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## Entrepreneurial Orientation in low- and medium-tech industries: The need for Absorptive Capacity to increase performance



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#### ABSTRACT

The implications of Entrepreneurial Orientation (EO) for firm performance in low- and medium-tech (LMT) industries are largely unexplored and seem to be limited. In this paper we seek to address this research gap studying how Absorptive Capacity can act as a key factor determining the effectiveness of EO in such a context. Specifically, we adopt the knowledge-based view of the firm and explore the moderating effects of Absorptive Capacity's Potential and Realized dimensions on the EO-performance relationship in LMT industries. Our regression results based on a lagged dataset of 103 medium-sized firms based in Italy confirm our hypotheses that, in LMT industries, EO has a positive effect on firm performance when coupled with high levels of both Potential and Realized Absorptive Capacity.

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#### Introduction

In a world increasingly driven by new opportunities and threats, the academic and popular press invites companies to promote Entrepreneurial Orientation (EO) to the benefit of their performance (Covin & Lumpkin, 2011; Lyon, Lumpkin, & Dess, 2000). Indeed, the firm's strategic posture to be innovative, proactive and risk-taking (EO) is considered to be a significant driver of firm performance (Rauch, Wiklund, Lumpkin, & Frese, 2009). However, research shows that the relationship between EO and performance is not universal, but moderated by internal and external contingency factors of different types, such as the firm availability of resources and competencies (García-Villaverde, Ruiz-Ortega, & Canales 2013; Wiklund & Shepherd, 2003; Wiklund & Shepherd, 2005) and industry characteristics (Covin & Covin, 1990; Dess, Lumpkin, & Covin, 1997; Lumpkin & Dess, 2001; Namen & Slevin, 1993). The technological level of the industry has been found to be a positive moderator (Rauch et al., 2009), signaling that firms in high-tech industries benefit from pursuing an EO more than those in the context of low- and medium-tech (LMT) industries. As such, the effectiveness of EO in LMT industries - i.e. the extent to which EO is turned into performance in these contexts - remains an unexplored issue that we seek to address in this paper.

We argue that the unique characteristics of relevant knowledge in LMT industries enhance the need for firms to integrate knowledge externally generated into their operations to successfully pursue entrepreneurial opportunities. The systematic integration of knowledge externally generated into the firm's operations could be achieved through the development of the firm's Absorptive Capacity (ACAP). Indeed, the ability to acquire, assimilate, transform, and exploit knowledge from external sources (ACAP) (Cohen & Levinthal, 1990; Jansen, Van den Bosch, & Volberda, 2005; Schildt, Keil, & Maula, 2012; Todorova & Durisin, 2007; Zahra & George, 2002), enhances the effectiveness of certain entrepreneurial behaviors in high tech industries (Hayton & Zahra, 2005; Zahra & Hayton, 2008). Still, ACAP encompasses two dimensions with potentially distinct effects: Potential ACAP and Realized ACAP (Zahra & George, 2002). Therefore, we try to answer to the following question: How do firms' Potential and Realized ACAP influence the effectiveness of EO in LMT industries?

In LMT industries learning tends to be done beyond formal R&D (Santamaria, Nieto, & Barge-Gil, 2009) through formal and informal knowledge diffusion among firms (Jacobson & Heanue, 2005). Also, relevant knowledge in LMT is often more practical than scientific (Santamaria et al., 2009), more market-based than technology-based (Grimpe & Sofka, 2009), and more tacit than explicit (von Tunzelmann & Acha, 2005). On the basis of the above-mentioned unique characteristics of knowledge in LMT industries and following the knowledge-based view of the firm, according to which successful entrepreneurial behavior is induced by a creative recombination of knowledge flows (Shane & Venkataraman, 2000) we posit that in these settings EO may not be beneficial for the firm unless it has developed high levels of ACAP. In LMT industries, EO developed with poor acquisition and assimilation

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of external knowledge (Potential ACAP) will be hardly turned into good performance given the relevance of market knowledge for the identification and preservation of truly attractive niches. Further, the high risks of imitation faced in LMT industries will strongly undermine the performance payoffs of EO if they are developed without a continuous process of practical and tacit knowledge combination and exploitation (Realized ACAP).

We tested our hypotheses on a lagged data-set of 103 medium-sized firms based in Italy. Results confirm our argument on the role of ACAP in the EO-performance relationship and provide two key contributions to the literature. First, we contribute to the debate on the EO-performance relationship by taking into consideration the specificities of LMT industries. The lack of research addressing LMT industries is particularly surprising given their relevance for the bulk of economic activity in any country (Robertson, Smith, & von Tunzelmann, 2009). Second, we add to the literature about the relationship between ACAP and entrepreneurial behavior by exploring the implications of the combination of EO and ACAP for firm performance. Particularly important is unraveling the effects in isolation of ACAP two dimensions (i.e. Potential ACAP and Realized ACAP) which appear to be enough to obtain performance payoffs from EO.

This paper is organized in the following manner. In Section 2, we review the two relevant literature streams to form the foundations of our work. Then we develop our hypotheses, drawing on the knowledge-based view of the firm. In Section 3, we present the adopted method. In Section 4, we report the results. In Section 5, we discuss the results and conclude with contributions, limitations and implications for research and practice.

#### Theory and hypotheses

Entrepreneurial Orientation and performance

EO has emerged as a major construct within the strategic management and entrepreneurship literatures over the years (Anderson, Covin, & Slevin, 2009; Covin, Green, & Slevin 2006).\(^1\) Miller and Friesen (1982) summarized the characteristics of an entrepreneurial oriented firm in its propensity to be innovative, proactive and risk-taking. In other words, EO has been intended as the strategic posture to rejuvenate market offerings, take risks to try out new products, services, and markets, and be more proactive than rivals toward new marketplace opportunities (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Miller, 1983; Wiklund & Shepherd, 2005).

There has been an intense debate regarding the dimensionality of EO and the interdependence among its dimensions (Covin et al., 2006; Knight, 1997; Kreiser, Marino, & Weaver, 2002; Lumpkin & Dess, 1996). Two models of EO have emerged (George, 2011): the reflective versus the formative second-order models. According to the reflective model, the dimensions co-vary and changes in EO result in changes in each dimension such that they 'reflect' the higher order construct. In contrast, along with the formative model EO is 'formed' by combining its dimensions; changes in EO are the result of changes in one or more dimensions that do not necessarily co-vary. We conceive EO as a second-order reflective construct, following the majority of previous studies, to increase the comparability of our findings.

EO is generally recognized to influence performance (Rauch et al., 2009; Wiklund, 1999; Zahra, 1991). According to Lumpkin and

Dess (1996), the effect of the EO-performance relationship depends on several contingency factors, many of which have been explored following the publication of their study. Some scholars have explored the moderating roles of internal firm factors such as resource availability (Wiklund & Shepherd, 2003; Wiklund & Shepherd, 2005), marketing capabilities (García-Villaverde et al., 2013), strategy formation process (Covin et al., 2006), internal social context (De Clercq, Dimov, & Thongpapanl, 2010), and family generations involved in management (Chirico, Sirmon, Sciascia, & Mazzola, 2011). Other scholars have revealed the moderating roles of external factors such as environmental hostility, turbulence, and dynamism (Covin & Covin, 1990; Dess et al., 1997; Namen & Slevin, 1993; Wiklund & Shepherd, 2005), industry life-cycle (Lumpkin & Dess, 2001), and external networks (Lee, Lee, & Pennings, 2001; Stam & Elfring, 2008). The existence of the above mentioned internal and external moderators have also pushed research towards the test of three-way interactions, i.e. configurational models (e.g. Dess et al.,

According to a recent meta-analysis on the EO-performance relationship, Rauch et al. (2009) found that the technological level of the industry is a positive moderator of the abovementioned relationship, i.e. firms operating in high-tech industries benefit more from an EO than firms operating in LMT industries.

LMT industries are those sectors characterized by an average R&D spending inferior to 5% of sales (OECD, 2002). Literature on EO in LMT industries is basically missing, highlighting the need to explore the existence of factors that could make EO more effective in these settings. The lack of studies on EO in LMT can be linked to three false myths, strictly related to each other (Hirsch-Kreinsen, 2005; Santamaria et al., 2009). The first one refers to the belief that innovation is a science-based process. LMT industries innovate by developing practical knowledge, which is a valid alternative source of innovation based on internal experimenting. The second myth is that innovation derives from R&D activities. Firms in LMT industries can take great advantage of other innovative activities as marketing, design and purchasing, The last myth refers to the idea that innovation arise only from firms operating in high-tech industries. LMT industries, instead, exchange knowledge with high-tech industries, and encompass innovative firms - even if in a smaller percentage (Mendonca,

Still, some research has been recently done on the innovativeness of firms operating in LMT industries. Given that innovativeness is a core dimension of EO; such a literature stream is certainly relevant to the present research. Innovation in LMT industries has some specific features. First, the role of R&D activities is less relevant by definition: innovation is not necessarily technology-oriented but more market-driven (Grimpe & Sofka, 2009). Second, innovation is mostly incremental rather than radical. In other words, innovation usually does not transcend given technology and consists in developing the product, redefining the market or improving the processes (Kirner, Kinkel, & Jaeger, 2009). Third, the relevant knowledge is practical, i.e. it is application-oriented and accrues in the context of operating processes, unlike the technological knowledge that can be assigned to R&D processes (Santamaria et al., 2009). Fourth, the generation of relevant innovation knowledge does not take place only within the company but it is mostly generated in the network of relations within and outside the value chain, e.g. with suppliers, customers, consultants and scientific institutions (Tether, 2002).

We believe that these specific features of innovation and thereby relevant knowledge to compete in LMT industries can strongly influence the relationship between EO and performance, making ACAP a necessary condition for EO effectiveness.

<sup>&</sup>lt;sup>1</sup> For a matter of clarity, we define entrepreneurship as the process of discovery, evaluation and exploitation of entrepreneurial opportunities (Shane & Venkataraman, 2000). Such a process may occur at individual level (out of the scope of this research) or firm-level. Firm-level entrepreneurship, in turn, may be intended as a generic strategic posture (better known as EO) or as venturing activities (better known as Corporate Entrepreneurship). The present study centers on EO.

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