

Research Activities in Internationalized Medium Sized Firms: A Productive Centricity

Maria Rosaria Marcone¹

Abstract

This study focuses on Internationalised Medium-Sized Firms (IMSFs) that belong to the sectors of mechanics and electronics, and operate in dynamic international business markets. This work aims to investigate how international competitive strategies are based and maybe in some cases actually heavily dependent on the capacity to form and enhance skills in design, engineering and production activities, and on the propensity to invest more resources in R&D activities as well as in activities that are more strictly speaking production based (manufacturing). This study highlights different approaches to innovation processes in the same or in different plants of the IMSFs analysed. Our research approach is inductive and deductive, which means our aim is directed towards theory building through the original use of existing theory from both international managerial literature and empirical analysis. Overall, this study provides a unique contribution in terms of both theoretical development and managerial implications by investigating the two activities (operations and R&D activities) with the aspects of global development.

Keywords: productive internationalization, strategic R&D firm-choices, medium-sized firms

1. Introduction

Competitiveness around the globe leads one to emphasize the role of demand in industry evolution in favor of engineering imperatives on the supply side. Moreover, because the most credible theories imply a very short menu of strategic responses by firms (e.g., either to imitate the dominant design or exit), their contributions to managerial decision making are quite restricted (Argyres et al., 2015). Medium-sized enterprises, which were able for some time to generate continuous innovation activities in their domestic (or original) productive sites, in order to increase the market value of their products, in this respect have reached the capacity to engage and experiment with such innovative processes in the domestic plants that resulted in being efficient only if accompanied by a higher level of R&D capacity. The fragmented nature of innovation literature suggests that there are multiple processes of innovation depending on the “type” of innovation involved (Vargo et al., 2015). This article explores diverging views on innovation and extends the research regarding innovation systems. Technology is conceptualized as potentially useful knowledge, or a value proposition, which is both an outcome and a medium of value co-creation and innovation. This conventional view was based on the understanding of how multiple participants (e.g., firms, customers and other stakeholders) contribute to value creation, as well as innovation. We adopt much of the literature that remains ‘production-centric’, and maintain our attention about those firms that ‘adopt’ innovations. Moreover, considering the role that users have, as important agents in the creation process in driving innovative efforts, we point to a more interactive and systemic view of innovation. Thus, this article brings together historically divergent perspectives on innovation - particularly those centered on operational activity development and those centered on market relationships - and investigates the underlying practices and processes that generate new ways to create value.

¹Associate Professor of Business Economics at the Department of Management, Polytechnic University of Marche, Ancona, Italy (address: P. le Martelli, n. 8, 60121 – Ancona, Italy). Email:m.r.@univpm.it

The remainder of the paper is organized as follows: section 2 devotes wide room to the individuation of consolidated research fields and those that have been highlighted in international management literature, above all in the last few years, to verify in which sector of managerial studies the present research can be set. In Section 3, 4 and 5, information is given about the firms where the field study has been carried out: size of the sample, data collected, method of collection and analysis. Section 6 gives the qualitative results of the empirical study. Finally, comments and some suggestions for further research are given.

2. Theoretical Background and the Development of the Hypotheses

Although an increasing number of studies apply, measure, or extend the concept of Absorptive Capacity (AC), some concerns about the exploitation of the concept emerge accordingly since researchers fail to specify the underlying assumptions of the concept. Thus identifying antecedents of absorptive capacity, including managerial-entrepreneurial antecedents (although within the entrepreneurial group) (Zahra and George, 2002; Lenox and King, 2004; Andersen and Foss, 2005), or inter-organizational antecedents (Argote, 1999; Van de Bosch et al., 1999; Lane et al., 2006), becomes one of important tasks for management scholars. As research on corporate entrepreneurial activity has evolved, numerous researchers have acknowledged the importance of internal organizational antecedents for promoting and supporting innovation performance (Covin and Slevin, 1991; Kuratko et al., 2005; Ireland et al., 2009). Despite the growing interest in exploring the antecedents of absorptive capacity, few of them capture the 'absorptive capacity process'. The industrial sub-sectors that the firms of our sample belong to are creative. Entrepreneurship has a strong role in identifying the innovative processes to take up (or implement) in internal production systems, and in recognising the autonomy of the operators that work in the areas of operation and R&D – traditionally involved in the dynamic processes of firm innovation. The entrepreneurs' role is crucial in creating new economic activities that help to create value. Creative entrepreneurial style refers to individual differences in perceiving, behaving, solving problems, and taking decisions. Despite its growing importance, entrepreneurship in creative-innovative manufacturing industries is still under-researched (Tekleab & Quigley, 2014).

Creative entrepreneurial leadership is carried out by attributing decision making powers to creative operators in the production area (eg. Heads of department) and to promoters of applied research within the firm (eg. Engineers). This creativity can be employed for complex processes of industrialisation of single orders. This creative innovation is fueled by a vibrant entrepreneurship that permeates the entire organization of business (widespread entrepreneurship): this phenomenon is very successful for smaller companies that do not have a well-developed middle management. Corporate entrepreneurship refers to the pursuit of entrepreneurial actions and initiatives that transform the established organization through strategic renewal processes and extend the firm's scope of operations into new domains. In this sense, operations managers realize that a mixture of formality and discretion is a key to providing both high effectiveness and high efficiency. Entrepreneurship encourages competition today's environment leading to globalization effects and favouring the introduction of innovative practices in productive activity (Verheul et al., 2005; Ribeiro & Huarng, 2013). For this reason we hypothesize the following:

H 1. Between knowledge management propensity and creative entrepreneurial leadership a positive relationship exists.

This paper contributes to research about knowledge management by presenting a comprehensive model that captures the relationships between knowledge management practices and knowledge-oriented leadership. The discussion below explains the relationships between knowledge management initiatives and innovation, going on to cover their links to knowledge-oriented leadership. We consider technological knowledge as a dynamic resource, such as potentially useful knowledge, and original recombination of practices with the aim of providing novel solutions for new or existing problems. Organizational learning is a dynamic process of organization and interpretative-integration of new knowledge demand pull or a process that is pushed by new applications of technology. Literature regarding the impact of institutional investors on a firm's applied research and development (R&D) expenses supports the claim that ownership promotes the most opportune R&D expenses, Thus removing the strategic choices of growth both from managerial myopia and from the myopia of institutional investors (Le et al., 2006; Aghion et al., 2013). In fact, R&D activities appear at the same time to be both a necessity to acquire an emerged opportunity and a long-term investment, while managers and institutional investors are attentive towards the R&D earnings goal in the short term. Correspondingly, top-level managers are increasingly recognizing the need to respond to the entrepreneurial imperatives created by their competitive landscapes.

However, managers at all levels of the organization can be instrumental in fostering entrepreneurial activity leading to productive innovation results (Kuratko et al., 2005; Hornsby et al., 2009; Ireland et al., 2009; Goodale et al., 2011). Recognizing the role of an organization's broad membership in the perpetuation of innovation, the concept of corporate entrepreneurship-as-strategy represents a concrete entrepreneurial orientation and an entrepreneurial opportunity. It has recently been suggested that control can produce trust when not denying or eliminating the other agents. However many studies highlight how controls which restrain the freedom of others may be compatible with trust. Control activities explained by environmental risks rather than relational risks can seemingly restrain the other's freedom of action without a negative impact on trust (Hagedoorn and Duysters, 2002; Huemer et al., 2009). In particular, both formal forms of behaviour control, output control or socialization processes can be regarded as sources of information used to support the initiatives taken, with the aim of taking advantage of business opportunities, even with partner auxiliaries, rather than being used to contrast strategic initiatives abroad (it is even considered to represent an attack/as being offensive). Trust can be viewed as an appropriate mechanism to facilitate the adaptation process. We propose this hypothesis:

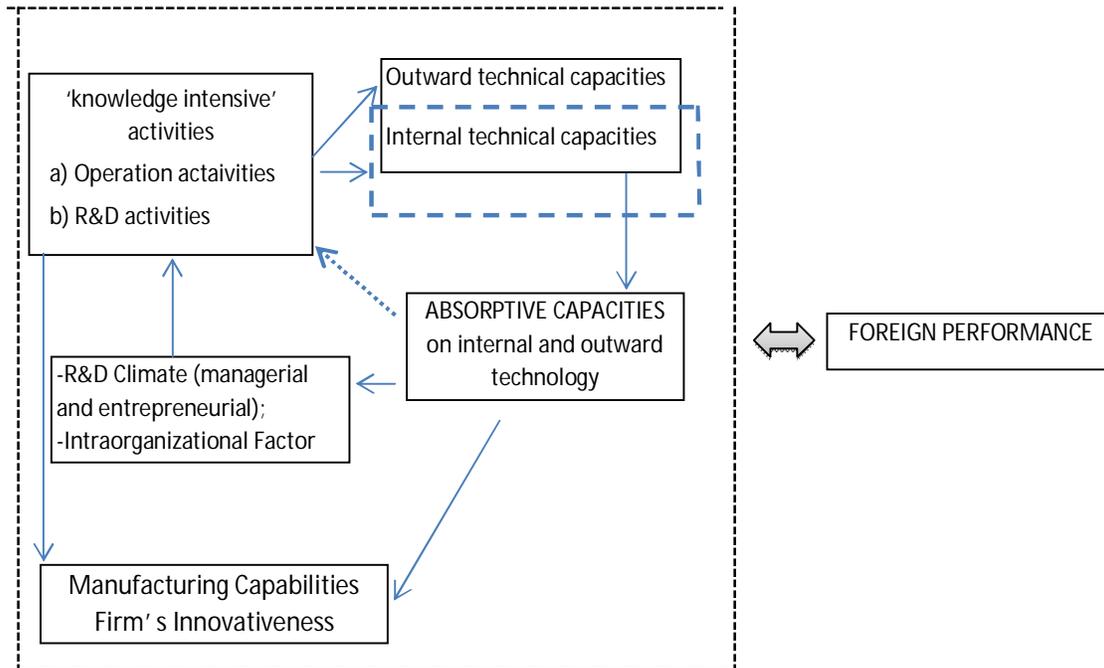
H 2. We believe that in internationalised medium sized firms strong entrepreneurship drives choices related to investments towards a non-myopic perspective of creation of value over time.

Technological opportunities can provide the firms with a competitive advantage in transforming their products and production processes (Hamel & Prahalad, 1994; Freeman & Perez, 1998). Although in the literature many authors claim that the amount of investment for a firm's R&D endeavour can determine the accumulation of its technological competencies which in turn determines its technological opportunities and firm innovation, in the firms from the sample investigated, it is more a case of the capacity to accumulate technological competencies in the areas that are strictly productive (experimenting with new materials: development of phases of the new processes, new original procedures of the industrialisation of orders) than the resources that are invested that increase the competitiveness of medium-sized firms in international business markets. More precisely, the accumulation of competencies determines the possibility to identify the most opportune industrial applications of the technologies available. Knowledge creation involves developing new knowledge content or replacing existing content in the organization's explicit or tacit knowledge pool. Knowledge management creation activities typically relate to the internal development of knowledge through R&D. Nevertheless, at the same time that organizations create knowledge and learn, they may forget or lose track of their acquired knowledge (Miller et al., 2007; Nonaka & Takeuchi, 2011). Knowledge management application practices should thus focus on making the integration and application of existing knowledge to manufacturing activities and problem solving easier and more effective for the firm (Grant, 1996; Caloghirou et al., 2004; Zack et al., 2009). With this in mind we present the following hypothesis:

H 3. Knowledge management manufacturing creation practices have a positive relationship with the company's innovation performance.

Generally, managers are thought to make ineffective decisions regarding R&D investments, focusing on short-term earnings instead of concentrating on value creation. The emphasis of this body of literature is that changes in R&D expenditures are evidence of myopic investment decisions. Firms that minimize or resist opportunities to disrupt the R&D process are thought to add most value for shareholders of the firms. Management research notes that stable investments in R&D enable firms to develop sustainable competitive advantages and that productive R&D is the result of knowledge accumulation that is based on steady investment over time (Mudambi & Swift, 2014).

Figure 1. Theoretical Framework



Source: our elaboration

3. Methodology

Prior studies have measured capabilities in a variety of ways. We did not utilise microlevel operational dimensions of performance parameters, including inputs (e.g., labor) used in production and output characteristics such as product defect levels. Capabilities have been inferred from outcome measures such as changes in accounting measures of performance, improvement of the R&D expenditure and stock market returns, and the rate of exportation. We decided to use perceptual measures of performance as well as - objective financial performance measures: perceptual performance measures have been shown to have a high correlation with objective financial performance measures, which supports the validity of the former (Venkatraman & Ramanujam, 1986). With the help of management (production director, R & D director, referees of the production planning, heads of department) we have estimated all charges related to the research carried out by companies, also including the costs incurred for engineering orders (man hours, machine hours, experimentation with new materials). As has been affirmed by resource based researchers, because a firm's unique resources determine its behavior, which is conditioned by the environmental context, the value and management of the firm's resources must be evaluated in the environmental context within which the firm operates (Barney et al., 2011; Sirmon et al., 2007).

4. Protocol

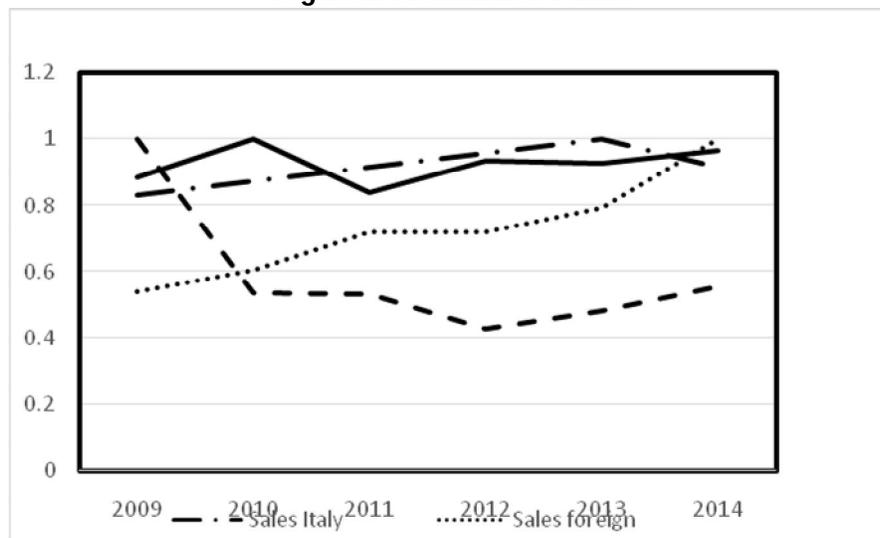
In order to identify a suitable data sample, we developed three criteria. Firstly, we wanted to find a firm that had an influence on its lead user that operates in competitive international learning business markets (Jaworski et al., 2000); secondly, the firm needed to have been engaged in this strategy for many years in order to provide us with opportunities for longitudinal analysis in a period of global crisis too; thirdly, we wanted to access data that would provide as rich a description as possible of how the focal sample had approached business market learning over time (Chandler & Vargo, 2011). The purpose of the utilised case analysis was not to validate the proposed international business market framework but rather to support interpretation and refinement of the framework from within an empirical context. We have had a medium-term (six years) research interest in developing a better understanding of the competitive phenomenon in order to reconnect innovative production processes to industrial markets.

Our primary data were elicited thorough our interactions with entrepreneurs, senior managers and operative workers in charge of and involved in learning productive processes within a company's international business marketing strategies. Much of this interaction occurred during an interactive interview, which involved detailed discussions related to the researched international business market-learning process. We also collected secondary data from publications of the official economic and financial performance of the firm, material from the corporation's website consisting of a large number of presentations from various seminars. Prior studies have measured capabilities in a variety of ways. We did not utilise microlevel's operational dimensions of performance parameters, including inputs (e.g., labor) used in production and output characteristics such as product defect levels. Capabilities have been inferred from outcome measures such as changes in accounting measures of performance, improvement of the R&D expenditure and stock market returns, and the rate of exportation. Cohen and Levinthal (1990) present evidence that R&D spending enables firms to increase their ability to apply knowledge to commercial ends. With the help of management (production director, R&D director, referees of production planning, heads of department) we have estimated all charges related to the research carried out by companies, also including the costs incurred for engineering orders (man hours, machine hours, experimentation with new materials).

5. Sample and Data Collection

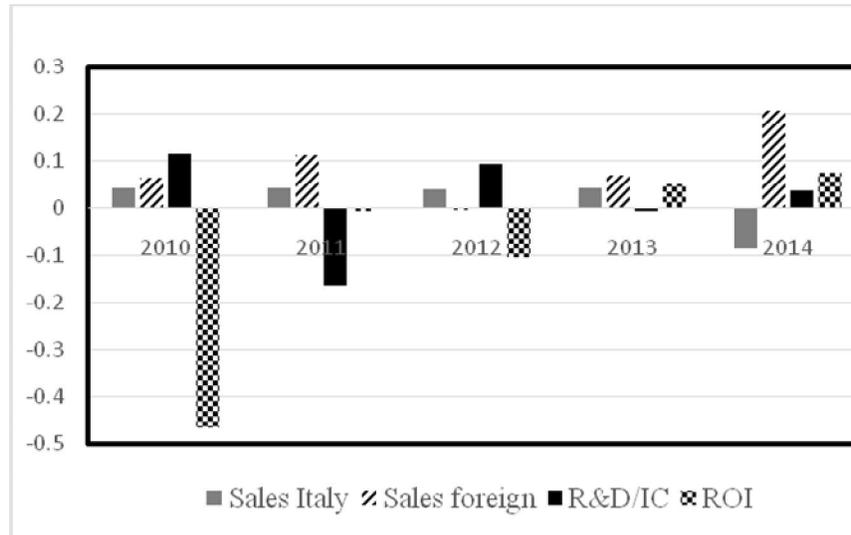
The present work highlights the results of my empirical research. The research was carried out during the years 2009–2014; it involved 30 firms of the sectors of mechanics and electronics located in Central Italy. The firms that belong to the sample were chosen among those that, while having internationalised production and research, maintain and develop the original domestic production site. The sample was chosen taking into consideration IMSFs that progressively invested more resources in R&D in relation to global investment in the activity of the firm, to understand if the innovation propension has had positive effects both on the total turnover (also this variable has been related to the invested capital), and on the exported turnover. A first basic analysis has been carried out by choosing a graphic method of representation that point out the positioning of firms according to their average tendency to change, with reference to both variables (R&D/IC vs. Turnover/IC and R&D/IC vs. Export/Turnover). Elaboration of data regarding the financial and the economic resources invested by the IMSF analysed in the activity of research and development shows (Figure 2 and 3) a good trend in recent years in R&D/IC (Research and Development/Invested Capital). I have actually tried to give graphic evidence to certain forms of company behaviour. Using primary data collected from a focused sample of multi-year invested resources in R&D activities, a combination of statistical and simulation analyses are used to develop a time-varying relationship between the entity of resources invested in research and development – in relation to global investment in the activities of the firm (IC) and the total turnover (Figure 2). One can see that the energy directed towards innovation does not generate, in the majority of the firms studied, positive effects on the volume of business. The relationship between the rate of innovation (R&D/IC), and the willingness to internationalise seems to be more significant: the propensity to export is positively connected to the effort towards innovation (Figure 2 and 3).

Figure 2: Normalized Values



Source: our elaboration based on direct empirical research

Figure 3: Differential Values



Source: our elaboration based on direct empirical research

6. Factors Increasing the Research Propensity

Recent international business research advocates placing knowledge acquisition and exploitation at the heart of firms' internationalization strategies (Meyer et al., 2009; Ghauri and Park, 2012). From this perspective, internationalization is viewed as a learning and knowledge accumulation process. Data from a sample of research-intensive firms of mechanics and electronics using design and engineering activities shows that operational-level exploratory and exploitative productive innovation and marketing capabilities allow firms to implement exploratory and exploitative strategies in complex and dynamics international business marketing (Kim & Atuahene-Gima, 2010; Lisboa et al., 2011; McCarthy & Gordon, 2011; Siren et al., 2012). A number of studies suggest that a firm that invests in R&D activities continuously can foster the firm's innovativeness (Hagedoorn & Duysters, 2002). As a result, a firm's investment in R&D activities is an important source for firm innovation. The firms analysed engage in research and development to create advantages and increase firm value. However, managing this R&D process is challenging as it involves uncertainty both regarding technological trajectories and international business-markets opportunities. Thus it may be difficult for firms to change their R&D strategic choices over time because it is difficult to gather reliable information with which to judge the prospects of their R&D portfolio. The acquisition, assimilation, and exploitation of heterogeneous, valuable, knowledge-based resources contribute critically to a firm's competitive advantage and superior performance (Nonaka, 1994; von Hippel, 2007; Lechner et al., 2010).

A higher level of R&D capacity improves a firm's ability to exploit sources of knowledge. Much research has treated capability development - changes in stocks of knowledge, operational skills, improvement in production processes, improvement in utilizing raw material, ecc. - as a 'gap-closing process' (Rockart & Dutt, 2015). Firms typically exploit and refine their knowledge by searching in the vicinity of their existing knowledge domains (Levinthal and March, 1993; Miller, 2002). At the same time, they are under pressure to change their knowledge bases to keep pace with the external technological environment and to compensate for the exhaustion of recombinant opportunities in existing domains (Fleming, 2001; Kim and Kogut, 1996). Technological innovation is the combinatorial evolution of useful knowledge, which is enabled and constrained by existing operational resources and arecombination of overlapping processes with users, technological providers, components providers, and in some cases institutions. Knowledge management in our study is analysed as a set of activities, initiatives, and strategies that companies use to generate, and apply knowledge for the improvement of productive and competitive performances. We would like to highlight that the effect of firm innovativeness on business performance is relevant in a competitive context that is characterised by market turbulence and competitive intensity.

The support and the experience of “expatriate entrepreneur” (a member or owner family nucleus) senior management in entrepreneurial activities in subsidiaries is more and more important in creating and stimulating the organizational environment for new business ideas and practices. Naturally, the relationship between entrepreneurial orientation and the development of capabilities requires the constant rebuilding of businesses and processes in a continuous and emerging manner.

In line with previous literature, results show that, although knowledge management practices themselves are important for innovation purposes, the existence of this kind of leadership encourages the development and use of knowledge management exploration (i.e., creation) and exploitation (i.e., storage, transfer, and application) practices (Nguyen & Mohamed, 2011; von Krogh et al., 2012). Entrepreneurial leadership behavior is an important factor, since leaders have an enormous impact on the direction and effectiveness of knowledge management within the firm's organizations. Traditionally, scholars consider organizational size to be an important predictor of innovation adoption. Although most medium enterprises suffer from the lack of the necessary means and know-how to invest in innovation, they boast a major advantage with respect to the larger firms: their size gives them more flexibility and independence from institutional bureaucracy. This structure can promote an innovative spirit and can foster innovation (De Jong & Marsili, 2006; Laforet, 2008). A firm's innovativeness is also reflected in the firm's cultural values and beliefs, which encourage its employees to act in innovative ways (Hult & Ketchen, 2001). According to the resource-based view (RBV) of the firm (Barney, 1991), firm innovativeness is a socially complex and imperfectly imitable resource that generates competitive advantage and better performance (Menguc & Auh, 2006). The traditional view asserts that firm innovativeness enhances business performance; however, the empirical research has not yet reached a consensus on this assertion (Tsai & Yang, 2013). In addition, more recent RBV perspectives increasingly emphasize the influence of the external environment on the value of a firm's resources. The traditional RBV holds ‘only as long as the rules of the game in an industry remain relatively fixed’ (Barney et al., 2011). However, the industrial environment in the real world is not always stable or uncompetitive. With very few exceptions, the majority of studies on firm innovativeness have not investigated the moderating role of market turbulence in the firm's innovativeness and firm performance (Hult et al., 2004). In this sense, it appears clear that the relationship between firm innovativeness and business performance depends on particular contingencies (environmental context) (Tsai and Yang, 2013). In general, the way a manufacturing plant utilizes its existing knowledge through knowledge management practices determines this knowledge's utility in innovation. Performance includes multiple dimensions. Studies in strategic management focus most commonly on firms' financial performance (Chen et al., 2015). Although the current research approach treats storage as a knowledge-exploitation process, this study considers the link with results in innovation to be indirect. Specifically, knowledge dissemination and application emerge as two characteristic components of knowledge management with major potential for the generation of sustainable competitive advantages based on innovation, due to their complexity, ambiguity, and uniqueness to the firm.

7. Some Concluding Observations

On site verification of some research hypotheses and the re-elaboration of balance sheet data allow one to attain some partial results in this field of research, that is still prevalently in its exploratory stages. The current paper investigates empirically the relation between relatively radical changes (radical for medium sized firms) in strategic R&D firm-choices occurring within small time windows and an evaluation of the extent of the firm's exploratory knowledge activity. This paper presents empirical evidence of the mediating effect of knowledge management practices in the relationship between knowledge-oriented leadership and innovation performance. Therefore, a higher R&D investment can result in higher innovativeness for the firm. Prior studies find that R&D investment has a positive relationship with a firm's innovativeness. For instance, we assert that internal R&D reveals the opportunity for a firm's dynamic improvement and innovation. Our results suggest that firm innovativeness is critical for firms that seek to enhance business performance in highly turbulent and highly competitive markets: firms must continually innovate to ensure that their productive plants are aligned with rapidly changing use in international business markets with intensely competitive landscapes. To ensure that their firms prosper under such difficult market conditions, managers should nurture a culture of high innovativeness that “encourages, supports, and rewards breakthrough thinking and that resists the inertial forces that stymie innovation” (Mohr et al., 2010). The overlap in the knowledge base between users and our analysed firms during the development (engineering) of such orders leads to ‘order development organisations’ possessing an increased capacity to influence users' priorities.

In some cases that were analysed, one comes across the fact that particular capacities are attributed to order development organisations in identifying autonomously the most opportune way to set up the complex and complete cycle of design-engineering-production of such orders. In these situations our analysed firms influence user's priorities strongly.

One should draw attention to the fact that the propensity of Italian medium firms to effectively take advantage of new process technologies and their ability to increase the innovative knowledge possessed co-evolve with planning and managing innovative processes on a global scale. In many of the cases analyzed negative profitability ratios were observed, negative, compared to increasing efforts in research and development and increased export propensity of firms. The increase in costs of applied research does not generate better income performance, at least in the short term. It can be observed generally that the index of profitability (ROI) improved in the years subsequent to those in which the growing innovative effort is evident. It is clear that the decision to use resources in innovative activities aiming at a competitive long-term vision is still important as is the role of entrepreneurship; this contrasts with the short-sighted view of development, famously attributed to managerial firms in which, as is demonstrated in literature, a short-term vision exists.

8. Some implications for Managerial Practices

This study contributes not only to academic research but also to practitioners (entrepreneurs, managers, Institutions, ...) on several fronts. The positive impact of innovative climates on proactive strategic decision-making flexibility seems almost inevitable: innovative climates enable firms to exploit and find new product and market opportunities, which can be translated into competitive advantages. Overall, this study provides a unique contribution in terms of both theoretical development and managerial implications by investigating the two activities (operations and R&D activities) with the aspects of global configuration (entry location, operational specialization, different positioning in diversified and interdependent international supply chains). In our survey, we focused on the early stages of innovation and were able to provide evidence for its significant impact. Having said this, we do not suggest that the later stage is any less important. Another limitation of this research is the absence of a comparison between the strategic decisions formulated by the firms that, in the period under consideration, have shown positive performance and those that have shown a more modest or even negative performance. On site verification of some research hypotheses and the re-elaboration of balance sheet data allow one to attain some partial results in this field of research, that is still prevalently in its exploratory stages.

9. Limitations and Further Research Interests

There are some limitations to consider. Firstly, the use of retrospective accounts may have biased the present results. However, the fact that the quantitative study has been conducted alongside a qualitative investigation has allowed a good interpretation of various managerial problems, and has permitted one to supply useful economic indications for managers, entrepreneurs and institutions that would like to follow strategies of growth and development. Secondly, a fruitful direction for future research would be to track the development and influence of intergroup or inter-firm relationships over the life cycle of international initiative development. While the research has made significant contributions to research and practice, there are limitations that need to be considered when interpreting the study's findings. Because of the limited number of observations (30 firms), the revalidation of constructs was not carried out in this research. This needs to be addressed in future research. Another limitation of this research is the absence of a comparison between the strategic decisions formulated by the firms that, in the period under consideration, have shown positive performance and those that have shown a more modest or even negative performance. In the end, due to the time constraints on the availability of the chose target group of top management members, measurement models were kept as short as possible. More detailed measurement models for the presented constructs might lead to additional valuable insights.

References

- Aghion, P., Van Reenen, J., & Zingales, L. (2013). Innovation and institutional ownership. *American Economic Review*, 103(1), 277-304.
- Andersen, T. J., & Foss, N. J. (2005). Strategic Opportunity and Economic Performance in Multinational Enterprises: The Role and Effects of Information and Communication Technology. *Journal of International Management*, 11 (2), 293–310.
- Argyres, N., Bigelow, L., & Nickerson, J., A. (2015). Dominant designs, innovations shocks, and the follower's dilemma. *Strategic Management Journal*, 36 (2), 216-234.
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barney, J., Ketchen, D. J., & Wright, M. (2011). The future of resource-based theory: Revitalization or decline? *Journal of Management*, 37(5), 1299-1315.
- Caloghirou, Y., Kastelli, I., & Tsakanikas, A. (2004). Internal capabilities and external knowledge sources: complements or substitutes for innovative performance. *Technovation*, 24, 29-39.
- Chandler, J. D., & Vargo, S. L. (2011). Contextualization and value-in-context: How context frames exchange. *Marketing Management*, 11 (1), 35-49.
- Chen, C. M., Delmas, M. A., & Lieberman, M. B. (2015). Production frontier methodologies and efficiency as a performance measure in strategic management research. *Strategic Management Journal*, 36 (1), 19-36.
- Covin, J. G., & Slevin, D. P. (1991). A Conceptual Model of Entrepreneurship as a Firm Behavior. *Entrepreneurship Theory and Practice*, 16(1), 7-25.
- De Jong, P.J.J., & Marsili, O. (2006). The fruit flies of innovations: A taxonomy of innovative small firms. *Research Policy*, 35 (2), 213-229.
- Fleming, L. (2001). Recombinant uncertainty in technological search. *Management Science*, 47(1), 117-132.
- Freeman, C., & Perez, C. (1998). Structural crises of adjustment: Business cycles and investment behaviour. In G. Dosi, C. Freeman, & R. Nelson (Eds.), *Technical Change and Economic Theory*. London: Pinter Publishers.
- Goodale, J. C., Kuratko, D. F., Hornsby, J. S., & Covin, J. G. (2011). Operations Management and Corporate Entrepreneurship: The Moderating Effect of Operations Control on the Antecedents of Corporate Entrepreneurial Activity in Relation to Innovation Performance. *Journal of Operations Management*, 29(1), 116-127.
- Grant, R. M. (1996). Toward a knowledge based theory of the firm. *Strategic Management Journal*, 17(Special Issue), 109–122
- Hagedoorn, J., & Duysters, G. (2002). Learning in dynamic Inter-firm Networks: The Efficacy of Multiple Contacts. *Organization Studies*, 23(4), 525-548.
- Holmqvist, M. (2004). Experiential learning processes exploitation and exploration within and between organizations: An empirical study of product development. *Organization Science*, 15 (1), 70-81.
- Hornsby, J. S., Kuratko, D. F., Shepherd, D. A., & Bott, J. P. (2009). Manager's Corporate Entrepreneurial Actions: Examining Perception and Position. *Journal of Business Venturing*, 24(3), 236-247.
- Huemer, L., Boström, G. O., & Felzenstein, C. (2009). Control-Trust Interplays and the Influence Paradox: A Comparative Study of MNC-Subsidiary Relationships. *Industrial Marketing Management*, 38(5), 520-528.
- Hult, G. T.M., Hurley, R. F., & Knight, G.A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial Marketing Management*, 33(5), 429-438.
- Ireland, R. D., Covin, J. G., & Kuratko, D. F. (2009). Conceptualizing Corporate Entrepreneurship Strategy. *Entrepreneurship Theory and Practice*, 33(1), 19-46.
- Jaworski, B., Kohli, A. K., & Sahay, A. (2000). Market-driven versus driving markets. *Journal of the Academy of Marketing Science*, 28 (1), 45-54.
- Kim, D., J, & Kogut, B. (1996). Technological platforms and diversification. *Organization Science*, 7(3), 283-301.
- Kim, N., & Atuahene-Gima, K. (2010). Using exploratory and exploitative market learning for new product development. *Journal of Product Innovation Management*, 27(4), 519-536.
- Kuratko, D. F., Hornsby, J. S., & Bishop, J. W. (2005). An Examination of Managers' Entrepreneurial Actions and Job Satisfaction. *International Entrepreneurship and Management Journal*, 1(3), 275-291.
- Laforet, S. (2008). Size, strategic, and market orientation effects on innovation. *Journal of Business Research*, 61 (7), 753-764.
- Lane, P. J., Koka, B. R., & Pathak, S. (2006). The Reification of Absorptive Capacity: A Critical Review and Rejuvenation of the Construct. *Academy of Management Review*, 31(4), 833-863.

- Le, S.A., Walters, B., & Kroll, M. (2006). The moderating effects of external monitors on the relationship between R&D spending and firm performance. *Journal of Business Research*, 59 (2), 278-287
- Lechner, C., Frankenberger, K., & Floyd, S. W. (2010). Task contingencies in the curvilinear relationships between intergroup networks and initiative performance. *Academy of Management Journal*, 53 (4), 865-889.
- Lenox, M., & King, A. (2004). Prospects for developing absorptive capacity through internal information provision. *Strategic Management Journal*, 25 (4), 331-345.
- Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic Management Journal* 14(S2), 95-112.
- Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319-340.
- Lisboa, A., Skarmeas, D., & Lages, C. (2011). Entrepreneurial orientation, exploitative and explorative capabilities, and performance outcomes in export markets: A resourcebased approach. *Industrial Marketing Management*, 40(8), 1274-1284.
- McCarthy, I. P., & Gordon, B. R. (2011). Achieving contextual ambidexterity in R&D organizations: A management control system approach. *R&D Management*, 41(3), 240-258.
- Menguc, B., & Auh, S. (2006). Creating a firm-level dynamic capability through capitalizing on market orientation & innovativeness. *Journal of the Academy of Marketing Science*, 34(1), 63-73.
- Miller, K., D. (2002). Knowledge inventory and managerial myopia. *Strategic Management Journal*, 23(8), 689-706.
- Miller, B., Bierly, P., & Daly, P. (2007). The knowledge strategy orientation scale: Individual perceptions of firm-level phenomena. *Journal of Managerial Issues*, 19(3), 414-435.
- Nguyen, H. N., & Mohamed, S. (2011). Leadership behaviors, organizational culture and knowledge management practices: An empirical investigation. *Journal of Management Development*, 30(2), 206-221.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I., & Takeuchi, H. (2011). The wise leader. *Harvard Business Review*, 89(5), 58-67.
- Ribeiro, D., & Huanng, K. H. (2011). Innovation and Entrepreneurship in knowledge industries. *Journal of Business Research*, 66(10), 1964-1969.
- Rockart, S. F., & Dutt, N. (2015). The rate and potential of capability development trajectories. *Strategic Management Journal*, 36 (1), 53-75.
- Rothaermel, F. T., & Alexandre, M. T. (2009). Ambidexterity in technology sourcing: The moderating role of absorptive capacity. *Organization Science*, 20 (4), 759-780.
- Siren, C. A., Kohtamäki, M., & Kuckertz, A. (2012). Exploration and exploitation strategies, profit performance, and the mediating role of strategic learning: Escaping the exploitation trap. *Strategic Entrepreneurship Journal*, 6(1), 18-41.
- Sirmon, D. G., Hitt, M. A., & Ireland, R. D. (2007). Managing firm resources in dynamic environments to create value: Looking inside the black box. *Academy of Management Review*, 32(1), 273-292
- Tekleab, A. G., & Quigley, N. R. (2014). Team deep-level diversity, relationship conflict, and team members' affective reactions: A cross-level investigation. *Journal of Business Research*, 67(3), 394-402.
- Tsai, K. H., & Yang, S. Y. (2013). Firm innovativeness and business performance: The joint moderating effects of market turbulence and competition. *Industrial Marketing Management*, 42 (8), 1279-1294.
- Van den Bosch, F. A. J., Volberda, H. W., & de Boer, M. (1999). Co-evolution of firm absorptive capacity and knowledge environment: organizational forms and combinative capabilities. *Organization Science*, 10 (5), 551-568.
- Vargo, S. L., Wieland, H., & Akaka, M. A. (2015). Innovation through institutionalization: A service ecosystems perspective. *Industrial Marketing Management*, 44 (1), 63-72.
- Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance in strategy research: A comparison of approaches. *Academy of Management Review*, 11 (4), 801-814.
- Verheul, I., Uhlaner, L., & Thurik, R. (2005). Business accomplishments, gender and entrepreneurial self-image. *Journal of Business Venturing*, 20 (4), 483-518.
- von Hippel, E. (2007). Horizontal innovation network-By and for users. *Industrial and Corporate Change*, 16(2), 293-315.
- von Krogh, G., Nonaka, I., & Rechsteiner, L. (2012). Leadership in organizational knowledge creation. A review and framework. *Journal of Management Studies*, 49(1), 240-277.
- Zack, M., McKeen, J., & Singh, S. (2009). Knowledge management and organizational performance: An exploratory survey. *Journal of Knowledge Management*, 13(6), 392-409.
- Zahra, S. A., & George, G. (2002). Absorptive Capacity: A Review, Reconceptualization, and Extension. *Academy of Management Review*, 27 (2), 185-203.