achieve customer retention, they can look to the future instead of having to deal exclusively with day-a-day operations. The involvement and cooperation of customers in the development process—co-creation—is one way of retaining them. The characteristics of industrial markets make customer interaction and integration not only possible but essential. Through paying attention to social exchange theory and RBV, it is possible to integrate the customer's point of view in the product development, at the same time as allowing the company to gain access to innovative ideas and to a new resource called customer knowledge. Thus with value co-creation the company is in the enviable position of being able to create dynamic capabilities based on innovation, customisation and learning that should not only lead to customer retention but also to its consequent benefits. However, in future research there remain two main challenges which the authors have faced: The first is to test the model empirically to assess its reliability. The second is to offer specific options for managers who want to incorporate value co-creation in their business processes. In other words, in future research the authors aim to reduce the limitations which apply to this present paper.

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Chapter 5
Business Start-ups and Innovation: The Effect of the 2008 Economic Crisis

Marta Peris-Ortiz, Francisco de Borja Trujillo-Ruiz, and Jose Luis Hervás-Oliver

Abstract This research aims to analyze if innovation, regarded as a distinctive feature of entrepreneurship, is a key element for obtaining satisfactory performance during a recession. The relationships between entrepreneurship and recession are difficult to establish, and there is no consensus in the literature on the effects of recession on entrepreneurial activities. This research has been conducted on four items in the "Individual level data GEM 2009 APS Global" survey. Results show the ineffective trend of innovation strategies in start-ups during times of economic prosperity. However, this negative effect disappears and even becomes positive in situations of economic crisis.

5.1 Introduction

This research, as we show more extensively in the methodology section, has been conducted on four items in the "Individual level data GEM 2009 APS Global" survey. Three items provide information on whether business start-ups carry out an innovative activity in the opinion of their respective entrepreneurs, and an item indicates how these entrepreneurs value payback.

Business start-ups in this research correspond to newly created businesses, characterized by carrying out market exchanges with their products or services, and that are not a mere appendix to another company or a subsidiary company, thus fulfilling the definition proposed by Luger and Koo (2005: 18): a firm "not only newly created and active but also independent." New companies (in this case from the year 2004 when the research began) are used to establish a close relationship between start-ups and entrepreneurship because the new combinations of factors

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that characterize entrepreneurship (Shane 2012; Shane and Venkataraman 2000; Schumpeter 1934) largely materialize in the creation of companies. Although in a considerable part of the literature entrepreneurship is linked to SMEs in general (Blackburn and Kovalainen 2009; Zimmerer and Scarborough 2002), in its broadest sense it is linked to new combinations of factors that involve innovation, regardless of the type or size of the enterprise (Shane 2012; Schumpeter 1934).

This present study focuses on innovation as a dimension of entrepreneurship and the way it relates to the economic crisis through business start-ups.

Relationships between entrepreneurship and economic crisis are difficult to establish. There is no consensus in the literature on how an economic crisis affects entrepreneurial activities. For some authors like Filippetti and Archibugi (2010) situations of weak growth, recession or stagnation of GDP, can favor the discovery of opportunities and innovation, while other authors consider that the slowdown of the economy negatively affects entrepreneurial attitude, limiting the discovery of opportunities and investment in innovation (Klapper and Love 2011). The destruction of industry during a slowdown or drop in GPD clearly implies a decrease in the number of entrepreneurs or less activity from them, but this empirical finding refers to entrepreneurs in general and we know little about those who manage to maintain or improve their performance in a time of crisis.

In this context, our research question is:

In situations of economic crisis, is innovation—as a distinctive feature of entrepreneurship—the key element for obtaining satisfactory performance?

5.2   Methodology

5.2.1   Sample and Data

We used a secondary data source to assess the effects of the 2008 economic crisis on the relationship between innovation and performance of business start-ups. The database used for this purpose, that includes entrepreneurs who founded a new business which we ask about, was the "Individual level data GEM 2009 APS Global" from the Global Entrepreneurship Research Association (GEM). The GEM project is an annual assessment of the entrepreneurial activity, aspirations, and attitudes of individuals across a wide range of countries. This GEM initiative was initiated in 1999 as a partnership between London Business School and Babson College.

The years selected from the database for carrying out our study were 2004, 2005, 2006, 2007, and 2008, 4 years before the 2008 crisis and 2008. The analysis was carried out jointly for 11 European countries and the USA (the USA, Netherlands, France, Spain, Hungary, Italy, Rumania, Austria, Denmark, Sweden, Norwegian, and Germany). The GDP was considered as a measure of the economic context of a country, and the variation of the GDP between years, if negative, as the measure of the deepness of the crisis in a specific country. The variation of the GDP of the countries considered in this study is shown in Table 5.1.

Table 5.1 GDP growth in the countries of the sample

	Year				
Country	2008 (%)	2007 (%)	2006 (%)	2005 (%)	2004 (%)
USA	−0.30	1.90	2.70	3.10	3.50
Greece	−0.20	3.50	5.50	2.30	4.40
Netherlands	1.80	3.90	3.40	2.00	2.20
Belgium	1.00	2.90	2.70	1.80	3.30
France	−0.10	2.30	2.50	1.80	2.50
Spain	0.90	3.50	4.10	3.60	3.30
Hungary	0.90	0.10	3.90	4.00	4.80
Italy	−1.20	1.70	2.20	0.90	1.70
Rumania	7.30	6.30	7.90	4.20	8.50
Switzerland	2.20	3.80	3.80	2.70	2.40
Austria	1.40	3.70	3.70	2.40	2.60
UK	−1.00	3.60	2.60	2.80	2.90
Denmark	−0.80	1.60	3.40	2.40	2.30
Sweden	−0.60	3.30	4.30	3.20	4.20
Norwegian	0.10	2.70	2.30	2.60	4.00
Germany	1.10	3.30	3.70	0.70	1.20

5.2.2 *Measures*

The indicators selected from the GEM database for measuring the innovation variable are shown below. For the "Innovation" variable we considered three items (see Table 5.2) regarding innovation in technology and products. Due to the clearly different components of the innovations considered, this scale is conceptualized as a formative scale (Podsakoff et al. 2006), and we added these three indicators to form the "Innovation" variable. The items are asked inversely (e.g., many (potential) customers consider product new/unfamiliar? 1 = all; 2 = some; 3 = none), so the innovation scale was inversed after adding the items.

The items considered two aspects of innovation. Two related with product innovation and another one related to technological innovation. Firms that offer products that are adapted to the needs and wants of target customers and that market them faster and more efficiently than their competitors are in a better position for performance (Alegre et al. 2006). At the same time, technological innovation is related with a better performance (Augusto et al. 2011), through the way products are made, reducing costs, and improving their quality. Product innovations are primarily driven by the market, whereas process innovation is usually related with operation objectives such as flexibility, costs, quality, and delivery time (Schilling 2008).

An innovative strategy, however, does not always give its fruits, and to prove the positive impact of investments in innovation on organizational performance is no easy task.

Table 5.2 GEM items used for the innovation and performance variables

GEM indicator	Variables and indicators	Range
eb_cust	EB: many (potential) customers consider product new/unfamiliar?	1 = all 2 = some 3 = none
eb_comp	EB: How many businesses offer the same products?	1 = many 2 = few 3 = none
eb_tech	EB: How long have the technologies or procedures required for this product or service been available?	1 = very latest technology (newer than 1 year) 2 = new technology (1–5 years) 3 = no new technology (more than 5 years)
Performance		
Supayoff	START-UP: R PAYBACK AMOUNT	1 = none 2 = half 3 = about as much 4 = one and half 5 = twice 6 = ten times 7 = twenty times

The performance has been measured as the payback amount of the new business estimated by the entrepreneur. Managerial perception of organizational outcomes has been already used as method of measurement in multiple previous work on the question (e.g., Tippins and Sohi 2003; Powell and Dent-Micallef 1997) and the use of subjective assessments of performance is widespread after having contrasted its convergence with the objective measures. A seven-point Likert scale is used, which increases depending on their perception of the period of the payback amount.

Payback period is the most widely used measure for evaluating potential investments and it is easy to understand. Nevertheless, the payback period does not afford any clue about how the start-up would perform after the break-even period. For this reason, the payback amount has been chosen as a proxy for performance.

5.2.3 Analysis

For each of the years (2004, 2005, 2006, 2007, and 2008) the correlation among the variables performance and innovation was studied. Each year was characterized in terms of the GDP growth. Table 5.1 shows the global results for the whole sample (all the countries). The global GDP growth was calculated as the average of the growth of the countries in the sample, weighted by the number of cases by which each country contributes to the sample (Table 5.3).

Table 5.3 Correlation between payback and innovation for all the samples

Year	GDP growth (%)	N	Coefficient	Significance (p)
2008	0.69	1,223	−0.079	0.06
2007	3.37	760	−0.132	0.022
2006	3.26	847	−0.149	0.011
2005	2.72	727	−0.247	0
2004	3.30	297	−0.165	0.004

5.3 Results

As can be seen, the correlation between innovation and payback is negative, indicating that the most innovative start-ups have lesser payback amounts. However, this relationship does not remain constant throughout the period considered. For those years where growth has remained around 3.5 % this relationship is significant at levels of 90 or 99 % (years 2004, 2005) or not significant, though close to the p-value 0.01 (years 2006, 2007), away clearly from these values in the year 2008. For this year, when the effect of the economic crisis can already be seen and the average of the estimated growth of the sample is only 0.69 %, the correlation clearly has a p-value of 0.06, greater than the previous values.

If we apply the Fisher's z test to the payback–innovation correlation of the year 2008 (GDP growth = 0.69 %) and the year 2005 (GDP growth = 2.72 %), the significance is considerable ($p < 0.001$).

This aggregate behavior is also reflected when countries are analyzed individually. For instance, in the case of Spain (Table 5.4), with some growth between 2004 and 2007 above 3 %, we see a negative relationship between innovation and performance, but not significant (except in the year 2004). This trend clearly changes in 2008, showing a positive sign in the relationship between innovation and performance (measured as the payback). The data are not significant, however, except in one of the years examined, especially due to the small number of cases. Nevertheless, in the Fisher's z test of the payback–innovation correlation of the year 2008 (GDP growth = 0.90 %) and the year 2005 (GDP growth = 3.60 %), the significance is $p = 0.057$. In the years 2008 and 2004 (GDP growth = 3.30 %) the significance of the Fisher's z test is $p < 0.001$ (Tables 5.5 and 5.6).

For the rest of the countries, the sample is too small to extract any conclusive conclusion. Notwithstanding, some pattern of the same kind can be observed. For instance, in the USA, excepting the contradictory results of 2006, there is a clear drop of the negative effect of innovation over the payback between the years 2007 and 2008, although the sample, 20 and 54 start-ups, respectively, is too small to affirm any conclusion.

Nevertheless, not all countries show this behavior, and erratic behaviors occur in certain samples. Thus, in the UK the correlations vary, although in none of the cases they are significant.

Table 5.4 Correlation between payback and innovation for Spain

Year	GDP growth (%)	N	Coefficient	Significance (p)
2008	0.90	414	0.016	0.744
2007	3.50	160	−0.105	0.187
2006	4.10	77	−0.027	0.813
2005	3.60	189	−0.151	0.038
2004	3.30	81	−0.297	0.007

Table 5.5 Correlation between payback and innovation for the USA

Year	GDP growth (%)	N	Coefficient	Significance (p)
2008	−0.30	54	−0.263	0.449
2007	1.90	20	−0.663	0.001
2006	2.70	32	0.21	0.249
2005	3.10	22	−0.507	0.016
2004	3.50	19	−0.129	0.598

Table 5.6 Correlation between payback and innovation for the UK

Year	GDP growth (%)	N	Coefficient	Significance (p)
2008	−1.00	12	−0.476	0.118
2007	3.60	57	0.058	0.667
2006	2.60	83	−0.039	0.728
2005	2.80	27	0.263	0.186
2004	2.90	33	0.007	0.97

5.4   Conclusions

The relationship between innovation and performance has always been complex, and the advantages of investment in innovation have always been difficult to prove, especially when the overall economic performance of organizations is considered. Many factors influence the impact of innovative activities on economic performance, such as the time gap between investment and results, always a risk with innovation.

The risk associated with innovation is exacerbated by the risk associated with any new venture. In addition, issues still undeveloped in new organizations, such as organizational and cultural aspects and absorptive capacity, can distort the advantages of innovation.

This study attempts to add a new element, exogenous to organizations, which may be relevant in the strategies of new start-ups: the economic context.

The results of this study, although not conclusive, show the ineffective trend of innovation strategies in start-ups during times of economic prosperity. However, this

negative effect disappears, and even becomes positive (but not significant, see Table 5.2), for the year of zero growth in 2008.

These results must be approached with caution, given the limitations of the study (especially because of its simplicity: it only measures the relationship between innovation and payback) and the number of countries surveyed, all differently affected by the 2008 crisis in terms of growth and economic deterioration. The results suggest it is not so much that innovation strategies fail, but rather that conservative strategies are safer in times of economic growth. However, in a deteriorated context of economic crisis, a strategy with little innovation stops being efficient for start-ups.

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Chapter 6
Youth Entrepreneurship and Crisis in the Health, Beauty and Sport Sectors

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Abstract The objective of this study is to analyse the profiles of young Spanish entrepreneurs, the main reasons driving them to engage in entrepreneurial activities and the obstacles they encounter in three specific sectors: health, beauty and sport. To this end, a survey was produced and circulated among young Spanish entrepreneurs belonging to the principal young entrepreneur associations in Spain. The results have made it possible to determine the profiles of young Spanish entrepreneurs in these three sectors, their principal motivations and the obstacles they have encountered, as well as to provide further information about this significant group.

6.1   Introduction

At present, the global marketing concept is the main focus for the development of an enterprise's economic activity. Globalization should be interpreted on the basis of its fundamental pillars: the free movement of capital, goods and services and people between countries. Business opportunities are no longer interpreted in terms of the local market; all markets have, in fact, become a "business opportunity". Therefore, the size and value of the "new market" are part of a global business strategy, with its resulting freedom, or tendency to reduce any restrictions curbing the movement of funds, benefits, capital, goods, services and people (Dreher 2006).

This scenario is a faithful reflection of the situation affecting the Spanish economy, where all of the crisis indicators (the bursting of the real estate bubble, the decline in the income and wealth of Spanish households, etc.) have led to serious

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Table 6.1 GEM Spain 2011 report balanced scorecard

Total entrepreneurial activity (TEA)	2011 (%)	2010 (%)	Evolution
TEA, total	5.8	4.3	Increase
TEA, necessity-driven	25.8	25.4	Slight increase
TEA, opportunity-driven	71.6	73.0	Decline
TEA, driven by other motivations	2.6	1.7	Increase
TEA, consumer-oriented sector	53.3	48.6	Increase
TEA, no employees	70.7	66.0	Increase
TEA, between 1 and 5 employees	25.0	27.9	Decline
TEA, between 6 and 19 employees	3.3	4.9	Decline
TEA, 20 employees and over	1.0	1.2	Decline
TEA, entirely innovative initiatives	16.3	10.8	Increase

Source: GEM Spain report (2011)

problems for commercial and savings banks. According to the National Statistics Institute (INE, for its acronym in Spanish) and the Central Companies Directory (DIRCE, in Spanish), on 1 January 2011, there were 3,250,576 enterprises in Spain; 2.58 % less than in 2007 (the beginning of the crisis).

Along these lines, GEM, the Global Entrepreneurship Monitor, in its GEM Spain 2011 Report provides data that measure the entrepreneurial activity rate, as well as a description of its features, its relation to economic development and a diagnosis of the status of the principal institutional conditions, or the entrepreneurial environment. GEM understands entrepreneurship to be a process that begins with an idea, continues with its related start-up activities, is launched onto the market, enters a consolidation phase and attains a consolidated state when it survives for more than 3 years and a half. One of the most significant indicators provided by the GEM report is TEA (Total Entrepreneurial Activity), which measures nascent enterprises (early-stage initiatives that have not yet paid salaries) and new enterprises (in a consolidation phase), among the population of between 18 and 64 years of age (Table 6.1).

Table 6.1 reveals an increase in TEA from 2010 to 2011. According to the Global Competitiveness Report 2011–2012 published by the World Economic Forum in 2012 (Davos), Spain is ranked No. 39 in the Global Innovation Index, out of a total of 142 countries.

According to data provided by Madrid's Young Entrepreneurs Association (AJE Madrid, in Spanish), in 2011, 38.72 % of young entrepreneurs were between 18 and 35; 76.6 % were men and 23.36 % were women; the most frequently used legal format was the private limited company (77.33 %); 61.71 % were companies of between 1 and 10 employees; 22.67 % had no employees and 11.11 % had between 11 and 49; and 84.68 % had a business volume of under 500,000 euro. As regards economic sectors, it should be noted that the health sector is grouped together with education and social services; beauty is included in the trade sector, which is grouped together with sales and repairs. Sport is included within leisure, together with tourism and culture (Table 6.2).

Table 6.2 Principal economic sectors—AJE Madrid 2011

Economic sector	%
Health, education and social services	8.26
Trade, sales and repairs (includes beauty)	13.52
Leisure, tourism and culture (includes sport)	3.45
Other sectors	74.77

Source: AJE Madrid (2011)

Table 6.3 Technical data sheet

Population universe	Companies in the sport, beauty and health sectors
Sampling technique	Convenience
Information-gathering method	Information gathered by means of an online survey
Respondents	Corporate managers (entrepreneurs)
Population	56
Sample size	15
Information-gathering period	From 1 April 2012 to 31 May 2012

6.2 Samples and Methodology

The information used in this study is based on sources of information gathered by the Bank of Spain (Banco de España 2012), INE (INE 2012), AJE, CEAJE and GEM. For the sample of entrepreneurial cases in the three sectors (sport, beauty and health), a questionnaire was drafted based on surveys conducted by the Association of Young Entrepreneurs of Málaga (AJE Malaga 2012) and the Spanish Confederation of Young Entrepreneurs (CEAJE, in Spanish).

A directory of companies in these sectors was drawn up on the basis of data provided by associations of young entrepreneurs. An analysis was performed of Spain's 20 principal associations of young entrepreneurs (AJE, in Spanish) (Alicante, Asturias, the Balearic Islands, Burgos, Cádiz, Catalonia, Castellón, Extremadura, Galicia, Huelva, La Rioja, Navarre, Madrid, Málaga, Murcia, Pontevedra, Salamanca and Valencia), the National Association of Young Entrepreneurs (ANJE 2012) and the Spanish Confederation of Young Entrepreneurs (CEAJE 2009). Of the 56 questionnaires sent out, 15 were returned (5 from each sector). It should be noted that each group has very specific features, which means that it is very risky to draw general conclusions from them (Velasco and Saiz 2007).

In short, the method consisted in analysing the questionnaires filled in by business managers (entrepreneurs) in order to analyse their profiles, principal motivations and obstacles. Descriptive statistics have basically been used to analyse relationships between variables and draw conclusions regarding the objectives of this research study (Table 6.3).

The following difficulties were encountered during the process of producing the directory: some of the associations cover an autonomous community and others cover a province; not all of the associations can provide a directory of their member companies; some of the associations lack an operational website, and standard designations are not used across sectors (Table 6.4).

Table 6.4 Associations, coverage, directory, search facility and website

Association	Coverage	Directory, yes/no	Search facility	Website, yes/no
Assoc. of Young Entrepreneurs of Málaga	Provincial	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of Navarre	Autonomous	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of Valencia	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Madrid	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of the Province of Alicante	Provincial	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of Galicia	Autonomous	Yes	Yes	Yes
Assoc. of Young Businesspeople and Entrepreneurs of Galicia	Autonomous	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of Burgos	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Cádiz	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Castellón	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Extremadura	Autonomous	No	–	Yes
Assoc. of Young Entrepreneurs of Huelva	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Pontevedra	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of Salamanca	Provincial	No	–	Yes
Assoc. of Young Entrepreneurs of the Region of Murcia	Autonomous	Yes	No[a]	Yes
Assoc. of Young Businesspeople and Entrepreneurs of La Rioja	Autonomous	No	–	Yes
Assoc. of Young Entrepreneurs of the Principality of Asturias	Autonomous	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of the Balearic Islands	Autonomous	Yes	Yes	Yes
Assoc. of Young Entrepreneurs of the Canary Islands	Autonomous	No	–	Yes
Independent Assoc. of Young Entrepreneurs of Catalonia	Autonomous	No	–	Yes
Fed. Assoc. of Young Entrepreneurs of the Valencian Comm.	Autonomous	–	–	No
National Assoc. of Young Entrepreneurs	State	No	–	Yes
Spanish Confederation of Young Entrepreneurs	State	–	–	No[b]

[a]No separation by sectors
[b]Under construction

Table 6.5 Number of employees and business volume in the sport sector

Number of employees		Business volume	
No employees		Under 500,000 euro	X5
From 1 to 10 employees	X2	Between 501,000 and 1,000,000 euro	
From 11 to 49 employees	X2	Between 1,000,001 and 2,000,000 euro	
From 50 to 250 employees	X1	Between 2,000,001 and 10,000,000 euro	
Over 250 employees		Between 10,000,001 and 50,000,000 euro	
		Over 50,000,000 euro	

6.3   The Sport Sector

It is difficult to find information about enterprises in the sport sector. In the National Census of Sporting Facilities of 2005 (CNID-05, in Spanish) conducted by the Consejo Superior de Deportes (Sport Council), data reveal that 65.48 % of all the installations in Spain are public property and 34.52 % are private property. Of these, 59.81 % are operated by the public sector and 40.19 % by the private sector (Cultura y Deporte 2012).

The age range of the individuals who answered the questionnaires is between 26 and 35 years, and they began their entrepreneurial activities when they were under 25. The gender distribution varies according to the enterprises undertaken. Higher education among entrepreneurs is the norm, the private limited company is the principal legal form used and companies are over 5 years old. The number of employees ranges between 1 and 10, 11 and 49 and 50 and 250, while the business volume is below 500,000 euro (Table 6.5).

The respondents' principal motivations for starting up an enterprise were: to create their own job, to be their own bosses and the connection between their studies and their work (e.g. Baron 2004; Baum and Bird 2010; Cuervo 2005). The principal obstacles respondents faced when starting up a business were: not knowing where to start and too much paperwork. It emerges that some entrepreneurs are gradually changing their minds about not using bank loans and about the use of "the company's own money". Their businesses were started up in 2007 and 2008—in the midst of the crisis—and have grown gradually from local to nationwide, with not too negative data. However, they complain about price wars, irregularities and the decline of family spending on sports. Finally, their assessment of the current general economic situation with regard to their competition is 5 (on a scale of 1–10).

6.4   The Beauty Sector

The Spanish beauty sector (perfumery, cosmetics and personal hygiene) is a benchmark in Europe; particularly in the field of professional cosmetics, Spain is the fifth European producer. Spain's turnover in the sector is 12 % of the total turnover in the EU and 6 % of the total in the USA, Japan and the EU (Fashionfromspain.com 2011). Skin care products are the largest segment in the sector, followed by

Table 6.6 Number of employees and business volume in the beauty sector

Number of employees		Business volume	
No employees	X2	Under 500,000 euro	X5
From 1 to 10 employees	X3	Between 501,000 and 1,000,000 euro	
From 11 to 49 employees		Between 1,000,001 and 2,000,000 euro	
From 50 to 250 employees		Between 2,000,001 and 10,000,000 euro	
Over 250 employees		Between 10,000,001 and 50,000,000 euro	
		Over 50,000,000 euro	

perfumes and fragrances, hair care, toiletries and personal hygiene and, finally, colour cosmetics. The sector is composed of over 300 enterprises and employs more than 30,000 people directly and 7,600 people in indirect jobs. There is a high concentration in geographical terms: 45 % in Catalonia, 30 % in Madrid and 15 % in the Valencian Community.

In this sector, entrepreneurs' ages range between 26 and 35 and they first began their entrepreneurial activities at between 26 and 35 years of age. Gender and marital status vary in every case. With regard to their studies, most have completed higher education, although there are some who have completed secondary education only. The private limited company is the principal legal form used. Companies are over 5 years old. They employ between 1 and 10 people and their business volume is less than 500,000 euro (Table 6.6).

The respondents' principal motivations for starting up an enterprise were: to take advantage of a business opportunity, family tradition and to be their own bosses (e.g. Chell 2008; Cuervo 2005). The principal obstacles respondents faced when starting up a business were: too much paperwork and a lack of customers. They are affected by the economic crisis owing to the decline in consumption, the lack of customers and financial problems. If asked to rate the economic situation with regard to their competition on a scale of 1–10, they gave it a 5.

6.5 The Health Sector

In Spain, the health needs of all Spanish citizens are covered by the National Health System. Public health is more accessible, closer and less demanding when it comes to profitability (García 2011). However, 17 % of the population (about 7,000,000 people) have contracted with private medical insurance (ICEA 2011, in Spanish). The public sector of the Spanish health system includes 1,100,000 professional practitioners and 921 public hospitals and contributes 6 % to GDP (Banco Santander 2011). The private sector includes 317 private clinics and invoiced 5.965 billion euro in 2010 (Banco Santander 2011).

Entrepreneurs' ages in this sector range between 26 and 35 and they first began their entrepreneurial activities at between 26 and 35 years of age. Gender and marital status vary in every case. Entrepreneurs in this sector have completed higher education and the principal legal form used is the "autonomous enterprise". Companies are

Table 6.7 Number of employees and business volume in the health sector

Number of employees		Business volume	
No employees	X2	Under 500,000 euro	X5
From 1 to 10 employees	X3	Between 501,000 and 1,000,000 euro	
From 11 to 49 employees		Between 1,000,001 and 2,000,000 euro	
From 50 to 250 employees		Between 2,000,001 and 10,000,000 euro	
Over 250 employees		Between 10,000,001 and 50,000,000 euro	
		Over 50,000,000 euro	

between 1.5 and 3 years old and over 5 years old. They employ between 1 and 10 people and their business volume is less than 500,000 euro (Table 6.7).

The respondents' principal motivations for starting up an enterprise were: to take advantage of a business opportunity and personal satisfaction (e.g. Baron 2004; Chell 2008; Cuervo 2005). The principal obstacles respondents faced when starting up a business were: too much paperwork. They agree that it is difficult to assess their evolution with regard to the crisis. In all five cases there was a "moderate" increase in the number of patients treated, as well as in income. They specifically mention that it is difficult to obtain financing for treatment in this sector and indicate that the number of patients with private health insurance has increased; which may be related to the decline in public healthcare. If asked to rate the economic situation with regard to their competition on a scale of 1–10, they rate it as 7.

6.6   Implications

Among the principal motivations for starting up an enterprise in the sectors analysed, "taking advantage of a business opportunity" and "being my own boss" were the most popular choices (Table 6.8). A significant motivation in the sport sector was "creating my own job" and in the health sector, "personal satisfaction". The "money" motive was not chosen in any of the sectors and "studies-work connection" and "family tradition" were only checked once in the sport and beauty sectors, respectively.

With regard to the principal obstacles faced by start-ups by sectors, it is surprising that "financing" was not indicated as an obstacle, inasmuch as it is considered to be one of the main problems of businesses in times of crisis. The principal obstacle in the sport sector was "not knowing where to start"; in health, "too much paperwork", and in beauty, "the lack of customers" (Table 6.9).

Finally, it should be emphasized that the Spanish entrepreneurial network is in need of more entrepreneurs and enterprises in order to overcome the crisis. The point should be made that working for others is as risky as engaging in entrepreneurial activities. Innovative entrepreneurs can help Spain to get back on the path to growth. The forthcoming Law on Entrepreneurship should underpin the creation of more enterprises so that Spain can emerge from its present crisis. It should contain specific fiscal measures, as well as others related to financing, administrative procedures and labour management.

Table 6.8 Motives for starting up a business by sector (Sport, Beauty, Health)

Motives	Sport	Beauty	Health
To create my own job	X3		
To take advantage of a business opportunity		X3	X3
To be my own boss	X3	X4	
Personal satisfaction			X3
Studies-work connection	X1		
Money			
Family tradition		X1	

Table 6.9 Principal obstacles when starting up a business, by sectors

Obstacles	Sport	Beauty	Health
Financing			
Not knowing where to start	X5		
Too much paperwork	X1	X2	X5
The lack of customers		X5	

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Chapter 7
Proactive Management of Core Competencies, Innovation and Business Performance in a Period of Crisis: The Case of Spain

Lidia García-Zambrano, Arturo Rodríguez-Castellanos, and Jose-Domingo García-Merino

Abstract At present, it is known that intangible resources are the drivers of economic growth through innovation; intangibles have become the key resource for generating competitive advantage; what's more, they are the fundamental source of business value. Numerous authors think that a concrete type of intangible resources, the core competencies, are the key factors that drive innovation and thus are able to be a source of competitive advantage. Nevertheless, there are few studies that analyse the relationship between investments in core competencies and business performance. For that reason, our objective is to test whether the proactive management of core competencies, through the investment into them, is translated into improved results in a period of crisis.

To achieve the aim of our research, a field study has been done, making telephone calls to Spanish companies' financial managers. Then, their responses and their financial performance have been analysed. It was concluded that firms, whose managers affirm that invest into their core competencies, have outperformed more efficiency and a higher ROA in a period of crisis.

7.1 Introduction

Intangible resources are the only those that generate a sustained increasing of company's value (Lev 2001; García-Merino et al. 2008), primarily through the innovation (Subramaniam and Youndt 2005; Lundvall and Nielsen 2007; Wu et al. 2007).

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The investment in material and financial assets nowadays doesn't allow obtaining sustainable competitive advantage, thus inside them there is no innovation capacity. Success and leadership, even in traditional industries, can now be secured only by continuous innovation, which is primarily created by investments in knowledge. Competitive advantage depends more and more on "people-embodied know-how". Therefore, the knowledge of people in organisations has become the driving force of competitive advantages through innovation (Prahalad 1983).

Numerous authors think that not all the intangible resources have the same importance; those that are called *core competencies* are the most important ones. *Core competencies* are the set of skills or capacities developed by the company that generate a significant value or benefit for the client (Hamel and Prahalad 1994). A correct management of these core competencies allows companies to obtain competitive advantages through innovation and better business results. For this, the aim of our research is to establish a relation between companies that carry out a proactive management of their core competencies through investing in them and economic performance. This is set out in the recent period; we estimate that in these circumstances, in crisis period, this relation is especially important.

In order to achieve this objective a survey to the Spanish's financial managers has been done, in which they are asked about these aspects. After the analysis of the results, it is concluded that, in the recent period of crisis, Spanish companies, whose managers affirm invest into their intangibles, have outperformed higher sales per employee, higher ROA and higher efficiency, the ROA and efficiency variables statistically significant.

The chapter is organised by the following form. In the second section, starting from the theory of resources and capabilities, the decisive role of the intangible resources and core competencies on the business competitiveness is justified; afterwards, a literature review on the link between core competencies and business performance is presented, as a previous step to planning the hypothesis and sub-hypotheses of the research. In the third section, the methodology utilised in this work is raised, showing the process utilised in order to obtain the dates, and finishing the section showing the statistical analysis applied. In the fourth section, the obtained results are exposed and commented. To sum up, the principal conclusions got in this study are presented.[1]

7.2 Intangible Resources and Core Competencies as Sources of Competitive Advantage

7.2.1 The Role of Intangibles on the Business Competitiveness: The RBV

When we talk about strategic management, there exist two complementary perspectives in order to explain the differences in business performance: an approach centred in the industry, called the theory of Industrial Organization or IO (Porter 1985), and another based on resources, called the resource-based view or RBV (Wernerfeld 1984; Barney 1986; Hoopes et al. 2003; Galbreath 2004).

Our work is based on this last approach. As a consequence, we pay special attention to business resources as major source of competitive advantage. However, not all of the resources are equalled important in order to the business success. The RBV prescribes that only resources with certain characteristics are capable of generating a favourable position against competitors. The resources that exhibit value, rareness, inimitability and non-substitutability ("VRIN requisites") are considered "critical resources" (Wernerfeld 1984), "strategic factors" (Barney 1986), "strategic assets" (Amit and Schoemaker 1993), "strategic resources" (Peteraf 1993) or "core competences" (Hamel and Prahalad 1994). With rare exceptions, resources that meet the VRIN criteria are widely purported to be intangible in nature (Galbreath 2004). As a consequence, intangibles are those resources that more frequently become basic factors of business competitiveness, through its capacity to promote innovation inside the company (Lev 2001). This statement is particularly applicable to knowledge-based intangible resources, that is, *intellectual capital*.

When we talk about intellectual capital or intangible resources, we distinguished between *intangible assets* and *core competencies*.

Intangible assets are "codified" intangible resources, so that the relevant rights regarding their holding or ownership by the organisation are clearly established, by means of a contract, a regulation or any other legal title. Patents, concession rights, licences, acquired trademarks and so on are intangible assets.

The *core competencies* are the set of skills or aptitudes developed by the company that generate a significant value or benefit for the client (Hamel and Prahalad 1994). Therefore, they are the sources of knowledge and activities that, by providing competitive advantage mainly through the innovation (Wu et al. 2007), are the determining ones when it comes to creating value. The core competencies of a company are not usually very numerous, as, in order to achieve their competitive advantage, the majority of companies focus their endeavours and internal resources on a few sources of knowledge, services or activities (*core business*).

7.2.2 Core Competencies and Business Performance: Literature Review and Proposal of Hypothesis

There are numerous papers that consider that intangibles, and investments into them, determine the profitability of the companies. Table 7.1 shows the studies that relate the investment in intangible resources and business performance. As it can be observed, the positive relation between both factors came basically from the capacity of intangible resources to promote the innovation (R&D, employee training, organisational change, etc.). Despite the existence of a general agreement about the importance of intangible resources, there is scarce empirical evidence about whether companies that really manage proactively those intangible resources that generate competitive advantage, that is, invest into *core competencies*, obtain a better economic performance. This is particularly important in a period of economic crisis.

Based on the above, the main hypothesis of the research work is advanced:

H_1: The firms which invest into their core competencies will get better results in a period of crisis.

With respect to the ways of measuring firm's results, we have used the ROA, but also other variables: the efficiency (operating profits per employee) and sales per employee. For that, we present the following sub-hypotheses.

$H_{1.1}$: The firms which invest into their core competencies will get a major ROA in a period of crisis.

$H_{1.2}$: The firms which invest into their core competencies will be more efficient[2] in a period of crisis.

$H_{1.3}$: The firms which invest into their core competencies will get greater sales per employee in a period of crisis.

7.3 Methodology

7.3.1 Selecting the Population and Obtaining the Sample

An empirical study was performed to check this hypothesis, with the results of survey to company managers combined with information on business performance obtained from a database. We have selected one population of Spanish Companies.

The survey focused on companies in Spain, specifically on those with over ten employees and whose turnover was also over two million euros a year. Companies that did not meet these conditions were ruled out as they did not have a minimum structure and, on the other hand, there are often not sufficient financial data to be able to carry out the analysis.

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[2] We have defined the efficiency of a company as the operating profits divided by the number of employees.

Table 7.1 Studies that relate the investment in intangibles and performance

Authors	Type of work	Intangible/core competence	Measure of business' results	Main results
Marr et al. (2004)	Theoretical	Dimensions of IC	Business results	The application of the model allows to the directives know how the organisational resources must be utilised and how invest into them to generate value
White and Begley (2006)	Theoretical	Dimensions of IC	Non-financial measurements	The study shows how the use of initiatives of organisational improvements to increase the intellectual capital has better results if they are used together than if they are used individually
Grimaldi and Gricelli (2009)	Theoretical	Dimensions of IC	Business results	The authors conclude by exposing a guideline in order to companies to carry out their investments and strategies to increase their business value
Ravernscraft and Scherer (1982)	Empirical	Investment in R&D	Market value	The investment in R&D increases the value of the company
Chauvin and Hirschey (1993)	Empirical	Advertising	Market value	The investment in advertising means an engagement of the company with its employees and it is related to positive cash flows
Luh and Chang (1997)	Empirical	Investment in R&D	Increase of the productivity	The relation between both variables is positive; however, the relation has not the same effect in all the companies, but it will depend on the size and the technological level of the industry

(continued)

Table 7.1 (continued)

Authors	Type of work	Intangible/core competence	Measure of business' results	Main results
Lee and Miller (1999)	Empirical	Investment in employees	ROA	Workers will be more motivated, and the results of the company will increase, if the company pays more attention to its workers
Tsai and Wang (2005)	Empirical	Investment in R&D	Productivity/ROA	The investment in R&D increases the ROA and productivity of the companies
Wu and Chou (2007)	Empirical	Dimensions of IC	Economic return	The investment into the three types of IC increases the returns; there is no differences among the three continents studied (Europe, Asia and America)
Danvila and Sastre (2009)	Empirical	Employee training	Economic profit	The efforts made to improve the employee training have a direct and positive effect over the companies' profits
Wang et al. (2009)	Empirical	Investment in advertising	Q Tobin	There exists a positive relation between the investment in advertising and the value of the company
Parcharidis and Varsakelis (2010)	Empirical	Investment in R&D	Q Tobin	There exists a positive and significant relation between the investment in R&D and the market value of the company. It's important to bear in mind that the result is better in small enterprises
Fernández and Martos (2011)	Empirical	Human and technological resources innovation	Results, measured through a Likert scale	The investments in intangible resources and innovation have positive and direct effects over the business results

Table 7.2 Study technical data

Population	41.776 Companies in Spain
Sample	1.492 valid questionnaire to Spanish directives
Technique for data collection	Telephone survey
Calendar	21 November 2011 to 16 December 2011
Source of financial data	Intertell database
Economic variables	ROA, efficiency and sales per employee
Final sample	1.385 Spanish companies: period 2010
Random final error	Random error of 2.5 %, with a level of confidence 95 %

The initial population in Spain was 41.776. It was obtained from the SABI database. From there, a representative random sample of 1.492 companies was obtained, whose managers answered the questionnaire by means of a telephone survey.

Subsequently, it was obtained the financial data for Spanish companies in 2010, that is, an advance period of economic crisis. The data were extracted from the Intertell database. Thus, the sample was reduced to 1.385 companies, being a maximum error level of 2.5 % for a confidence level of 95. Table 7.2 contains the technical datasheet of the conducted survey.

7.3.2   Research Process

In order to verify the hypothesis, the research process was organised as follows:

– First of all, the answers to telephone survey conducted were collected, where the opinion of Spanish executives was gathered about different aspects relating to the importance of intangibles and the proactive management of the core competencies and the investment made into them.
– Next, after collecting the opinion of the executives, information was gathered about the business performance of the companies analysed during 2010 period in Spain.
– Subsequently, in order to analyse the relation between the companies that invest into core competencies and the business performance, the data obtained were initially subject to a descriptive analysis.
– Lastly, the hypothesis was tested. Given that the variables did not match normal distribution, and that the standard transformations to achieve normality were not successful, non-parametric tests, particularly the Mann–Whitney test, were performed.

7.3.3   Results

For the hypothesis of the study and its sub-hypotheses Tables 7.3 and 7.4 show the results of the descriptive analysis and the Mann–Whitney *U* test, respectively.

Table 7.3 Proactive management of core competencies and business performance

Descriptive statistics

Type of companies	Variables measuring companies' results	N	Mean	Standard deviation
Affirm that invest into core competencies	ROA (%)	624	−1.4787	0.6166
	Efficiency (%)	623	0.6012	0.7148
	Sales per employee (%)	802	2.1998	0.3829
Affirm that don't invest into core competencies	ROA (%)	103	−1.6523	0.6342
	Efficiency (%)	101	0.3978	0.7647
	Sales per employee (%)	155	2.1699	0.3808

Table 7.4 Proactive management of core competencies and business performance

Test statistics

	Mann–Whitney U test	Wilcoxon W test	Z	Asymptotic sig. (2-tailed)
ROA ($H_{1.1}$)	26.609	31.965	−2.799	0.005
Efficiency ($H_{1.2,E}$)	25.170	30.321	0.3227	0.001
Sales per employee ($H_{1.3}$)	58.710	70.801	−1.093	0.274

Table 7.3 shows that for the period 2010 ROA, sales per employee and efficiency variables are all greater in Spanish firms that affirm that invest into *core competencies* than in those that affirm don't invest into them. These results are according to the relationships stated in the sub-hypotheses. Turning to Table 7.4, it can be seen that the difference in ROA and efficiency between the two groups is statistically significant at 5 %, according to the Mann–Whitney U test, while in all other cases the differences are not statistically significant.

This result shows how the companies, who have invested into their core competencies, have obtained greater business results. The period analysed is 2010: it is a period where the crisis is established; so that means, in a period of crisis, those companies, who previously have invested into their core competencies in the face of those who have not paid attention to their core competencies, have got better business performance.

All the sub-hypotheses except $H_{1.3}$ are therefore accepted. Therefore, H_1 can be accepted only partially.

7.4   Conclusions and Future Research Lines

As the resource-based view argues, intangibles have become the most basic resource for creating competitive advantage, especially through innovation. In this approach, any action destined to improve the way intangibles are managed must contribute to better performance. This chapter seeks to identify the positive link between the

proactive management of intangible resources, specifically core competencies, and business performance in a period of economic crisis, aspect that until now has been scarcely analysed.

With respect to the results in Spain the three variables analysed are higher in those companies whose directives affirm that they invest into their core competencies. However, only two variables are statistically significant: the ROA and the efficiency. That result means that, in a period where the crisis is established, those companies that have invested into their core competencies obtain a greater business performance than other those that haven't invested. This strengthens the approaches about the necessity of a proactive management of core competencies, since, especially in a period of crisis, the survival of the company depends on the innovation, and this is obtained through the development of those competencies.

We believe that these conclusions are particularly relevant, as, as has already been indicated, this study has been based on a representative sample of companies—any type of companies from all sectors, while the majority of previous studies have focused on specific sectors or technological or innovative companies. In addition, it has been considered explicitly a period of strong economic crisis. Nonetheless, this work has a limitation: it refers to the data: it could be necessary to increase the periods analysed to know what happens in the future performance. It would, therefore, be interesting to repeat the same study extending the geographical area including other European companies, on the one hand, and using data dealing with future results, on the other hand.

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Chapter 8
Seeking a Sustainable Competitive Advantage in Periods of Economic Recession for SMEs and Entrepreneurs: The Role of Value Co-creation and Customer Trust in the Service Provider

María-Ángeles Revilla-Camacho, Francisco-José Cossío-Silva, and Manuela Vega-Vázquez

Abstract A sustainable competitive advantage is obtained when firms have resources that are valuable, rare, and unique. In this sense, building relationships that are valuable for customers and based on trust is a critical requirement for corporate success, especially in situations of economic crisis such as the current one. On the other hand, the greater part of the academic literature coincides in highlighting the positive influence that consumer participation has on the value created in service delivery. In this vein, research stands out which studies the consumer's role as a value co-creator in the service. However, there are few studies which analyze the consequences of co-creation behavior from the customer perspective. This research means to fill this gap and proposes that there is a direct relationship between value co-creation behavior and the customer's trust in the firm. The data for the empirical research have been obtained from a sample of regular users of firms in the personal image sector—a sector which is mostly made up of young, self-employed entrepreneurs and microenterprises. The implications for management would stem from the need to foster the customers' active participation in value creation by adapting actions and processes with this in mind. This can be especially important in the case of small firms and entrepreneurs, forced into seeking a sustainable competitive advantage when facing large corporations.

8.1 Introduction

Entrepreneurial processes are a decisive element of economic growth (Audretsch and Thurik 2001; Nissan et al. 2012). In the same line, Veciana (2005) defends the creating of new firms as being a fundamental factor in the development of a

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country's economy. This is due to its effect on the reduction of unemployment rates. It seems logical to suppose, therefore, that it is precisely in periods of economic recession—such as the current one—when the aim for self-employment and entrepreneurship become key elements of economic recuperation. However, the data of the National Statistics Institute (INE) for 2012 reflect a decrease in the creating of firms in Spain with respect to the previous year, as well as self-employment rates below the European average.

This general situation regarding firm creation contrasts with the conditions of the Spanish sector of hairdressing and aesthetics. This is mostly made up of young, self-employed entrepreneurs and microenterprises. The two types of entrepreneurs share a focus on the organizational context of the individual and business ownership being derived from a legal status in both cases (Audretsch 2012). We are faced with an extremely atomized sector in which there are hardly any medium-sized firms and even fewer large firms. On the other hand, the economic slow-down and the policies of expansion of the sector's main chains will significantly increase the competitive intensity in the coming years. Interest in physical appearance and postponing signs of aging has widened and diversified the public aesthetic centers aim at. Spain is one of the countries in which more importance is given to aesthetics.

In the same way, we can consider that trust is a critical factor for success in the relationship between the firm and the consumer (Grönnros 1994; Delgado and Munuera 2002), as well as in the understanding of the consumer's long-term behavior (Morgan and Hunt 1994; Berry 1995; Flavián and Guinalíu 2006). The importance of this study lies in the benefits which it can bring being both varied and significant: the satisfaction of individuals is increased and their perception is improved (Sanz et al. 2009). Trust is also key in the extent to which it fosters long-term interchange relationships and contributes to the collaboration between parties (Ratnasingam and Phan 2003). From this point of view, all long-lasting relationships must be based on this mutual trust and this trust will itself be valued by customers and suppliers. Indeed, trust adds value for customers and influences their loyalty toward the firm. This value for the customer is considered by many organizations to be a key factor when seeking new ways of achieving and maintaining a competitive advantage.

Identifying the experiences that are embedded in the value co-creation process is potentially beneficial for providers (Payne et al. 2008). The enhancement of these experiences can provide a competitive advantage, and increase confidence through the creation of positive emotional bonds (Gebauer et al. 2010). Likewise, recent studies have shown that the generated value can favor, among other things, customer satisfaction and business results (Guenzi and Troilo 2007; Cedric Hsi-Jui 2011; Pratibha and Dabholkar 2012). However, and in spite of the importance this subject has for academics and those in charge of firms, there is a gap in understanding the relationship between value co-creation and the customer's trust in the service from entrepreneurs and SMEs. This work aims precisely to tackle to what extent the co-creation process affects the customer's trust in the service provider. It at all times adopts the perspective of the customers themselves in a context of economic crisis such as the current one.

8.2 Literature Review and Development of Hypotheses

8.2.1 Value Co-creation

Co-creation implies the joint value creation between the supplier and the customer (Prahalad and Ramaswamy 2004a) and requires the building of experiences and the resolving of problems. This is achieved through a combined effort between the parts that make up a commercial relationship. This concept is based on the idea that the main business abilities are not in the value chain as such, but at the point of interaction between the customer and the firm. It is in this context that the application of the Service-Dominant (S-D) Logic paradigm (Vargo and Lusch 2004) gains a greater importance. The former is in any case a value co-creator (Yi and Gong 2012). In this line, Vargo and Lusch (2008) consider that all the parties involved in an exchange relationship perform a common function: to co-create value via the integrating of resources and the provision of services. Consequently, and following this premise, the organization must begin by recognizing that it is not possible to add value to the offer without gathering or combining resources which go beyond the entity itself (Prahalad and Ramaswamy 2004b). Value co-creation is considered, therefore, to be a way of increasing value for both the customers and the service suppliers (Vargo and Lusch 2004). The customer's role in this process is centered upon carrying out a series of activities to achieve a particular goal (Payne et al. 2008).

In an aim to unite all the efforts made until now, Yi and Gong (2012) define the behavior of customer co-creation as a construct made up of two differentiated types of consumer behavior: participation behavior and citizenship behavior. The first of these dimensions refers to the behavior that the customer adopts during the service encounter. This is considered necessary to attain an appropriate performance in the value co-creation. The second refers to a type of behavior which can create a higher value for the organization but which is not necessary for value co-creation (Bove et al. 2008; Groth 2005; Yi and Gong 2012). Each of these dimensions is made up of four factors in the original scale: information seeking, information sharing, responsible behavior and personal interaction in the framework of participation behavior and feedback, plus the advocacy, helping, and tolerance of citizenship behavior.

Although the study of the consequences of co-creation is in its initial stages, it has been possible to verify that as the customers' participation increases, their motivation and commitment with co-creation also augment. These circumstances allow them to perceive a greater quality of service. In this sense, we can also intuit that the interaction between the service provider and the customer—the basic aspect of the value co-creation process—is essential to create and maintain trust (Sanz et al. 2009).

8.2.2 Customer Trust

Trust has been analyzed in different fields. This circumstance explains the breadth of definitions provided (Little and Mari 2003). Hence, and from the perspective of

Relational Marketing, there are numerous works which revolve around the concept of trust—considered as a basic element to maintain relationships over time. In the services field, Parasuraman et al. (1985) suggest that customers must feel sure in their dealings with the service provider, as well as being certain that the information passed on will be dealt with confidentially (Vázquez et al. 2005). Trust is considered as a multidimensional construct. Various works (Fernández and Martín 2006; Flavián and Guinalíu 2006; Gillil and Bello 2002; Hewett et al. 2002; Roberts et al. 2003; Sanz et al. 2009) define it on the basis of two fundamental dimensions (Vázquez et al. 2005):

1. Credibility is the capacity of an organization or a person to fulfill their promises (Ganesan 1994). More specifically, it refers to the degree to which a party believes that the other party has the experience necessary to do the work effectively and reliably.
2. Benevolence is the degree to which the customers believe that the other parties are motivated to perform in the interest of the customers' well-being and to seek common benefits, subordinating their interests to the relationship's long-term aims (Kumar et al. 1995).

The first dimension is based on the trust in the firm's capacity and competence. That is, it is seen that the firm has the technical knowledge, and the professional experience and expertise which bestows it with command in its field of activity. The second dimension is based on trust in the firm's values, aims, and intentions in such a way that an image of seriousness, integrity, honesty, and sincerity is perceived, as is the notion that in no case will the firm undertake actions which may damage the relationship (Ganesan and Hess 1997; San Martín et al. 2004; Sanz et al. 2009).

In the context of this research, trust refers to the degree of the firm's fulfillment of the contractual agreements and the expectation of its being committed to taking initiatives of mutual benefit, leaving aside possible advantages stemming from opportunism (Vázquez et al. 2005).

In this sense, we argue that the customer's active participation in the value co-creation process implies—as we have shown before—the personal interaction of the parties involved. This personalized bearing strengthens the communication between the customer and the firm. It favors the mutual comprehension of the relationship and the fostering of trust. Likewise, if the employees are pleasant and friendly, the customer will consider them to be kindred and will feel a liking toward them (Doney and Cannon 1997). The interaction between the service provider and the customer—the basic aspect of the value co-creation process—is essential to create and maintain trust (Sanz et al. 2009).

On the other hand, the customers' responsible behavior will be favored when they perceive that the seller is equally responsible. This fact will reduce their fear of opportunistic behavior. This circumstance will lead to an increase in the trust in the service provider (Barclay and Smith 1997).

Communication has been considered to be a key component in the development of a relationship (Bendapudi and Berry 1997; Duncan and Moriarty 1998). This means that when customers provide the employees with information about the

specifications of the service which they wish to receive and an open and bilateral communication is produced, the firm's aim will be oriented toward the achievement of the customer's well-being. This situation will foster trust.

On the other hand, the current economic situation requires the dynamizing of entrepreneurs and SMEs as economic motors. To do so, customer value creation, the setting up of participative environments, and the development of appropriate marketing strategies which foster loyalty, satisfaction, and trust are essential.

On the basis of these arguments, it is defended that co-creation permits the reduction of the customers' perceived risk and increases their trust in the service provider. This leads us to posit the following research hypothesis:

> H: There is a positive relationship between the customers' behavior of value co-creation and their level of trust with the service provider.

8.3 Empirical Study

8.3.1 Methodology

To verify the hypothesis proposed, adults over 18 were personally interviewed. They had to be regular users of some center for personal care, such as hairdressers', beauty parlors, hair removal centers, and gyms. The interviews were carried out between September and November 2012 by interviewers trained in the matter. This quarter coincides with an especially delicate economic situation for Spanish entrepreneurs due to the strict adjustment measures driven by the Spanish government at the request of the European Union. The data collection finished with 547 duly-completed questionnaires. The SPSS 20 and AMOS 20 statistical programs were used for the data analysis.

8.3.2 Measurement Scales

Value co-creation: To measure value co-creation the scale proposed by Yi and Gong (2012) was used. This scale is the first which aims to know all the aspects associated with value co-creation behavior from the customers' perspective. The authors uphold that co-creation is a third order construct made up of two second order dimensions: participative behavior and citizen behavior. The 29 items of the construct are measured with a 7-point Likert-type scale. Taking into account the scale's multidimensionality, the analysis of its reliability and validity has been carried out dimension by dimension. Upon removing the indicators that do not fulfill the minimum requirements, all the indices show appropriate values on the scale of the pertinent validity and reliability analyses.

Customer trust: The customers' trust in the personal care center chosen has been measured using the bidimensional scale proposed by Vázquez et al. (2005). When the scale was submitted to the analysis of reliability and validity—once one item which did not attain the recommended values had been removed—all the indices surpassed their acceptation values. We can therefore guarantee this measurement instrument's reliability and discriminant and convergent validity.

8.3.3 Data Analysis

Before evaluating the structural model, we analyze the measurement model. Following the theoretical guidelines we carry out a factorial analysis using structural equations and taking into account four criteria: the significance and value of the factorial loadings, the individual reliability of each item, and the model's fit indices. All the indicators surpass the minimum thresholds and the goodness of fit indices show that the measurement model is appropriate ($RMR = 0.101$; $RMSEA = 0.056$; $GFI = 0.895$; Normed $\chi^2 = 2.71$).

8.3.4 Results

Regarding the causal model proposed, the data confirm the relationship set out in the hypothesis H ($\lambda = 0.991$, $p < 0.01$). It can therefore be stated that there is a positive relation between value co-creation and the customer's trust in the service provider. The goodness of fit indices present appropriate values in general ($RMR = 0.101$; $RMSEA = 0.056$; $GFI = 0.895$; Normed $\chi^2 = 2.71$).

8.4 Implications for Management

In spite of the unfavorable economic situation, the sector of aesthetics and personal image is on the rise. The demand for the services of this type of establishments is experiencing considerable growth and the main international chains are considering entering the Spanish market. This fact, along with the sector's high atomization—characterized by the presence of a great number of self-employed and microenterprises—is going to considerably heighten competitiveness. In these circumstances, entrepreneurs will see themselves forced to achieve a sustainable competitive advantage which helps them to compete appropriately. Value co-creation seems like being one of the most accessible. The findings of the study suggest that service firms dedicated to personal care should foster the customers' active participation in the value creation process, as this has been shown to have a positive influence on the customer's trust in the service provider. Therefore, and according to the results attained,

firms should make an effort to favor this interaction. They can do so by creating appropriate communication channels and fostering the involvement of the customer in the process of the production of the service. This is a fundamental aspect considering firm results, as it directly influences the retaining of customers and profitability.

Moreover, it could be expected that the consumer will acquire certain skills in the value creation process, hence contributing to differentiate the supplier's service (Dong et al. 2008).

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Chapter 9
The Role of Social Capital in Family Firms to Explain the Innovation Capabilities in Recession Time: An Empirical Study

Valeriano Sanchez-Famoso and Amaia Maseda

Abstract This chapter investigates the internal social capital of family firms by studying the relationship between a family social capital and organizational innovation during recessions. We predict that the social capital of family members will has a positive effect on firm innovation. We test our hypothesis by sampling respondents serving management functions in Spanish family firms.

9.1 Introduction

This chapter investigates family firms' innovation from the perspective of internal social capital (SC). Our interest in innovation stems from firms' increasingly turbulent environment, in which they must seek and execute innovation to overcome inertial forces and remain competitive (e.g. Floyd and Lane 2000). Our conceptualization of innovation follows Craig and Moores (2006), among others, and we define "innovation" as the use of opportunities to create new products, services, or process thus allowing businesses to obtain an important competitive advantage.

It is widely accepted that organizational innovation is extremely important for the survival, sustainable competitive advantage, and performances of many firms (e.g. Damanpour 1991), including family firms (e.g. Craig and Moores 2006; De Massis et al. 2013a, b). The family firm that survives through generations requires renewal through innovation (Hoy 2006). However, the effects of family involvement on a firm's ability to develop new products and processes are still not well understood. While some studies highlight organizational relationships' potential to stimulate innovation (e.g. Le Breton-Miller and Miller 2006), others suggest that such relationships may constrain it (e.g. Dunn 1996). Accordingly, an overarching theoretical approach is necessary. To that end, we utilize the lens of internal SC (Nahapiet and

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Ghoshal 1998; Sanchez-Famoso et al. 2013; Yli-Renko et al. 2001), which defines SC as the knowledge embedded within, available through, and utilized by interactions among individuals and their interrelationship networks inside family firms.

Several studies have analysed the effect of internal SC on innovation (e.g. Moran 2005; Nahapiet and Ghoshal 1998; Tsai and Ghoshal 1998) and have shown that internal SC is critical to the development of innovation (Subramaniam and Youndt 2005). However, to our knowledge, few of these studies have analysed the relationship between internal SC and innovation in the context of family firms. We close this gap by studying the relationship between family social capital (FSC) and organizational innovation from an internal perspective during recessions.

The rest of this chapter is organized as follows. After the introduction, we provide the theoretical background of the SC concept and its dimensions in the context of family firms in an atmosphere of crisis, using the "groups" theory (Oh et al. 2004). We also explain the influence of SC on family firm innovation by proposing a specific model and testing it. Finally, we enunciate some reflections about this work and its limitations and then propose avenues for future research.

9.2   Conceptual Framework

Tsai and Ghoshal (1998) found that social interaction and trust are significantly correlated with innovation. However, innovation is often risky in financial and nonfinancial terms, especially in family firms (Cassia et al. 2012), where the family's impact on the business and innovation occurs through a combination of social interaction, networks, family goals, values, and culture, all acting on the firm through behaviours, acts, decisions, and plans. Thus, the success of a family firm will depend on its capacity to manage social interactions to achieve common goals. Consequently, this study follows Chua et al. (1999) in defining a family firm as a *"business governed and/or managed with the intention to shape and pursue the vision of the business held by a dominant coalition controlled by members of the same family or a small number of families in a manner that is potentially sustainable across generations of the family or families"* (p. 25). Through this definition, we can use the term "family firm" to refer to organizations in which the behaviour of their actors and the nature of their relationships are influenced by common goals and visions.

Nahapiet and Ghoshal (1998) have pointed out that the fundamental theme of social capital theory is that network ties provide access to resources, constitute a valuable source of information benefits, and reduce the amount of time required to gather information. Social capital enables organizations to either reinforce or transform their prevailing knowledge (Subramaniam and Youndt 2005).

This chapter analyses the relationship between FSC and innovation from an internal perspective by examining the family members' group's relationships in turbulent environment. The internal SC view focuses on the internal linkages among family members. In this sense, SC is concerned with the relationships across all organizational levels (Leana and Van Buren 1999). Nahapiet and Ghoshal (1998) identify three interrelated internal SC dimensions: structural, relational, and cognitive.

The *structural dimension* of SC provides channels for information and resource flows and offers certain advantages for family members (Tsai and Ghoshal 1998) like the generation and implementation of new ideas. The *relational dimension* of SC describes the types of relationships family members develop throughout the history of their interactions within a firm. The *cognitive dimension* of SC serves as a bonding mechanism that helps organizational partners integrate or combine resources.

Systematic interaction between the involvement of family and business is what creates the idiosyncratic resources and capabilities that Habbershon and Williams (1999) call *familiness*. The nature and composition of family firms' relationships vary, but all family members have strong and enduring ties, shared visions and goals, and a sense of shared responsibility and collective action (Chua et al. 1999; Coleman 1990; Nahapiet and Ghoshal 1998; Portes 1998). Familiness allows the family group to communicate more efficiently, exchange information with greater privacy, motivation, loyalty, and trust, and be more likely to generate SC than in non-family firms.

The family group, a distinct (indeed the dominant) feature in family firms, can shape and drive pursuit of the firm's vision for long periods. The family group consists of a group of people with varying expertise, abilities, knowledge, and experience; therefore, motivating interaction within the group is particularly important. This group needs to network with each other in order to exchange, transfer, and diffuse knowledge to develop new specifications and discuss technical solutions (e.g. Tsai and Ghoshal 1998; Yli-Renko et al. 2001). In this way, family group's members who engage in more social interaction will be more likely to obtain information and resources, communicate with each other, exchange opinions and ideas related to task issues, and generate novel ideas and concepts. This process affects the SC-building capacity of family firms (e.g. Arregle et al. 2007). Thus, the SC within familial relationships is an important factor in creating a competitive advantage (e.g. Arregle et al. 2007; Hoffman et al. 2006; Pearson et al. 2008; Sorenson et al. 2009) and involves the development of innovation. Given these arguments, we hypothesize the following relationship between FSC and innovation:

> H: During Recessions there is a direct and positive influence of FSC on family firm innovation.

9.3 Methodology

9.3.1 Sample

We studied Spanish family firms that were included in the SABI[1] database in January 2013 (crisis time). We eliminated companies affected by special situations, and eliminated listed companies and firms with fewer than 50 employees. We also looked for companies with more than one family member employee because, when

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[1] Iberian Balance Sheet Analysis System.
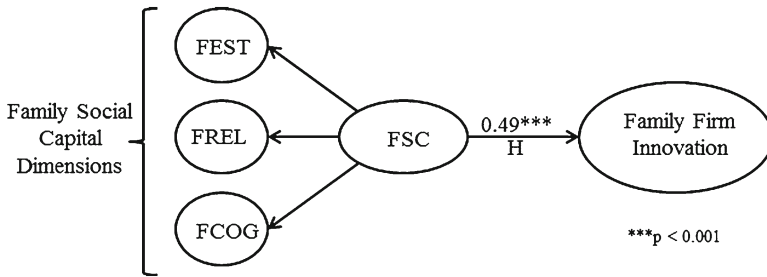
Fig. 9.1 Standardized path loading for hypothesized model (from authors' own research)

two or more members of the same group work in a family-owned company, they reinforce the use of group communication patterns (Sorenson 2012).

In this study, "family firm" refers to a firm that meets two conditions: (a) a substantial common stock is held by the founder or family members, allowing them to exercise control over the firm, and (b) they actively monitor it. As per Arosa et al. (2010), among others, we established 50 % as the minimum percentage of a firm's equity qualifying as a controlling interest. To find cases meeting these two conditions, we conducted an exhaustive review of shareholding structures (percentage of common stock) and composition (name and surnames of shareholders). The resulting sample consisted of 1,122 non-listed Spanish family firms. A questionnaire was used to collect information regarding the relationships inside family group and innovation perceptions inside the family firm. 172 family firms (15.30 % of the sample) provided responses.

To learn about the relationships among family members, we contacted multiple family employees with managerial functions. Moreover, we created a pretest to fine-tune the questionnaire; the preliminary questionnaire was pretested on eleven family firms from different sectors, and the pretest interviews were conducted face-to-face with family employees.

9.3.2 Data Analysis

The model presented in Fig. 9.1 was tested using SEM, concretely EQS 6.2 statistics package for windows, with the raw data used as input.[2]

9.3.3 Measurement of the Model Variables

To select our measures, we reviewed the most relevant literature on innovation, social capital, and family firms and chose the measures that best fit our research. Consistent with our research focus and similar approaches that assessed firm-level

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[2] Data of evidence of non-normal distribution are available from the authors.

phenomena based on individual-level responses (e.g. De Clercq et al. 2010), survey questions were worded to capture attitudes and behaviours occurring at the firm level rather than at the manager level (Whetten et al. 2009).

Innovation: We followed García-Morales et al. (2008), Miller and Friesen work (1983), and Subramaniam and Youndt (2005) in measuring organizational innovation.

   The SC construct is a second-order reflective factor (Casanueva-Rocha et al. 2010; Carr et al. 2011) that includes the structural (FEST), relational (FREL), and cognitive dimensions (FCOG), commonly used in the literature (Bolino et al. 2002; Cuevas-Rodriguez et al. 2013; Inkpen and Tsang 2005; Nahapiet and Ghoshal 1998; Pearson et al. 2008; Tsai and Ghoshal 1998).

9.3.4   Results

We re-validated the measurement model before testing the hypothesis even though the scales' validity had been tested in previous studies because our constructs were adapted from earlier work.

9.3.4.1   Validity of the Scales (First- and Second-Order Concepts)

The FSC scale represents second-order reflective construct (Casanueva-Rocha et al. 2010), multidimensional concepts consisting of a number of more concrete (or first-order) sub-dimensions. This study conceptualizes FSC as three-dimensional second-order reflective measure (see Fig. 9.1) because structural, relational, and cognitive dimensions serve as latent indicators of the second-order FSC construct.

   We ran a confirmatory factor analysis (CFA) to validate the measurement model. The final measurement model is reliable, as all Cronbach's αs (CA) are above the recommended value of 0.70, and the composite reliability (CR) indexes are also above 0.70. The analysis provides an acceptable fit (BBNFI = 0.948; BBNNFI = 0.999; CFI = 0.999; IFI = 0.999; MFI = 0.999; RMSEA = 0.010, and S-Bχ^2(23) = 27.37).[3] The results also allow confirmation of the convergent validity of the FSC sub-dimensions, since the standardized loading parameters relating each observed variable to the latent variable range from 0.67 to 0.93.

   No evidence of a lack of discriminant validity was found.[4] These results reinforce the reflective nature of the FSC dimensions. Therefore, our measurement model, with seven first-order factors and two second-order factors, has a good fit.[5]

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[3] BNNFI = Bentler–Bonett normed fit index; BBNNFI = Bentler–Bonett non-normed fit index; CFI = Comparative fit index; IFI = Bollen's fit index; MFI = McDonald's fit index; RMSEA = root mean-square error of approximation.

[4] Detailed results of average variance extracted (AVE) and squared correlation are available from the authors.

[5] Detailed results of CFA are available from authors.

9.3.4.2 Estimation of the Causal Model

To test our proposed model (see Fig. 9.1), we ran the SEM with the hypothesized path. Figure 9.1 presents the results of the final structural model. As the model shows, the hypothesis was supported. The model shows that FSC has a direct, positive effect on innovation. Given the acceptable levels of the all indicators, the analysis results revealed a reasonable fit between our model and the data.[6]

9.4 Discussion, Conclusions, and Implications

This study has attempted to shed some light on the complex and very important issue of innovation in family firms from the perspective of internal SC (the linkages among family members of a family firm) during recessions. We sought to fill a gap in and extend the literature by developing an empirically grounded theoretical framework that outlines how the main group that compose family firms affects innovation in an atmosphere of crisis. We have thus extended SC, family firm, and innovation research, most of which has studied the influence of external SC rather than the social capital residing within firms.

Our findings reveal that in turbulent environment, and during recessions FSC directly and positively affects organizational innovation (e.g. Arregle et al. 2007; Pearson et al. 2008), and that SC is necessary to innovation (Leana and Van Buren 1999), so organization can adapt more quickly during recessions.

This study makes several contributions to research on innovation and family firm SC in an atmosphere of recession. First, we estimated the FSC construct as a second-order reflective factor. Second, although others have described SC theory as being particularly relevant to research on family firms (e.g. Arregle et al. 2007; Hoffman et al. 2006; Pearson et al. 2008), ours is one of the first studies to empirically test the relationships among family members (FSC) inside family firms.

It is important to address how this study could be applied in practice. First, this research supports the argument that SC facilitates innovation. Second, it provides an intrafirm SC lens with which to explore the relevance of SC. Managers should carefully assess the benefits of having good and collaborative internal relationships among family employees involved in a family firm, and family employees must be encouraged to share their resources and knowledge, because that is more important during recessions than ever before.

Although these findings are significant, our study also has limitations. First, we focused on the internal side of SC. A second limitation is that the study's cross-sectionalization into a series of dynamic concepts (e.g. social capital and innovation) allows us to analyse only specific organizational situations in time rather than overall conduct over time.

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[6] BBNFI = 0.948; BBNNFI = 0.999; CFI = 0.999; IFI = 0.999; MFI = 0.999; RMSEA = 0.010, and S-Bχ^2(23) = 23.38.

In conclusion, SC appears to serve as the bedrock of innovative capabilities in turbulent environments and, as innovation is fundamentally a collaborative effort, SC plays a central role in generating innovations. Thus, communication and the fluid diffusion of information are vital to innovation especially during recessions.

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Chapter 10
Managing Innovation During Economic Changes and Crisis: "How Small and Mid-Sized Enterprises React"

Florian Kauf and Jochen Kniess

Abstract This article considers the situation of small and mid-sized enterprises (SMEs) within the European Union during the economic crisis. The purpose is to characterise SMEs of the equipment industry and to localise existing potentials which they can use for new product development as well as to determine how these enterprises currently use these potentials. The analysis illuminates reactions and answers that SMEs of the equipment industry have developed to the global economic changes and crisis during the last years.

10.1 Introduction

Globalisation is a major topic in current public discussions, in journals and the news media. It is seen as an unavoidable development and therefore has various effects on business in general. On the one hand, globalisation leads to a worldwide market, which leads to changes for and within an enterprise. On the other hand, it leads to strong competition and is a definite challenge. The influence of these changes can be recognised in many different situations. For example, it can be seen in the turbulences resulting from the economic crisis or fluctuating commodity prices (Kevelioc et al. 2012:1; Mede 2011:12; Diedrichs 2008:82; Buchholtz 2006:7–10; Baumöl et al. 2006:37; Edelmann 2012:1). These shockwaves have been distant to Europe in the past but have a direct influence on the industry today, particularly for SMEs, which represent the engine of the EU's economic power, even though they have reduced financial resources and workforce. Thus, it is crucial for these types of enterprises to develop answers for the market requirements for such unforeseeable events and their effects (Kespohl 2011:18; Kriegesmann 2008:66).

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One option to solve this issue might be the optimisation of internal processes, in particular the NPD (Dubs 2004:66–141). However, before the step of process optimising, the SMEs of the equipment industry must be characterised and an overview about existing idea sources and their potentials for NPD is required. This study presents an overview based on the SMEs of the equipment industry for production and packaging plants, which represents the object of interest (OoI). Our purpose is to achieve a deeper insight and understanding of the current situation, i.e. the requirements and existing limitations regarding innovation within SMEs during the economic changes and crisis in the year 2010–2012. In particular, the processes, behavioural rules and individual views in these enterprises are of interest. Therefore we analyse the current situation alongside the typical product life cycle (PLC) for the equipment industry according to Paul et al. (1997:2) and Pahl (2007:99–101), represented by the centre loop in Fig. 10.2.

10.2   Theoretical Background

Today interview surveys (IS) are accepted strategies in research for creating an easily understandable, general and representative real world picture of an OoI. Conceptually a survey is also not tied to any particular philosophical viewpoint and thus can be taken to be objective (Mayring 2010:48–51). Therefore we chose an IS as the basis for this study in order to create an image of the reality on the basis of the subjective view of the relevant interviewees.

IS' are always accompanied with certain limits and restrictions; thus it is crucial for the researcher to consider and rate these issues in order to avoid problems later during the evaluation induced by missing data or incorrect questioning which might lead to a bias. Besides the subjective influence by the interviewee himself (Töpfer 2010:223–224, 234), influences due to choosing the random sample must also be taken in consideration in order to avoid erroneous conclusions (Robson 2009:230; Töpfer 2010:232–233; Wolff, 2010:344–345; Robson 2009:233). This short overview, which does not claim to be complete, shows, that by using IS', shortcomings will always be included and have to be accepted. Thus, it is relevant to explain the applied procedure and circumstances in which the IS' have been executed and aimed at, in order to allow the reader make an own rating or judgement of the situation and to avoid the dubiousness some researchers see in the large amount of gathered data which finally can affect its validity (Kumar 2011:149; Creswell 2010:162–163; Töpfer 2010:217–234; Robson 2009:231).

For the aforementioned purpose, firstly, the type of study population must be characterised. For this study, it is represented in the business-to-business character of the SMEs of the equipment industry, since the technicians and the entrepreneurs (decision makers) are the group of people who are relevant for evaluating information about methodical product development. Here, a major characteristic of this industry is its distribution over a wide geographical area. This fact motivates us to

choose two different exhibitions for performing the IS, represented by the BAUMA[1] and the Fach-Pack[2] which are leading exhibitions in these two major fields of the equipment industry. The applied procedure for the IS follows the aforementioned segmented PLC, which can be interpreted as a reflexive control design explained by Kumar (2011:339). Both exhibitions offer a wide product range which serves nearly the whole PLC of the OoI, being considered, and additionally they are slightly differently oriented. This means: whereas the BAUMA is mainly concentrated on product development and manufacturing of Production products, the Fach-Pack tends to the packaging and delivery of the products. This study design guarantees that the whole PLC is considered sufficiently and a valid outcome can be expected.

Next, the criteria for a significant random sample is defined using an approach from Christians and Wirth (2009:16–19), where a 1 % sample size is required for reaching a relative standardised failure of 38 % within the outcome. Within this study the main unit consists of approximately 6000 enterprises (Wiechers and Gesine 2011:6), which leads to a sample size of 60 interviewee partners to meet the quality requirements for a significant random sample. Further information, concerning this topic is available (see also Kumar 2011:212; DIN German Institute for Standardization 2002:21; DIN German Institute for Standardization 1982:1–17).

After defining the purpose and the sample size the gathered random sample must be discussed regarding the size classes and the business sectors in order to detect possible bias. Within this survey about 170 SMEs of the equipment industry have been interviewed about the topic "business processes" and "product development". Sixteen interviews have been annulled and 35 interviews have been of a lower quality because they have included a few contradictions. Summarised is a dataset of 129, 65 from the BAUMA and 64 from the Fach-Pack, which is of good quality and we meet the aforementioned requirements for the representatives of our study. The applied sampling approach allows us to reduce the relative standardised failure to approximately 10 % according to Christians and Wirth (2009:16–19) and at the same time to meet the requirements for the reflexive control design discussed by Kumar (2011:339) because we interview two independent random samples.

The gathered dataset, therewith, delivers a satisfactory overview about the OoI and allows for deriving valid assertions, although the outer limits of the random sample show a higher variance compared to the reality and the outcome will be acceptable for the purpose of this study.

Regarding the interview strategy and its methodical procedure, we use a qualitative approach where a rough thematic guideline is preferred and standardised criteria are avoided as much as possible. Thus, this study follows a design which is similar to a cross-sectional study and relates to both the study population and the time of investigation (Kumar 2011:107). We choose semi-structured interviews

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[1] International trade fair for construction machinery, building material machines, mining machines, construction vehicles and construction equipment, München, Germany, Presszentrum Messe München (2010: 1–2).

[2] International exhibition for packaging technology and labelling solutions, palletisers and equipment for packaging recycling, Nürnberg, Germany, Trommer and McNally (2011: 1–2).
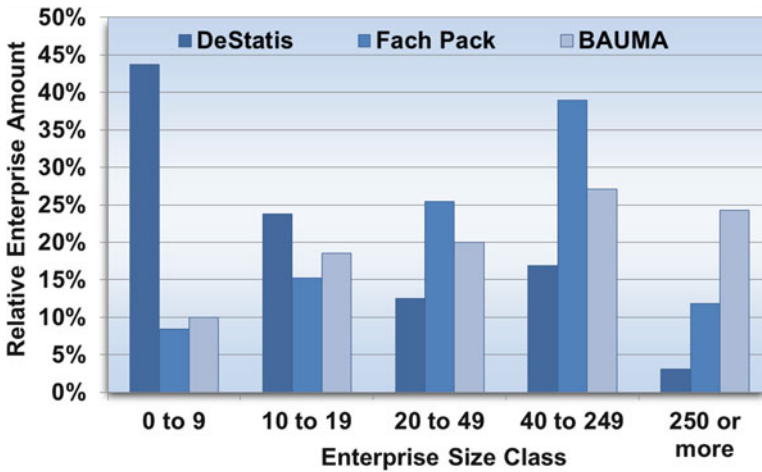
Fig. 10.1 SME size class distribution, *Source*: DeStatis (2012); IS, (2011/2012)

based on the approach of Robson (2009:271), where we use a set of guiding questions in advance which has been slightly modified during the interview. Therewith, we have not been limited to a predefined questionnaire and have a certain liberty to leave out individual existing enquiries, which may then also seem inappropriate to a particular interviewee, or even to include additional questions, if needed. The interview schedule, as a central factor of an IS, is discussed in various manner in literature and for a detailed explanation we refer to Kumar (2011:150), Hermanns (2010:360–368) and Robson (2009:279–281). During the post processing phase, the content of the data are concentrated into a coded spread sheet following the approach of Kumar (2011:291–321).

Figure 10.1 shows the "Relative Enterprise Amount" of the random samples compared to the market composition on basis of the statistic data.

10.3 Discussion of the Findings

The enterprises which have been interviewed show a total turnover of more than 4.5 billion EUR and therefore represent a market share of nearly 3 % of the equipment industry (Wiechers and Gesine 2011:6). The average number of employees, from the particular interviewed personally managed enterprises, has been about 124. While performing the interviews, we recognised the interesting topic that the representatives of the SMEs at the BAUMA talk of a current but slow start in a new boom-phase after a long period of stagnation and recession. In contrast, the representatives of the SMEs at the Fach-Pack talk about a boom-phase, which shows the tendency of a soon-to-be slowing down in business. These findings show that there exists an inhomogeneous distribution and certain phase-difference in the various sectors of the equipment industry which can be led back to the effects and aforementioned shockwaves which meets different sectors of the industry at different

times. Thus we execute an in-depth analysis of the PLC of these considered enterprises and its innovation potentials for extracting further insights.

10.3.1 Technology Driver

A central criterion for success that we see is the product portfolio and patent strategy of the OoI. For illuminating the current situation, as a first step it is of interest that the optimisation of the existing product portfolio will take place with 62 % of interviewed enterprises after 5 years and with 36 % of interviewed enterprises within a time period of 10 years. A faster optimisation-cycle is found only in 38 % of the interviewed enterprises. A small part of only 14 % of the interviewed SMEs seem to do product optimisation more continuously within a year, whereas the other's mention a time-span of up to 3 years. However, surprising information comes to light when asking about the patents created within product development, because the results are very poor. This can be traced back to the effort invested into R&D in the equipment industry with approximately 4–5 % in the years 2003 and 2009, which seems to be significantly lower compared to other industries such as the car industry with approximately 7–10 % (EUROstat 2012; Gesine Schneider 2010:42; Schmoch et al. 2001:72). About 36 % generate no patents at all and 53 % less than five patents within a year. A small amount of around 2 % of the SMEs of the equipment industry shows a higher patent activity and therefore also generates a significant amount, guaranteeing their survival in the daily competition. The remarkable feature here is that the small percentage of higher patent activity can be found within the larger sized SMEs. This information underpins that professional innovation management corresponds to the enterprise size and invites us to ask for the reason of this ineffective situation.

Clarifying the way in which the SMEs develop a product is a way of doing this. Here, the SMEs see the product development with 62 % directly initiated by one internal person or based on a problem from a customer. 20 % use development teams and involve more than one person. Only 8 % use a written procedure alongside which product-innovation takes place. 10 % seem to use tools or a method which is state-of-the-art, e.g. quality-function-deployment (QFD) or failure mode and effect analysis (FMEA). Interesting information such as the SMEs often use a fragment of one approach can be gathered from the interviews. This knowledge has often been delivered from one or a few persons within the SMEs. The more complex approaches like DSM, DMM, Graph-Theory or TIRZ are not being used by the interviewed SMEs at all.

10.3.2 Strategic Thinking

Going deeper into the strategic view of the SMEs who are using global sourcing, the question that occurred was whether they were aware of the effort they spent on this procedure. In particular the cost incurred with the aim to save money, is not added in almost 35 % of the SMEs. The majority of the SMEs of the equipment industry

calculate the estimated cost based on the price of the purchased parts. Only 15 % of the enterprises recommend that they do a clear calculation and recalculation of the projects in general, with the aim of getting a detailed cost comparison of in-house and external manufacturing. By concluding these insights of the research and development behaviour, a similar pragmatic approach for NPD was expected. By asking in an inductive way about the product behaviour, it is possible to validate this expectation. SMEs of the equipment industry include less possibilities of external know-how with only 5 %. The reason for this can be found in the entrepreneurial view, which means doing everything within the own enterprise. This happens in nearly 66 % of the SMEs of the equipment industry and seems to have two origins. They try to solve these challenges on their own and without involving third parties. One reason seems to be the character of the entrepreneurial dominated form of enterprises, the so-called authority-promoters, which represent the main drivers of the SMEs and seem mostly concentrated on family-driven SMEs. Another reason can be found in the low academic resources, because within most SMEs only one or two employees with an academic background are available. The latter issue seems to be a basic skill for understanding the sense in using a theoretical method for NPD and to pave a path to applying this procedure to existing processes. Finally, it is not surprising, that only 29 % of the SMEs operate through enterprise-networks, which also seems to be more common and known to the large enterprises.

10.3.3   *Flexibility and Diversity*

Analysing the interviewed enterprises about the amount of different products they offer as an OEM on their markets, it becomes clear that they are concentrated, with close to 78 %, to a product portfolio of less than 50 different types of products. Only 22 % of enterprises offer more than 50 different types of products. Here it has to be mentioned that these enterprises are looking at a product in combination with supplier elements. After clarifying the product portfolio, the question arises about the underlying strategy. By asking this, the question was designed into an inductive and comparative manner. This means that the particular interviewee has been asked to compare the particular strategy of his enterprise with that of the competitors. Here the responses can be sorted into two major categories. On the one hand is the more trivial category, the characterisation by product parameters, for example a cheaper and higher quality or with more innovation. On the other hand, in strategic parameters, for instance a faster delivery, availability, inexpensive total-cost-of-ownership. By evaluating these findings, a homogenous distribution can be recognised, dependent on the capabilities of the SMEs and the individual part of the market they operate. However, this price sensibility is clearly recognisable within 27 %, followed by the product innovations, generally within 41 %. Interestingly, the customer orientation within 17 % and quality within 15 % is settled in this parameter-set on a lower focus. The more strategic-oriented parameters are being focused in an excellent 62 %, either within the particular niche or within the sector the SMEs operate in.

10.3.4 Management of Innovation

With the focus on NPD, which being the central aspect within this study, the management of innovation is of special interest. For gathering information about this topic, the questions have been concentrated on applied strategies for NPD and their key-drivers. By asking about the importance of certain issues with regard to the product portfolio, it was possible to reveal that 42 % of the SMEs are strictly cost-cutting oriented. 58 % of the SMEs follow a strategic aim to improve missing abilities and competences. Here, 28 % try to work in enterprise-networks and 30 % only by external competences. Overall it can be said, that 72 % avoid cooperation with the aforementioned issue of losing knowledge. Besides cost-cutting effects, other topics could be recognised as key-drivers for SMEs, for example, the increase in quality and a faster development of new products. Asking for the amount of new products developed per year and the overview that the SMEs have about the market itself dismantles the applied strategies of the OoI. Regarding the products, 44 % of the SMEs of the equipment industry only do continuous optimisation of their existing products and 43 % have an output of new products of less than five per year. Only 13 % develop more than 5 new products per year, whereas only 4 % develop over ten new products per year. During this discussion we gain the insight that, whereas the equipment industry branch is in general widely spread with a very complex assortment from apparatus to a completed plant, most of the SMEs operate within a very close-ranged own product portfolio if the single SME is considered. Asking the SMEs about recognised development trends or changes, 27 % see an increase in the electronic and computer-assistance within their products. Another trend, within 24 %, is that the individualisation of the products takes place when based on the market force of the customers. These two more extrinsically initiated topics that are followed by the standardisation of the products; in 18 % it is being recognised. This can be interpreted as a reaction from the market pressure with the major aim of reducing manufacturing costs. Besides these major topics, 10 % of the SMEs of the equipment industry do not analyse or follow any trend and another 13 % follows individual optimisation trends like building blocks (6 %), or integration from up and down-stream process influences. A controversial direction has also been recognised within 9 % of SMEs of the equipment industry which follow the idea of building integral product architectures, in order to protect their know-how against competitors. Here, it becomes obvious that it is a challenges for SMEs to protect their know-how and individual product proposition against their global competitors.

10.3.5 Clock Speed

When observing customer requirement management within the SMEs, globalisation shows a clear influence. Factors like transportation, easy installation and availability of spare-parts and services represent the major part of what drives 73 % of the SMEs of

the equipment industry. When analysing these findings to the core, remarkable and usable drivers can be localised. Besides the general term globalisation, factors like ongoing modernisation and local requirements by employees and managers can also be mentioned. Other factors which seemed to be relevant before are of lower influence, for example reparability within 25 % and usability within 15 % of the products. This is because these features are expected from the customers and therefore are presupposed requirements of the past. Therefore, a growing percentage of the SMEs localise clear trends, which will result in a more complex and individual product in 32 %. A further major issue is the optimisation of systems, and subsequently to the delivered product. This means the supplier must be able to optimise beyond the borders of his product. However, it has to be mentioned, that nearly 17 % of the SMEs have no resources to recognise or analyse new trends. These enterprises mostly concentrate on a small-product portfolio and are firmly driven by their customers. This insight shows a clear contradiction to the internal behaviour of "doing all by its one" or in house as well as a critical situation regarding fast changes like for example economic shock waves.

10.3.6   Discussion of the Findings

The IS delivers a clear insight into the business practice, the current thinking, weaknesses and potential of SMEs of the equipment industry. It becomes obvious that SMEs have long product development cycles with low output and also low strategic product management. They seem to do NPD by small steps of improvement for existing products.

Situations like the current economic shock waves are in contradiction to the business model of SMEs and one option to meet these challenges of the globalisation seem to be hidden in the PLC. Here, the gathered data allow one to consider the PLC with the view of NPD and under the existing contradictions the SME has to fight for a daily surviving. Issues like product delivery, spare-parts and service in place as well as rapid technology changes are major challenges which impact established business of the SME all the time. The IS also dismantles weaknesses, which could be lead back to the use of wrong technology or too slow innovation, as well as the use of innovations from the past. However, existing potentials can be found in personal customer contact, the flexibility and the individual product adaptation as a main proposition, compared to their competitors. We have qualitatively rated these feedings, as shown in Fig. 10.2, where the grey bar symbolises the assumed existing NPD potential and the red level its current use.

Besides these results, there have also been localised success potentials, hidden in the internal processes such as cross communication and interfaces. Optimisation of these processes can seriously influence the success of a SME and it seems that the needs of the SMEs for a NPD approach are different from the industries where existing methods for NPD are being developed. This result allows the conclusion that the needs of the SMEs currently do not seem to be met by the existing methods. Here, a major reason can be found in the required effort, the complexity of the existing methods and the missed consideration for which an NPD approach will serve the needs of
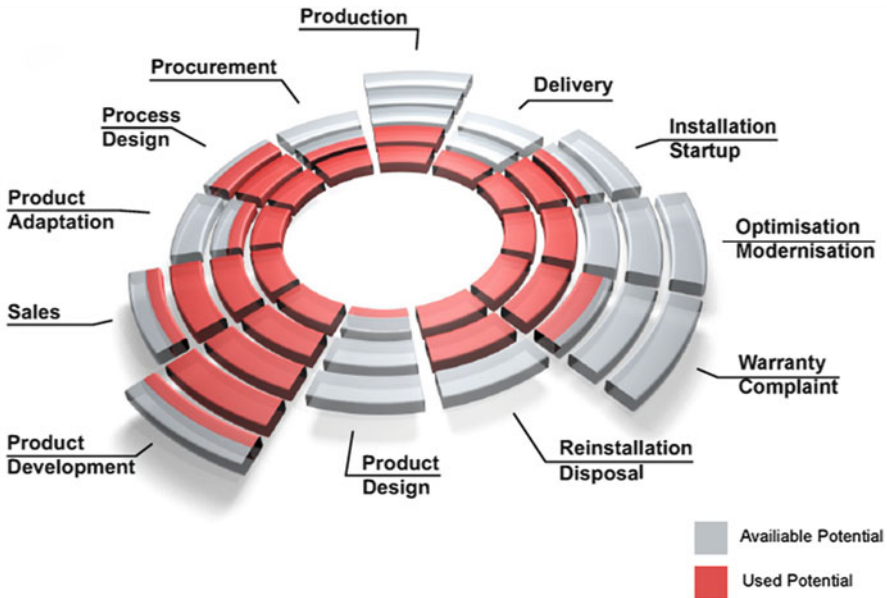
Fig. 10.2 Equipment industry product life cycle with innovation driver potential

the SMEs. However, the IS also shows that regarding NPD within SMEs, the major inventors come from outside the enterprises and that is the underlying particularity of the technology-cycles with different velocities, regarding the particular industry sector of the equipment industry. On the basis of these insights it becomes possible to value the idea sources and potentials for NPD alongside the PLC.

Summarising the findings, it can be said that scientific approaches for product management and development are applied less or not at all within SMEs of the equipment industry; although the IS shows that the interviewees agree that for successful NPD well-implemented innovation and risk management is required to guarantee the survival of the enterprise. Existing approaches seem to be the more necessary when more globalisation happens; and unpredictability of further business takes place. Above all, these findings are a contradiction within itself regarding the reduced resource availability within the SMEs. This is seen in the low theoretical and background knowledge which is missing, as well as time which is not available to implement such approaches in the existing growth processes.

10.3.7   Implications and Further Research

These findings represent one view of this matter and do not claim to be complete or absolute. However, based upon these findings it can be said that SMEs require pragmatic development methods which are not too complex and thus can be handled under the particular circumstances of SMEs of the equipment industry.

When reflecting upon these findings it is obvious that the employees of the SMEs are open to the use of a methodical procedure if it is pragmatic and offers a directly recognisable advantage in comparison to the current procedure. At this stage it becomes clear that firstly the question has to be solved if a method such as modularisation or block building might be an answer to the requirements of the equipment industry and thus will lead to success.

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Chapter 11
Youth and Entrepreneurship in Culture, Fashion and Tourism: Business Development Possibilities in Times of Crisis

Jaime Gil-Lafuente, Diana Pérez-Bustamante,
and Jaime Amaro-Soteras

Abstract Entrepreneurship is vital and business opportunities available to the young should be borne in mind by institutions, enterprises and other decision-makers. In an era of new technologies and innovation, young people are particularly well-prepared and many of the new businesses that emerge in today's knowledge society reflect this important situation, maybe more significant, if we remember the current crisis that we are experiencing. Our cultural and creative industry has great economic potential and is one of the most dynamic in Europe. It therefore makes sense to explore alternatives for the formation of enterprises in this area. Likewise, a key factor is what public and private institutions can do to offer incentives to young people's initiatives in the fields of cultural and creative activities, fashion and tourism and eliminate the barriers they encounter when attempting to start up and develop these enterprises smoothly.

11.1 Introduction

The objective of this chapter is to analyse promotional policies and possible entrepreneurial activities available to young people in the fields of culture, fashion and tourism. Our starting point was a White Paper on Entrepreneurial Initiatives in Spain published by ESADE, a nonprofit university institution, which notes, for example, that "young Spaniards do not feel adequately prepared or educated to

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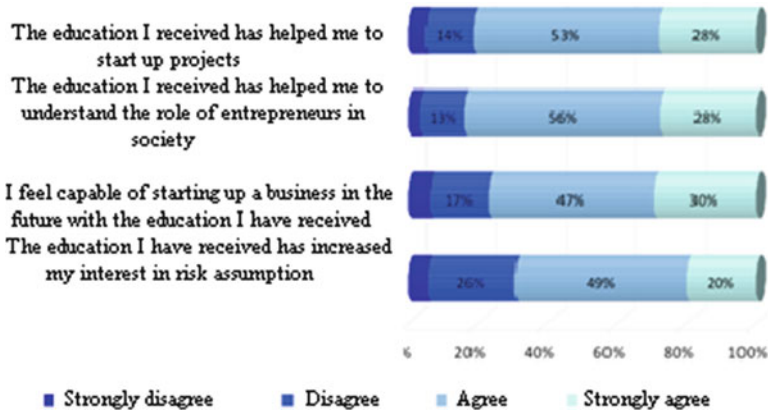
Fig. 11.1 Young people's perception of training in entrepreneurship (*Source*: Alemany et al. 2011)

become entrepreneurs." It also states that institutions and schools should address educational changes to include training in entrepreneurship.

In our view, a key element for change in the world today, especially considering the time we are living in regard to this economic, financial and social crisis is to provide flexible training linked to professions related to culture and creativity. This is becoming essential for the effective operation of the creative industries and is a factor that contributes to strengthening and updating traditional activities, helping them to differentiate themselves in a highly competitive globalised world (Rausell et al. 2011, 2012). It also contributes to developing entirely new skills associated with the information society (Acs et al. 2007) and the new kinds of market emerging in connection with the social networks, whose principal tool is the Internet. However, in addition to taking action in education, fostering cultural entrepreneurship in Spain also calls for a change of mentality among young Spaniards in order to avoid stigmatising the initiators of failed start-ups.

Some recent data available in Alemany et al.'s 2011 White Paper on Entrepreneurial Initiatives in Spain sheds light on young people's perception of training in entrepreneurship. According to this publication, 28 % of young people strongly agree that their education has helped them to set up projects and consider that they can develop a business with this training, while 30 % consider that their education has given them a better understanding of the role of entrepreneurs in society. Finally, 20 % believe that the education they received has encouraged their interest in taking risks (Fig. 11.1).

After analysing data regarding training for entrepreneurs and focusing on the perceptions of young people, we note that 34 % of them strongly agree that entrepreneurs generate new products and services that benefit everyone. Furthermore, 37 % strongly agree with the statement that entrepreneurs create jobs/employment.
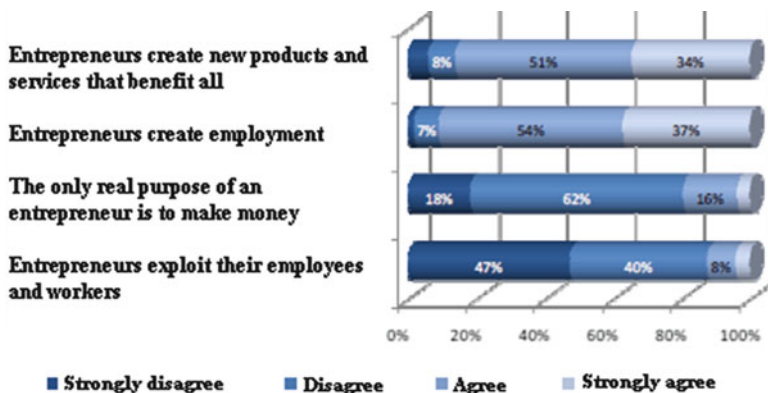
Fig. 11.2 The perception of entrepreneurs (*Source*: Alemany et al. 2011)

With regard to what young people think about the claim that the only purpose of entrepreneurs is to make money, it emerges from this study that 80 % of the sample analysed disagrees. Likewise, 87 % of Spanish youth disagrees with the statement that entrepreneurs exploit the people who work for them (Fig. 11.2).

The right kind of training is not the only factor that will ensure success in business. The current scenario of restricted demand and limited bank financing makes it particularly difficult to undertake new ventures. The difficulties arising as a result of the economic crisis are addressed in the Draft Law on Entrepreneurship and, in part, in Royal Decree-Law 4/2013, of 22 February, on Measures to Support Entrepreneurs, Stimulate Growth and Create Employment, which introduces a strategy to foster new enterprises and self-employment among the young. Its provisions include some means to improve financing and access to credit (fostering business angel networks, seed capital with mixed funding, microcredit, the capitalisation of unemployment benefits); new tax incentives (mainly involving Social Contributions, VAT, Personal Income Tax and the Corporation Tax) and some tools in support of internationalisation, such as deductions for expenditure on external consultants, trade fair attendance, etc. However, the opportunities opened up by the so-called third industrial revolution should not be overlooked, with the advent of 3D printing and nanotechnology and the options they provide, as well as their positive impact on the development of entrepreneurial activity. In this respect, it may be useful to quote relevant data from the same source: 59 % of start-ups are necessity-driven and 41 % are opportunity-driven.

In our view, it is essential for institutions to foster an entrepreneurial culture in order to develop the entrepreneurial spirit from the lowest levels of the education system—based on effort and the capacity to assume risk. At the same time, they should lower administrative, financial and fiscal barriers, particularly in times of crisis such as this, and, finally, promote an image that reflects the valuable role played by entrepreneurs in development and innovation and, therefore, in the progress of our society.

11.2 The Third Industrial Revolution and Opportunities for Starting Up New Businesses: Innovation

The terms "information society" and "knowledge society" are now commonly used by communicators and opinion leaders when attempting to describe some of the features of the world today or forecast future trends in social and economic development.

Politicians, academics and researchers use these two concepts to refer to the desirable societies towards which we should be moving, and, therefore, steering today's social, economic, political and cultural phenomena. Committing to this process, which has been described as a "third industrial revolution" (Castells, Era 27, Rifkin 2011), promises to improve the quality of life of the world's population by modifying the material base of societies.

As Herman Kahn, Brown and Martel anticipated in an almost premonitory manner in their book, *The Next 200 Years*, published in 1977, there are ample opportunities for business development in settings linked, connected or created—virtually or not—by using the *new technologies*. If this were to happen, the relative importance of the *quaternary sector* would increase considerably. This new sector includes the high technology industry, information and telecommunications technology and some forms of scientific research, as well as education, consultancy and the information industry in general.

The quaternary sector can be said to encompass areas of activity in which companies invest with a view to ensuring their future expansion, brought about by an innovative product line that will generate long-term profits. In these companies, research, development and innovation (R&D+i) tend to seek cost reduction, market expansion, innovative ideas, new methods of production and manufacturing, etc.

We should not forget that chief among the contributions of the authors cited above is their defence of the transition towards a different kind of services economy, an economy we might define as quaternary or postindustrial. In this new era, employees carrying out activities in the primary, secondary and services sectors would only constitute a minor part of people's efforts; increasingly, individuals would be self-employed and carry out their activities for their own well-being. These considerations in favour of entrepreneurial activities were pioneering thinking in the seventies and are, therefore, relevant to the issues we are addressing today.

This quaternary sector naturally encompasses the cultural and creative industries, fashion, tourism and the leisure industry, to all of which this paper refers. In fact, it was the opinion of the authors cited that people would prefer to carry out certain *quaternary activities* in their free time, and they expressly mentioned *single-player games, activities in which participants could compete against themselves, against others or against other communities*. In brief, it is quaternary activities that are, at present, considered to form the core of leisure pastimes and where cultural and artistic activities find their principal niche.

As empirical evidence shows, in order to be able to compete effectively, this kind of new enterprise must now take advantage of the opportunities provided by the new information and communication technologies, as well as face the challenges of new

production formats and systems in which innovation plays a significant role, particularly within the restrictive context of the European Union (EU)'s Stability Treaty. The social networks and strategic partnerships that can be set up in this area are powerful tools for the enhancement, innovation and promotion of cultural and creative products and services, low in cost and high in added value, and particularly significant in times of economic crisis.

A fact compatible with this reality is that in these sectors it is advisable to promote distance work (working for others and self-employed) from the worker's home, facilitated by the use of the communications media: telephones, mobiles, the fax and, particularly, the Internet. The possibility of reducing hours wasted in travelling to work hubs would significantly benefit workers and improve working conditions, with a positive impact on productivity in these sectors of activity and making it possible to take advantage of hidden opportunities concealed by the crisis.

11.3   Entrepreneurship in Culture, Fashion, Art and Tourism

In our view, it is essential, particularly during the current economic crisis, to measure the influence of cultural and creative projects on their surroundings from an economic dimension, making tools available in order to allow enterprises and entrepreneurs to develop their business models, and fostering the internationalisation of their actions, products and cultural services, as well as their mobility within the European context.

The European Commission's recent Green Paper entitled *Unlocking the potential of cultural and creative industries* provides a list of the sectors that compose the field of cultural and creative industries, including fashion and cultural and sustainable tourism. In international terms, both sectors—which are highly creative and entrepreneurial—are important to the European economy and competitiveness.

11.3.1   The Cultural and Creative Industries

In the EU, "cultural industries are those industries producing and distributing goods or services which at the time they are developed are considered to have a specific attribute, use or purpose which embodies or conveys cultural expressions, irrespective of the commercial value they may have" (European Commission 2010). It is likewise recognised in the EU that these industries also generate products and services that fulfil important symbolic functions, such as the capture, dissemination and legitimation of knowledge and values (Candace and Thornton 2005). On their part, cultural entrepreneurs can be viewed as "cultural change agents and resourceful visionaries […] [who] generate revenue from a cultural activity". Cultural enterprises can emerge from innovative proposals and initiatives and are economically sustainable, improve life and create cultural value, both for creative producers and for the users of cultural services and products.

Exploring how to foster an increase of entrepreneurs in the field of cultural and creative activities as well as new enterprises of this kind has become a major issue in the EU.

The cultural and creative industries offer genuine potential in response to the challenges of economic growth and employment in the EU—contributing to the *Europe 2020 Strategy*—and are significant promoters of economic and social innovation in many sectors, as culture represents an increasingly important part of the private economy. At present, cultural and creative activities contribute approximately 2.6 % to the EU's GDP (European Commission 2010).

We should not forget that individuals undergo cultural experiences and carry out activities that take place in cultural exchange venues, interacting with other individuals in specific social or individual environments, moved by their expressive, communicative, leisure or spiritual needs. For this reason, these activities are increasingly taking place in market environments where someone creates, produces, distributes or consumes a cultural asset or service in exchange for a price, wage or capital income.

Recent Ministerio de Cultura (2011) studies reveal that cultural and creative enterprises have great economic potential and are one of the most dynamic sectors in Europe. Likewise, the Spanish Ministry of Culture's *Plan de Fomento de las Industrias Culturales y Creativas* (Plan for the Promotion of the Cultural and Creative Industries) underscores the importance of culture as a wealth generator in economic terms.

In view of the fact that culture promotes and strengthens a sense of belonging, stimulates citizen participation and gives rise to social cohesion, facilitating the establishment of democratic governments and favouring close links between the environment and the activities carried out by different agents and entrepreneurs, the European Commission makes it clear that countries should make better use of the job-creating potential of innovative and creative cultural products; for example, in the field of culture-related online services, the media and the information society, or design, and should ensure that policies and measures in these areas are mainstreamed into their regional programmes. This perspective was already present in the wording of the EU's *Lisbon Agenda*, which considered that cultural and creative activities adapt particularly well to the objectives it proposed and, therefore, to lasting economic growth accompanied by qualitative and quantitative employment enhancement. It also appears in the recent report on *Culture as a factor for economic and social innovation*, which recalls the potential synergies between economics and culture, stressing "the role of media, culture and communications in generating change and growth in what Schumpeter called the capitalist 'engine'…" (Cunningham 2011).

The cultural and creative industries, therefore, are a principal point of interest for European institutions and, in consequence, have become the focus of the new cultural policy linked to the *Europe 2020 Strategy*. In this respect, we agree with the reflections contained in the report on the *Economy of Culture in Europe*, of 2006, which takes a firm stand in favour of innovation and competitiveness in the context of today's technological development.

11.3.2 Fashion

Fashion, defined as the production of clothes, accessories and shoes, occupies a significant place in industry, inasmuch as the textile and apparel manufacturing sector directly employs more than 200,000 people—7 % of all industrial employment—and contributes 4 % to gross value added (GVA). In 2006, consumption expenditure in the fashion sector was 17.750 billion euro; production amounted to 8.625 billion euro and exports to about 5.770 billion euro. Imports, for their part, were even higher, reaching 10.750 billion euro, according to data for 2008 obtained from the report produced by *Madrid Emprende* (2008) on fashion, design and manufacturing in the city of Madrid.

As in other industrial countries, this sector of Spanish industry needs to adapt to a changing market and must face the restructuring imposed by globalisation, with the considerable increase in competition from Southeast Asia and countries with a shorter history as members of the EU. The introduction of new technologies, increased innovation (in products and design as well as in production, management and distribution) and internationalisation have bolstered its viability and transformed it into a sector with potential, particularly after undergoing reforms that focused mainly on these aspects.

Current alternatives for the establishment of businesses by young entrepreneurs in this sector are in keeping with the present needs and preferences of society, as well as with young people's capacity to lead or adapt to the restructuring required. Thus, new online fashion marketing ventures can use the services of digital content editing companies in order to extend their range and improve sales, increasing their chances of surviving the crisis.

These alternatives are, no doubt, simplified by the support of several initiatives and institutional facilities. Among them are business incubators, whose objective is to promote the economy of regions or cities such as Madrid in the current economic crisis, by fostering learning and the improvement of SME competitiveness, attracting foreign investment and providing new entrepreneurs with a business infrastructure.

11.3.3 Tourism

The European Commission's Green Paper (Comisión Europea 2006), *Unlocking the potential of cultural and creative industries,* recommends that in tourism, cities and regions should use culture as a distinguishing feature to a greater extent, bolstering mutual cooperation in cultural tourism and promoting cooperation between culture and tourism, providing support to both sectors in business and marketing projects—both individually and jointly. In this field, the new technologies and youth with its new enterprises have a broad field of action.

The European Commission's communication (Comisión Europea 2010) on *Europe, the world's Nº 1 tourist destination,* (COM (2010) 352, final) of 2010,

sheds light on tourism as an economic activity that has an effect on cultural heritage, cultural exchange and creativity, with a very positive impact on economic growth and employment. The same source provides global figures that clearly reveal its relative importance in economic terms and describes the EU as the world's primary tourist destination, with 370 million international tourists in 2008 (40 % of the total worldwide). The European tourist industry generates over 5 % of EU GDP, encompasses 1.8 million businesses—primarily SMEs—and has generated around 9.7 million jobs.

The extraordinary cultural wealth of member countries, which is emphasised in COM (2010) 352, is a key factor in producing a sustainable, high-quality tourist project that generates high added value. It should be borne in mind that 300 of UNESCO's 800 World Heritage sites are located in the EU. It is also essential to take advantage of synergies established between the cultural heritage, contemporary cultural production and the success of the European Capitals of Culture experience.

For tourism to thrive, the potential of culture policies must be exploited to the full, mobilising tools and community support programmes that boost the tourism/culture combination at the same time. To this end, it would be very helpful if Spain and the other EU member states were to produce regional strategies in order to link current tourist attractions and develop the potential of others, drawing on a meticulous knowledge of the cultural heritage of every region, territory and city. The potential of cultural tourism should be noted in this regard; it is well-adapted to the capabilities of young people and the new technological alternatives and social communication networks.

Thus, the cultural dimension should be mainstreamed appropriately and without delay in tourism development strategies; a region's cultural potential can attract foreign investment, which is particularly important in times of crisis. Likewise, sharing experience among regions or local authorities can help to transfer knowledge about culture and ways of developing cultural tourism, which may lead to finding joint and cooperative solutions.

11.4 Conclusions

The knowledge society to which we belong is based on the swift development and dissemination of information and communications technologies, new technologies for which young Spaniards are particularly well-prepared and which represent a considerable human capital, especially in this particular moment with this economic, social and financial crisis. At the same time, we are immersed in an era of innovation; ICTs and innovation give rise to new business models and provide opportunities to interact and share experience, creating synergies between experts and entrepreneurs in various sectors, which underpins the success of many of the new enterprises undertaken at present, despite the economic crisis. The essential features of the social network markets should also be noted, together with their impact on the market in general and the development and continuity of business models that have sprung up as a result of the increased use of these networks.

Starting up and developing innovative enterprises will have a positive effect on the economy and will create jobs in the present complex labour environment, which has been particularly affected by the economic crisis. Encouraging the formation of these enterprises and providing them with the support of public institutions should become the fundamental concern of the new regulatory framework and its application, in view of their unique capacity to promote self-employment and suggest new paths to young entrepreneurs, in keeping with the critical environment in which businesses are developing.

Urging Spanish youth towards an entrepreneurial frame of mind is key, and should be undertaken by a variety of institutions, beginning with education, with the purpose of fostering an entrepreneurial culture that will lead to an entrepreneurial spirit, supporting its endeavours and capacity to assume risk. The need to promote from the different Spanish youth institutions towards an entrepreneurial culture should begin at the educational level. It should stimulate an entrepreneurial culture that, starting from the lowest levels of the education system, develop an entrepreneurial spirit supported in the effort and the ability to take risks (Pérez-Bustamante Yábar and Amaro Soteras 2012). With the purpose of steering our society in the right direction and at an effective rate, towards an acceptable way out of the present economic crisis, one of the most serious manifestations of which is youth unemployment.

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Chapter 12
Entrepreneurial Orientation and Innovation in a Context of Crisis: Some Relevant Factors in the Case of Family Firms

Unai Arzubiaga and Txomin Iturralde

Abstract This article analyses how some internal factors inherent to family firms influence the entrepreneurial orientation (EO) of small-and-medium (SME) family businesses, which are the most successful type of firms in maintaining jobs in a crisis like the present. In this sense, we predict that a family firm's image, its willingness to change, and the strategic involvement of its board of directors may positively influence its EO, which is one of the most used strategies among firms against crisis. We test these hypotheses by surveying the CEOs of 232 Spanish SMEs. The results of a structural equation model corroborate our hypotheses.

12.1 Introduction

Family businesses, which account for over 70 % of companies worldwide, have shown a greater ability to preserve jobs in times of crisis. In this sense, one of the key factors for this is the corporate entrepreneurship. Despite the fact that corporate entrepreneurship's potential and power to sustain family firms across generations, little research has investigated this strategic focus in family firms (Nordqvist 2005; Rogoff and Heck 2003). Thus, one of the major tasks for the relevant literature is studying entrepreneurial orientation (EO), whose one of the main factors is the innovativeness, in family firms.

One issue that requires attention is the question of which family firm variables affect the EO construct and how. We begin by inquiring how the effort to preserve the good image of a family firm may affect its EO. Second, we consider the possibility that a firm's willingness to change may affect its EO attitude. Finally, as we assume that

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advisors can increase a family firm's corporate entrepreneurship by complementing their tacit knowledge (Eddleston et al. 2008), we measure the direct effect of the strategic involvement of the board of directors (SIBD) on family firms' EO.

We thus contribute to the literature in two ways. First, we have developed a model through which we seek to demonstrate the causal relationship between the internal family firm variables indicated below and firm EO, thereby demonstrating the direct influence of these factors, yet unanalysed, on the EO of family firms. Second, our use of structural equation modelling (SEM) represents progress towards more robust techniques than those used in this field to date.

The rest of this paper is structured as follows. In the next section, we develop a model through which we demonstrate how some key internal family business variables affect family firms' EO and hypothesise the causality of each one. We then describe our method, the study's data collection approach, and the measurement of the variables. The next section presents the results of the study. Finally, we discuss those results, highlighting our major conclusions as well as the study's limitations and implications.

12.2 Literature Review and Theoretical Development

12.2.1 Family Firm Image and EO

According to the organisational identity theory, family firm image embodies how firm members suppose others see their organisation and how the firm leader would like the organisation to be perceived (Gioia and Thomas 1996).

Maintaining a positive family business image fosters a connection between the family and the business (Zellweger and Sieger 2010) and reinforces employees' feeling of belonging to the firm. The mission of maintaining the good name and, by extension, the good image of the family firm and its brand tends to keep family firm members working together (Dyer and Whetten 2006) and taking risky entrepreneurial initiatives (Memili et al. 2010). We thus hypothesise that family firm image directly and positively affects a family firm's EO:

> H1: In a crisis like the present, family firm image will enhance the entrepreneurial orientation of the family firm.

12.2.2 Willingness to Change and EO

Given today's global competition, diverse workforce, short business cycles, and rapidly changing environment, an attitude against change can have very negative consequences. Indeed, the lack of environmental adaptation strategies and rigid behaviour can ruin a formerly successful company, more in times of crisis. The

culture of a family firm is a significant aspect of the firm's ability to rapidly and effectively adapt to the changing demands of today's environment. This adaptation will be quicker and easier if the family firms' willingness to change is higher. Furthermore, as adapting to changing environmental demands requires the pursuit of entrepreneurial activities (Zahra et al. 2004) and as a willingness to change can accelerate this adaptation, we can conclude that a willingness to change will promote a family firm's EO. We thus propose a relationship between willingness to change and entrepreneurial orientation:

> H2: In a crisis like the present, willingness to change will enhance the entrepreneurial orientation of a family firm.

12.2.3 The Strategic Involvement of the Board of Directors and EO

In fact, boards of directors may assist firms' strategic planning through their influence on the owners. Its main activities are shaping the firm's mission, vision and values, identifying important strategic activities, and scanning the environment for new trends and opportunities, all of which comprise strategic involvement (Machold et al. 2011). The more SIBD, the more important activities will be identified, and the wider will be board's environmental scanning; the company will then engage in more entrepreneurial initiatives, projects, and activities, thus increasing its EO. We can thus conclude that a higher strategic involvement from the board of directors will enhance a family firm's EO:

> H3: In a crisis like the present, a high strategic involvement of the board of directors will enhance the entrepreneurial orientation of a family firm.

12.3 Methodology

12.3.1 Context of Study and Characteristics of Sample

This study focuses on Spanish family SMEs included in the SABI (Iberian Balance Sheet Analysis System) database for May 2013. Although many criteria can be used to delimit the 'family firm' concept, two were selected for this study (Astrachan et al. 2002): whether one family or more (a) had ownership control of the firm and (b) actively participated in its management. We considered 50 % as the minimum percentage of firm equity necessary for firm control (Arosa et al. 2010). At this point, the population under study included 1953 non-listed Spanish family firms. We obtained 232 responses (11.9 % of the sample). Interviewees were CEOs in 68.1 % of the cases and persons responsible for departmental management in the

rest of the cases due to their global vision. Techniques for reducing the potential for response bias were used successfully.

12.3.2   Measures and Questionnaire Construction

All items used to assess the dependent and independent variables were drawn from works published in well-known journals.

Entrepreneurial orientation. Firm-level EO, a multidimensional construct consisting of three first-order dimensions (innovativeness, proactiveness, and risk taking), was measured using the nine-item, eleven-point scale proposed by Covin and Slevin (1989).

The family firm image. This scale comprises five items on the eleven-point scale created and inspired by Dyer and Whetten (2006).

The willingness to change. This variable was measured on the four-item, eleven-point scale used by Kellermanns and Eddleston (2006).

The strategic involvement of the board of directors. This is a four-item, eleven-point scale used by Machold et al. (2011).

Control variables. We introduced several firm-level variables, such as firm size (measured as a log of the number of full-time employees), firm age (measured as the log of the number of years since the firm's founding), and sector (classifying firms as either 'service' or 'manufacturing', according to their activity type).

12.3.3   Data Analysis

We selected SEM because, unlike other multivariate statistical techniques, it provides a simultaneous overview of all phenomena under study, allowing an analysis of models that attends to unseen variables, also called 'factors' or 'constructs'. Thus, the model was performed in two steps: first, we analysed the measurement model through a confirmatory factor analysis (CFA) to give construct validity to the instruments and evaluate the psychometric properties of the scales. Second, we tested the hypothesis in the structural model (Kellermanns and Eddleston 2006; Memili et al. 2010) to evaluate the assumptions about the relationships and effects between the model's independent variables and the dependent one. Both approaches to the model were carried out through the EQS statistical package, version 6.2 (Bentler 1995).

12.4 Results

12.4.1 Analysis of the Measurement Model

12.4.1.1 First-Order Constructs

After some of the fit indices of the first-order CFA led us to dispense with several construct scale items: the measurement model acquired the appropriate values as suggested by the literature ($\chi^2(83) = 141.10$, BBNFI = 0.924; BBNNFI = 0.945; CFI = 0.966; IFI = 0.967; MFI = 0.882; and RMSEA = 0.055). Thus, the CFA results suggest that the measurement model fits the data well.

According to the reliability of the measurement scales, the Cronbach's alpha coefficient, the composite reliability index, and the Average Variance Extracted (AVE) coefficient all exceed the recommended minimum levels, as shown in Table 12.1. Regarding validity, the results shown in Table 12.1 confirm the convergent validity of the measurement scales, which was demonstrated through factor loadings (>0.6). Discriminant validity was tested in two ways. First, we performed a chi-square test comparing this model to a model with freed correlation. In all cases, the chi-square difference was significant at the $p < 0.001$ level, further indicating discriminant validities among all pairs of constructs in every measurement model. Second, the confidence interval for each pairwise correlation estimate (i.e. ±two standard errors) should not include 1 (Anderson and Gerbing 1988). This condition was satisfied for all pairwise correlations in the three measurement models.

The multidimensional nature of the EO construct required us to perform a second-order CFA.

Table 12.1 Validation of the final measurement model-reliability and convergent validity

Source	Constructs	Items	Standardised loading	Robust t-value	CA	CR	AVE
Memili et al. (2010)	Family firm image				0.885	0.902	0.212
		FFI1	0.912	13.888			
		FFI2	0.873	11.857			
Kellermanns and Eddleston (2006)	Willingness to change				0.787	0.758	0.192
		WTC1	0.825	9.125			
		WTC2	0.792	9.900			
Machold et al. (2011)	Strategic involvement of board of directors				0.943	0.945	0.135
		SIBD1	0.968	15.222			
		SIBD2	0.877	14.612			
		SIBD3	0.883	12.977			

S-B χ^2 (83 df) = 141.1025 ($p = 0.00007$); BBNFI = 0.924; BBNNFI = 0.945; CFI = 0.966; IFI = 0.967; MFI = 0.882; RMSEA = 0.055; Cronbach = 0.800

Source: Own elaboration

CA Cronbach's alpha, *CR* Composite reliability, *AVE* Average variance extracted

***$p < 0.001$

Table 12.2 Validation of the final measurement model-reliability and convergent validity

Source	Second-order construct	Dimensions	Standardised loading	Robust t-value	CA	CR	AVE
Covin and Slevin (1989)	EO				0.800	0.946	0.027
		INN	0.739	1			
		PRO	0.917	5.961			
		RIS	0.601	5.133			

S-B χ^2 (95 df) = 153.2887 (p = 0.00007); BBNFI = 0.918; BBNNFI = 0.952; CFI = 0.966; IFI = 0.967; MFI = 0.882; RMSEA = 0.052; Cronbach = 0.800

Source: Own elaboration

CA Cronbach's alpha, *CR* Composite reliability, *AVE* Average variance extracted

***p < 0.001

12.4.1.2 Second-Order Construct

The second-order CFA examined whether the three EO subdimensions converge on a single latent factor. In this regard, the model fit indices are satisfactory (χ^2(95 df) = 153.2887; BBNFI = 0.918; BBNNFI = 0.952; CFI = 0.966; IFI = 0.967; MFI = 0.882; and RMSEA = 0.052), suggesting that the measurement model fit the data well. Convergent validity was demonstrated, as the standardised factor loading levels exceeded 0.4 and are 95 % significant in all cases. Furthermore, as Table 12.2 shows, the Cronbach's alpha values, the AVE, and the composite reliability are above 0.7, 0.6, and 0.5 respectively. Finally, discriminant validity was checked through the two ways mentioned in the first-order construct analysis, confirming its existence. These results suggest that the EO can be understood as a second-order reflective construct.

12.4.2 Testing the Hypothesised Structural Model

As in the CFA process, the hypotheses were examined using the EQS 6.2. The paths between constructs represent individual hypotheses, and each was assessed for the statistical significance of the path coefficient. The hypothesis relationships were tested one by one into a full model. Table 12.3 reports the results of the final structural model, showing the path coefficients, t-values, and construct relationships, supporting the three hypothesis: H1 ($\gamma1$ = 0.139, t = 2.087), H2 ($\gamma2$ = 0.597, t = 5.794), and H3 ($\gamma6$ = 0.167, t = 2.470).

Table 12.3 Hypothesis testing

Hypothesis	Variables	Path coefficient	t-value	Result
H1	Family firm image is positively associated with the entrepreneurial orientation of the family firm	0.139	2.087	Supported
S-B χ^2 (100 df) = 196.2177 (p=0.07); BBNFI=0.894; BBNNFI=0.924; CFI=0.944; IFI=0.945; MFI=0.813; RMSEA=0.065; Cronbach=0.800				
H2	Willingness to change is positively associated with the entrepreneurial orientation of a family firm	0.597	5.794	Supported
S-B χ^2 (100 df) = 161.2821 (p=0.10); BBNFI=0.913; BBNNFI=0.952; CFI=0.964; IFI=0.965; MFI=0.876; RMSEA=0.052; Cronbach=0.800				
H3	Family firms with a great strategic involvement of the board of directors will have a higher entrepreneurial orientation of a family firm	0.167	2.470	Supported
S-B χ^2 (100 df) = 194.8630 (p=0.08); BBNFI=0.895; BBNNFI=0.925; CFI=0.945; IFI=0.946; MFI=0.815; RMSEA=0.064; Cronbach=0.800				

Source: Own elaboration

12.5   Discussion, Conclusions, and Implications

Taking the resource-based view, our study has tested the effect that several key internal family firm variables have on the EO of this type of firm. In times of crisis, it is more necessary than ever for companies to address entrepreneurial initiatives, on the one hand, for offering products and services with greater added value and, on the other hand, for gaining competitiveness against its competitors. In that sense, our empirical results support the three hypothesised relationships. The first one, which says that in a crisis like the present, the family firm image will enhance the entrepreneurial orientation of the family firm, reinforces the importance that image plays in a family firm's strategy. Indeed, recent research based on organisational identity theory and the resource-based view suggest that the family firm's brand and, by extension, its image are key sources of competitive advantage (Zellweger and Sieger 2010). This empirically supports the idea that family firm members tend to work together (Dyer and Whetten 2006), take risky entrepreneurial initiatives (Memili et al. 2010), and enhance the EO of the firm in order to maintain the good name and, by extension, the good image of the family firm and its brand, becoming more competitive firms in the times of crisis.

Concerning the hypothesis that in times of crisis like the present the willingness to change will enhance the entrepreneurial orientation of the family firm, the empirical data suggest that cultural factors may play an important role. Indeed, a firm's internal culture enables and catalyses rapid and effective adaptive responses to today's changing environment. In fact, the willingness to change derived from a family culture will allow quicker and easier adaptation, more in times of crisis. Thus,

given that entrepreneurial initiatives are key tools for adapting to a rapidly changing environment (Zahra et al. 2004), it seems logical to conclude that willingness to change will promote the EO of a family firm (Kellermanns and Eddleston 2006).

Third, the empirical test supports the hypothesis that in a crisis like the present, a high SIBD (Machold et al. 2011) will enhance the entrepreneurial orientation of the family firm. Given that boards shape their firms' mission, vision, and values, identify important strategic possibilities, and scan the environment for new trends and opportunities, it seems natural to conclude that the more SIBD, the more important activities will be identified, and the wider the board's environmental scanning will be. This would cause the company to engage in more entrepreneurial initiatives, projects, and activities, thus increasing the firm's EO. A higher SIBD will also serve as an important source of expertise and perspectives, facilitating new entrepreneurial initiatives. As it has been mentioned above, in times of crisis the EO of a family firm becomes one of the most important tools for competing with others.

From a social point of view, the enhancing effects that these three variables have in the EO of family firms will be crucial for the survival of this type of businesses in times of crisis. Specifically, the survival of these firms will permit the preservation of a high number of jobs in different countries of the global economy.

This work has several limitations. The main one is the research's basis on cross-sectional data, which makes it impossible to ensure that the causal relations identified in the results will not vary or lose their significance over time.

This study provides opportunities for future research. One possibility is replicating it in different geographical contexts and using different samples. Another possible future line of research is investigating the direct effects that internal family firm variables may have in the performance of the family firm, without considering the mediating effect of the EO.

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Chapter 13
Entrepreneurial Risk Without Return? Empirical Evidence from Self-Employed Accountants in Germany

Robert Rieg

Abstract Economic theories of entrepreneurship state that the higher risks of self-employment should be compensated by higher profits compared to income earned by those being on the payroll of firms. Yet, this seems not always the case given the evidence provided in this chapter: Self-employed accountants in Germany earn on average less than full-time employees. Only a minority earns higher profits. The evidence is reconciled with economic theory of entrepreneurship through considering situational and preferential causes. Firstly, self-employed accountants face lower risks than other professions; secondly they compensate lower earnings with higher preferences for independence and autonomy. A further factor yet not often considered in entrepreneurship research is the service portfolio offered. Accountants can influence their returns through the services they offer. A significant amount of the respondents chose less profitable services. The paper contributes to the literature on economic analysis of entrepreneurship in providing evidence not available before and on stressing the importance of evaluating peculiarities of professions as well as contexts in order to understand decisions for self-employment.

13.1 Introduction

The purpose of this paper is twofold: first, to test the claim that entrepreneurs should earn a risk premium compared to employees, second, to explain the test results with the specific situation and preferences of self-employed accountants.

Economic theory explains decisions for self-employment compared to be employed by a firm through cost-benefit considerations. Since income risks are

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higher for self-employed, risk-neutral or risk-averse individuals would expect higher income compared to their previous or similar employments at firms. The difference is called risk premium. While in general true, this paper provides evidence that self-employed accountants do not earn a risk premium, even after controlling for several context factors.

An important goal of scholarly discussion of entrepreneurship is to understand decision-making of individuals in starting a business and the contingency factors influencing such decisions (Audretsch 2012). Scholars apply a multitude of approaches to analyse decision-making, motivation and contingencies of nascent and incumbent entrepreneurs. Yet, only empirically tested and grounded theories can inform scholars and practitioners. Empirical studies like the paper at hand contribute to the growth in insight.

The specific contributions of the paper are as follows: decisions for self-employment are, consistent with the literature, driven not only by profitability compared to paid employment but also by other considerations as well as perceived benefits of autonomy and satisfaction. The study adds a further context factor to the literature: profitability may be influenced by the specific risk situation of a certain profession. While business cycles in general and especially the latest recession around the years 2010–2012 may influence the overall business climate, it seems that the accounting profession was less affected by that.

Previous studies on the relation of risk and return for self-employed individuals compared with paid employment focused on large diverse samples mainly from the USA (for example Hamilton 2000). Their results do not support the notion of higher returns as a compensation of higher risks for entrepreneurs, to the contrary. Yet, it is not plausible to assume a time- and scale-invariant relation: samples at different points in time with different subgroups in a sector and of different cultural and political contexts could reveal different results.

Accounting is one profession where we could expect higher returns for self-employed individuals given higher entry qualifications than a lot of other professions or activities and increased complexity of accounting regulations which should transform in more valued services.

After developing hypotheses we constructed a conceptual model and derived a multiple linear regression model for empirical testing. We tested the regression model with data from a survey on self-employed accountants. The results show that median profit per capita for self-employed accountants is lower than gross income of fully employed accounting staff. We explain this by (a) the lower risks compared to other professions and jobs, (b) the pursuit of autonomy and higher job satisfaction in self-employment and (c) the relatively low-priced services ("commodities") offered by many accountants.

The paper contributes to the literature of economic entrepreneurial theory threefold: (a) it shows that risks of self-employment are not per se higher than for fixed-term employments, one should carefully evaluate the specific situation of the targeted area of self-employment; (b) latent entrepreneurs may consider additional factors and weigh them differently in their decisions to start a business. Preferences may vary between individuals; (c) effects of service portfolio on profitability.

In total while economic theory of entrepreneurship maybe a valid description in general, specific details have to be analysed in order to understand and explain self-employment decisions more fully.

13.2   Theoretical Backgrounds

13.2.1   Theories of Self-Employment Decisions-Making

Audretsch (2012) states the multitude of approaches and perspectives of entrepreneurial research. One category in entrepreneurial research is the focus on the organisational context and its prevalent theoretical framework of income choice: individuals make decisions for or against self-employment by weighing cost and benefits of self-employment versus paid employment (Douglas and Shepherd 2002). That raises two subsequent questions: What factors influence such a decision and do self-employed experience the expected benefits after their decision?

The literature mentions plenty of contingent factors which can be grouped in (a) personal characteristics like education or self-perception as entrepreneur, (b) firm-specific characteristics like amount of working hours or starting a business with others and (c) environmental characteristics like industry, regulation or cost of starting a business (Cholotta and Drobnič 2009).

Looking past an initial decision to begin with self-employment, some argue the main success factor of entrepreneurs is their survival in business (van Praag 2003). Yet, economic theory sets the hurdle higher: self-employed individuals should earn a profit on average higher than with paid employment because of the higher uncertainty they face (Ravi Kanbur 1982). The literature offers several explanations for the so-called income differential between self-employed and paid employed (Hamilton 2000):

Investment and agency: cross-sectional differences exist due to better exploitation of an individual's social and human capital investment by her while lack of agency reduces steepness of income profiles compared to paid employment.

Matching and learning: individuals match their abilities (self-selection) to areas where it fits better or learn to adapt to such an area and quit respectively if it does not fit.

Superstar: due to minor differences amplified over time, some can earn extremely more than others which attract followers, but only a minority will be superior. The median income could then be lower than for paid employed individuals.

Compensation: lower earnings are compensated by other benefits like independence, autonomy, job satisfaction.

Return on entrepreneurship and self-employment is more volatile and its distribution is extremely skewed compared to paid employment (Hall and Woodward 2010; van Praag and Versloot 2007). According to Hamilton (2000) the median entrepreneur earns less than her paid counterpart. He explains the negative income differential explained mainly by compensating factors for income i.e. self-employed sacrifice income for other benefits.

However, the evidence is inconsistent, study results depend on samples chosen, time frames and sectors (Parker 2009). Most studies focus on a large and diverse group of self-employed and do not distinguish different professions which could result in differing evidence (Hamilton 2000). Especially freelancers and self-employed in service industries are seen as gap in entrepreneurial research (Kitching and Smallbone 2012).

Additionally, we hypothesise the impact of the services offered on profitability. Since business can and do offer different products and services, their profitability will differ depending on their service and product portfolio. A more detailed look into such portfolio decisions is necessary to understand profit dispersion of self-employed. This focus seems to be an open research question.

We focus on self-employed in accounting for two reasons: (1) Accountants are a homogeneous group regarding qualification, general services offered, economic and political situation, differences concerning the proposed factors influencing profitability should more easily recognisable. (2) Accounting professionals are one of a group of freelancers and service professionals which are seen as a gap in entrepreneurial research (Kitching and Smallbone 2012). For practical reasons and because it offers a perspective different from the often researched US samples, we will focus on accountants in Germany.

13.2.2   Self-Employment in Accounting

External accountants, be it self-employed individuals as well as firms, provide external business advice for firms and not-for-profit organisations (see e.g. Bennett and Robson 1999; Gooderham et al. 2004). Their service portfolio consists mainly of accounting tasks, auditing and tax advisory as well as general consulting. The accounting tasks consist of bookkeeping, i.e. entry of transactions, preparation of preliminary P&L statements, year-end accounting and preparation of financial statements (Everaert et al. 2010).

The main research stream on external accounting services concentrates on the auditing function (e.g. Niemi 2004); much lesser research focuses on tax accounting services, at least from an organisational point of view. The least researched group comprises self-employed accountants who do not offer—or are not allowed to offer—auditing and tax advisory services. This is especially true for German accounting firms and accountants.

We exclude auditors (or public accountants) and tax advisors for the high level of regulations (Baker et al. 2001) and highly challenging nationwide exams. Both form high market entry barriers and restrict the number of market participants which reduces competition and risks of service provision. Given that, the profitability of public accountants and tax advisors is less driven by market forces. Additionally, since their services are defined by law and firms are required by law to mandate them, there is only a low degree of freedom for their service portfolio. Yet, a high degree of freedom in making such decisions is central to our research and we focus

on external accountants who do not offer auditing and tax advisory—in the following referred to as self-employed accountants.

Concerning accounting services for self-employed accountants, their services are defined in part by the regulation for tax advisors (StBerG, short for Steuerberatergesetz, law on tax advisors). By law, self-employed accountants are allowed to offer (§6 no. 3 and 4 StBerG): (1) entry of transactions regarding debtors, creditors, exchange of goods and services (bookkeeping) and (2) payroll accounting.

They are not allowed by law to prepare annual reports (balance sheet, income statement) or preliminary and final turnover tax returns. But, since there is no regulation in Germany concerning cost accounting and general business consulting, they are free to offer additional services of these kinds. So they have a certain degree of freedom in making services decision.

Compared to around 12,000 public accountants and more than 70,000 tax advisors in Germany the number of self-employed accountants is estimated around 20,000 in contrast to more than 150,000 full-paid employees in accounting (BVBC e.V., personal communication).

The specific risk situation of accountants seems to be different from that of other self-employed for several reasons. Although many European countries including Germany, albeit to a lesser degree, faced a recession starting from 2009, demand for accounting services remained on a constant level or even grew. This is in part explainable by the trend for more regulation and more complexity in accounting standards which in turn benefits specialised professionals and reduces the number of small- and medium-sized firms willing or being able to employ paid accountants.

13.2.3   Hypotheses

The previous discussions led to two hypotheses. The first hypothesis proposes a positive income differential for self-employed accountants; the second hypothesis proposes factors moderating the magnitude and direction of this income differential.

Hypothesis H1: median income of self-employed in accounting is higher than paid employed. Rationale: given the higher risks of self-employment, they should be compensated by higher income. Since income distribution is skewed and not normal it is more appropriate to compare median values.

Income could be measured by profit but since profit is prone to discretionary decisions of self-employed we will compare at first revenue as an indicator of market performance. Subtracting a median cost margin of all respondents will allow to calculate the median profit.

Hypothesis H2: Income of self-employed is moderated by additional contingency factors. These factors are autonomy (Hamilton 2000; Carsrud and Brännback 2011), experience in self-employment, measured in years (Robinson and Sexton 1994; van Praag et al. 2013), gender (Gottschalk and Niefert 2013) and service portfolio offered.

13.3 Methodology and Data

13.3.1 Statistical Inference

13.3.1.1 Hypothesis 1: χ^2-Test

Since the sample we surveyed consisted only of self-employed accountants and we want to compare returns for self-employed to paid employed individuals we have to compare the results of our survey with other survey data. Here we use the data of the latest survey on salaries of paid employed accountants of the BVBC e.V. in 2012.

The statistical inference is based on the test of equality of both surveys, i.e. a χ^2-test for the two groups of data. The null hypothesis is that both groups earn the same.

13.3.1.2 Hypothesis 2: Multivariate Regression

Given one dependent variable (sales or profit) and several independent variables which can interact we chose to apply multivariate regression. An a priori power test with $\alpha = 0.05$, $\beta = 0.95$, a medium effect size and five predictors results in a required sample size of $n = 138$ (calculated with G*Power 3.1.5, see Faul et al. 2007).

The regression equation reads as follows:

$$Sales = \beta1 + \beta2 * motivation + \beta3 * Experience + \\ \beta4 * gender + \beta5 * low\_portfolio + \beta6 * high\_portfolio.$$

Motivation is a dummy variable which captures the answers for the main motivation to start a business: higher income (value 1) or autonomy (2) or both (3).

The services offered are divided into two groups: one with low hourly rates consists mainly of typical bookkeeping activities; it is named low_portfolio. The second consists mainly of consulting and management accounting services with significantly higher hourly rates; it is named high_portfolio.

13.3.2 Sample, Questionnaire, Data and Survey Procedure

Since our target population is accounting professionals we could resort to a long-standing cooperation with a professional association of financial and management accountants in Germany (BVBC—Bundesverband der Bilanzbuchhalter und Controller). With them we conducted several surveys on different matters over the years. One of these surveys concerned self-employed accountants: it was performed for the third time in 2012. In the 2012 survey, we focussed on testing the hypotheses mentioned before. Base year for the data was 2011.

We developed the questionnaire in spring 2012 and did a pretest with several accountants. After changes and suggestions were incorporated, the association BVBC sent a link to the online survey via e-mail in June 2012 to its members who are self-employed. The self-employed can take part in a mailing list, it encompasses around 900 members. The members had 3 weeks to fill in the questionnaire and were reminded once. To increase participation several prizes were offered (books, attending seminars for free).

In total, 176 respondents filled in the questionnaire though not all of them completely; so some statistics will show lower sample sizes due to missing data.

13.4 Main Results

13.4.1 Descriptive Statistics

Nearly a half of all respondents work in financial accounting (47 %), while only 9 % concentrate solely on management accounting tasks, 16 % do both and a further 29 % provide other services. Fifty-five percent of all respondents were male, 45 % female. Most of the respondents have long-standing experiences as self-employed as well as working as paid employee.

An interesting analysis is the range of services offered by the respondents (see Fig. 13.1). As is indicated in Fig. 13.1, many self-employed accountants concentrate on bookkeeping and related services. These are also those which have lower rates to charge to clients that the services in the lower part.

Comparing the previous surveys with the actual one, we can see from Table 13.1 an increase in revenues which should lead to an increase in profits as well. The compound average growth rate for median revenue is 3.6 % per year. The several surveys showed a steady upward trend in prices, revenues and profits. There were no signs of a weak economic condition affecting profitability or the overall situation of accountants in Germany.

13.4.2 Test Results Hypothesis 1: Income Differential

We compare the revenue per capita for self-employed with a median of 40.000 EUR and the gross income of paid employed with a median value of 45.000 EUR. The χ^2-test on equality results in a value of 14.05 (df = 16) which is higher than the critical χ^2 value of 9.3 on a 1 %-statistical significance level, so there is a large probability for differences between both groups. The χ^2 value can be transformed into the effect size w (Cohen 1988); here the value is 0.21 which can be seen as a small to medium effect. The differences and effects are higher when we compare the net earnings before tax per capita to gross income. Given a median return on sales

Offered services of German self-employed accountants
(n=131)
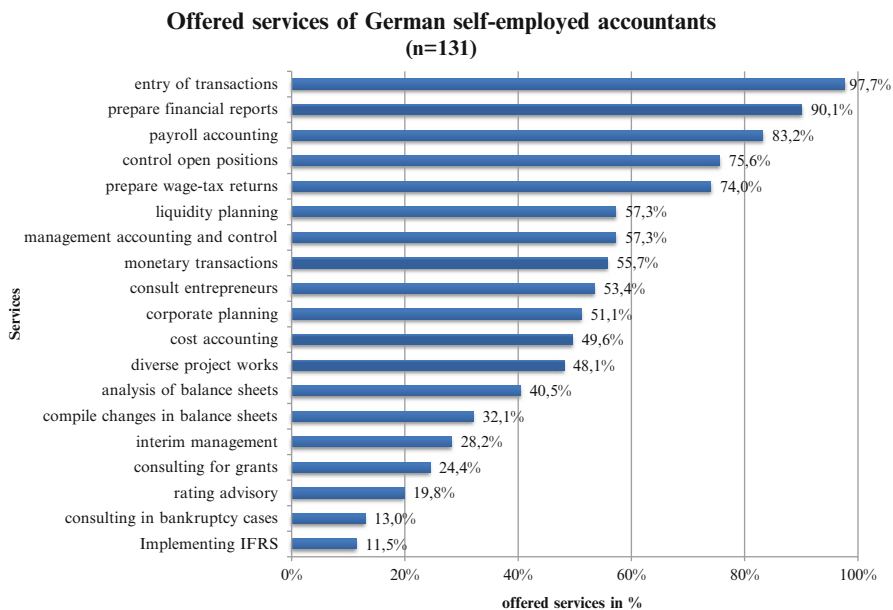
Fig. 13.1 Services offered by respondents

Table 13.1 Revenue trend for self-employed accountants

Base year of survey	2005	2008	2011
Average revenue [EUR]	38,170	44,787	53,330
Median revenue [EUR]	35,000	40,000	43,250
Sample size [no.]	116	58	96

(earnings before tax/revenue) of 51 %, the median self-employed accountant would receive a profit before earnings of around 21.000 EUR. Clearly, hypothesis 1 is refuted, there is a large and negative income differential for self-employed accountants.

13.4.3 Test Results Hypothesis 2: Contingency Factors

The test for multiple regression yields a coefficient of determination (R^2) of 0.024, so the regression explains only 2.4 % of all variance, this is equivalent to Cohens $d = 0.16$ which indicates a small effect. Considering the skewed distribution this could be interpreted as a signal to use other regression techniques.

The partial correlation coefficients for the independent variables are: (1) less profitable services −0.032, i.e. a weak negative influence on revenue, (2) highly profitable services with 0.063, i.e. a weak positive influence on revenue, (3) gender:

−0.173, i.e. a medium negative influence on revenue which means that female accountants earn less than male accountants, (4) motivation: +0.140, i.e. a medium influence of independence on revenue and (5) experience as self-employed (0.097) has nearly no influence.

The correlations between these variables show that female accountants are more motivated by independence than male ones; highly profitable services are offered more often by male accountants. Yet, one should be cautious in interpretation, since the values of correlations are rather small.

13.5   Discussion

The aim of the study was to shed light on the economic situation and decision-making of self-employed accountants, a profession not empirically analysed in detail. Main results are the negative income differential and the modest influence of several dependent variables on per capita revenue. This seems surprising given the notion of "return on expertise" and "return on education" but it is consistent with studies focusing on larger samples (van Praag and Versloot 2007). Several explanations are possible for the negative income differential: accounting services may have become "commodities" so one cannot charge high rates anymore as may have been true in the past. Self-employed may have started their business with higher income expectations and then adapt to a lower income and justify that in some sense with their feeling of independence.

While economic theory suggests higher risks for self-employment, our results are not in line with that notion. Given the steady increase in prices, revenue and profits over the years (see Table 13.1) the evidence may hint to equal or lower risks of self-employment compared to paid employment. For example, the economic weakness and tendencies of recession is not showing up in the data, to the contrary.

A limitation of the study is the statistics employed. The regression results should be viewed with caution since the skewness of revenue and profit data distorts regression results. Further analysis should apply advanced methods to avoid biases, for example, quantile regression.

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Chapter 14
Innovation Through Total Quality Management Elements, and Customer Loyalty in Spanish Financial Institutions

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Abstract Customer relationship marketing (CRM) and total quality management (TQM) share a common principle that has become particularly important for financial institutions following the 2008 financial crisis: creating customer value to generate customer loyalty. The present study analyzes the relative influence and development levels of the component elements of TQM models on CRM strategies to improve financial institution customer's loyalty; an issue that has special relevance in a situation of economic crisis. Data gathered by means of a survey sent out to 53 Spanish banks and savings banks shows that, while all TQM components are considered necessary in generating customer loyalty, "customer and market orientation of all business agents and activities" is seen as especially important. The results also showed that there is insufficient development in establishing "human resource management policies," "process management geared toward continuous improvement," and on "establishing a system to evaluate results using wide-ranging indicators."

14.1 Introduction

According to a report by the Conference Board (cited by Daemon Quest 2007), US firms loose an average of 50 % of their clients every 5 years. Consequently, there is great preoccupation over the subject of customer attrition; it is a common theme for

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top management to set churn reduction as a strategic priority. As markets become more open and competitive, firms tend to develop defensive strategies to avoid customer loss (Fandos et al. 2011). Increasingly, firms are realizing that it is advantageous for them to develop long-term relationships with their clientele and reap the benefits of a loyal customer base (Gummesson 2008; Buttle 2009).

The relationship between entrepreneurial and marketing orientations is a strategic response to the turbulent environments faced by firms today. Further, marketing provides an effective medium for achieving entrepreneurship (Bhuian et al. 2005; Morris and Paul 1987). Customer relationship marketing (CRM) is the key for the entrepreneurial process. A firm's entrepreneurial orientation has three dimensions: innovativeness, risk taking, and proactiveness (Morris and Paul 1987). A firm's marketing orientation refers to the size and consistency of its investment in marketing activities and people, and includes the firm's adoption of the marketing concept (i.e., CRM).

CRM is a term that includes all marketing actions oriented toward establishing, developing, and maintaining long-term relationships with customers (Weinstein and Johnson 1999). The basic goal of CRM is to develop customer loyalty in order to generate repeat purchases and recommendations to other potential customers (Buttle 2009) as well as reduce new service costs (Heskett et al. 1997).

The Spanish financial sector is highly competitive (Castillo et al. 2011). Because of this, profit margins are on a negative trend and customer or relationship banking is becoming prevalent (Funcas 2007). The main characteristic of this new form of banking is that it makes customers the center of the banking business by aiming to create long-term—and profitable—relationships with customers. The loss of trust generated by the financial crisis is counterbalanced with increased transparency and customer service (Castelló 2011). Basically, this trend is a move by financial institutions to join firms in other sectors by embracing customer loyalty as their main goal. This is achieved by implementing customer relationship strategies (Faine and Tornabell 2001; Fandos et al. 2011).

Section 2 will show that, despite the above, many firms implement these strategies but are not able to improve customer loyalty (Day and Van den Bulte 2002). There is evidence that points toward internal causes for the limited success of these strategies (Iglesias et al. 2011). The following section of the paper highlights the increasing connections between CRM strategies and total quality management (TQM) models. The basic goal of both approaches is to create customer value and, thus, customer loyalty (Mele 2007). Services are an especially good sector in which to witness these overlapping goals (Horovitz 2005). Within these, financial institutions are an ideal example of how service quality can contribute to a firm's differentiation (Faine and Tornabell 2001; Fandos et al. 2011).

Finally, in Sects. 5 and 6 the authors offer the results and conclusions of a survey to measure the relative influence and development level of the component elements of TQM models on CRM strategies to improve Spanish financial institution customer's loyalty. For this survey, a questionnaire was mailed to marketing directors of 53 Spanish banks and savings banks.

14.2 Relationship Marketing and Client Loyalty

The relevance of relationship marketing was reaffirmed in 2007, when the leading professional association in the field—the American Marketing Association (AMA) (2007)—defined marketing as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large." Relationship marketing is a customer-centered approach that studies the subset of a firm's activities that relate to the establishment of relationships with clients or other agents. In order to do this effectively, the client's needs and perceived value structure must be known (Reinares and Ponzoa 2002). Loyalty is a result or consequence of this process. If a firm knows its clients, establishes strong connections with them, and offers them what they are looking for in a way that adds value they will reward the firm with loyalty (Reichheld 1996; Weinstein and Johnson 1999).

On the other hand, as shown by Sheth (2002), efforts to implement relationship marketing have evolved toward "customer relationship management" (CRM). Teo et al. (2006) define CRM as the strategy of identifying, understanding, and predicting customer behavior in order to create long-term relationships. Similarly, Sheth and Parvatiyar (2002) indicate that CRM is a global process and strategy for specific client acquisition, retention, and association that should lead to a greater level of loyalty.

Nevertheless, implementation of CRM strategies does not always lead to improved customer loyalty and retention (Day and Van den Bulte 2002). According to a 2006 study by Forrester Research, just 10 % of participating executives were fully satisfied with the way CRM strategies had helped them achieve their goals (Richards and Jones 2008). Furthermore, according to research by the Gartner Group in 2001, just 3 % of firms are successfully implementing CRM projects (Mendoza et al. 2007). These factors point to the fact that despite CRM's popularity, success is not guaranteed. Even those that clearly define its benefits or methods or investing in the necessary technology do not always see the intended results. Internal organizational factors are affecting these firms' successful implementation of CRM strategies (Garrido and Padilla 2011).

In this sense, Day (2003) indicates that the best results are obtained by integrating the three components of customer relationship: a global "orientation" toward making customer retention a top priority, quality "information" on the relationship, and finally an "internal configuration" geared toward creating customer relationships. On the other hand, Renard and Cabré (2005, 2008) lay out four necessary steps to implement a CRM strategy: (a) define the firm's mission, values, and culture; (b) design the strategy itself; (c) design and implement CRM processes—the types of services, privileges, or benefits that the customer has access to through his relationship with the firm; (d) acquire the human and technical means to implement each of the CRM processes. Iglesias et al. (2011) add that it is also necessary to have an organizational culture that shares these

two values: customer orientation and employee caring. Several authors agree with Iglesias; the importance of an organizational culture that shares these values has been noted by Gronroos (1997), Winklhofer et al. (2006), and Chakravorti (2011), among others.

Finally, in the specific case of Spanish financial institutions, internal marketing is of paramount importance. Employee competition, motivation, and involvement are crucial in order to achieve differentiation, competitiveness, and customer loyalty (Aguirre and Aparicio 2002; Huete et al. 2003; Barnes et al. 2004).

14.3 Relationship Marketing (CRM) and Total Quality (TQM)

The concept of quality has evolved over time. Currently, it incorporates multiple organizational requirements for creating products and services that satisfy customer's needs. The idea of "quality vision" (Mele 2007) defines quality not just as a lack of errors, but as the creation of value through a system of continuous improvement throughout the organization—including its human resources—with the goal of satisfying the explicit and implicit expectations of customers and other stakeholders (Dean and Bowen 1994; Curry and Kadasah 2002). This evolution has led to the idea of TQM. TQM is a global and systematic management approach that emphasizes continuous improvement in order to satisfy the explicit and implicit expectations of consumers and other stakeholders. This is widely seen as the only way to assure long-term success (Dean and Bowen 1994; Summers 2000; Mele and Colurcio 2006).

There is significant overlap between this evolved understanding of quality and the new approach to relationship marketing. Both TQM and CRM derive from the same business philosophy: customer satisfaction and long-term profitability. These are achieved by integrating and coordinating all organizational activities and resources around these two goals (Zineldin 1999; Mele 2007). Noting this coincidence, several researchers have studied the synergies between both approaches. For them, prior implementation of TQM is a key factor for a CRM strategy to succeed (Morris et al. 1999). The importance of TQM is evident both at the operative level—the tools and techniques used in this approach to quality may be useful in implementing a CRM strategy (Morris et al. 1999; Barnes et al. 2004)—as well as a more global level—relationship marketing strategies may be enhanced by the cultural, strategic, and operational dimensions of TQM (Curry and Kkolou 2004). A TQM approach helps align all organizational resources (human and physical), business processes, and the organizational structure itself with the development of satisfactory, value-creating customer relationships (Webster 1994).

To summarize, the overlap between CRM strategies and TQM models mostly makes itself evident from an operational perspective. TQM tools and techniques may contribute to create the internal conditions that favor CRM strategies, as mentioned in Sect. 2 (Morris et al. 1999; Barnes et al. 2004); so both approaches may be considered as complementary (Mele 2007).

14.4 Empirical Research

14.4.1 Goals

The first goal of the study is to analyze the influence of the different elements of a total quality management (TQM) system on the successful implementation of relationship marketing (CRM) strategies. A CRM strategy is successful if customer loyalty is improved.

The second goal is to analyze how developed these TQM elements are in the Spanish financial institutions under scrutiny. This allows the authors to observe gaps between the importance and development of each of the elements and make recommendations toward the successful implementation of CRM strategies.

14.4.2 Sample and Methodology

In the Spanish financial sector, banks and saving banks have a market share of more than 94 % for the majority of industry benchmarks. A selection of these institutions was made with data from a 2008 statistical release by Banco de España. Several entities were excluded for lack of penetration in the retail banking market since CRM strategies and TQM models are more pervasive in this type of banking. The final selection includes 53 banks and savings banks that manage more than 92 % of the industry's assets.

Data was obtained through "primary" information sources. A questionnaire was sent physically and electronically to the marketing directors of the selected financial institutions and built around the seven criteria used by one of the most prominent TQM approaches, the 1997 version of the Malcolm Baldridge National Quality Award. The different Total Quality models were originally developed as a way to measure criteria for various Quality Awards. Eventually, these models started to be used as tools for implementing TQM. Forty financial institutions returned their questionnaires, representing 72.7 % of the sample and 90 % of total assets for banks and savings banks (Table 14.1).

Table 14.1 Technical specifications

Universe	Spanish financial institutions (banks and savings banks) with presence in retail banking
Geographic area	Spain
Sampling method	Probability: the questionnaire is sent to all the entities in the universe
Data collection method	Online and mail questionnaire
Person surveyed	Marketing Director of the financial institution
Population	53
Sample size	40
Confidence level	95 % ($z=1.96$; $p=q=0.5$)
Sampling error	7.7 %
Information collection period	December 1, 2009 to February 28, 2010

14.5   Results

Results on the primary analysis of the influence of TQM elements on CRM strategy success and customer loyalty toward Spanish financial institutions, based on the Malcolm Baldrige National Quality Award 1997 criteria, are shown in Table 14.2.

According to Table 14.2, over 90 % of participating institutions consider that it is "quite" or "very important" that all of the TQM model components are previously implemented, in order for CRM strategies to succeed. The only exception is "information and analysis systems that provide global and permanent insight into the firm's operations," with just 70 % of participants stating that it is "quite" or "very important."

The "customer and market orientation of all firm activities and components" component showed unanimous agreement, with 100 % of participants marking it as "quite" or "very important." Furthermore, 87.5 % of responding Directors considered this to be "very important," as opposed to a range between 30 and 57.5 % for the other options.

Regarding the second goal of analyzing how developed these TQM elements are in Spanish financial institutions, results are shown in Table 14.3.

As shown in Table 14.3, 85 % and more of participating institutions' representatives agreed with the statement that the three first model components ("leadership," "planning and internal organization," and "customer and market orientation") are "quite" or "very developed." On the other hand, "human resource management policies," "process management geared toward continuous improvement," and "evaluation system using wide-ranging indicators" are just "quite" or "very developed" in 60 % of the sample. "Information and analysis systems that provide global and permanent insight" meet this criteria in 72.5 % of participating firms, an intermediate value between the two previous groups. Finally, "customer and market orientation" is "quite" or "very developed" in 95 % of respondent's institutions.

If attending to just those institutions that responded that the different elements are "very developed," a different picture emerges. Among the last three model elements, not one (0 %) thought this applied to their financial institution, and 35 % or less thought this applied to their institution on the first four. It is remarkable that just 10 % consider that their "customer and market orientation of all firm activities and components" is "very developed."

To complete the *second goal of the study*, we compare the importance that each participating institution assigns to the different elements with how developed they consider these elements to be with data from Tables 14.2 and 14.3.

Figure 14.1 shows a comparative analysis of how many respondents mark that each TQM element is "quite" or "very important" for a successful implantation of CRM strategies, comparing it to how many reply that it is "quite" or "very developed" inside their organization.

Figure 14.1 shows that the level of importance and the level of internal development is balanced for the first four model characteristics and that a substantial gap exists for the last three (from 33 to 45 %).

Table 14.2 Importance TQM components on customer loyalty for Spanish financial institutions

Number of participating institutions that selected each option (as a percentage)	*Top management leadership and commitment to CRM strategies*			
	Not important	Somewhat important	Quite important	Very important
	2.5 %	0.0 %	52.5 %	45.0 %
	Adequate planning and internal organization for CRM strategies			
	Not important	Somewhat important	Quite important	Very important
	0.0 %	15.0 %	30.5 %	55.0 %
	Customer and market orientation of all firm activities and components			
	Not important	Somewhat important	Quite important	Very important
	0.0 %	0.0 %	12.5 %	87.5 %
	Information and analysis systems that provide global and permanent insight into the firm's operations			
	Not important	Somewhat important	Quite important	Very important
	0.0 %	30.0 %	40.0 %	30.0 %
	HR management policies that favor involvement with CRM strategies			
	Not important	Somewhat important	Quite important	Very important
	5.0 %	2.5 %	42.5 %	50.0 %
	Process management geared toward continuous improvement; always from the customer's perspective			
	Not important	Somewhat important	Quite important	Very important
	0.0 %	5.0 %	55.0 %	40.0 %
	Establishing a system to evaluate results using wide-ranging indicators to measure CRM strategies			
	Not important	Somewhat important	Quite important	Very important
	0.0 %	7.5 %	35.0 %	57.5 %

Finally, to complete the analysis of the difference between how important different aspects are considered to be and how well implemented they are, Fig. 14.2 shows percentage values for the institutions that marked each element as "very important" for successful implementation of CRM strategies and how many consider it is "very developed" in their organizations.

Figure 14.2 makes evident the divergence in all the TQM model elements. "Leadership," "planning and internal organization," and "information and analysis systems" show gaps of between 15 and 20 %, while the other elements show significant differences of between 40 and 78 %. "Customer and market orientation" must be noted as having the largest divergence. Eighty-seven percent of respondents believe that it is a "very important" element, while just 10 % think it is "very developed" in their organizations.

Table 14.3 Level of development of TQM model components

Number of participating institutions that selected each option (as a percentage)	*Top management leadership and commitment to CRM strategies*			
	Not developed	Somewhat developed	Quite developed	Very developed
	2.5 %	5.0 %	67.5 %	25.0 %
	Adequate planning and internal organization for CRM strategies			
	Not developed	Somewhat developed	Quite developed	Very developed
	0.0 %	12.5 %	52.5 %	35.0 %
	Customer and market orientation of all firm activities and components			
	Not developed	Somewhat developed	Quite developed	Very developed
	0.0 %	5.0 %	85.0 %	10.0 %
	Information and analysis systems that provide global and permanent insight into the firm's operations			
	Not developed	Somewhat developed	Quite developed	Very developed
	2.5 %	25.0 %	57.5 %	15.0 %
	HR resource management policies that favor involvement with CRM strategies			
	Not developed	Somewhat developed	Quite developed	Very developed
	2.5 %	47.5 %	50.0 %	0.0 %
	Process management geared toward continuous improvement; always from the customer's perspective			
	Not developed	Somewhat developed	Quite developed	Very developed
	2.5 %	47.5 %	50.0 %	0.0 %
	Establishing a system to evaluate results using wide-ranging indicators to measure CRM strategies			
	Not developed	Somewhat developed	Quite developed	Very developed
	0.0 %	40.0 %	57.5 %	2.5 %
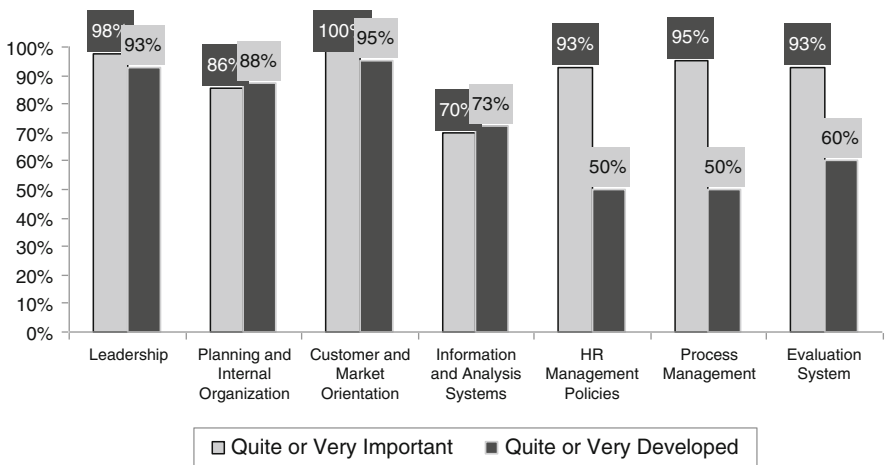
Fig. 14.1 Comparative analysis of the "importance level" of TQM model components in creating customer loyalty for Spanish financial institutions and their "development level"
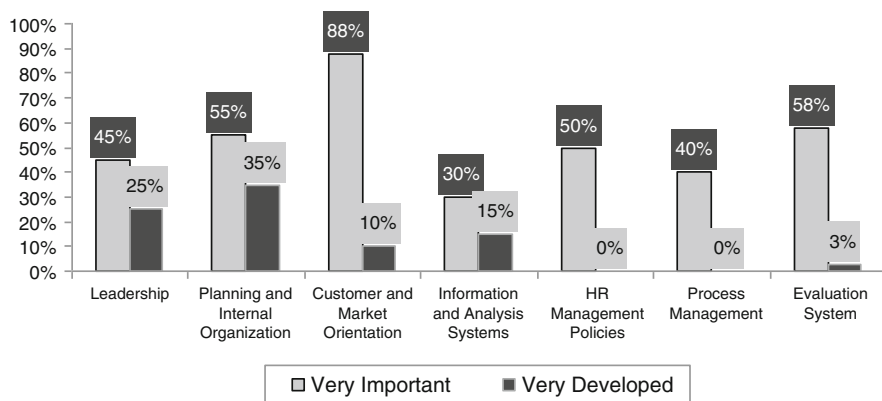
Fig. 14.2 Comparative analysis of the "importance level" of TQM model elements for customer loyalty in Spanish financial institutions and their "development level"

14.6 Conclusions and Implications

Concerning the *first goal* of the study, results shown in Table 14.2 are evidence that all TQM model elements are perceived as relevant for CRM strategies to be successfully implemented, creating greater customer loyalty. All seven elements are "quite," or "very important" for over 90 % of the entities, except for implementing an "information and analysis systems that provide global and permanent insight into the firm's operations" at 70 %. It is logical that to implement a relationship marketing strategy a "customer and market orientation" would be important for 100 % of the respondents. 87.5 % considered that this was a "very important" element, versus a maximum of 57.5 % for the other TQM model components.

With regard to the *second research goal*—development levels for each of the TQM elements in each organization—there is greater disparity among the results. Table 14.3 depicts how the first three factors ("leadership," "planning and internal organization," and "customer and market orientation") are seen as "quite" or "very developed" by 85 % of the responding directors; this being the case for only between 50 and 72.5 % of the institutions for the other four elements. Once again, "customer and market orientation of all firm activities and components" shows the highest values. Ninety-five percent consider that it is "quite" or "very developed," although only 10 % thought their institutions were "very developed" in this sense. Overall, there is a large difference between "quite developed" and "very developed" percentages of self-identification.

In conclusion, by comparing how different institutions consider that each TQM elements is and how developed they are, it is evident that Spanish financial institutions still have work to do, especially, in actual economic context. There are four areas that have already seen significant advances: "leadership," "planning and

internal organization," "customer and market orientation," and "evaluation systems," as shown in Figs. 14.1 and 14.2. Thus, the study shows that Spanish financial entities have an opportunity to continue developing these organizational elements in order to successfully implement their CRM strategies and in this way improve their customer's loyalty after the recent financial crisis.

To move forward in this line of research, it would be necessary to analyze the influence of each of the different TQM model elements on the effectiveness of different customer loyalty strategies implemented by Spanish financial institutions, during and after the economic crisis.

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Chapter 15
Entrepreneurship and Credit Rationing: How to Screen Successful Projects in this Current Crisis Period

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Abstract The current credit rationing heavily influences entrepreneurship and, more dramatically, the viability of innovation projects. In this context, mechanisms to screen successful projects are of paramount importance for both lenders and entrepreneurs. We present an experiment to test the collateral-interest mechanism of credit screening. Our results confirm that incentive-compatible pairs of collateral-interest rate can distinguish between projects of different success probability, even in moral hazard settings.

15.1 Introduction

The current collapse of credit markets has left entrepreneurs facing severe credit rationing, which affects the viability of its projects (Carmona et al. 2012; Cuervo et al. 2007). If lenders could screen borrowers by their success probability (risk level), a separating equilibrium that reveals information would arise and credit rationing would be overcome. Thus, mechanisms to screen investment projects by their success probability become of paramount importance for both lenders and entrepreneurs (Arzubiaga et al. 2012, 2013).

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In credit markets with asymmetric information, lenders can formulate sets of incentive-compatible contracts that consider collateral and interest rates simultaneously as a mechanism to reveal the borrower's ex ante risk level. Early theoretical studies considered collateral and interest rates in an isolated manner. These studies showed that adverse selection resulted in riskier credit applicants selecting high interest rates or high collateral (see Stiglit and Weiss (1981); Wette (1983); Boot et al. (1991)). Later analyses by Bester (1985, 1987) and Chan and Kanatas (1985), however, considered contracts that lead to separation of types by offering rates of interest and collateral simultaneously. Bester (1985) showed that by offering pairs of incentive-compatible contracts with different interest rate-collateral combinations, lenders are capable of indirectly distinguishing between borrowers of different risk levels, which in turn reduces credit rationing. In his later work, Bester (1987) also considered the possibility of moral hazard due to ex ante asymmetric information and showed that the demanded collateral softens the effects of moral hazard, since higher collateral gives incentives to borrowers to choose projects involving a smaller risk ex post.

Notwithstanding the relevance of these results, the hypothesis that contracts combining pairs of collateral and interest rates are incentive compatible for projects with different risk levels, with or without moral hazard, has not yet been tested experimentally. In addition, this hypothesis is difficult to be tested by field data. Indeed, there is a scarcity of microdata on the contractual terms of commercial bank loans, which are usually confidential. Just Comeig et al. (2013) have tested empirically the screening role of loan contracts that consider collateral-interest margins simultaneously. Given the difficulties inherent with field data, laboratory experiments offer an attractive "complementary" approach, because they make it possible to control, isolate, and vary the factors of interest while keeping all others constant.

In this chapter, we present an experiment designed to test Bester's hypothesis that contracts that combining collateral and interest rates are incentive compatible and that these contracts can also smooth moral hazard. We find that pairs of contracts that combine interest rates and collateral allow lenders to separate borrowers by their success probability; in addition, we also find that contracts with higher collateral make subjects less likely to increase the probability of failure of their projects in an environment with moral hazard. Thus, we provide evidence that supports Bester's hypothesis.

There are only a few experimental papers on screening; most of them have examined screening in insurance and labor markets and have focused on the principal's behavior (see Shapira and Venezia (1999), Posey and Yavas (2004), and Kübler et al. (2008)). This is the first experiment on credit screening that focuses on the self-selection mechanism and not on the principal's behavior. (This experiment was first presented in Spanish in Capra et al. (2001) working paper, and then in English in Capra et al. (2005) working paper.) Later works by Bediou et al. (2013) and Comeig et al. (2012) have used the incentive-compatible contracts designed here to analyze framing and gender effects in self-selection and credit screening mechanisms.

The remainder of the chapter is organized as follows. The next section presents the experimental design and hypotheses. Section 15.3 presents the results; and Sect. 15.4 summarizes the main conclusions.

15.2   Experimental Design and Procedures

We use experimental methods to analyze incentive compatibility in loan contracts that combine collateral and interest rate requirements under two different environments: first without moral hazard, and then with moral hazard due to ex ante asymmetric information. We design ad hoc contracts following Bester (1985, 1987) to test the following hypotheses:

Hypothesis 1: By offering two incentive-compatible contracts, borrowers can be separated by their risk levels. Lower risk borrowers choose contracts with higher collateral (separating effect of contracts).

Hypothesis 2: When there is moral hazard generated by ex ante asymmetric information, higher collateral incentive borrowers choose lower risk projects (positive incentive effect of collateral).

We design a setting with N_i subjects who can have one of the two types $i = s$ (safer) or r (riskier), according to the risk level of their projects. Subjects in the experiment can acquire an asset in order to develop their projects with some expected future return. The project of a type s borrower has a return of 600 monetary units in case of success with a probability of 0.9 and a return of zero in case of failure. Type r can develop a project that provides a return of 1,080 monetary units in case of success and zero in case of failure, each with equal probability.

We offered two contracts for the purchase of the asset. Each contract includes two features: the price to be paid and a security deposit, representing the collateral. In this experimental market, the buyers do not pay for the asset at the time the contract is signed, but at the end of the round when the buyer learns about the return the asset yields. If the project succeeds, they earn the asset's return and pay the contract price. However, if the project fails, they pay the security deposit. Each individual starts each market round with an initial wealth of 300 units; any amount equal to 300 or less can be used as a security deposit. There are five rounds in the market and each subject makes five independent decisions (one for each round) in which only the contracts (price and security deposit) change. Each subject must choose one or none of the two offered contracts in each round, whichever he/she prefers. The subjects who do not choose any contract in the round receive a return of 30 monetary units at the end of the round from a risk-free investment. The expected returns for each individual s and r for acquiring the asset are given as follows:

$$ER_s = 0.9\left(300 + 600 - \text{Price}\right) + 0.1\left(300 + 0 - \text{Deposit}\right)$$

$$ER_r = 0.5\left(300 + 1{,}080 - \text{Price}\right) + 0.5\left(300 + 0 - \text{Deposit}\right)$$

In each of the rounds, we offered a pair of theoretically incentive-compatible contracts (C_1, C_2) with: $ER_s(C_2) \geq ER_s(C_1)$ and $ER_r(C_1) \geq ER_r(C_2)$.

Table 15.1 Treatment A: pairs of offered contracts and expected returns

| | C$_1$ | | C$_2$ | | Treatment A | | | |
| | | | | | Safer project | | Riskier project | |
Round	Price	Dep.	Price	Dep.	ER$_s$(C$_1$)	ER$_s$(C$_2$)	ER$_r$(C$_1$)	ER$_r$(C$_2$)
1	360	0	166	300	516 (72)	660.6 (220.2)	660 (360)	607 (607)
2	335	25	169	275	536 (87)	660.4 (211.8)	660 (385)	618 (593)
3	310	50	172	250	556 (102)	660.2 (203.4)	660 (410)	629 (579)
4	285	75	175	225	576 (117)	660 (195)	660 (435)	640 (565)
5	260	100	177	200	596 (132)	660.7 (186.9)	660 (460)	651.5 (551.5)

$ER(\cdot)$ Expected returns for each contract under each treatment. Standard deviations are in parenthesis

Table 15.1 shows the pairs of contracts offered to the subjects in each round; it also shows the expected returns and the standard deviations of each of the contracts in each round. The later information was not given to the subjects. Subjects made their choices based on their own risk tolerance, the price, and security deposit of each contract.

Treatment A is devoted to test whether the pairs of contracts designed, which combine prices and security deposits, permit the separation of heterogeneous individuals by their risk level. After making their decisions in Treatment A, all subjects read the instructions for Treatment B. In Treatment B, we introduced moral hazard due to ex ante asymmetric information to test the effectiveness of these contracts as a mechanism to separate borrowers with different risk levels. We started within the same previously described context, the only change being that subjects had the opportunity to make another decision before learning about the project's success or failure. This second decision was whether to modify the original project, which entailed an increase in the projects' expected return and probability of failure. Thus, moral hazard originated from the lack of control that sellers had on the buyers' project choice. Note that in our design, if the buyer was successful, he automatically paid the contract price; thus, we excluded moral hazard derived from the ex post asymmetric information between buyers and sellers.

The second treatment also contained several rounds in which each subject i = s, r was offered a pair of incentive-compatible contracts shown in Table 15.1. Subjects chose one of these contracts or a risk-free investment, exactly as in Treatment A. The pairs of contracts were identical to those in Treatment A (pairs 1–5 in Tables 15.1 and 15.2) and consequently the expected results, too, in case individuals did not modify original projects. However, when individuals modified original projects, they also modified their expected returns.

Table 15.2 shows the contracts 1–5 expected returns and standard deviations.

The modified project of s individuals provided a return of 1,200 monetary units in case of success, with a probability of 0.6, and zero in case of failure. For subjects r, modifying the original projects had a success probability of 0.3 and resulted in a return of 2,160 monetary units; failure resulted in a payoff equal to zero. Hence, the expected returns for each s and r subjects for modifying the initial project are given as follows:

$$ER_{sm} = 0.6(300 + 1,200 - \text{Price}) + 0.4(300 + 0 - \text{Deposit})$$

Table 15.2 Treatment B: pairs of offered contracts and expected returns

| Round | Initially safer project | | | | Initially riskier project | | | |
| | Keep initial project | | Change | | Keep initial project | | Change | |
	$ER_s(C_1)$	$ER_s(C_2)$	$ER_s(C_1)$	$ER_s(C_2)$	$ER_r(C_1)$	$ER_r(C_2)$	$ER_r(C_1)$	$ER_r(C_2)$
1	516 (72)	660.6 (220.2)	804 (411.5)	800.4 (653.5)	660 (360)	607 (607)	840 (824.9)	688.2 (1,051.2)
2	536 (87)	660.4 (211.8)	809 (436)	808.6 (639.8)	660 (385)	618 (593)	830 (847.8)	704.8 (1,038.4)
3	556 (102)	660.2 (203.4)	814 (460.5)	816.8 (626.1)	660 (410)	629 (579)	820 (870.7)	721.4 (1,025.6)
4	576 (117)	660 (195)	819 (485)	825 (612.4)	660 (435)	640 (565)	810 (893.6)	738 (1,012.7)
5	596 (132)	660.7 (186.9)	824 (509.5)	833,8 (599.1)	660 (460)	651.5 (551.5)	800 (916.5)	754.9 (1,000.4)

$ER(\cdot)$ Expected returns for each contract under each treatment. Standard deviations are in parenthesis.

$$ER_{rm} = 0.3\big(300 + 2{,}160 - \text{Price}\big) + 0.7\big(300 + 0 - \text{Deposit}\big)$$

Thus, a situation was created in which both types of individuals experienced an increase in their expected return, if they changed the original project.

We are interested in testing Bester's (1987) hypothesis that contracts with higher co-payment have a positive incentive effect in agents, making higher risk projects less attractive. If this hypothesis is not rejected in the experiments, the s subjects who choose to increase the risk of the project must choose Contract C_1, with the lower security deposit. However, the s subjects who choose not to increase the risk of the project must also choose Contract C_2, with the higher security deposit (as in Treatment A). Individuals r obtain higher returns and lower standard deviations with Contract C_1 than with Contract C_2 either by modifying the initial contract or not. Thus, the r subjects are also expected to choose Contract C_1, with the lower security deposit.

We organized four experimental sessions with students recruited from the Washington and Lee University (USA) and from the University of Valencia (Spain). There were 10 participants in each experimental session except the second, which had 14 participants; no single subject participated in more than one session. Each session lasted for 1 h and 30 min and consisted of ten rounds. After randomly and privately assigning their types, riskier or safer, we read the instructions and answered questions. The subjects, in each round, had an initial wealth of 300 monetary units and made their choices privately. During the experiment they were not allowed to communicate with the rest of the participants and each subject only knew their own project success and failure probabilities as well as their returns. After ending the five rounds of Treatment A, the subjects read instructions for the five rounds of Treatment B. At the end of the session we paid in cash each subject's amount made during five randomly chosen rounds from Treatments A and B. Subjects made on average $45.

15.3   Results

The results of the experiment are summarized in Table 15.3. Also, Fig. 15.1 shows the distribution of subjects' responses by treatment and round. There were a total of 440 observations; 220 corresponded to Treatment A. As shown in Table 15.3, most of the subjects endowed with the safer project chose Contract C_2 (85.5 %), whereas most of the subjects endowed with the riskier project chose Contract C_1 (63.6 %). The hypothesis that the mean number of C_1 choices is the same among the two risk types is rejected. In Treatment B, we observe that type s subjects who choose to change their projects mainly chose Contract C_1. Subjects endowed with a risky project mainly chose Contract C_1 and changed their project, as predicted.

To test for significance of differences in contract choice, we run logit regressions. For this analysis, we excluded from the total of the observed subject choices

Table 15.3 Experimental results

	Subjects with safer projects		Subjects with riskier projects	
Contracts	Numbers and percentages			
Treatment A				
C_1	14	12.7 %	70	**63.6 %**
C_2	94	**85.5 %**	35	31.8 %
None	2	1.8 %	5	4.5 %
Total	110	100 %	110	100 %
	Subjects with initial safer projects		Subjects with initial riskier projects	
	Numbers and percentages			
Contracts	Initial choice	Change project (%)	Initial choice	Change project (%)
Treatment B				
C_1	48	48	100	87	49	56.3
C_2	57	38	66.7	22	4	18.2
None	5	–	–	1	–	–
Total	110	–	82	110	–	49
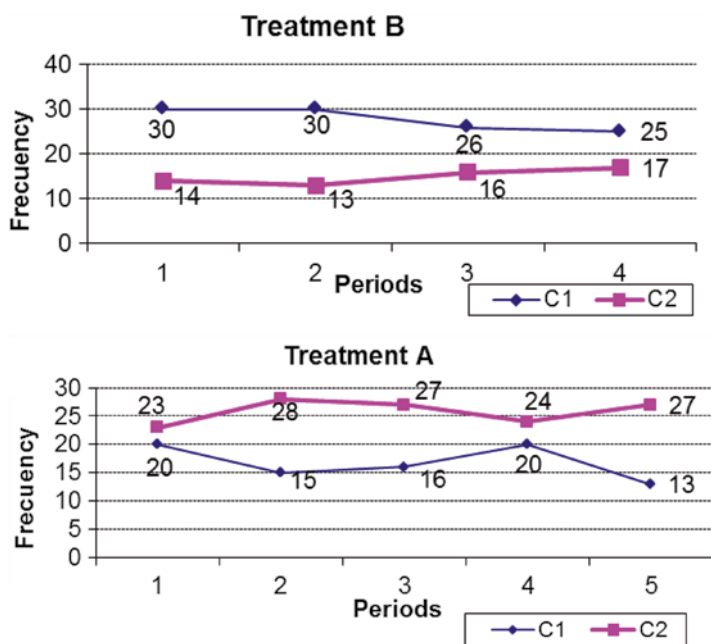
Fig. 15.1 Offered contracts and experimental results

risk-free investment decisions. Hence, we analyzed 427 choices only, 219 of Contract C_1 and 208 of Contract C_2. The variable selection method was the forward stepwise process of the likelihood ratio. Table 15.4 summarizes the results.

The positive coefficient for the variable PROJECT indicates that the safer the project, the greater the probability of choosing Contract C_2. This result confirms the

Table 15.4 Test for differences based on contract choice

Const.	−0.4761 (7.1822)
PROJECT (risky = 0; safe = 1)	2.0037*** (75.4433)
TREATMENT (Keep Initial Project = 0; Change = 1)	−1.2396*** (28.7929)
−2Ln λLR	113.912***
Cox-Snell R2	0.234
Nagelkerke R2	0.312
Correct classification	71.66 %

CONTRACT is the endogenous variable (value 0 given to Contract C_1 (219 observations) and value 1 given to Contract C_2 (208 observations))

***Significant at the 1 % level. Wald statistics are in parenthesis

significance of the differences between subjects with safer projects and subjects with riskier projects mentioned above. Hence, we find support for Hypothesis 1 that predicts high collateral combined with an adequate low rate of interest (i.e., Contract C_2) principally attracts subjects with safer projects, resulting in separation of borrowers by their risk level. On the other hand, the negative coefficient for the variable TREATMENT shows that in Treatment B (with moral hazard), the likelihood of choosing C_2 (the high collateral contract) is lower than in Treatment A. Subjects willing to increase their project risk prefer to switch to contract 1 (no collateral). This result confirms Hypothesis 2.

Upon confirmation of the hypothesis, in both treatments, it is observed that can be used to solve (or improve) the credit problems (especially in this current crisis period) in relation to its demand by entrepreneurs.

15.4 Conclusions and Discussion

The current financial crisis has left entrepreneurs facing severe credit rationing, which endanger the viability of its projects. Thus, mechanisms to screen successful projects are needed by entrepreneurs and also by banks. We conducted an experiment based on models of contracting under asymmetric information that closely follows Bester (1985, 1987). The main prediction of these models is that by offering a menu of contracts that combine different levels of interest rates and collateral, projects can be separated by their success probability (risk level). In addition, the separating effect of this menu of contracts holds also under moral hazard.

Despite of the important implications of these theoretical models on the reduction of credit rationing, empirical studies, so far, have been limited in their ability to examine the incentive compatibility of this menu of contracts. Just Comeig et al. (2013) have tested empirically the screening role of loan contracts that consider collateral-interest margins simultaneously. Individualized information on loan contract features is unusual and does not include a direct and objective approximation to the ex ante unobservable borrower risk. In contrast, in the lab, the experimenter is able to

control the variables that are unobserved in the field. This control provides a unique advantage for empirically testing predictions of the above-mentioned models.

Consistent with theory and with the empirical results found by Comeig et al. (2013), our experimental results show that by appropriately combining collateral with the interest rate, projects with different risk levels are separated. Projects with higher risk tend to be financed without collateral and with higher interest rates. Hence, we provide support for the predictions of screening models of Bester (1985, 1987) and Chan and Kanatas (1985). Moreover, our experimental results showed that the separating effect of this menu of contracts remains even in moral hazard settings.

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Chapter 16
Profile of Young Entrepreneurs in Spain in Times of Recession

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Abstract According to Spain's 2011 barometer, 83 % of the Spanish population regards unemployment as Spain's main problem and thinks that the solution lies in supporting entrepreneurs and jobs for young people. Figures for the evolution of entrepreneurs highlight the influence of age on entrepreneur profiles. This chapter describes the typical young entrepreneur as a single male between 26 and 35 years old. The company is typically the entrepreneur's own limited company that has been operating in the new technologies industry for over 5 years, has less than ten employees and an annual turnover under €500,000. Finally, most young people become entrepreneurs because it is hard to find employment, and in turn, they have to deal with numerous challenges caused by the economic situation.

16.1 Introduction

Entrepreneurial activity is essential for understanding economic development in any country and it must be taken into account when planning and adapting public policies to promote new projects and generate employment. Entrepreneurship means setting up a new business project assuming the risk involved in exchange for business profit. It drives innovation, competitiveness and growth (Wennekers and Thurik 1999).

In an economic scenario with high unemployment rates (20.58 % in 2011), self-employment generates new jobs. However, entrepreneurial potential in countries

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like Spain is immersed in an issue that is preventing its development: lack of confidence in the economic system (Wennekers and Thurik 1999). For example, data from the 2011 barometer (Spanish Centre for Sociological Research (CIS), July 2011) shows that 82 % of Spanish people consider that Spain's main problem is unemployment and that the most important measure for ensuring the country's development is to support businesses and entrepreneurs (34 %).

According to the 2011 Global Entrepreneurship Monitor Report (GEM) one way the young can find jobs is by becoming entrepreneurs. Business creation by young people is one solution to the lack of jobs (Blanchflower and Meyer 1994), hence the increasing number of public and private initiatives to support entrepreneurial actions intended for this collective. Some of them are young entrepreneur associations, publicly backed financing and specialist courses.

Therefore we ask, are young Spaniards ready to take business initiatives? What profile do they need to have and what skills must they have? What are their main challenges and concerns?

16.2   The Influence of Age on Entrepreneurial Profiles

Many academic studies have analysed young entrepreneurs (Aidis and Van Praag 2007; Blanchflower and Meyer 1994; Bonnett and Furnham 1991; Brockhaus 1980; Fairlie 2002, 2005; Gómez 2011; González 2004; Honjo 2004; Jackson and Rodkey 1994; Levesque and Minniti 2006; Nafukho 1998; Parker 2006; Ronstandt 1985; Rojas and Siga 2009; Scherer et al. 1989; Schiller and Crewson 1997; Thomas 2009; Walstad and Kourilsky 1998). A review of these studies shows a lack of consensus over the question of whether young people are more entrepreneurial.

Studies that claim that being young means individuals are less entrepreneurial include Bird (1993), Blanchflower and Meyer (1994), Thomas (2009) and Rojas and Siga (2009). Bird (1993), however, shows that the entrepreneur's age is less significant than other factors. Based on results for the United States and Australia, Blanchflower and Meyer (1994) claim that entrepreneurial ability increases with age and employment experience. Young people are less entrepreneurial because they have barely begun their working lives and lack the necessary experience to start their own business. Thomas (2009) analyses the relationship between education and entrepreneurship and concludes that university graduates are less entrepreneurial because they expect better opportunities in other jobs and also because before engaging in entrepreneurship they want to obtain more experience. According to Rojas and Siga (2009) young people in Argentina usually work for an employer because they find it difficult to access economic resources.

In contrast, other studies claim that being young increases the likelihood of entrepreneurship. Bonnett and Furnham (1991) conclude that young people have less perception of success or failure and therefore are less frightened of starting an entrepreneurial activity. Honjo (2004) shows that young people have a much greater ability to learn and face challenges. Among newly created companies, those that are

Table 16.1 Age distribution of Spanish entrepreneurs in 2009–2011

Age	Nascent	New	General	Consolidated	Abandon	Potential
Year 2011						
18–24	9.2	6	7.8	1.1	5	14.4
25–34	33.2	32.8	33	12.2	20.6	31.5
35–44	33.7	34.7	34.1	31.5	28.8	30.6
45–54	18	17.9	18	32.8	27.7	17.9
55–64	6	8.6	7.1	22.4	17.9	5.6
Average age	37.31	38.63	37.88	46.33	43.01	36.31
Year 2010						
18–24	7.7	7.8	7.8	0.8	5.9	15.5
25–34	37.4	36.6	37	19.8	26.8	37.9
35–44	32.6	36.5	37	19.8	26.8	37.9
45–54	16	14.8	15.4	30.1	20.7	16.3
55–64	6.2	4	5.3	20.4	18.1	4.7
Average age	7.3	6.8	37.1	44.8	41.8	35.2

Source: GEM (2011)

managed by young people are more likely to grow, whereas companies managed by older people are more likely to survive.

Jackson and Rodkey (1994) argue that older individuals are less likely to create a company because they are less willing to take risks. The 25–40 age range is the most favourable period because of a series of factors: individuals have the energy, a certain amount of experience and knowledge, an appropriate level of self-confidence, they do not have to cope with excessive family responsibilities and they are not risking a consolidated reputation or social position.

Levesque and Minniti (2006) consider that young people are more capable of being entrepreneurs because they tackle greater risks. Ronstandt (1985) concludes that it is very difficult for people under the age of 22 and over 55 to create a company. Experience is a crucial success factor for entrepreneurs and there are critical ages where there is a greater willingness to be entrepreneurial. With the appropriate education, it is advisable to begin entrepreneurship at a young age as there are fewer responsibilities.

Data for the Spanish economy in the GEM (2010–2011) (see Table 16.1) shows that 2010 and 2011 saw a significant increase in nascent entrepreneurs between18 and 24 years old, whereas entry of people in entrepreneurial activity in the next age range is almost 4 points below. Between the ages of 35–44 numbers increased by one percentage point, between 45 and 55 there was a two-point increase and the upper age range remained stable. The average age of Spanish entrepreneurs is 38.

According to the general report (2011), these changes symbolise greater determination of young people to engage in entrepreneurial activity due to the precarious situation of youth employment, the high unemployment rate, more initiatives for promoting entrepreneurial activity, the increase in vocational training and university graduates who finish their studies in this age range and more training and programmes for young entrepreneurs in comparison to 5 years ago.
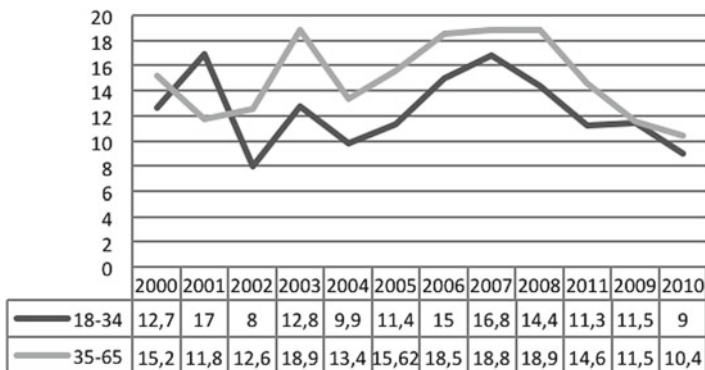
Fig. 16.1 EAR evolution from 2000 to 2010. *Source*: Original work based on GEM (2011)
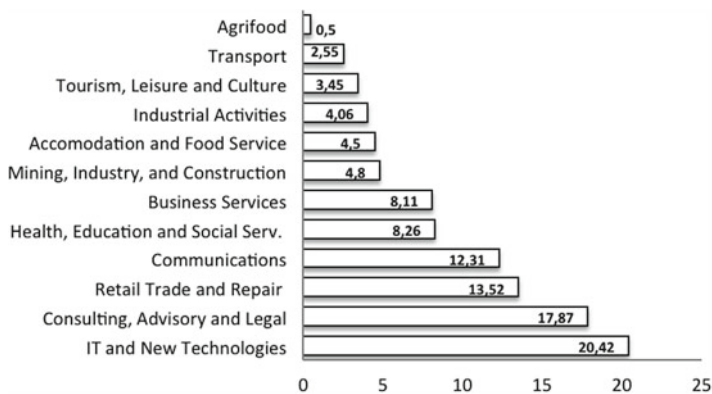
Fig. 16.2 Economic sector where young entrepreneurs operate. *Source*: Original work based on AJE Madrid (2011)

Although more young people are engaged in entrepreneurial activity, entrepreneurial intention is gradually decreasing. The intention rate in 2011 (14.4 %) exceeds that of nascent entrepreneurs (9.2 %) in the same year but is below that of 2010. Furthermore, young people are quite a changeable collective, highly affected by the environment and so results must be interpreted cautiously.

Finally, to establish differences between young and older entrepreneurs, Fig. 16.2 shows the evolution of the entrepreneurial activity rate (EAR) between 2000 and 2010. The figure shows increased rates of entrepreneurial activity among young people since 2008 and more moderate growth and declines in that age range. Therefore we consider it necessary to determine the profile and motivations of young Spanish entrepreneurs.

16.3   Profile of Young Entrepreneurs in Spain

Although it is not possible to establish the profile of an individual who is more likely to create a company (Brockhaus and Horwitz 1986; McDougall et al. 1992), an entrepreneur must have the skills of originality and innovation, moderate risk aversion, acceptance of responsibilities, an understanding of the results of their actions and long-term planning (McClelland 1961). Entrepreneurs also show the characteristics of needing to achieve, self-confidence, optimism, creativity and autonomy. Demographic, training, experience and psychological factors have also been identified (Fuentes and Sánchez 2010).

Based on data provided by the Association of Young Entrepreneurs of Madrid (AJE) and the Spanish Confederation of Young Entrepreneurs (CEAJE) below we detail the characteristics of AJE members. Firstly (and something that is hugely important for strategic decision making), young entrepreneurs generally represent the collective aged between 18 and 35. However, the data and current social changes show members of the Young Entrepreneurs Association aged between 18 and 40.

Table 16.2 shows the sociodemographic variables and it can be seen that the collective is predominantly aged between 26 and 35 (34.71 % of the members). The next largest group are those aged between 35 and 40 (30.84 %) followed by those over 41 (30.44 %). Entrepreneurs under the age of 25 are in the minority (4.01 %) because at that age future entrepreneurs are still studying, ending their studies or acquiring experience in other jobs. In terms of gender, men are in the majority. 77 % of young business owners are male and 23 % female. A large percentage of young entrepreneurs are single (57 %), and 38 % are married.

Secondly, we need to establish characteristics of the entrepreneur and the company. Table 16.3 shows that 81.71 % own the company they created and it is the only company they operate with (93.47 %). They choose the legal figure of a limited company (77.33 %) and the company is more than 5 years old. 61.71 % have from 1 to 10 employees and the turnover is less than €500,000 (84.68 %).

Table 16.2 Socio-demographic variables of young entrepreneurs

Age range	%
Under 25	4.01
From 26 to 35	34.71
From 35 to 40	30.84
Over 41	30.44
Gender	%
Man	76.64
Woman	23.36
Marital status	%
Single	56.87
Married	37.92
Other	5.21

Source: AJE Madrid (2011)

Table 16.3 Characteristics of companies created by young entrepreneurs

Entrepreneurs (AJE) with company/without company	%
With company	81.71
Without company	18.29
Companies per member	%
Entrepreneurs (AJE) with one company	93.47
Entrepreneurs (AJE) with two companies	4.9
Entrepreneurs (AJE) with three companies	1.14
Entrepreneurs (AJE) with four companies	0.33
Entrepreneurs (AJE) with five companies	0.16
Legal status	%
Self-employed	6.91
Limited liability company	77.33
Corporation	5.55
Employee-owned company	0.45
Cooperative	0
Joint ownership	0.45
Other	9.31
Active	%
Up to 6 months	3
From 6 months to 1.5 years	16.52
From 1.5 to 3 years	15.16
From 3 to 5 years	18.47
Over 5 years	46.85
Number of employees	%
No employees	22.67
From 1 to 10 employees	61.71
From 11 to 49 employees	11.11
From 50 to 250 employees	4.21
Over 250 employees	0.3
Turnover	%
Under €500,000	84.68
Between €501,000 and €1,000,000	4.96
Between €1,000,001 and €2,000,000	3.3
Between €2,000,001 and €10,000,000	5.11
Between €10,000,001 and €50,000,000	1.35
Over €50,000,000	0.6

Source: AJE Madrid (2011)

Thirdly, we present the industries in which young entrepreneurs operate (Fig. 16.2). Important sectors include computers and new technologies (20.42 %); and advisory or consultancy services, legal, insurance and investment (17.87 %); followed by commerce, sales and repair (13.52 %); communication (12.31 %); health, education and social services (8.26 %); and business services (8.11 %). Less attractive for young people in order of nonparticipation are the food and agriculture industry (0.15 %), transport (2.55 %), tourism, leisure and culture (3.45 %), industrial activities (4.06 %), hotel and catering (4.5 %) and construction, real estate and mining (4.8 %).

These data suggest that the typical young Spanish entrepreneur is a man aged between 26 and 35 years old and single. Young entrepreneurs in Spain typically direct their own limited company in the new technologies industry which has been in the market for more than 5 years and has less than ten employees. Annual turnover is under €500,000.

16.4 Motivations and Challenges for Young Entrepreneurs

The literature considers two main motivations for entrepreneurship: seizing an opportunity and need due to the lack of employment options. According to the 2011 GEM report, 71.5 % of Spanish people engage in entrepreneurship because they have found an opportunity and 25.9 % out of necessity. 38.7 % become entrepreneurs to obtain greater independence, 33.3 % to increase their income, 19.4 % to maintain their income and 8.6 % for a variety of reasons.

The main motivations and challenges facing young entrepreneurs in Spain are as follows:

(a) *Perception of opportunities*: Although the collective of entrepreneurs is characteristically made up of people able to capture entrepreneurship opportunities, young Spaniards find reasons for a negative assessment of the situation in Spain. To quote young entrepreneurs (CEAJE 2009) the reasons that discourage entrepreneurship are: lack of liquidity, rising defaults, rising unemployment rate, decreased consumption, lack of confidence, lack of operational capacity in companies, lack of measures from public authorities and the increased effort entrepreneurs have to make.

Nevertheless, as entrepreneurs they have to find positive aspects that can become opportunities.

(b) *Social entrepreneurial network*: Having some social network in the form of knowing other entrepreneurs increases the likelihood of entrepreneurship. Here, it can be said that young people are changing this situation with tools like AJEIMPULSA created by the Spanish Confederation of Young Business owners.

(c) *Having the knowledge, skills and experience for entrepreneurship*: There has been a considerable increase in specific training courses for young entrepreneurs. Universities have created specific subjects like "Business Creation" activities that bring students into contact with business reality, seminars aimed at entrepreneurs and postgraduate courses aimed at developing entrepreneurial skills.

(d) *Fear of failure*: According to the GEM (2011), fear of failure lessened in recent years but has increased again with the difficult economic situation. Although one of the advantages for young people is that they are less concerned about risk, according to the Spanish Confederation of Young Entrpreneurs, 68 % of young people are afraid that risk might make them lose everything, in addition to the lack of financial support, complex administrative procedures, etc.

(e) *Preference for a competitive society*: According to the Malaga Association of Young Entrepreneurs (2011), competitiveness is a fundamental aspect for entrepreneurial success and one of the weak points in the high number of firms that have disappeared or are finding it difficult to survive. The Association itself highlights the fact that many of its members are adapting to the more competitive society (fruit of better business training for the young people of today).

(f) *Entrepreneurship as an attractive professional option*: According to the GEM (2011) around 65 % of the adult population thinks that entrepreneurship is a good professional option. From the perspective of young entrepreneurs (AFE Malaga 2011) difficulties in finding jobs lead many young people to create their own job (25.1 %), seize an opportunity (20.1 %) or decide to become their own boss because of the advantages it brings (19.4 %).

(g) *Entrepreneurship and socioeconomic status*: Exemplified by the fact that 19.4 % of young entrepreneurs in Malaga decided to become entrepreneurs because they wanted to be their own boss.

16.5   Implications

The economic situation in Spain requires a detailed study of the profile and motivations of young entrepreneurs. Increasing entrepreneurial initiatives in young people is one solution to high rates of youth unemployment. It is fundamental for public and private institutions to encourage such actions. To provide these institutions with more information so they can design more effective action plans, the first issue is to find out whether age really is a differentiating factor in entrepreneurship. A review of previous scientific studies and data provided by the GEM (2011) shows a disparate evolution in the number of entrepreneurial actions over the years and an upward trend in young entrepreneurs. The data highlights a significant increase in potential young entrepreneurs ensuring the entrepreneurial process in Spain.

The profile of the young Spanish entrepreneur is an unmarried male between the ages of 26 and 35. Young entrepreneurs in Spain typically direct their own limited company in the new technologies industry which has been in the market for more than 5 years, has less than 10 employees and an annual turnover of less than €500,000.

This profile highlights the scanty presence of women in the entrepreneurial world, the attraction of the new technologies industry and the predominance of SMEs. These traits raise the need to develop initiatives to respond to the question of why young women are not entrepreneurial, analyse the potential in the medium to long term of companies that operate in the technological industry and develop initiatives directed at the specific features of SMEs.

Of the motivations for young entrepreneurs business creation in particular is a channel for professional development. Along this route need prevails over "vocation" and this option is taken with fewer resources. Young Spanish men and women perceive numerous negative aspects to the current economic situation which become obstacles to entrepreneurship. Young people view the recession (that has caused among others,

a drop in the employment rate) as an important spur or motivating factor to creating one's own job. In addition, despite the fact that current economic conditions are not good, they can also be a source of opportunities facilitated by the falling prices for renting spaces and facilities, acquiring materials, equipment and human resources.

A final important consideration that cannot be analysed in this work refers to the quality of entrepreneurs when their numbers increase due to a recession and the need to create self-employment. In such circumstances new entrepreneurs will move further away from the ideal characteristics of entrepreneurship and that will make it difficult to innovate and discover opportunities in the sense of Shane (2012) and Shane and Venkataraman (2000).

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Chapter 17
In Times of Economic Crisis: Innovation With, or Without, R&D Activities? An Analysis of Spanish Companies

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Abstract Analysis of non-R&D innovators—firms that successfully innovate without conducting R&D activities in-house—is an emerging topic in the innovation literature. Surprisingly, little is known about how they differ from R&D innovators. This paper's goal is to understand those differences and their persistence in times of economic crisis. From analysing 2011 CIS data, results suggest that for non-R&D innovators: (a) the innovation process has been persistent across different time periods, and that, therefore, firms have innovated whatever the environmental economic conditions; (b) the acquisition of equipment, machinery, and software has been the form most used for acquiring knowledge; (c) in times of economic crisis, the non-R&D strategy is strengthened by a high commitment to acquiring ready-to-use knowledge, rather than relying on uncertain R&D activities; that is, in times of crisis, non-R&D innovators invest more intensively in non-R&D activities than do R&D innovators. Non-R&D innovation represents 50 % of innovation in Europe. At times of economic crisis, it is a more suitable, innovation strategy.

17.1 Introduction

R&D indicators and, by extension, R&D innovators, are the topics most intensively researched in the innovation management literature, to the extent that the mainstream literature has generally equated innovation with in-house R&D. Nevertheless, when it comes to identifying and explaining firms' innovation strategies, there is a burgeoning body of evidence indicating a need to go beyond considerations of R&D alone. In fact, according to the European Commission (2008), referring to CIS data, almost a half of innovators in Europe do not perform R&D activities. Patterns of innovation-oriented

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behaviour observed for non-R&D performers include: the acquisition of advanced machinery and equipment, patents, licenses, or know-how; and the carrying out of training or marketing activities for the purposes of implementing new, or significantly improved, products and processes (European Commission 2008). Also, the OECD (OECD 2010) points out: "…firms may introduce new products on the market without engaging in R&D. New indicators reveal that in Australia and Norway the propensity to introduce a new-to-market product innovation is similar whether or not the firm performs R&D." Cited as an example is the fact that in Luxemburg 52 % of non-R&D performers introduced new-to-market innovations, which compares to 63 % found for in-house R&D performers (p. 23).

Thus, it is clear that the body of research focused solely on R&D activities does not cover all innovation phenomena. Indeed, in our view, evidence based on R&D activities constitutes a key repository of knowledge but underestimates the influence of other innovation efforts and expenditures. Moreover, an important segment of innovative firms can be missed when research samples are limited (see Cuervo-Cazurra and Annique Un 2010) to those firms that report R&D expenditures (e.g. Mañez-Castillejo et al. 2013). So, what do we know about non-R&D performers and their innovation strategies? Do their innovation strategies differ in times of crisis? In this chapter, we offer evidence on these matters.

The motivation for this chapter is to see how the behaviour of non-R&D innovators compares to that of R&D innovators during times of crisis. Can innovation without R&D be a suitable strategy for sustaining innovation performance in times of crisis, given that it does not involve the same levels of commitment of resources and uncertainty associated with R&D activities, and given that when the environment is really uncertain firms do not want to take many risks? This chapter offers insights based on a sample of 5,640 firms drawn from CIS data for Spain in 2011, including 2,067 non-R&D innovators and 3,576 firms innovating using in-house R&D. After this introduction, Sect. 17.2 reviews those empirical studies of innovation that go beyond R&D activities. Then, in Sect. 17.3, an empirical exercise is conducted, using CIS data for Spain. A discussion and conclusion of this study's findings are presented in Sect. 17.4.

17.2 Literature Review: What Do We Know About Non-R&D Activities and Innovation?

The fact that not all firms formally invest in R&D is at the centre of an old debate in the economics of innovation literature. Smith (2005) pointed out that some activities are crucial to innovation but are not included in R&D efforts: education and training, the acquisition of products and licenses, product design, trial production runs, training, tooling up, and the acquisition of equipment or machinery related to innovation. Cohen et al. (1987) showed that 24 % of large firms in the USA did not invest in formal R&D, and Bound et al. (1984) found that 40 % of US firms did not report positive R&D expenditures. In fact, many scholars have argued that

innovation is not limited to R&D alone (Hirsch-Kreinsen 2008; Kline and Rosenberg 1986; Nelson and Rosenberg 1993; Nelson 2000).

Taken as a whole, the literature about non-R&D innovators (Arundel et al. 2008; Bougrain and Haudeville 2002; Freel 2003, 2007; Muscio 2007) has highlighted the following: (a) non-R&D activities matter when innovating (Arundel et al. 2008; Barge-Gil et al. 2011; European Commission 2008; Hervas-Oliver et al. 2011; Huang et al. 2010; OECD 2005); (b) engineering departments carry out activities that substitute for R&D functions (Pavitt 1982); (c) relationships with specialised suppliers and equipment suppliers enhance a firm's innovation processes (Pavitt 1982); (d) process innovation occurs more often than that for products (Heidenreich 2009; Hervas-Oliver et al. 2011; Huang et al. 2010); (e) there are activities other than R&D which contribute to innovation, such as training, prototyping, or design, among others (e.g. Asheim and Isaksen 1997; Freel 2005; Santamaría et al. 2009); (f) SMEs, and low and medium technology intensive industries, are the most prominent users of non-R&D activities and in adopting non-R&D strategies (e.g. Griliches 1990; Heidenreich 2009; Hervas-Oliver et al. 2011; Kleinknecht and Reijnen 1991; Santarelli and Sterlacchini 1990); (g) the utilisation of advanced machinery for innovation is extensive (e.g. Barge-Gil et al. 2011; Heidenreich 2009; Hervas-Oliver et al. 2011).

Non-R&D innovation is mostly based on incremental problem solving and experimentation on the shop floor (Romijn and Albaladejo 2000: 4–5). These problem-solving activities, following Arundel et al. (2008), involve minor changes of engineering knowledge (e.g. Kline and Rosenberg 1986), reverse engineering (Kim and Nelson 2000) or adaption (Von Hippel 2005), and the recombination of existing knowledges (e.g. Evangelista et al. 2002) in new design forms or prototypes (Asheim and Isaksen 1997).

17.3 An Empirical Exercise

17.3.1 Sample and Data

Our data was sourced from the Spanish Innovation Survey (the "Technology Innovation Survey" is the official name), administered by the Spanish National Statistics Institute (INE), and conducted in 2011. This survey was based on core elements of the Eurostat Community of Innovation Surveys (CIS). The methodology and questions used in CIS are described by the Organisation for Economic Co-operation and Development (OECD 2010). Our final sample covers 2,067 non-R&D innovators and 3,576 R&D innovators in 2011. We focus on technological innovators (both those engaged in R&D and those not engaged) due to the fact that technological non-active firms (firms which did not innovate) did not answer many questions in the survey. The sample covers NACE-92 2-digit industries from 14 to 74, including therefore manufacturing and service industries. The period covered was from 2009 to 2011 (3 years).

17.3.2   Description of Non-R&D Innovators in Comparison with R&D Innovators

The variables analysed are presented in Table 17.1.

Table 17.2 shows the differences between non-R&D and R&D innovators concerning their adoption of technological innovations. The table shows that non-R&D innovators prefer adopting technological process innovations to product innovations and that also R&D innovators are more ready to undertake both (product and process) innovations at the same time. Around half (49 %) of non-R&D innovators carry out solely technological process innovations, without developing product innovations; whereas process innovations alone are only carried out by 16 % of R&D innovators, these firms being more oriented to product innovation. This means that there is a tendency for non-R&D performers to mainly focus on introducing only process innovations; introducing a new, or significantly improved, method for the manufacture, or production, of goods or services; introducing a new, or significantly improved, logistics system, or delivery or distribution method, for its supplies, goods, or services; or introducing support activities for its processes, such as new or significantly improved maintenance systems or IT operations, or purchasing procedures, or accounting practices. In contrast, R&D innovators are more oriented to introducing product and process innovations simultaneously (58 %, compared with 30 % in the case of the non-R&D innovators).

According to Table 17.3, non-R&D innovators carry out higher investments in many non-R&D activities. Despite the fact that R&D innovators spend more money on innovation activities per volume of sales (when including also R&D expenditures: 15.39 compared with 1.25), the results indicate that in times of crisis the non-R&D innovators spend much more on some non-R&D activities: acquiring machinery and equipment (exp_maq variable); buying knowledge such as patents (exp_buy_R&D variable); and spending on innovation support activities such as tooling up (exp_preparation_support). All these activities are performed more intensively (in terms of expenditures) by non-R&D innovators than by R&D innovators. The results indicate that at times of crisis, for purposes of innovation the acquisition by non-R&D innovators of external knowledge in its different forms is more attractive than developing in-house R&D activities. Investing in R&D is risky and returns are not immediately appropriated, whereas the acquisition of external knowledge (such as patents, machinery, and even extramural R&D) is less risky as long as the knowledge is ready for application and can be inserted in the production process quickly and safely.

Following this comparison, it can be stated that: (a) the innovation process is persistent across different time periods and that firms innovate whatever the economic conditions; (b) in times of economic crisis, the non-R&D strategy is strengthened by a high commitment to acquiring ready-to-use knowledge, rather than relying on uncertain R&D activities.

Table 17.1 Table of variables in the analysis

Variable	Meaning	Codification
Exp_ext_R&D	*Extramural R&D expenditures per sales*: comprising the acquisition of R&D services; total expenditures divided into the sales	Continuous
Exp_buy_R&D	*Buying R&D expenditures per sales*: comprising the acquisition of external knowledge, i.e. "the purchase or licensing of patents and non-patented inventions, know-how, and other types of knowledge from other enterprises or organisations"; total expenditures divided into the sales	Continuous
Exp_maq	*Embodied technology expenditures per sales*: comprising expenditure on the acquisition of machinery and equipment offering improved technological performance, including major software; total expenditures divided into the sales	Continuous
Exp_Training_support	*Training activities expenditures per sales*: comprising expenses on internal or external training for personnel specifically involved with the development and/or introduction of innovations; total expenditures divided into the sales	Continuous
Exp_Marketing_support	*Marketing activities expenditures per sales*: comprising expenses on activities for accessing the market, and the introduction of new or significantly improved goods and services, including market research and launch advertising; total expenditures divided into the sales	Continuous
Exp_Preparation_support	*Preparation activities expenditures per sales*: comprising expenses on design and tooling up of design functions for the development or implementation of new or improved goods, service processes, and the improvement of production; total expenditures divided into the sales	Continuous
Total_non_R&D_inno_expen	*Total expenditures on non-R&D innovation activities per sales*: represent the sum of: Exp_ext_R&D, Exp_buy_R&D, Exp_maq, Exp_Training_support, Exp_Marketing_support, and Exp_Preparation_support; total expenditures divided into the sales	Continuous
Inno_product	*Product innovation*: indicating whether the firm has carried out product innovations (goods and/or services) during the research period (2009–2011)	0–1
Inno_process	*Process innovation*: indicating if the enterprise has introduced at least one of the following during the research period (2009–2011): – *New or significantly improved methods for the manufacture or production of goods or services* – *New or significantly improved logistics systems or delivery or distribution methods for supplies, goods, or services* – *Support activities for processes, such as maintenance systems or IT operations, or purchasing procedures, or accounting, being new or significantly improved*	0–1

Table 17.2 Product and process innovations carried out by non-R&D and R&D innovators

	Non-R&D innovators		R&D innovators	
	N	%	N	%
Only process innovations	1,003	49	588	16
Only product innovations	454	22	913	26
Process and product innovations simultaneously	610	30	2,057	58

Table 17.3 Innovation activity expenditures by non-R&D and R&D innovators: a nonparametric test

	Non-R&D innovators ($N=2{,}067$)		R&D innovators ($N=3{,}576$)	
	Mean	SD	Mean	SD
exp_ext_R&D	0.385	4.458	1.418	6.409
exp_maq	0.712	3.863	0.544	3.877
exp_buy_R&D	0.033	0.556	0.020	0.243
exp_preparation_support	0.109	1.315	0.099	0.946
exp_training_support	0.004	0.028	0.039	0.197
exp_marketing_support	0.004	0.039	0.066	0.0305
Total_non_R&D_inno_expen	1.250	6.087	2.185	8.220

Mean comparison tests are consistent and statistically significant at $p<0.01$, using nonparametric Mann–Whitney U test

17.4   Conclusion

The goal of this chapter has been to understand and compare innovation patterns of non-R&D and R&D innovators, as they have occurred in a context of economic crisis. This work has contributed to the literature on innovation by shedding light on a frequently omitted innovator segment which accounts for roughly 50 % of the firms innovating in Europe: namely, non-R&D innovators.

This chapter makes a contribution by going beyond the use of traditional R&D indicators (Arundel et al. 2008; Bougrain and Haudeville 2002; Freel 2003, 2007; Muscio 2007) and confirms the generally accepted view that non-R&D activities also matter for innovation (Arundel et al. 2008; Barge-Gil et al. 2011; European Commission 2008; Hervas-Oliver et al. 2011; Huang et al. 2010; OECD 2005), especially during times of economic crisis. That is to say, the non-R&D innovation strategy is persistent also in time periods characterised by crisis. In fact, the strategy grows stronger at times of uncertainty and crisis, when R&D activities are believed riskier because of difficulties in being transformed into appropriable returns. In contrast, non-R&D activities are perceived as less risky, because they involve the acquisition of knowledge that is ready for use in the production process and incur less problems of appropriation.

Overall, the study has shown that non-R&D firms exhibit a pattern of technological innovation characterised by a high dependence on external knowledge

acquisition, with the acquisition of equipment, machinery, and software being the most prevalent ways of acquiring knowledge. These results confirm those of Hervas-Oliver et al. (2011) and Huang et al. (2010), both of which also revealed a similar pattern of innovation by non-R&D performers. For them, the structure of innovation patterns is mainly formed by the carrying out of internal non-R&D initiatives, including technological support activities (such as tooling up), and by accessing external sources of knowledge (mainly through machinery acquisition). This structure confirms the validity of both the RBV and relational viewpoints (Barney 1991; Dyer and Singh 1998, respectively) and their predictions about a significant relationship between a firm's internal and external resources.

The above having been said, we do not want readers to come away with the message that non-R&D activities are an optimal choice, and better than R&D ones. Indeed, and as shown above, non-R&D innovation strategies are associated with weak internal innovation capabilities that are supported by a strong dependence on external sources of knowledge, such as the acquisition of embodied knowledge, and a notable preference for process innovation.

Non-R&D innovation strategies are carried out by around 50 % of Europe's innovators, and this should not be overlooked by managers, scholars, and policymakers. In fact, innovation can occur without R&D, especially in SMEs and in low-medium technology contexts. The conclusions of this paper matter for scholars. In fact, they suggest how important it is to widen our lens and scope in order to include neglected innovators in our samples. Omitting those firms from our studies will not contribute to a better understanding of technical change or to the design and implementation of effective policy-making which may otherwise be constructed from incomplete samples. It seems, in fact, that most studies that measure innovation could have presented misleading results by just focusing on R&D activities, and then generalising the findings, implicitly assuming that only R&D is the way to innovate. For future studies, the role of non-R&D innovators should be analysed further, by, in particular, comparing countries of the European Union, and doing so specifically in times of crisis.

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Chapter 18
A Conceptual Approach to the Dilemma of R&D Integration: Further Insights into the Innovating Entrepreneur's Toolkit

Nuria Rodriguez-López and M. Eva Diz-Comesaña

Abstract In an age of deep crisis and uncertainty, those entrepreneurs who think of difficulties as chances hold the key for a way out. Innovation, as a result of R&D investing, is one of the items in their toolkit. Unfortunately, even though decision-making on the area of vertical integration has been extensively studied, there is no agreement yet about the effects of uncertainty on the optimal degree of R&D integration. Consequently, entrepreneurs wishing to innovate are missing a sound criterion to choose the governance form for their project.

Some authors claim that the reason for this is that the research conducted so far on the relation between uncertainty and R&D integration is incomplete. We provide further support to this claim by putting forward a model that reconciles the most important results discussed in the available literature. After reviewing the main past contributions available, we highlight the most significant variables driving decision-making on R&D integration in the face of uncertainty, and we discuss their mutual interrelations. We argue why and how specificities comprise key factors in this regard.

18.1 Introduction

Decision-making in the area of vertical integration remains a current research topic in the academic literature, and the conclusions of different studies tackling optimal decision-making in the area of business performance do not seem to be consistent. Rather, making a well-informed decision on the degree to which a governance form should be integrated appears to be conditional on different circumstances surrounding the relationship.

The lack of agreement among researchers in the area of vertical integration is particularly acute when it comes to the topic of innovation and R&D-related

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activities (Rodríguez-López et al. 2013). These are characterized by the presence of uncertainty and the need for protection, particularly relevant in a context of crisis like the present one. Besides, the usual requirements to encourage developing the activity in-house—among others, the availability of resources and the absence of market failures—can hardly be satisfied in this scenario (Santamaría and Surroca 2004), thus encouraging an outsourced activity (Howells 1999; Silipo 2008) or, at least, a properly balanced combination of in-house and outsourced activities (Harrigan 1986; Van de Vrande et al. 2006).

With all of the above in mind, our research is focused on discerning which are the most significant parameters or variables in making a decision on the degree of R&D integration and on gaining a proper understanding of their different role in this context. While it is accepted that uncertainty and specific assets, together with the risks ensuing from opportunistic behavior, can be highlighted as key elements in the optimality of integration, no agreement on the meaning and significance of the interrelations among them has been attained yet.

The disagreement among researchers on the features of the twofold interrelation that vertical integration can have—with uncertainty on the one hand, with specificities on the other—has brought as a consequence a general dismissal of the existence of interactions among these two variables. Nonetheless, such a possibility is contemplated in two research venues. The first one puts forward some mathematical model following a second degree law. According to it, there is a positive relation between those variables as long as one of them remains at one side of the law's critical point, becoming negative as soon as it crosses over to the other side (Oriani and Sobrero 2008). In the second research proposal, it is considered that the nature of the interaction is such that uncertainty can impinge on specificities in such a way that it can change its relation with vertical integration (Mahoney 1992). In this line of thought, Gervais et al. (2008) proved the existence of a negative relation between environmental uncertainty and specific human assets by introducing a particular mathematical model. In such a down-to-earth setting as the car industry, it has been proved that, both in the USA and in Japan, technological uncertainty increases specificities, whereas market uncertainty is not a significant variable (Bensaou and Anderson 1999).

The authors cited above introduce a measuring system composed of items combining physical with human specificities. This does not seem to us particularly fortunate, at least when considering the issue of appropriability, because any type of specificity must be carefully distinguished from any other.

Other researchers have addressed topics related to the optimal degree of R&D integration, both from a single-sector and from a multi-sector perspective. But even though uncertainty and specificities are discussed profusely, their interaction is not considered. Thus, Gooroochurn and Haley (2007) address the issue of whether to develop R&D in-house or have it outsourced, but nonetheless they do not provide an assessment in terms of a joint function of uncertainty and specificities. Wong et al. (2008) make their own analysis of the effects of outsourcing on innovative activity, but they obliterate discussing the contributions of uncertainty and specificities in this regard.

Our aim with this contribution is testing whether the existence of a relation between specificities and integration, on the one hand, and between integration and uncertainty, on the other, embeds some kind of interaction between specificity and uncertainty. Moreover, we aim to ascertain whether, in the affirmative, the features of those interactions have something to do with the specific kind of assets on scope. This could provide a coherent framework encompassing different research venues on the subject matter of R&D integration, thus enhancing the corresponding decision-making criteria and procedures.

We proceed by discussing in the next sections the effects that the multifaceted sources of uncertainty and specificities can have on choosing a particular governance form. We consider the relations ensuing from transaction costs theory (TCT), from the resource-based view (RBV), and from Real Options Theory (RO). Building upon this, we put forward the propositions standing at the core of our contribution. In a final section, we discuss the conclusions of our conceptual analysis.

18.2   Implications of Environmental Uncertainty Regarding the Degree of R&D Integration

As we have been saying, there is in the academic literature an acute disagreement about the relation between uncertainty and vertical integration. Thus, we find contributions stating that uncertainty has random effects on the optimal degree of integration (Krickx 2000). Other researchers, approaching the problem from the perspective of TCT, claim that there is a positive relation between uncertainty and integration based on the increased chances for opportunistic behavior in any scenario of environmental uncertainty or volatility (Carson et al. 2006; Skarmeas et al. 2006). And there is also a fraction of the literature where the authors, building up from the same theoretic foundations, claim that uncertainty—whether market-based (Gençtürk and Aulakh 2007; Levy 1985; MacMillan et al. 1986) or technological (Joshi and Stump 1999; John and Weitz 1988; Masten 1984; Masten et al. 1991; Gulati 1995; Oxley 1997, 1999; Gulati and Singh 1998)—can eventually encourage a larger degree of vertical integration.

Founded upon these considerations, different approaches have tested the proposition that technological intensity discourages vertical integration (Lambertini and Rossini 2008) and encourages cooperation (Schartinger et al. 2002; Pangarkar and Klein 2001) with the aim to remain locked onto the pace of innovation (Gooroochurn and Haley 2007).

High levels of technology and market uncertainty, together with fast technological change, discourage a large degree of integration and encourage a strategy based upon a wise combination of in-house and outsourced R&D (Harrigan 1986; Van de Vrande et al. 2006). Much in the way that is suggested by Strategy Theory, environmental uncertainty and volatility demand a greater flexibility (Sharfman and Dean 1997; Bello and Gilliland 1997) and a smaller commitment (Skarmeas et al. 2006).

According to both RBV and RO, it is concluded that, in front of a high level of environmental uncertainty, delaying the decision as to whether or not to invest in R&D will increase its value, since this allows to make the best out of the resources provided by other agents and adds flexibility to the company (Oriani and Sobrero 2008; Pateli 2009), thus encouraging those forms with a smaller degree of integration (Pateli 2009). The enhanced flexibility that belongs in the character of non-integrated forms, together with the possibility of establishing synergetic trading relationships with specialized agents, provides further support for this thesis (Harrigan 1986).

The differences of the conclusions in Oriani and Sobrero (2008) with respect to those of the preceding contributions are combined by testing the existence of more sophisticated relations between different types of uncertainty and the value of investing into R&D. They conclude that the value of the latter decreases with market uncertainty as long as uncertainty remains above a certain threshold, but as soon as it drops below it, the effect is reversed. In regards to technological uncertainty, it will be the other way around; the latter contributes to increasing the value of R&D investing until this type of uncertainty crosses over a certain threshold, showing a negative effect from that point on.

This can be summarized in terms of the following proposition:

Proposition (1): *Environmental uncertainty shows a quadratic effect on R&D integration*.
Proposition (1a): *Market uncertainty has a quadratic positive effect on R&D integration*.
Proposition (1b): *Technology uncertainty has a quadratic negative effect on R&D integration*.

18.3 Implications of Specificities on the Degree of R&D Integration

According to TCT, endogenous uncertainty is a consequence of the existence of specific assets in scenarios of asymmetric information together with the possibility of the presence of opportunistic behavior (Pateli 2009). Under such circumstances, those governance forms allowing for a tighter control (Gençtürk and Aulakh 2007; Das and Teng 2001) and the provision of the latest technology (Nakamura and Odagiri 2005) are the ones to be preferred. These correspond precisely to the structure of a firm (Heide 2003). Therefore, according to this theory, there is a positive relation between endogenous uncertainty and the degree of vertical integration (Krickx 2000).

As for specificities, most of the empirical tests conclude that it encourages integration. This is a result of the protection it provides against the possibility of expropriations (Williamson 1989). In the same way, TCT suggests that a larger degree of integration provides further protection to specific technological knowledge (Hashai and Almor 2008).

Whenever there is a large sustituibility and a possibility for replication, the need for protection becomes even more critical and, consequently, so does a larger degree

of integration (Lambertini and Rossini 2008). In those cases, innovation must be developed in-house (Gooroochurn and Haley 2007). Increasing the degree of integration when the interdependence degree between assets is low makes the risk of opportunism smaller (Lee and Fixson 2008).

On the other hand, RO suggests that, while the innovation process moves forward, the decrease of uncertainty will lead to changes on the preferences regarding R&D integration (Van de Vrande et al. 2006). According to RO, a decrease of uncertainty among partners encourages compromising a larger fraction of the resources and quitting hierarchies progressively.

Moreover, a negative relation between specificity and integration has been justified on the basis of the compliance warranty ensuing from such a specificity (López Bayón et al. 2002). This warranty becomes particularly significant when the assets are prone to appropriability (Klein 1996; Dyer 1997; Nakamura and Odagiri 2005). Brocas (2003) and Bulan (2005) provide an analytical proof for the argumentation above in terms of the possibility to increase the licensing prices and therefore to obtain all the surplus resulting from innovation.

Along the same lines, we can find RBV, adding to the above that the larger the specificity in technological knowledge, the deeper the extent to which it contributes to the competitive advantage of the company, making at the same time more difficult any possibility of replication and of illegitimate appropriation; hence, the need for protection is smaller (Hashai and Almor 2008). In this way, specificities will become protective only once the intensity of R&D is high enough; whenever there is specificity to some degree, as long as it is small, it is necessary to resort to protection mechanisms, which in turn could encourage a larger degree of integration.

Intermediate R&D intensity will demand a larger degree of integration, because the possibility of market failure must be considered, and specificity is not high enough to become protective. For R&D intensity increasing up to a certain threshold, the optimal degree of integration rises accordingly, but once that threshold is crossed over, specificities are protective enough and the optimal degree of integration is smaller. Thus, the relation has the shape of an inverted "U." We get in this way to Proposition 2:

Proposition (2): *Specificities have a negative quadratic effect on R&D integration.*
Proposition (2a): *Physical specificities have a negative quadratic effect on R&D integration.*
Proposition (2b): *Human specificities have a negative quadratic effect on R&D integration.*

Any proposal to reconcile organizational theories and the different conclusions that they appear to support must necessarily consider a joint assessment of the role of specificities and uncertainty. The effect of uncertainty on the optimal degree of vertical integration is conditioned by assets specificities. If the latter remain constant, the relation between uncertainty and integration will be positive, whereas if specificities decrease due to uncertainty, the relation between uncertainty and integration might even become negative (Mahoney 1992).

Nevertheless, the two types of specificities—physical and human—display very distinctive features in regard to their susceptibility to being appropriated. Physical

Table 18.1 Propositions

Proposition	Independent variable	Sign	Dependent variable
Proposition 1	Environmental uncertainty (market/technology)	∪/∩	R&D integration
Proposition 2	Specificities	∩	R&D integration
Proposition 3	Environmental uncertainty	−	Physical specificities
Proposition 4	Environmental uncertainty	+	Human specificities

specificities are in full sight, which makes their replication an easy task when they are successful. Besides, they are tightly bound to their owner, hence they are difficult to remove when they prove a failure. Thus, physical specificities should decrease in front of uncertainty and consequently lead to governance forms which are integrated only to a smaller degree. This is stated as Proposition 3.

In turn, human specificities, if successful, can be replicated by others only with difficulty—they need time to be developed to the necessary extent. Besides, they prove helpful in the generation of capabilities that allow for a better fit to environmental changes and to the generation of innovations underlying competitive advantage. In this sense, uncertainty should encourage investing into human specificities. This is considered in Proposition 4.

Proposition (3): *Environmental uncertainty has a negative effect on physical specificities.*

Proposition (3a): *Market uncertainty has a negative effect on physical specificities.*

Proposition (3b): *Technology uncertainty has a negative effect on physical specificities.*

Proposition (4): *Environmental uncertainty has a positive effect on human specificities.*

Proposition (4a): *Market uncertainty has a positive effect on human specificities.*

Proposition (4b): *Technology uncertainty has a positive effect on human specificities.*

The theoretic approach discussed in our paper suggests the five propositions that we have put forward. These are statements collecting and giving open expression, on the one hand, to the different interrelation modes existing between the degree of uncertainty and the optimal degree of R&D integration; on the other, to the binding effect between the former and the latter due to specificities. As a summary, we compile in Table 18.1 those propositions.

18.4   Conclusions

The lack of consensus on the relation between specificities and vertical integration, on the one hand, and between uncertainty and vertical integration, on the other, seems to have led to a general dismissal of the possibility of specificities and

uncertainty interacting with each other. As an immediate consequence of this disagreement, entrepreneurs wishing to innovate based on the outcome of R&D activity are missing the grounds on which they can base their decisions on how to devise their projects' governance forms and strategies. This is a gap that needs to be filled urgently, because innovating entrepreneurship is one of the paths to follow in order to get out of our current crisis scenario.

Nonetheless, two research venues have been suggested which contemplate the possibility of an interrelation existing between uncertainty and integration and which, through it, hopefully pave the way to a more comprehensive and unified approach to the dilemma of R&D integration. The first one, in terms of a mathematical model, following a quadratic law (Oriani and Sobrero 2008). In the second approach, it is considered that uncertainty can impinge on specificities and in this way change its relation with vertical integration (Mahoney 1992).

With the above in mind, plus the relevant literature reviewed, it is shown how it is nonetheless possible to find some coherence in the different results obtained on R&D integration, and therefore to establish some guidelines for those entrepreneurs wishing to innovate in the presence of uncertainty.

Our paper develops a foundational discussion pointing to a number of propositions that add up to the statement that the relations between specificities and integration, on the one hand, and between uncertainty and integration, on the other, embed interactions among specificities and uncertainty. Environmental uncertainty decreases physical specificities and increases human specificities. Besides, specificities have a negative quadratic effect on R&D integration. In this way, developing R&D in-house is advised only for those business sectors which are not knowledge-based and for those enjoying high specific investments.

In accordance with the objectives put forward, those propositions account for the features distinguishing the results that had been obtained previously about the relations involved among the variables uncertainty, specificities, and R&D integration. An appropriate understanding of these interactions will provide more coherent grounds to the different research venues in this subject matter, thus moving forward the state of the art. In regard to empirical approaches and applications, the results obtained herein will enhance the decision-making criteria, and the corresponding procedures, on the optimal degree of R&D integration.

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