



García-Villaverde, P.M., Ruiz-Ortega, M.J., and Canales, J.I. (2013)
Entrepreneurial orientation and the threat of imitation: the influence of
upstream and downstream capabilities. *European Management Journal* .
ISSN 0263-2373

Copyright © 2013 Elsevier

A copy can be downloaded for personal non-commercial research or
study, without prior permission or charge

The content must not be changed in any way or reproduced in any format
or medium without the formal permission of the copyright holder(s)

When referring to this work, full bibliographic details must be given

<http://eprints.gla.ac.uk/73289>

Deposited on: 18 February 2013

Enlighten – Research publications by members of the University of Glasgow
<http://eprints.gla.ac.uk>

ENTREPRENEURIAL ORIENTATION AND THE THREAT OF IMITATION: THE INFLUENCE OF UPSTREAM AND DOWNSTREAM CAPABILITIES

1. Introduction

Despite interest in entrepreneurial orientation (EO) and significant theoretical development, (Rauch, Wiklund, Lumpkin, & Frese, 2009) there is a call for studies on internal and external factors acting as intermediaries between EO and performance (Rosenbusch, Brinckmann, & Bausch, 2011). Due to these factors, an EO to strategy may not always be beneficial. Entrepreneurial behaviors such as opportunity-seeking and risk-taking only produce benefits when they result in innovation, growth and wealth creation (Ireland, Hitt, & Sirmon, 2003). However, the effectiveness of an entrepreneurial approach will suffer from the combined effect of external circumstances and each firm's characteristics (Stam & Elfring, 2008). For this reason, the relationship between EO and performance is complex (Miller & Friesen, 1983; Wiklund, 1999; Zahra & Covin, 1995). Even when the total effect might be positive, certain elements intervene between EO and performance (Lumpkin & Dess, 2001; Moreno & Casillas, 2008; Wiklund & Shepherd, 2005), overestimating this effect (Lumpkin & Dess, 1996; Lyon, Lumpkin, & Dess, 2000). These intervening elements can be either external or internal to the firm. In this paper, we firstly specify external circumstances with high threat of imitation to emphasize the effects caused by EO. Under threat of imitationⁱ EO is stretched to its limit to remain effective. Secondly, to specify the intervening elements, which refer to firm's characteristics, we view them as either upstream or downstream capabilities affecting the EO-performance relationship.

EO as a mechanism to seek performance is essentially created by managers, especially by CEOs, and their perceptions will bear a major say on how EO is formed. Thus, the strength of the present study is that our results build on the perceptions of the CEOs. According to Dess, et al. (1997), EO is an extension of entrepreneurship from the individual level to the organizational level. Referred to as an 'entrepreneurial posture' by Covin and

Slevin (1989) and 'entrepreneurial orientation' by Lumpkin and Dess (1996), EO reflects an independent posture which includes the firm's commitment to risk-taking, innovation and proactiveness in developing and implementing its strategies (Green, Covin, & Slevin, 2008; Keh, Nguyen, & Ng, 2007; Li, Zhang, & Chan, 2005; Miller, 1983). Thus, EO will produce strategies where new ideas, creativity and innovation are promoted. Previous research has studied specific environmental conditions affect the EO-performance relationship contingently: hostile or benign environments (Covin & Slevin, 1989), external variables such as the role of technology, dynamism, hostility and life cycle (Covin & Slevin, 1991; Lumpkin & Dess, 2001) and market uncertainty (Li, et al., 2005). Other studies have analyzed internal elements that intervene between EO and performance as process (Covin, Green, & Slevin, 2006; Wiklund & Shepherd, 2003), strategies (Dess, et al., 1997) or resources (Li, et al., 2005). However, these studies show contradictory results and fail to include elements that explain these contradictions (Lumpkin & Dess, 2001). For this reason Lumpkin and Dess (1996) called for the need to deepen our understanding of the combination of factors that influence EO and performance.

In order to answer this call, we rely on the configurational approach to examine the relationship between EO and the performance (Wiklund & Shepherd, 2005). Such configurational approach allows a nuanced view, which is particularly helpful in understanding the complexities of attempting an EO. Under a configurational approach, performance is the result of internal coherence of organizational and strategic factors among themselves and with the specific context of the organization (Doty, Glick, & Huber, 1993; Meyer, Tsui, & Hinings, 1993; Miller, D., 1986; Miller, 1996). In addition, elements of strategy, structure and process combine (Miller, 1996) in such a way that a variety of organizations show a relatively small number of combinations (Meyer, et al., 1993; Short, Payne, & Ketchen, 2008). Nevertheless, few empirical studies have addressed EO from the

configurational approach (see for instance Dess and colleagues, Winklund & Shepherd or Stam & Elfring (Winklund & Shepherd, 2005)). Although, these studies confirm the positive EO-performance relationship, they introduce specific internal factors (e.g. strategies, financial resources or social capital); analyze segmented samples (e.g. small firms or new ventures) and apply simplified statistic techniques (e.g. partial regressions). Overall, due to the scope of previous studies, they fail to specify intervening internal and external elements that affect the EO-performance relationship, thus yielding results that are fragmented.

The purpose of this paper is to determine the necessary capabilities that enable EO when firms face the threat of imitation according to the perceptions of CEOs. Our central argument is that, under imitation-based competition, downstream marketing capabilities facilitate tapping into opportunities derived from EO and will yield a better performance. Conversely, the deployment of technical upstream capabilities will hamper any benefits that the development of EO may bring. Combining technical capabilities will negatively affect performance as these capabilities can be easily imitated.

Specifically, we aimed to determine whether the joint effect of specific capabilities fosters or hinders the influence of EO on performance in the special case where imitation is a threat. Consequently, we included technical and marketing capabilities within a general model to control for all major effects and avoid the biases derived from partial regressions linked to each factor (Dess, et al., 1997). Thus, our overarching contribution with this paper is to shed light, from configurational approach, on how the effectiveness of EO depends on the availability of capabilities and on their adequacy to compete in a specific environment.

The remainder of the paper is structured as follows. Next, we develop a set of hypotheses derived from extant theory. Then, we describe the methodology used followed by the results obtained. Finally, we present the conclusions and discuss implications for theory and practice as well as future potential research.

2. Theory and Hypotheses

2.1 Entrepreneurial Orientation

Mintzberg (1973) described entrepreneurial, adaptive and planning modes, but only the entrepreneurial mode comprised opportunity-seeking, risk-taking and decisive action. Lumpkin and Dess (1996) broadened this conceptualization by including five dimensions that include EO: autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness. EO has been studied in relation to performance outcomes (Li, et al., 2005) typically using EO measures such as firm behavior, resource allocation and management perceptions (Lyon, et al., 2000). In the present study, we use CEOs' perceptions of EO because of the richer information regarding EO that allows a deeper understanding of the causal links in EO-performance models. While some studies (e.g. (Chaganti, De Carolis, & Deeds, 1995)) have measured EO through management perceptions using Lumpkin and Dess's (1996) dimensions, most of them only focus on a subset of the dimensions. Following Lumpkin and Dess (1996), we carried out this study focusing on both the dimensionality of the EO construct and the role of contingency and configurational approaches in explaining its relationship to performance. Hence, we use a one-dimensional measure of EO through perceptions of CEOs. This usage is consistent with Dess et al. (1997) and allows a more thorough understanding of the processes that are internal to the firm and its relation to performance. At the same time, enhancing our understanding is more likely to improve the abilities to interact with external processes and environment by CEOs.

EO reflects a firm's risk taking behavior, innovativeness and proactiveness (Miller, 1983). As such, we state that there is a universalistic positive effect of EO on firm performance. However, we argue that the effect of EO for firm performance will be affected by the existence of firm's capabilities and serendipitous occurrence of valuable opportunities. The value of EO will depend, first, on the extent to which this external environment provides

potential opportunities for the firm to explore these opportunities, and second, on the extent to which internal capabilities enable the firm to capture opportunities when implementing EO.

2.2 EO and Performance

There is some evidence for a positive relationship between EO and performance. This evidence is based on the argument that EO allows firms to achieve first-mover advantage (FMA), hence capitalizing on emergent opportunities (Covin & Slevin, 1991). Miller (1983) argues that entrepreneurial activity captures the proactive behavior of a firm and advocates that this behavior has an overall positive effect on firm performance. This universalistic effect is also due to the growing tendency to shorten product lifecycles (Hamel, 2000), where EO may help firms to constantly seek out new opportunities to maintain current profit streams with the operation of these new opportunities (Wiklund & Shepherd, 2005).

Several studies report on a positive relationship between EO and performance (Covin & Slevin, 1986; Madsen, 2007; Runyan, Droge, & Swinney, 2008; Wiklund, 1999; Wiklund & Shepherd, 2003). However, there are studies that find little relationship between EO and performance (e.g. (Lumpkin & Dess, 2001)). One reason for this indistinct relationship is that internal and environmental elements intervene between EO and performance (Lumpkin, Dess, & Covin, 1997; Wiklund & Shepherd, 2003) and these elements can overestimate or bias this effect (Lumpkin & Dess, 1996; Lyon, et al., 2000). Thus, we posit that this relationship will be contingent upon the resources to which the firm has access and the environment the firm operates in. Alternatively, the EO-performance relationship can be overestimated or underestimated due to biases in construct measurement (Lyon, et al., 2000). For this reason, Covin et al. (2006) argue that the typical measure of EO might hide other effects and specifically that these constituent measures can vary somewhat independently.

Despite the potential biases and diversity of results on the influence of EO on

performance, Rauch et al. (2009) show through meta-analysis that the correlation of the EO-performance relationship is moderately large and this relationship is robust for different operationalization of key constructs. At the most aggregate level of measurement we would expect the relationship between EO and performance to exist. In consequence, our first hypothesis is as follow,

Hypothesis 1: EO has a positive influence on performance.

2.3 The Moderating Role of Level of Imitation in the Environment

Contingency theory suggests that the fit between key factors, such as environment, structure, and strategy, is critical for obtaining optimal performance (Burns & Stalker, 1961; Lawrence & Lorsch, 1967; Miller, 1988). From that perspective, convergence between EO and external factors related to competitive dynamics (like capabilities and organizational structure) may foster superior performance (Lumpkin & Dess, 1996). A number of studies stress the affective role of environmental factors in the relationship between EO and performance (Covin & Slevin, 1989; Dess, et al., 1997; Li, et al., 2005). Such studies examined the moderating role between EO and performance by introducing generic environmental variables as hostility, heterogeneity uncertainty and growth, Instead this study focuses on the competitors' capacity to imitate as a variable that can significantly moderate the EO-Performance relationship. However, perceived threat of imitation does not affect all firms in the same way. The more CEOs have either experienced or witnessed imitation of new products or ideas by other competitors, the higher their perception of threat of imitation.

According to Ethiraj et al. (2008), imitation can be defined as “the process by which a low-performing firm replaces a subset of its own decision choices and/or interdependencies with an equivalent set of decision choices and/or interdependencies copied from a high-performing firm” [45 p.944]. Imitation has a clear effect on industry dynamics (Barreto,

2010). The actions of imitators promote a quick diffusion of new products, processes and organizational arrangements as suggested by Ethiraj et al., (2008). These diffusions via imitation assume less risk and uncertainty than otherwise. In consequence, the possibility of imitation will lessen the incentive of innovators to take risks. Quick imitation reduces the industry profitability, increases concentration and ultimately the capacity of successful firms to maintain their productivity (Rivkin, 2000).

Research studying imitation has analyzed either why firms imitate or the effects of imitations on firm's performance (Ethiraj & Zhu, 2008). Concerning the latter, the effect imitation has on the industry is well developed (Lee, Smith, Grimm, & Schomburg, 2000; Lieberman & Asaba, 2006; Moatti, 2009). The ability to imitate enables less skilled firms to compete with more innovative firms reflecting back to them the main characteristics of their products and strategies. This situation would worsen the results of the innovative firms (Rivkin, 2000). Contesting this, Mukoyama (2003) contradicts the notion that imitation diminishes overall industry results, arguing that imitation could increase the dynamism of the economy as a whole. Possible explanations for this inconsistency can be the level of analysis and time span. Within an industry, and in the short run, imitation might tend to have a negative effect for firms, which actively engage in EO. Alternatively, one could argue that imitation essentially alters the size of the slices of the available pie to competitors rather than the actual size of the pie itself. We use imitation as an exercise of copying new technological products, which may occur within diverse market niches and controlled for the competitive dynamism of each niche.

EO can act as a driver for firms to gain new segments in emerging markets, achieve economies of scale and ultimately higher performance (Miller & Friesen, 1983; Wiklund, 1999; Zahra & Covin, 1995). The higher the perceived level of imitation within the environment the lesser time will be required to respond to actions of firms who utilize EO

(Bowman & Gatignon, 1995). Imitators' actions encourage a rapid diffusion of new products, processes and organizational agreements (Pil & Cohen, 2006). Whether the advantages derived from EO are temporary or more permanent will be largely determined by the responses of rivals. By quickly imitating new product introductions, rivals can adversely affect the extension and permanence of the first mover advantages by sharing and/or reducing their potential profits (Lee, et al., 2000).

In consequence, the higher the competitors' capacity to imitate in an industry the less the incentive to innovate, as innovation will not reach fruition (Nelson & Winter, 1982; Rivkin, 2000). Those firms with an EO, will be discouraged from being first movers if they act in an environment where competitors can swiftly imitate recently introduced innovations (Lieberman & Montgomery, 1998). In fact, under threat of imitation, entrepreneurial behavior can generate a less positive effect (or even a negative one) as innovations are readily copied, thereby inhibiting rents. The effect of imitation is to dissipate the first movers shareholder wealth gains, thus undermining the permanence of the EO advantages (Lee, et al., 2000). Consistent with this line of argument, we hypothesize that,

H2. The threat of imitation in the environment moderates the relationship between EO and performance. The perception of an environment with high level of imitation produces a less positive (more negative) influence of EO on performance.

2.4 The Moderating Role of Capabilities

The resource-based view (RBV) holds that higher performance is due to effective deployment of firm-specific valuable resources and capabilities (Barney, 1991; Carmeli, 2004; Peteraf, 1993; Roos & Victor, 1999; Teece, Pisano, & Shuen, 1997). It is those resources and capabilities that underpin the achievement of competitive advantage via superior performance (Barney, 1991; Wernerfelt, 1984). At the same time, in order to pursue high performance, firms must either have superior expectations of the value of their

committed resources and developed capabilities or mere luck (Makadok & Barney, 2001). The outcome of EO will be one way to either identify or generate such expectations. Accordingly, the effectiveness of EO on performance will depend on the coherence between expectations developed via EO and the reality of committed resources and capabilities. In this paper we focus on two types of capabilities –upstream technical and downstream marketing, thus covering two elements within the value chain (Porter, 1985). Technical and marketing capabilities have been shown to ensue from EO and, as a result of it, to affect performance (Li, et al., 2005). We address technical and marketing capabilities due to their all-encompassing nature. In a broad sense, technical capabilities relate to the execution of any relevant technical function or volume activity within the firm, including the ability to develop new products and processes to operate facilities effectively. Marketing capabilities relate to the skills that derive from commercializing a firm's product, and are directly linked to obtaining advantages in the firm's relationship with its clients (Lado, Boyd, & Wright, 1992; Teece, et al., 1997).

If, apart from possessing valuable technical capabilities, a firm also adopts an EO, it increases its chances of achieving first moving advantage. As explained earlier, development of an EO comprises risk taking, innovativeness and proactiveness; thus, we argue that those firms that engage in EO require the support of upstream capabilities to benefit more from this behavior. Inasmuch as EO encourages opportunity identification, technological capabilities become central for firms to capitalize on such opportunities by launching quality products and adopting new technologies (Li, et al., 2005). As innovations enter the marketplace, but prove difficult to copy the advantage could be higher and sustained for longer. These arguments lead to the following hypothesis:

H3. Technical capabilities moderate the relationship between EO and performance. Availability of high technical capabilities produces a more positive (less negative) influence of EO on performance.

Marketing capabilities as defined by Spanos and Lioukas (2001), suit entrepreneurial behavior as such behavior provides easier access to clients. In turn, the feedback from entrepreneurial behavior will tend to improve and fine tune marketing capabilities (Makadok, 1998). Marketing capabilities can establish strong resource position barriers (Wernerfelt, 1984) with respect to competitors, making imitation difficult even when the technical component can be copied swiftly. Control and investment in downstream marketing capabilities can turn them into complementary assets for the successful exploitation of innovations, facilitating new product launches and niche market growth. Similarly, marketing capabilities can better both protect market opportunities and direct contact with consumers (Teece, 1986). These capabilities will allow firms that develop an EO to create a strong brand image that customers will tend to identify with the standard of the product (Lieberman & Montgomery, 1998), and eventually will improve their performance. In sum, strong marketing capabilities help firms to identify and capture the 'right' business opportunities emerging as a result of an EO. Hence, our next hypothesis:

H4. Marketing capabilities moderate the relationship between EO and performance. Availability of high marketing capabilities produces a more positive (less negative) influence of EO on performance.

2.5 Configurational Approach

Capabilities, structures and processes need to be managed coherently within organizations, in order for a configuration to be effective (Hill & Birkinshaw, 2008; Meyer, et al., 1993; Miller, 1996). From such configurational approach a firm's results depend on both the consistency between structural and strategic factors and the congruence of those factors with the context (Wiklund & Shepherd, 2005). Hence, in order to achieve high performance firms must be structured following internally consistent configurations, which at the same time have to be consistent with the environment (Ketchen, Thomas, & Snow, 1993; Short, et al., 2008).

As pointed out, a firm's perception of the perceived level of threat of imitation in the environment moderates the relationship between EO and firm performance. If a firm's competitors are capable of quickly imitating the strengths and attributes of a new product, then the advantages derived from an EO will have a shorter life (Lee, et al., 2000). Besides, availability of required resources and capabilities will affect firms' behaviors within their environments as well as the results obtained (Giarratana, 2004; Teece, 1986). With a high threat of imitation, firms possessing strong technical capabilities will at best improve current products rather than new launches for fear of imitation (Henderson, 1993).

In the presence of imitating competitors, the initial success of firms using an EO can intensify their commitment to the existing technology with high technical capabilities, and can make them less able to develop innovations in response to market changes (Mitchell, 1989; Yip, 1982). Thus, an inertia effect, ensuing from the fear of damaging their products, may turn the configuration of an EO incoherent affecting performance. For instance, an EO focused on developing strong technical capabilities under an environment with high threat of imitation by competitors may render EO useless. Proactive and innovative firms, who are highly committed to existing technical capabilities, will have difficulties in competing under the threat of possible imitation. On the one hand, they do not obtain cost advantages from their technical capabilities, while on the other they do not reap the benefits of new product development given the strong commitment of upstream capabilities of current products. In these conditions, the imitators offer lower prices compared to innovators as they attain significant cost advantages (Shamsie, Phelps, & Kuperman, 2004). Thus, EO and technical capabilities involve costs that can be hardly be offset by the benefits of an EO in environments highly prone to imitation. As a consequence, the EO configuration that puts less emphasis on technical capabilities under high imitation by competitors will be associated with higher performance than the configuration emphasizing technical capabilities under high

imitation environment. Hence, we can formulate our next hypothesis:

H5. Availability of high technical capabilities in environments highly prone to imitation produces a more negative (less positive) influence of EO on performance than the availability of low technical capabilities in environments highly prone to imitation.

In a context where a high threat of imitation prevails, the imitation of product and process technology can easily occur due to their standardized characteristics and typically rapid dissemination. In contrast, developing downstream capabilities such as marketing, involves added causal ambiguity and a generally less transparent market, making imitation and acquisition more difficult. Makadok (1998) stresses that, even when there are strong imitation threats in the industry, if firms possess key downstream capabilities that can develop 'resource position barriers', such as marketing, they will achieve and maintain advantages derived from the development of an EO over time. In other words, under high imitation by competitors, the development of an EO is enhanced by complementary downstream capabilities that can establish strong resource position barriers in relation to competitors (Wernerfelt, 1984). These complementary capabilities facilitate the achievement of FMA derived from EO, even when the technical aspect of a product is relatively easy to imitate. In fact, under imitative pressure from competitors downstream capabilities become complementary to EO when the firm wants to quickly access and exploit market opportunities by seizing the rents derived from entrepreneurial behavior (Teece, 1986). Marketing capabilities such as access to clients, strong brand image, distribution channels and advertising become highly relevant (Lieberman & Montgomery, 1998; Makadok, 1998). In sum, under high imitation, firms developing EO will tend to obtain better results if they possess marketing capabilities with which to make the most of the product in the marketplace. Consequently, the EO configuration with strong emphasis in marketing capabilities under high imitation by competitors will be associated with higher performance than the EO configuration putting less emphasis on marketing capabilities under high

imitation of the environment. From this line of argument we offer the next hypothesis:

H6. Availability of high marketing capabilities in environments highly prone to imitation produces a more positive (less negative) influence of the EO on performance than the availability of low marketing capabilities in environments highly prone to imitation.

3. Sample and Methods

3.1 Sample

To carry out the empirical study, we have chosen to centre on the Information and Communications Technology Industry in Spain, where the perception of threat of imitation played a major role. In order to establish the total number of firms in this sector we have used five data bases: ANIEL, Census of exporters, Promotion of the production, *Europage* and *Camerdata*. In building our sample we chose not to include those companies that had fewer than 10 employees since, in companies of such a small size, their characteristics differ substantially from the considerations raised in the theoretical argumentation, and hence a minimal operative structure and a specific study are required (Naman & Slevin, 1993; Reuber & Fischer, 2002; Spanos & Lioukas, 2001). The bulk of the data was collected between January and March of 2003.

Once we had eliminated duplicated cases resulting from the use of different data sources, we were left with a database with 1847 records, to which we sent the questionnaires that had been prepared for this study. The data were gathered by means of a postal questionnaire directed to the CEO of the firms involved. After three weeks we re-sent the questionnaire, obtaining a total of 253 valid questionnaires constituting a rate of response of 13.69%, which is deemed acceptable in view of the low response rate in mail surveys. With regard to the sampling error, for a confidence level of 95 %, we have an error of 5.72%. In order to reinforce the validity of the data collection we only included those questionnaires that were fully completed by the CEO. We compared the firms that responded during the first three weeks (176) and the firms that responded later (77) through a t-test for all the variables

included in the study, and did not find any significant differences between the two groups. In addition, we compared the mean value of the size variable between all firms and those included in the sample and obtained similar values in both cases. Non-response bias was not detected (Armstrong & Overton, 1977).

3.2 Measurement

The questionnaire design was developed from a wide review of the literature, which allowed us to measure most of the analyzed variables using validated scales. In order to improve content validity (Hambrick, 1981), we developed a pre-test involving nine firms belonging to the target sector. We then sent a lengthy questionnaire, in which CEOs could indicate the degree of comprehensibility of the questions, as they expressed their opinion as to the extent that the questions were appropriate. Likewise, we also carried out in-depth discussions with academics and industry experts during the design of the questionnaire. In these meetings, we went through the questionnaire, so that these experts could produce critiques and suggest improvements. Finally, we developed a principal-axis factor analysis to demonstrate independence between the conceptual dimensions of the capabilities and environment variables.

Given that all of the data were collected from the same source, Harman's single factor test for common method variance was conducted on all of the items used in the factor analysis. The results of this un-rotated principal component analysis revealed that the first factor accounted for a small percentage of the total variance in the items, which indicates that common method source/method variance does not explain the majority of the covariance between the items (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003).

3.3 Dependent Variable

Performance. In order to reflect the performance of the company adequately, we have calculated the product of CEOs' self-reported importance and satisfaction (Gupta & Govindarajan, 1984; Zahra, 1996) for five items –return on investment, profit margin, market share, growth of sales, and general performance (Chronbach's alpha of 0.824). We established a time horizon of three years for performance as an approximation to its sustainability. Specifically, respondents were asked to evaluate the five items over the previous three years (Spanos & Lioukas, 2001). In addition, and in order to verify the reliability of the self-reported measures of performance included in the study, we calculated the correlations between these measures and objective measures of performance which were obtained from the SABIⁱⁱ database –return on investment and growth of sales. Within a subsampleⁱⁱⁱ of 90 firms, results show correlation coefficients of 0.641 for return of investment and of 0.689 in growth of sales. Therefore, the hypothesis of independence between the variables was rejected. In order to strengthen the measurement we calculated the correlation between the construct importance x satisfaction with the results value of each firm in relation to competitors, used by Spanos and Lioukas (2001). The coefficient obtained was 0.540. The items selected reflect the variety of goals relevant to different strategic thrusts and are consistent with the desirability of a multidimensional approach to performance measurement (Hambrick, 1982). Subjective measures of performance were used for the difficulty in accounting for industry differences on objective financial data (Miller, Danny, 1986). Subjective measures are widely used in other strategy studies (for example, (Drnevich & A. P. Kriauciunas, 2011; Spanos & Lioukas, 2001).

3.4 Independent Variables

Entrepreneurial Orientation. Our measure of EO is based on Dess et al. (1997). From this 25-item instrument —related to entrepreneurial orientation, CEO style, and general

management orientation— Dess et al. (1997) obtain a factor, which they check for validity and reliability. This factor is characterized by innovation, experimentation, risk taking, and assertiveness. We assembled four of Dess et al. (1997) scales, which entails a wide focus on the dimensions of EO, using a five-point Likert scale.

The items are the following: *people in this organization are very dynamic and entrepreneurial* -overall EO-; *people are encouraged to experiment in this organization so as to identify new, innovative approaches or products* –proactiveness and innovativeness-; *people are willing to take risks* -risk-taking-; and *most people in this organization are treated pretty much the same, regardless of rank or status* –autonomy- (Cronbach's alpha of 0.798). To reinforce the one dimensionality of the chosen scale we performed a principal component factor analysis checking that the items analyzed actually group into one factor.

Imitation. The level of imitation in the environment can be defined as the group of market reactions to a new product's introduction (Chaney, Devinney, & Winer, 1991). We measured the CEO perceptions of threat of imitation within the environment because of the importance it has for obtaining and sustaining advantages from EO (Lee, et al., 2000). Thus, the perception of threat of imitation will be high if new product launches are followed by numerous actions to imitate it. Conversely, the perception of threat to imitation will be low, if there are hardly any actions taken to imitate the product launched. This variable was measured with a two-item scale^{iv} adapted from Lee et al. (2000). The scale reads as follows: *the firms in the sector usually imitate new products introduced into the market rapidly* and *competitors have unique capabilities of imitating new products introduced into the market* (Cronbach's alpha of 0.7233).

Firm capabilities. In relation to the measurement of firm capabilities, we have included two kinds of capabilities, linked to their position in the value chain, as proposed by the Spanos and Lioukas (2001). Subsequently, this scale was discussed with academics and

managers during the pre-test phase until it was deemed to be suitable for our study on account of its functional approach.

Technical capabilities. These upstream capabilities refer to the necessary technical and technological abilities needed to transform inputs into products. The construct includes three items: *technological capabilities and equipment*, *economies of scale and technical experience*, and *efficient and effective manufacturing department* (Cronbach's alpha of 0.830).

Marketing capabilities. These downstream capabilities refer to the output-based competences. The construct includes four items: the *advantages in the relations with clients*, the *customer "installed base"*, *control and access to the distribution channels* and *market knowledge* (Cronbach's alpha of 0.729).

3.5 Control Variables

Size. Size is frequently included in studies to control the effect that it can have on firm performance. Big firms can often own more resources to obtain a better position in the market and develop economies of scale that will help them achieve a better performance (Mcevil & Zaheer, 1999). This variable has been included through the natural logarithm of the number of employees (Tsai, 2001).

Age. The variable age is conventionally included in the studies in order to control its influence on the firm's performance (Chandler & Hanks, 1994; Zahra, Ireland, & Hitt, 2000).

Market potential. This control variable for the nature of the environment refers to the potential demand of the market. This construct was measured by an index consisting of four items adapted from Song & Parry (1997) that refer to the *number of potential customers*, *strength of the needs*, *size of the market* and the *market's growth rate* (Chronbach's alpha of 0.7934).

3.6 Analysis

In order to test the hypotheses we carried out linear regression analyses, proposed as independent linear models. We first proposed a simple model, which includes only the direct effects. Subsequently, we developed the double interactive effects and triple interactive effects models, including the moderating factors individually and jointly. This type of approach is appropriate when analyzing multiplicative terms in regression analysis or, more generally, when independent variables are highly correlated with the dependent variable (Cohen & Cohen, 1983). The validity of the procedure has been shown mathematically (Arnold, 1982; Cohen & Cohen, 1983) as well as in computer simulations (Stone & Hollenbeck, 1984). In each step of the hierarchical analysis, the next higher order interaction is added (two-way and three-way interactions, respectively), and incremental R^2 and F tests of statistical significance are evaluated. An interaction effect exists if, and only if, the interaction term gives a significant contribution over and above the direct effects of the independent variables (Cohen & Cohen, 1983). The magnitude of higher-order regression coefficients (as opposed to statistical significance) cannot be evaluated separately from lower-order terms but has to be assessed jointly. Typically, assessment of how significant interactions affect the dependent variable are done by first entering selected values of the interaction terms into the regression equation and then plotting these values against the resulting values of the dependent variable, a practice we adhere to in this article. Such plots show the effect of one selected variable, given different combinations of values for other variables (Wiklund & Shepherd, 2005).

4. Results

Tables I and II present the correlation matrix and the descriptive statistics for all variables. As a starting point, we calculated the value inflation factors (VIFs) and found them

all to be below two, which is well below the standard benchmark (Hair, Anderson, Tatham, & Black, 2001). This indicates that multicollinearity is unlikely to be a problem. The hypotheses were tested using hierarchical regression analysis, which we present in Table III (hypothesis 1 against the universalistic model, hypotheses 2, 3 and 4 against the contingent model, and hypotheses 5 and 6 against the configurational model^v). Control variables as organizational size, age and market potential- as well as the independent as imitation, technical capabilities and marketing capabilities were first entered in a universal model. This model explains a statistically significant share of the variance of firm performance ($R^2_{\text{corr}} = 0.209$). Results obtained from this model show that technical capabilities ($\beta = 0.281$; $p < 0.001$) and marketing capabilities ($\beta = 0.237$; $p < 0.01$) have a positive and significant influence on performance. Although we detected a negative effect of threat of imitation on performance it was not significant. Against our expectations, we did not find a direct significant effect of EO on performance, which does not provide support for Hypothesis 1.

[Insert tables I, II, and III about here]

Next, we included the double interactive effects i.e. EO x imitation, EO x technical capabilities and EO x marketing capabilities. This model makes a significant contribution over and above the previous universal model ($\Delta R^2_{\text{corr}} = 0.027$). In this model we find once again the positive and significant influence of technical and marketing capabilities on firm performance. In spite of this, the interactive effect of EO and environmental threat of imitation, is small and not significant ($\beta = -0.026$; ns), providing no support for Hypothesis 2.

With regard to the moderating role of capabilities in relation of EO and performance, we found that the interactive effect of EO and technical capabilities is positive and significant ($\beta = 0.291$; $p < 0.01$). Therefore, availability of strong technical capabilities produces a more positive influence of EO on performance. However, against expectations, the interactive effect of EO and marketing capabilities is negative, though this effect is not significant ($\beta = -$

0.108; ns). These findings would provide support for Hypothesis 3, supporting the moderating role of technical capabilities, but not for Hypothesis 4, not supporting the moderating role of marketing capabilities.

Finally, we included the triple interactive effects in the full model^{vi}. The results obtained show that this model makes an explanatory contribution over and above that of the previous model ($\Delta R^2_{\text{corr}} = 0.021$). This suggests that triple interaction effects are indeed present –the level of imitation in the environment and the firm’s capabilities jointly moderate the relationship between EO and performance-. In this model we find that technical capabilities ($\beta=0.357$; $p<0.001$), marketing capabilities ($\beta=0.242$; $p<0.001$) and double interactive effect of EO and technical capabilities ($\beta=0.194$; $p<0.1$) have a positive and significant influence on firm performance. In the opposite direction, yet of importance, is the significant and negative effect of EO x marketing capabilities on performance ($\beta= -.242$; $p<0.01$).

The results of full model show that the triple interactive effect of EO, environmental threat imitation and technical capabilities is negative and significant ($\beta= -0.558$; $p<0.01$). Second, we found that the triple interactive effect of EO, environmental perception of threat of imitation and marketing capabilities is positive and significant ($\beta= 0.469$; $p<0.05$).

In order to strengthen the results already obtained we replicated the regression analyses in a sub-sample of 90 firms of which there objective measures of performance available (previously, we double checked that there were no significant differences between the subsample and the total sample in terms of descriptive statistics). Results show that the signs remain the same for the universalistic, contingent and configurational models across the objective variables in the subsample –return of investment and growth of sales-. However, some divergence and some effects are not significant, which could be due to the partial character of the objective measure of performance and the reduced sample size imposed by

data availability.

Based on the regression coefficients shown in our analysis, we plotted the effect of EO on performance (considering the three main effects, the two-way interactions, and the three-way interaction term) for given values of environmental imitation and capabilities (technical and marketing). Values of imitation and capabilities were set at 1 S.D. above and below the mean, and we entered a range of values for EO, as suggested by Cohen and Cohen (Cohen & Cohen, 1983). In order to compare the two configurations we constructed two plots for technical capabilities and two plots for marketing capabilities, as shown in figures I and II.

[Insert figures I and II about here]

The first plot (figure I) indicates that availability of technical capabilities in environments prone to imitations yields a worse EO-performance relationship than when such capabilities are relatively lacking in such context. Given low levels of EO, those firms with highly developed technical capabilities who perceive the threat of imitation have better performance than the ones with underdeveloped technical capabilities. However, given high levels of EO firms with underdeveloped technical capabilities obtain better results than the ones with highly developed technical capabilities when imitation is perceived in the environment. These results suggest that a configuration emphasizing of EO coupled with relatively undeveloped technical capabilities is more effective than otherwise when the perception of potential imitation is high. These results lend support to hypothesis 5.

With regard to marketing capabilities (figure II), the nature of the interaction indicates that, in order to face the environment with high imitation of marketing capabilities to improve the relationship between EO and performance if compared with relative lack of marketing capabilities. Given low levels of EO those firms with strong marketing capabilities achieve better performance than the ones with relative lack of marketing capabilities under

environmental threat of imitation. As EO increases, the difference in results is increased. In fact, those firms with strong marketing capabilities, who perceive high imitation increase their results as they increase EO. Conversely, firms with weak marketing capabilities reduce their performance with increased EO. In consequence, the configuration with high levels of EO and strong marketing capabilities under high threat of imitation allows for better results than a configuration of high OE, weak marketing capabilities and high imitation. These results support hypothesis 6.

As already mentioned, after completing the analyses we verified to what extent the results from the universalistic and contingent models are consistent with those of the configurational model. Having reviewed the set of hypotheses, we found inconsistencies in testing hypothesis 3. In this case, the configurational model suggests that effect of EO x technical capabilities on performance ranges from a slightly negative effect, if imitation is low, to highly negative effect, if imitation is high. In view of these results we cannot accept hypothesis 3.

In Figure III, supported relationships are marked with an (s) and not supported relationships with (ns). First, the figure shows that no direct relationship was found between EO and performance via the universalistic approach or base model. Second, the direct effects on the EO-performance relationship received little support from our data analysis, disregarding the double interactive effect model. Finally, support for the triple interactive effect model can be deduced from the relationships supported. In consequence, our contribution states that given the high levels of imitation in the environment, effectiveness of EO depends more on the availability of downstream capabilities (such as marketing which is idiosyncratic and adequate to face high imitability) and less on upstream capabilities (which can be easily transferred or copied as technical capabilities).

[Insert figure III about here]

5. Discussion

This paper has studied how capabilities and perceived threat imitation affect the EO-performance relationship. Contrary to our expectations, the results obtained do not reveal that EO affects performance directly. For the base model we found that technical upstream capabilities, and marketing downstream capabilities, have a positive impact on performance. In the double interaction effects model, and against expectations, we found that neither the level of imitation nor the marketing capabilities have a significant effect on the EO-performance relationship. In the case of the technical capabilities we cannot highlight the contingent effect due to the inconsistencies with the configurational model. Finally, from the triple interaction effects model we found that greater marketing capabilities are more adequate to improve the EO-performance relationship when firms faced with an environment highly prone to imitation. However, lower technical capabilities are more adequate to improve the EO-performance relationship in environments with high imitation.

The overarching contribution of this paper has been to shed light on how the effectiveness of EO is affected by the availability of capabilities and that these capabilities match an environment with high threat imitation. We found that marketing downstream capabilities are complementary to EO when facing the threat of imitation in the environment, and in so doing it supports the improvement of FMA. In consequence, marketing capabilities can create strong position barriers, which makes the benefits obtained from entrepreneurial behavior more resilient to the pressure of an environment where imitation is a threat (Makadok, 1998). Conversely, the availability of upstream technical capabilities may constrain the organization to current markets and products, causing considerable inertia (Ghemawat, 1991), thus hampering the effectiveness of an EO under imitability conditions. The three models examined show the important role that technical and marketing capabilities

have when it comes to explaining performance. Hence, we add evidence that tends to confirm the postulate of the RBV, highlighting that capabilities lie at the heart of the origins of the competitive advantage (Peteraf, 1993; Teece, 2007; Teece, et al., 1997). In the contingent model however, we show that the incidence of capabilities in reaping benefits derived from using an EO is not clear. We did not find a significant role for the technical and marketing capabilities as a moderator between an EO and performance. One possible explanation for the lack of support in the moderating effect of capabilities may be that the effort to control and invest in upstream and downstream assets can outweigh the benefits of achieving first mover advantage (Lieberman & Montgomery, 1998). In this sense, risks and costs derived from taking emergent opportunities using an EO may not pay back the resources used, at least in the short term, if the environment is not fully taken into account.

We also show that environmental threat of imitation does not affect performance or the effectiveness of EO *per se*. In line with Dess et al. (1997), environmental conditions are not sufficient to explain the relationship between an EO and performance. As stated by Miller (1988), we deemed it necessary to incorporate internal factors that profile a coherent configurational approach to cope with competition. From the triple interaction effects model, we show the relevance of competitors' capability to imitate has, as it modifies the role played by technical and marketing capabilities over EO. In fact, the relative importance of an environment that is prone to imitation is high, as it can condition the dynamics of competition in an industry, the behavior of the companies and the effectiveness of different configurations on performance (Ethiraj & Zhu, 2008; Lieberman & Asaba, 2006; Pil & Cohen, 2006; Rivkin, 2000). In consequence, from a theoretical viewpoint, the configurational approach (Ketchen, et al., 1993; Meyer, et al., 1993; Miller, D., 1986; Miller, 1996) presents a more complete picture to explain EO, highlighting that the coherence in configuration between strategic orientation and capabilities under specific environment affects the performance.

This paper also contributes with a conceptual and methodological approach relevant to study the relationship between EO and performance. We view EO, as reflecting the firm's commitment to risk-taking, innovation and proactiveness in developing and implementing its strategies (Dess, et al., 1997; Hart, 1992; Li, et al., 2005; Lyon, et al., 2000), and we add that EO may be linked to upstream and downstream factors from a joint approach. A further addition of this study to establish an approximation to the sustainability of performance answering Spanos and Lioukas' (2001) call. Besides this study's results are built on the perceptions of the CEOs, which reflects the fact that an EO is shaped by management. Finally, configuration scholars have studied different alignments among internal and external factors, however, this study is novel in showing the configurations align with upstream and downstream capabilities with perceived threat of imitation within the environment.

Some advice for practitioners can be derived from the results of this study. Before carrying out EO, managers should assess whether the firm has key complementary capabilities to retain the value that could generated from entrepreneurial behavior, as well as the extent to which competitors may copy. If practicing managers wanted to develop new products fostering creativity and innovation, at the same time they must develop marketing capabilities, when they perceive imitation to be a threat. When facing environments where imitation is perceived to exist, firms carrying out EO should avoid inertia derived from excessive technical or organizational commitment with previous products, which will erode the chances of achieving competitive advantage.

6. Conclusion

Though all possible precautions were taken, this study still has limitations. In spite of the efforts developed to validate scales and measures, the potential bias cannot be totally excluded but the broad effort to select the measures included in the study guarantee, as much

as possible, their validity. Though we worked with a single respondent we took all known precautions. We only accepted the results if they were completed by the CEO, we eliminated incomplete or incoherent questionnaires and performed Harman's single factor test. Finally, the cross-sectional nature of our study imposes an important limitation on the results of this paper. Nevertheless, we think that, because of the detailed information required to achieve our research aims, a longitudinal study would be excessively complex. In any case, we believe that the cross-sectional approach of the study suffices for the proposed aims, having already been put to good use in other studies on entry timing, as in Coeurderoy and Durand (2004). Notwithstanding the theoretical rationale for causality and the effort to avoid the survey-induced endogeneity, we cannot discard potential problems of endogeneity in our study. Thus, we acknowledge possible reverse causality problems between technical and marketing capabilities and performance. For example, firms with high performance are likely to have more cash flows to invest in technical and marketing capabilities. We cannot discard either omitted managers bias, in which unobserved factors such as the ability of the managers could correlate with both dependent and independent variables.

Several avenues for future research open up after this study. First, the results show that EO and its relationship to performance is not direct. It might be of interest to study EO independently and maybe add a triangulation of measures for firm behavior, resource allocations and management perceptions, as recommended by Lyon et al. (2000). Second, it would be useful to understand how EO changes longitudinally by embarking on more dynamic studies in the spirit of population ecology (Hannan & Freeman, 1977). This would enhance our understanding of the success of EO and how it relates to the development of capabilities adequate to face environmental conditions and obtain FMA. This approach would also make evident the competitive dynamic that is produced amongst firms in processes of innovation and imitation. Finally, it would be desirable to understand in depth the

consequences of the complexity of designing an EO, linked to numerous capabilities, processes and decisions in the face of different environments. The configurational approach adds a solid theoretical approach based in the alignment among many factors under a central theme (Miller, D., 1986; Miller, 1996).

In sum, this paper has described the conditions that can make EO to have an effect on performance. EO in strategy making can be more beneficial for the company when the complementary capabilities are present in a specific environment. Imitation can play tricks rendering entrepreneurial behavior futile, so EO is to be used wisely.

References

- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, *16*, 396-402.
- Arnold, H. (1982). Moderator variables: A clarification of conceptual, analytic and psychometric issues. *Organizational Behavior and Human Performance*, *29*, 134-174.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*, 99-120.
- Barreto, I. (2010). Dynamic Capabilities: A Review of Past Research and an Agenda for the Future. *Journal of Management*, *36*, 256-280.
- Bowman, D., & Gatignon, H. (1995). Determinants of Competitor Response Time to a New project Introduction. *Journal of Marketing Research*, *32*, 42-53.
- Burns, T., & Stalker, G. (1961). *The management of innovation*. London: Tavistock Publications.
- Carmeli, A. (2004). Assessing Core Intangible Resources. *European Management Journal*, *22*, 110-122.
- Chaganti, R., De Carolis, D., & Deeds, D. (1995). Predictors of Capital Structure in Small Ventures. *Entrepreneurship Theory and Practice*, *20*, 7-18.
- Chandler, G., & Hanks, S. (1994). Market Attractiveness, Resource-Based Capabilities, Venture Strategies and Venture Performance. *Journal of Business Venturing*, *9*, 331-349.
- Chaney, P., Devinney, T., & Winer, R. (1991). The impact of new product introductions on the market value of firms. *Journal of Business Research*, *64*, 573-610.
- Coeurderoy, R., & Durand, R. (2004). Leveraging the first mover advantage: proprietary technologies versus cost leadership. *Journal of Business Research*, *57*, 583-590.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ.: Lawrence Erlbaum Associates.
- Covin, J., Green, K., & Slevin, D. P. (2006). Strategic Process Effects on the Entrepreneurial Orientation–Sales Growth Rate Relationship. *Entrepreneurship Theory and Practice*, *30*, 57-81.
- Covin, J. G., & Slevin, D. P. (1986). The development and testing of an organizational-level entrepreneurship scale. In R. Ronstadt, J. A. Hornaday, R. Peterson & K. H. Vespar (Eds.), (pp. 628-639). Wellseley, MA: Babson College.
- Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, *10*, 75-87.
- Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as a firm behavior. *Entrepreneurship Theory and Practice*, *16*, 7-25.
- Dess, G. G., Lumpkin, G. T., & Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: tests of contingency and configurational models. *Strategic Management Journal*, *18*, 677-695.
- Dimitratos, P., Lioukas, S., & Carter, S. (2004). The relationship between entrepreneurship and international performance: The importance of domestic environment. *International Business Review*, *13*, 19-41.
- Doty, D. H., Glick, W. H., & Huber, G. P. F. (1993). It, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, *36*, 1196-1250.
- Drnevich, P. L., & A. P. Kriauciunas. (2011). Clarifying the conditions and limits of the contributions of ordinary and dynamic capabilities to relative firm performance. *Strategic Management Journal*, *32*, 254-279.

- Ethiraj, K., Levinthal, D., & Roy, R. (2008). The dual role of modularity: innovation and imitation. *Management Science*, *54*, 939-955.
- Ethiraj, S., & Zhu, D. (2008). Performance effects of imitative entry. *Strategic Management Journal*, *29*, 797-817.
- Ghemawat. (1991). *Commitment: The Dynamic of Strategy*. New York: The Free Press.
- Giarratana, M. S. (2004). The Birth of a New Industry: Entry by Startups and the Drivers of Firm Growth. The Case of Encryption Software. *Research Policy*, *35*, 787-806.
- Green, K. M., Covin, J. G., & Slevin, D. P. (2008). Exploring the relationship between strategic reactivity and entrepreneurial orientation: The role of structure-style fit. *Journal of Business Venturing*, *23*, 356-383.
- Gupta, A. K., & Govindarajan, V. (1984). Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal*, *27*, 25-41.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2001). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice-Hall.
- Hambrick, D. C. (1981). Environment, Strategy, and Power within Top Management Teams. *Administrative Science Quarterly*, *26*, 253-276.
- Hambrick, D. C. (1982). Environmental Scanning and Organizational Strategy. *Strategic Management Journal*, *3*, 159-174.
- Hamel, G. (2000). *Leading the Revolution*. Cambridge, MA: Harvard Univ. Press.
- Hannan, M. T., & Freeman, J. (1977). The Population Ecology of Organizations. *American Journal of Sociology*, *82*, 929-964.
- Hart, S. L. (1992). An Integrative Framework for Strategy-Making Process. *Academy of Management Review*, *17*, 327-351.
- Henderson, R. (1993). Underinvestment and incompetence as responses to radical innovation: evidence from the photolithographic alignment industry. *The Rand Journal of Economics*, *24*, 248-270.
- Hill, S. A., & Birkinshaw, J. (2008). Strategy-organization configurations in corporate venture units: Impact on performance and survival. *Journal of Business Venturing*, *23*, 423-444.
- Ireland, R. D., Hitt, M. A., & Sirmon, D. G. (2003). A Model of Strategic Entrepreneurship: The Construct and its Dimensions. *Journal of Management*, *29*, 963-989.
- Keh, H. T., Nguyen, T. M., & Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing*, *22*, 592-611.
- Ketchen, D. J., Thomas, J. B., & Snow, C. C. (1993). Organizational configurations and performance: A comparison of theoretical approaches. *Academy of Management Journal*, *36*, 1278-1313.
- Lado, A. A., Boyd, N. G., & Wright, P. (1992). A competency-based model of sustainable competitive advantage: Toward a conceptual synthesis. *Journal of Management*, *18*, 77-91.
- Lawrence, P., & Lorsch, J. (1967). *Organization and environment*. Cambridge MA: Harvard University Press.
- Lee, H., Smith, K. G., Grimm, C. M., & Schomburg, A. (2000). Timing, order and durability of new product advantages with imitation. *Strategic Management Journal*, *21*, 23-30.
- Li, H., Zhang, Y., & Chan, T.-S. (2005). Entrepreneurial strategy making and performance in China's new technology ventures – the contingency effect of environments and firm competences. *The Journal of High Technology Management Research*, *16*, 37-57.
- Lieberman, M. B., & Asaba, S. (2006). Why do firms imitate each other? *Academy of Management Review*, *31*, 366-385.

- Lieberman, M. B., & Montgomery, D. B. (1998). First-mover (dis)advantages: Retrospective and link with the resource-based view. *Strategic Management Journal*, *19*, 1111-1125.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the Entrepreneurial Orientation Construct and Linking it to Performance. *Academy of Management Review*, *21*, 135-172.
- Lumpkin, G. T., & Dess, G. G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. *Journal of Business Venturing*, *16*, 429-451.
- Lumpkin, G. T., Dess, G. G., & Covin, J. G. (1997). Entrepreneurial Strategy Making and Firm Performance: Tests of Contingency and Configurational Models. *Strategic Management Journal*, *18*, 677-695.
- Lyon, D. W., Lumpkin, G. T., & Dess, G. G. (2000). Enhancing Entrepreneurial Orientation Research: Operationalizing and Measuring a Key Strategic Decision Making Process. *Journal of Management*, *26*, 1055-1085.
- Madsen, E. L. (2007). The significance of sustained entrepreneurial orientation on performance of firms - A longitudinal analysis. *Entrepreneurship and Regional Development*, *19*, 185-204.
- Makadok, R. (1998). Can First-Mover and Early-Mover Advantages Be Sustained in an Industry with Low Barriers to Entry/Imitation? *Strategic Management Journal*, *19*, 683-696.
- Makadok, R., & Barney, J. (2001). Strategic Factor Intelligence: An Application of Information Economics to Strategy Formulation and Competitor Intelligence. *Management Science*, *47*, 1621-1638.
- McEvily, B., & Zaheer, A. (1999). Bridging ties: a source of firm heterogeneity in competitive capabilities. *Strategic Management Journal*, *20*, 1133-1156.
- Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Guest co-editors' introduction: Configurational approaches to organizational analysis. *Academy of Management Journal*, *36*, 1175-1195.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, *29*, 770-791.
- Miller, D. (1986). Configurations of strategy and structure: Towards a synthesis. *Strategic Management Journal*, *7*, 233-249.
- Miller, D. (1986). Psychological and Traditional Determinants of Structure. *Administrative Science Quarterly*, *31*, 539-558.
- Miller, D. (1988). Relating Porter's business strategies to environment and structure. *Academy of Management Journal*, *31*, 280-308.
- Miller, D. (1996). Configurations Revisited. *Strategic Management Journal*, *17*, 505-512.
- Miller, D., & Friesen, P. H. (1983). Strategy making and environment. *Strategic Management Journal*, *4*, 221-235.
- Mintzberg, H. (1973). Strategy-Making in Three Modes. *California Management Review*, *16*, 44-53.
- Mitchell, W. (1989). Whether and when? Probability and timing of incumbents' entry into emerging industrial sub-fields. *Administrative Science Quarterly*, *34*, 208-230.
- Moatti, V. (2009). Learning to expand or expanding to learn? The role of imitation and experience in the choice among several expansion modes. *European Management Journal*, *27*, 36-46.
- Moreno, A. M., & Casillas, J. C. (2008). Entrepreneurial Orientation and Growth of SMEs: A Causal Model. *Entrepreneurship Theory and Practice*, *32*, 507-528.
- Mukoyama, T. (2003). Innovation, imitation and growth with cumulative technology. *Journal of Monetary Economics*, *50*, 361-380.

- Naman, J., & Slevin, D. (1993). Naman, J. and Slevin, D. (1993): "Entrepreneurship and the concept of fit: a model and empirical tests", *Strategic Management Journal*, Vol. 14, pp.137-153. *Strategic Management Journal*, 14.
- Nelson, R. R., & Winter, S. G. (1982). *Evolutionary Theory of Economic Change*. Cambridge Mass: Harvard Univ. Press.
- Palich, L. E., & Ray Bagby, D. (1995). Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. *Journal of Business Venturing*, 10, 425-438.
- Peteraf, M. A. (1993). The Cornerstone of Competitive Advantage: A Resource-Based View. *Strategic Management Journal*, 21, 179-191.
- Pil, F. K., & Cohen, S. K. (2006). Modularity: implications for imitation, innovation, and sustained advantage. *Academy of Management Review*, 31, 995-1011.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. New York: The Free Press.
- Rajagopalan, N. (1997). Strategic Orientations, Incentive Plan Adoptions and Firm Performance: Evidence form Electric Utility Firms. *Strategic Management Journal*, 18, 761-785.
- Rauch, A., Wiklund, J., Lumpkin, G., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship: Theory and Practice*, 33, 761-787.
- Reuber, A. R., & Fischer, E. (2002). Foreign Sales and Small Firm Growth: The Moderating Role of the Management Team. *Entrepreneurship Theory and Practice*, 27.
- Rivkin, J. W. (2000). Imitation of complex strategies. *Management Science*, 46, 824-844.
- Roos, J., & Victor, B. (1999). Towards a New Model of Strategy-making as Serious Play. *European Management Journal*, 17, 348-355.
- Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of Business Venturing*, 26, 441-457.
- Runyan, R. C., Droge, C., & Swinney, J. L. (2008). Entrepreneurial orientation versus small business orientation: Do their relationships to firm performance depend on longevity? *Journal of Small Business Management*, 46, 567-582.
- Shamsie, J., Phelps, C., & Kuperman, J. (2004). Better late than never: A study of late entrants in household electrical equipment. *Strategic Management Journal*, 25, 69-84.
- Short, J. C., Payne, G. T., & Ketchen, D. J. (2008). Research on organizational configurations: Past accomplishments and future challenges. *Journal of Management*, 34, 1053-1079.
- Song, X. M., & Parry, M. E. (1997). A Cross-National Comparative Study of New Product Development Processes: Japan and the United States. *Journal of Marketing*, 61, 1-18.
- Spanos, Y., & Lioukas, S. (2001). An examination into the causal logic of rent generation: contrasting Porter's competitive strategy framework and the resource-based perspective. *Strategic Management Journal*, 22, 907-934.
- Stam, W., & Elfring, T. (2008). Entrepreneurial Orientation and new venture performance: The moderating role of intra- and extra industry social capital. *Academy of Management Journal*, 51, 97-111.
- Stone, E. F., & Hollenbeck, J. R. (1984). Some issues associated with moderated regression *Organization Behavior and Human Performance*, 34, 195-213.

- Teece, D. (1986). Profiting from technological innovation: implications for integration, collaboration, licensing, and public policy. *Research Policy*, 15, 285-305.
- Teece, D. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319-1330.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18, 509-533.
- Tsai, W. (2001). Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. *The Academy of Management Journal*, 44, 996-1004.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, 5, 171-180.
- Wiklund, J. (1999). The sustainability of the entrepreneurial orientation-performance relationship. *Entrepreneurship Theory and Practice*, Fall, 37-48.
- Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, 24, 1307-1314.
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing*, 20, 71-91.
- Yip, G. S. (1982). *Barriers to entry: a corporate perspective*. Lexicon, MA.
- Zahra, S., & Covin, J. (1995). Contextual influence on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10, 43-58.
- Zahra, S. A. (1996). Technology strategy and financial performance: examining the moderating role of the firm's competitive environment. *Journal of Business Venturing*, 11, 189-219.
- Zahra, S. A., Ireland, R., & Hitt, M. A. (2000). International expansion by new venture firms: international diversity, mode of market entry, technological learning and performance. *Academy of Management Journal*, 43, 925-950.

ⁱ We view threat of imitation as when new product launches, comprising creativity and innovation, are likely to be copied soon after by competitors.

ⁱⁱ SABI is a directory of Spanish and Portuguese firms that gathers general information and financial data. In the case of Spain, it compiles information on more than 95% of firms with total yearly revenues over 360,000-420,000 € from the 17 Spanish regions.

ⁱⁱⁱ The questionnaire was anonymized in order to obtain a higher return rate. In consequence, only those firms who voluntarily filled their details could be identified.

^{iv} To avoid any problem of endogeneity, the wording of the items was made preventing the respondents might interpret that the best performers within a given sector are those who build products more difficult to imitate.

^v The universalistic and contingent models are just particular cases of the configurational model where some of the interactions are assumed to be = 0 and some of these interactions are indeed non-zero. Given that those models run the risk of being misspecified, we check to what extent the results from the simplified models are consistent with those of the configurational model.

^{vi} To determine the nature of an interaction, the main effects and the interaction term must be included in the regression analysis (Stone and Hollenbeck, 1984; Cohen and Cohen, 1983). For higher-order interactions, all lower-order interactions and main effects must be considered (Aiken and West, 1991).

**TABLE I
CORRELATIONS**

	Size	Age	MarkPot	EO	Imitation	Tec.Cap	Mark.Cap	EOxImit	EOxTC	EOxMC	ImitxTC	ImitxMC	TCxMC	EOxIxTC
Size	1													
Age	.287**	1												
MarkPot	-.078	-.231**	1											
EO	.222**	.070	.175**	1										
Imitation	.064	.003	.207**	.165**	1									
Tec.Cap	.249**	.093	.130*	.340**	.052	1								
Mark.Cap	.180**	.141*	.147*	.357**	.095	.470**	1							
EOxImit	.042	.025	-.044	-.142*	-.205**	-.139*	-.142*	1						
EOxTC	-.112	-.047	-.164**	-.106	-.129*	-.293**	-.263**	.353**	1					
EOxMC	-.040	-.005	-.179**	-.138*	-.205**	-.287**	-.246**	.373**	.398**	1				
ImitxTC	-.050	-.024	-.079	-.122	-.129*	-.182**	-.153*	.361**	.371**	.313**	1			
ImitxMC	-.015	-.055	-.063	-.137*	-.096	-.169**	-.069	.371**	.304**	.398**	.412**	1		
TCxMC	-.055	-.025	-.101	-.215**	-.123	-.350**	-.318**	.316**	.430**	.409**	.356**	.369**	1	
EOxIxTC	.097	.100	.191**	.209**	.333**	.352**	.288**	-.337**	.422**	.389**	-.366**	.404**	.466**	1
EOxIxMC	.106	.048	.140*	.228**	.303**	.334**	.298**	-.350**	.383**	.398**	-.335**	.423**	.435**	.449**

The values for mean and standard deviation were calculated before variables were standardized
 * p<0.1; ** p<0.05; ***p<0.01; ****p<0.001

TABLE II
DESCRIPTIVE STATISTICS

Variables	Mean	SD	Min	Max
Size	3.96	1.56	0	8.79
Age	21.1	20.4	1	129
MarkPot	3.14	0.84	1	5
EO	3.63	0.76	1	5
Imitation	3.68	0.94	1	5
Tec.Cap	3.81	0.62	1	5
Mark.Cap	3.90	0.68	1.5	5
EOxImit	13.49	4.67	1	25
EOxTC	14.05	4.25	1	25
EOxMC	14.34	4.28	1.5	23.75
ImitxTC	14.07	4.27	1.5	25
ImitxMC	14.43	4.63	1.5	25
TCxMC	15.12	4.24	1.67	25
EOxIxTC	52.25	21.66	1.5	118.75
EOxIxMC	53.45	22.28	1.5	118.75
Performance	14.02	4.07	4	25

TABLE III
REGRESSION ANALYSIS

Variables	Universalistic		Contingent		Configurational	
	model		model		model	
	β	t-statistics	β	t-statistics	β	t-statistics
Size	0.088	1,435	0.105	1.722*	0.091	1,496
Age	-0.044	-0.703	-0.034	-0.552	-0.051	-0.832
Market potential	0.032	0.504	0.055	0.880	0.054	0.855
Entrepreneurial Orientation	-0.004	-0.061	-0.001	-0.010	0.009	0.137
Imitation	-0.078	-1,300	-0.065	-0.097	-0.038	-0.612
Technical Capabilities	0.281	3,772*****	0.308	4.164*****	0.357	4.750*****
Marketing Capabilities	0.237	3,383***	0.256	3.711*****	0.242	3.453*****
EO x Imitation			-0.026	-0.385	0.001	0.014
EO x Technical Capabilities			0.291	2.903***	0.194	1.698*
EO x Marketing Capabilities			-0.108	-1.147	-0.219	-2.162**
Imitation x Technical Capabilities					-0.144	-1.396
Imitation x Marketing Capabilities					0.128	1.388
Technical Capabilities x Marketing Capabilities					0.153	1.630
EO x Imitation x Technical Capabilities					-0.558	-2.759***
EO x Imitation x Marketing Capabilities					0.469	2.538**
Model	-----		-----		-----	
R ²		0.232*****		0.270*****		0.305*****
Adjusted R ²		0.209*****		0.238*****		0.259*****
Change in R ²				0.027*****		0.021*****
Number of observations: 253						
Type of regression analysis: OLS						

Degrees of freedom: 15

Residual: 225

Total: 240

Dependent variable: General Performance

* p<0.1; ** p<0.05; ***p<0.01; ****p<0.001

FIGURE I
CONFIGURATIONS COMPARATION
EO-High Imitation-Technological Capabilities

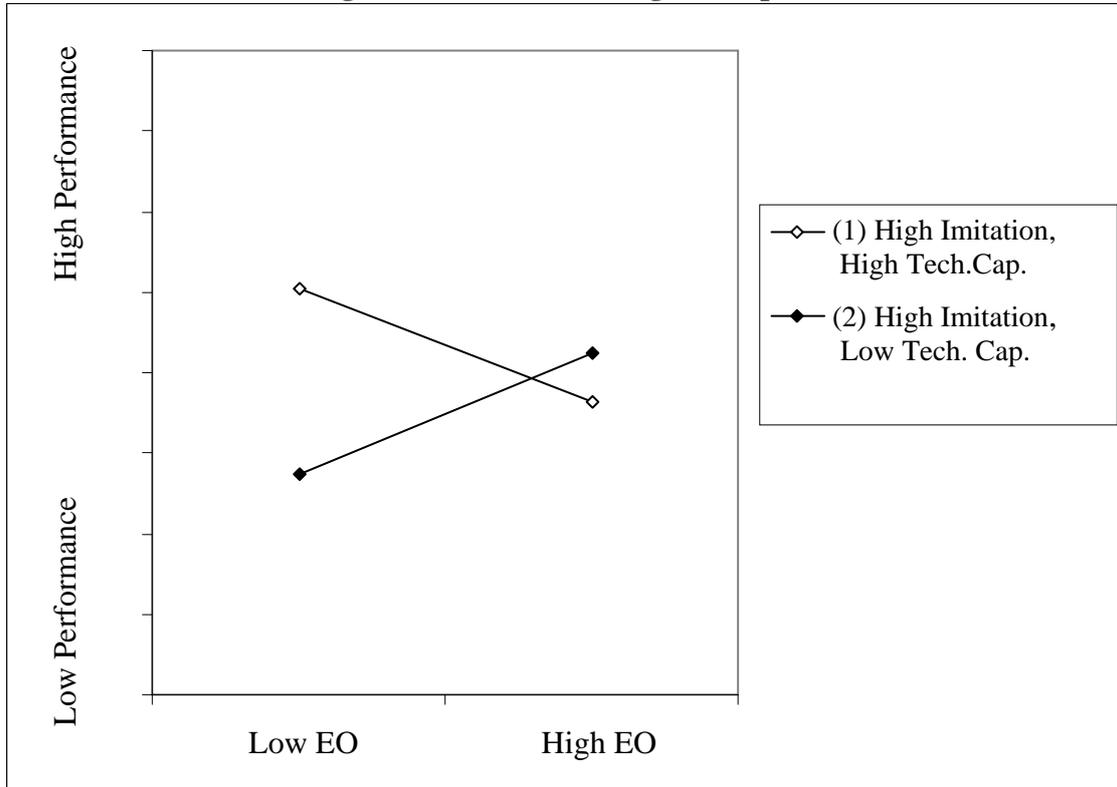
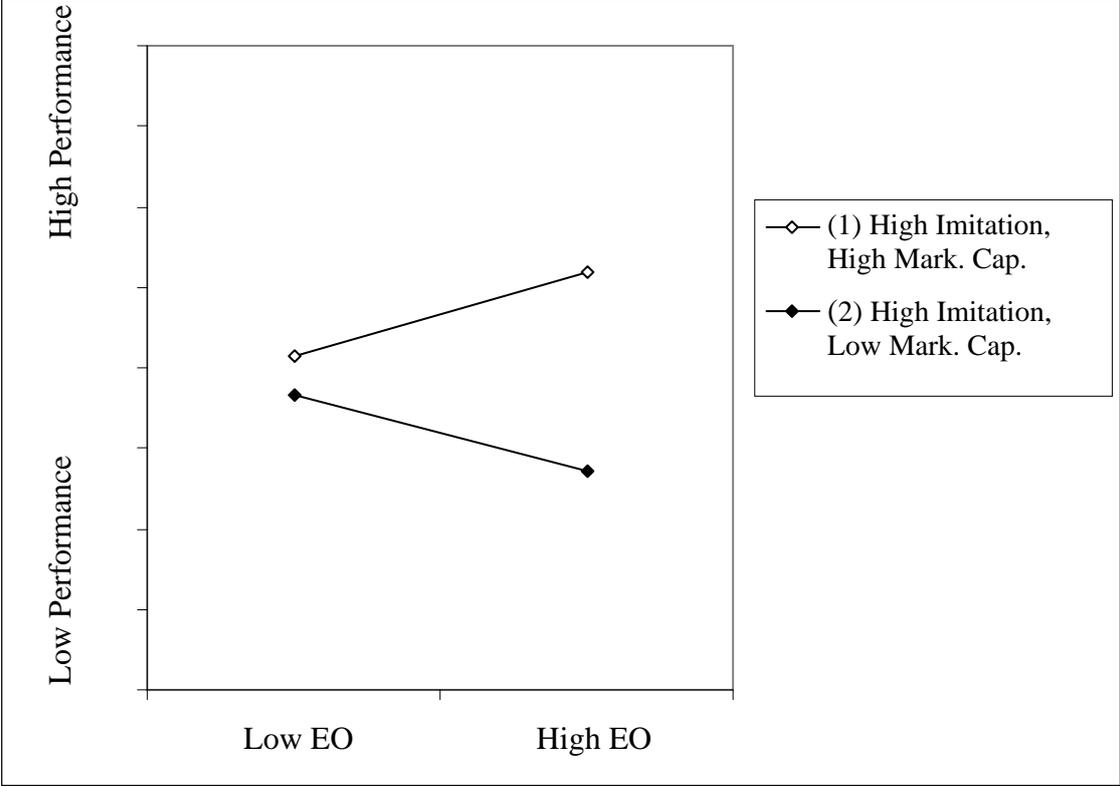
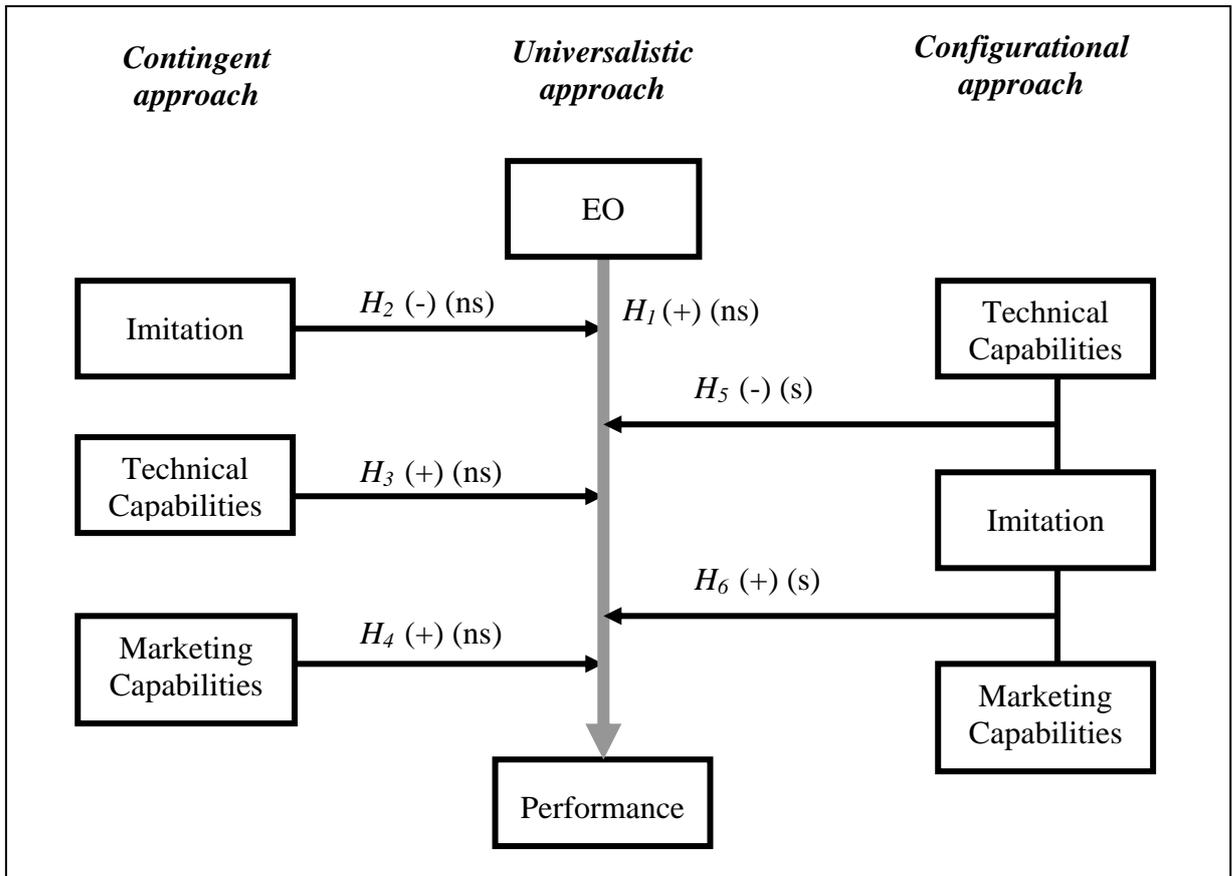


FIGURE II
CONFIGURATIONS COMPARISON
EO-High Imitation-Marketing Capabilities



**FIGURE III
RESULTS OF EO-PERFORMANCE APPROACHES**



* (s): supported; (ns): no supported