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THE EFFECT OF HUMAN RESOURCE MANAGEMENT PRACTICES ON ORGANIZATIONAL PERFORMANCE THROUGH CORPORATE ENTREPRENEURSHIP

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1. Purpose of the study.

Many studies have underlined the relevance of Human Resource Management (HRM) practices in order to achieve strategic objectives and sustain performance (Lado an Wilson, 1994; Delery and Doty, 1996). Nevertheless, many of them highlight a significant statistical relation between HRM practices and organizational outcomes, overlooking the causal mechanism underlying this relation (Huselid 1995). Moreover, such studies do not address the issue of the level of analysis. It is not very clear how HRM practices, that are supposed to influence individual behaviours, can produce their effect at the level of the organization (Becker and Huselid 1998).

My study intends to shed light on these aspects. To do so, I rely on corporate entrepreneurship (CE) as the main mechanism underlying the relation between HRM practices and performance. Several studies pointed out the relevance of CE to various kinds of performance (Zahra, 1991, 1993, Lumpkin and Dess 1996). At the same time, corporate entrepreneurship relies on the activities carried out by some key players within the organization (Sharma and Chrisman, 1999). Therefore, if the entrepreneurial effort is based on the behaviours of individuals, these should be affected by appropriate HRM practices.

In the following sections, I develop a model showing how different sets of HRM practices can influence different kinds of entrepreneurial activities that, in turn, lead to different aspects of corporate performance. I first define the concept of “entrepreneurial capabilities”, that are central to my model. Basing on the literature on entrepreneurship, I point out three main capabilities that characterize an entrepreneurial firm: opportunity discovery, evaluation, and exploitation. I then show how such capabilities result from the aggregation of middle managers’ networking behaviours, thereby configuring them as employee-based capabilities that can be influenced by HRM systems (Collins and Clark 2003). Then, I indicate the potential effect of these capabilities on different aspects of firm performance. Finally, I indicate two different sets of HRM practices that could consistently lead to the enhancement of entrepreneurial capabilities.

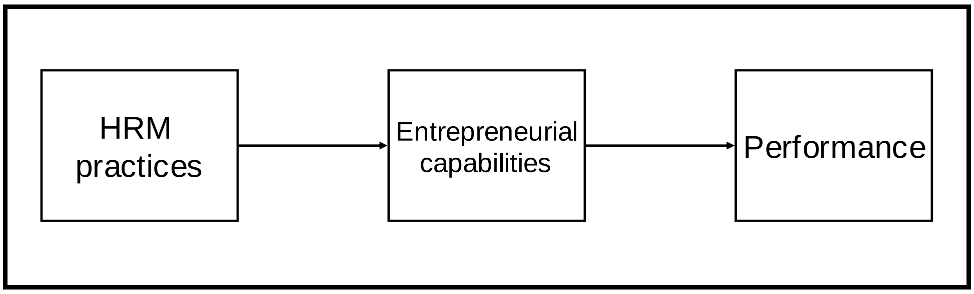

Fig 1 Basic research framework

2. Entrepreneurship and entrepreneurial capabilities

2.1 A definition of entrepreneurship

Many definitions of Corporate Entrepreneurship (CE) have been provided in the literature. Some of these see firms themselves as the actors of the entrepreneurial effort and outline the entrepreneurial attributes these organizations should possess (Miller, 1983; Covin and Miles 1999). Other conceptualizations of CE more specifically refer to the action of individuals (or groups of individuals) within the firm (Sharma and Chrisman, 1999).

Contributions adopting the first kind of definition usually translate the characteristics of the individual entrepreneur to the firm-level. It is the case, for example, of the definition provided by Miller (1983) that identifies risk taking attitude and proactiveness as two of the three traits characterizing the entrepreneurial firm. Lumpkin and Dess (1996) added autonomy and competitive aggressiveness to the original Miller's dimensions. Studies focusing on individuals within the organization usually consider the activities that are performed by these players, that might eventually show the characteristics of individual entrepreneurs. Jones and Butler (1992), for example, suggested that corporate entrepreneurship resides in the entrepreneurial behaviour of managers. Hornsby et al. (2002) and Kuratko et al (2005) indicate middle managers as main actors in the entrepreneurial performance of a company.

In an attempt to provide a framework that could be applicable to both corporate entrepreneurship and to the broader field of entrepreneurship, Stevenson and Jarrillo (1990) define entrepreneurship as "*a process by which individuals, either on their own or inside organizations, pursue opportunities without regard to the resources they currently control (p.23)*".

In this definition the pursuit of opportunities, independently from the actual control of resources, is presented as the central activity of all the entrepreneurial effort.

This conceptualization of entrepreneurship is consistent with the one by Venkataraman (1997), who conceptualizes it as the discovery, the evaluation and the exploitation of future goods and services .

Ten years after Stevenson and Jarrillo's contribution, Shane and Venkataraman (2000) point out that research on entrepreneurship has failed to consider it as a nexus of two phenomena: the presence of *opportunities* and the presence of enterprising individuals, as it focused mainly on the nature entrepreneuring *individuals*.

In Stevenson and Jarrillo's view, the definition of entrepreneurship can be easily extended to firms, whose entrepreneurial characteristics are based on their ability to pursue opportunities, regardless of the resources they currently control.

More specifically, they suggest that "*the level of entrepreneurship within the firms is critically dependent on the attitude of the individuals within the firms below the ranks of top management (p.24)*". It is, therefore, the ability of individuals within the firm to pursue opportunities that defines the ability of the whole organization to be entrepreneurial.

I adopt this definition of corporate entrepreneurship because it focuses on the "entrepreneur's" behaviour and therefore sheds light on the corporate entrepreneurship process. In this way, we can get insight on how to foster this phenomenon (Stevenson and Jarillo, 1990). Moreover, this conceptualization shows how the entrepreneurial capabilities of a firm rely on the behaviour of a particular group of people, thereby emphasizing the relevance of the HRM practices to corporate entrepreneurship.

Consistent with this view, several studies on corporate entrepreneurship specifically focus on middle managers as key players in the process of corporate entrepreneurship (Kuratko et al. 2005, Hornsby et al 2002, Floyd and Wooldridge, 1990, 1992, Pearce et al 1997). As Hornsby et al. (2002) suggest, given their position within the organization, middle managers are fundamental in accomplishing those formal and informal activities that promote corporate entrepreneurship, as they mediate the strategic and operating levels.

In line with the above discussion, I will highlight in the following sections three entrepreneurial capabilities that are based on middle managers' contribution: opportunity discovery, opportunity evaluation, and opportunity exploitation, based on middle managers' networking behaviours. I will discuss which activities are to be performed by middle managers in order to make a company entrepreneurial, that is to make it able to discover, evaluate and exploit opportunities. I will describe, therefore, middle manager's behaviours and outline the process that leads to successful corporate entrepreneurship.

2.2 Three network - based entrepreneurial capabilities

1) Opportunity discovery

Similarly to what Shane and Venkataraman (2003) indicate in the case of individual entrepreneurs, I define the opportunity discovery capability as "the ability of the organization to realize that an opportunity exists and has value".

Although many distinctions have been operated in the literature between opportunity discovery, recognition, perception or creation (Ardichvili et al, 2003), I generically use the term "opportunity discovery" to indicate the ability to locate value in some market or technological condition through the application of a new means-end relation framework that is unknown to other competitors (Shane and Venkataraman, 2000; Eckhardt and Shane 2003).

Shane and Venkataraman (2000) suggest that the discovery of entrepreneurial opportunities is helped by the creation of new information channels and by the cognitive abilities of the entrepreneur. These elements make the entrepreneur depart from the dominant mind-set of the organization and come up with new ideas and opportunities (Floyd and Wooldridge, 1999).

Establishing contacts outside the firm, with both customers and suppliers, is helpful in discovering new opportunities. Creating informal networks with people within and outside an organization is a way to create those "information corridors" that enable the entrepreneur to acquire new, specialized, information. By so doing, he or she can create those mental frameworks that help to recognize new opportunities (Shane and Venkataraman, 2000). Consistently, Wiklund and Shepherd (2003) point out that establishing external contacts with customers helps firm acquire market knowledge and therefore more easily locate opportunities. Shane and Venkataraman (2000) suggest that not only the product market can be source of opportunities, but also the factor market can provide occasions to develop entrepreneurial ideas. Once the information corridors are established and the relevant knowledge is acquired, the cognitive abilities of the entrepreneurs make them see the opportunities that many other people do not see by creating new means-end relations (Shane and Venkataraman, 2000). In this process, the entrepreneur is helped by other organizational members that may be directly or indirectly involved in the entrepreneurial activity (Zahra 1999).

Therefore, creating informal networks within and outside the organization to exchange pieces of specialized knowledge with a broad array of different actors is crucial for middle managers to identify new opportunities. As Hills et al. (1997) conclude, entrepreneurs who have extended networks identify significantly more opportunities.

Middle managers often create informal networks even beyond the ones strictly needed for their ordinary working activity. By so doing, they actively and diligently gather innovative ideas from within and outside the firm (Hornsby et al. 2002) Similarly, Burgelman (1983) indicates that managers like group leaders assemble internal and external pieces of knowledge together in order to define a new opportunity. Hayton and Kelley (2006) suggest that corporate entrepreneurs (typically middle managers) explore different knowledge domains, learn from them, link knowledge to solve problems. When doing so, middle managers develop networks of relations, both within and outside the company. Such relations favour the acquisition off new knowledge as well as the cognitive process that leads to the discovery of new entrepreneurial opportunities.

2) Opportunity evaluation

When an individual entrepreneur discovers an opportunity, he or she informally evaluates it in order to conclude whether it is worth pursuing more formal investigation or not (Ardichvili et al 2003). Similarly, I define the "opportunity evaluation capability" as the ability of an organization to formally or informally evaluate if an entrepreneurial opportunity is worth pursuing or not.

The process of evaluation is typically started by the individual (the entrepreneur) that discovers an opportunity and evaluates it in a way that is often informal and not articulated (Ardchivili et al. 2003). The opportunity discovered has to be consistent with the subjective system of beliefs of the entrepreneur (Floyd and Wooldridge, 1999). This means that an entrepreneurial idea has to make sense first of all to his/her discoverer. However, this is only the first step of the evaluation of an entrepreneurial opportunity. After the (positive) subjective evaluation by the entrepreneur, an idea has to undergo a process of empirical validation by receiving the evaluation of a network of people that the entrepreneur creates in order to get his/her idea accepted. After this, the idea has to be matched with the organizational goals and activities. Therefore, the validation of an entrepreneurial idea is a process that takes place at the individual, social and organizational level (Floyd and Wooldridge 1999). The necessity of evaluating an opportunity in collaboration with other people becomes even more stringent when it comes the time to acquire resources to start developing it or testing it through more formal steps like feasibility analyses (Ardichvili et al. 2003). As Burgelman (1983) suggests, an opportunity has to be proven viable even before obtaining resources for its preliminary development. In order to receive a positive evaluation of a new entrepreneurial idea, and get access to resources, such idea needs to be championed throughout the organization.

Through this process of championing, an individual influences other people's perception about the necessity of pursuing a certain opportunity (Hayton and Kelley, 2006). Champions can do this to involve people in the technical definition and development of an entrepreneurial idea (like a new product, service or process oriented at fulfilling an opportunity) or to gain legitimacy and sponsorship from the key resource holders and decision makers within the organization . The person championing an entrepreneurial idea from the technical standpoint may be different from the one that navigates it throughout the organization (Floyd and Wooldridge, 1999). However, Day (1994) suggests that, under particular circumstances, the two functions of "product" and "organizational" champion can be performed by the same person ("dual-role champions").

The process of opportunity evaluation is closely tied to knowledge exchange and recombination.

Whether he/she does so to look for collaboration in defining technical innovation or to gain organizational support and resources, the entrepreneur articulates his/her own knowledge to convince others about the potential of an innovation, by recognizing in advance the value that can be obtained by pursuing a certain opportunity (Hayton and Kelley, 2006). Nahapiet and Goshal (1999) suggest that anticipating that interaction, exchange and combination will create value, even without knowing exactly how, is one of the basic conditions that promotes knowledge exchange and recombination.

When acting as a product champion, an intrapreneur usually influences other colleagues in order to recombine their knowledge and define how to exploit an opportunity. As Zahra et al. (1999) note, the mere technical discovery cannot impact the firm bottom line if it is not widely shared across the organization. In this process, the product champion plays an important role in reaching the key contact persons, determining the best time and approach and eventually going back to those who discovered the opportunity to further refine it (Zahra et al 1999). Organizational champions exchange knowledge with key resource holders and decision makers in the organization to get insights on how the opportunity they are shepherding can have more chances to be successful (Kuratko et al. 2005). To do so, they first need to articulate the knowledge produced so far within the entrepreneurial process in order to present it to the influential stakeholders within the firm. Then, they exchange knowledge with those who developed the entrepreneurial idea in order to make it more aligned with the organizational goals (Pinchot 1985).

The championing process, if successful, leads to a positive evaluation of the entrepreneurial opportunity, when decision makers and resource holders are committed to invest in an entrepreneurial idea that has been defined and refined during the process. .

The championing process, as well as the exchange and recombination of knowledge characterizing the opportunity evaluation capability, involves the creation of social networks.

As Floyd and Wooldridge (1999) suggest, when promoting their ideas, champions become central figures in emerging social networks. Creating networks helps in influencing other people's perceptions about the necessity of pursuing certain opportunities and simplifies the acquisition of the resources required to develop and implement them. Consequently, the creation of social ties with resource providers will increase the likelihood of the entrepreneurial opportunity to be exploited (Aldrich and Zimmer 1986). These ties can include people both within and outside the organization (MacMillan and Starr 1990).

A relevant role in this process of influencing others to champion entrepreneurial opportunities is played by middle managers. Given their favourable position at the heart of the organization, they can create networks that reach people at both the operating and the executive level of the firm. Therefore, they can inspire and enthuse collaborators to gain commitment towards the development of opportunities (Hayton and Kelley, 2006), by creating a shared vision (Pinchot 1985). At the same time, they are able to influence the perceptions of top managers by making accessible to them different strategic alternatives, by synthesizing information and eventually altering the formal structure (Floyd and Wooldridge, 1992, Hornsby et al. 2002). They can also try to convince senior managers about the strategic opportunity of some particular ventures (Burgelman 1983), thereby influencing the type and the intensity of the corporate entrepreneurship effort and, therefore, the company's strategic agenda (Burgelman and Sayles, 1986). To do so, middle managers build their own networks of contacts that help key people within the organization uncover new ways to think about new technologies and their potential use to fulfil emerging opportunities (Zahra et al., in press). Moreover, middle managers play a critical role in identifying, acquiring and deploying resources to be devoted to entrepreneurial opportunities. Their closeness to the operating level makes them able to have an idea of the amount and quality of the resources that are needed to develop a specific opportunity. Their superior knowledge of the organization with respect to lower level managers allow them to locate these resources and find out the most effective way to reach them. Middle mangers can shepherd an entrepreneurial opportunity by their personal networks (Kuratko et al 2005). As Pinchot (1985) suggests, middle managers can themselves act as sponsors and create networks of additional sponsors, directly and indirectly influencing the process of resource allocation (Hayton and Kelley 2006).

Given their role in the championing process, middle managers are key figures in the process of knowledge exchange and recombination. For example, drawing on the technical intuition from the lower levels, middle managers intervene on the content and the nature of entrepreneurial opportunities so that they "look like" good opportunities for the company (Kuratko et al. 2005). Thanks to both their technical and strategic knowledge, middle managers can help their collaborators turn ideas into concrete projects, in which technological and market activities take shape (Burgelman 1983). They also communicate them which of their ideas are likely to meet the acceptability criteria that are imposed by the top management (Hornsby et al 2002), individuating the ones that are more likely to succeed.

Middle managers do not only bridge the strategic and the operating level, but also help to create connections among actors within and outside the organization. For example, they help their collaborators recombine pieces of existing knowledge, facilitating the flow of knowledge within the organization, acting as brokers (Hayton and Kelley, 2006). Also, middle managers help to create informal communication channels among sub-units of the organizations with different knowledge backgrounds. These channels help the circulation of ideas within the organization and their cross-fertilization, and create an environment favourable to the survival of new ideas, favouring in this way innovation (Damanpour 1991)

In sum, middle managers are in a favourable position to create internal communication networks, that are of central importance for the championing process, that is at the heart of the evaluation capability. Being in this position provides them with informal power that allows them to more easily reach resources and build coalitions in support of the opportunities they are protecting (Day, 1994), favouring a positive evaluation of such opportunities and paving the way for their actual exploitation.

3) Opportunity exploitation

I define the opportunity exploitation capability as the ability of a firm to actually take advantage of the opportunities discovered by appropriating the rent deriving from it. This capability is very important because, without this ability, a firm cannot fully be considered entrepreneurial (Zahra et al. 1998). As Schumpeter suggests (1934), creating rents is a fundamental part of entrepreneurship, along with risk taking and resource recombination.

This capability is similar to the "exploitation capability" defined by Zahra and George (2002). In their conceptualization, such capability allows a firm to harvest and incorporate knowledge into its operations. The outcomes of the exploitation capability are the persistent creation and commercialization of new goods, systems, processes, knowledge and organizational forms (Zahra et al. 1999; Zahra and George, 2002). The integration of knowledge in a firm's operations as described by Zahra and George (2002) is similar to the integration of knowledge in a firm's competencies indicated by Floyd and Wooldridge (1999) and Zhara et al. (1999) when they refer to the process of learning triggered by corporate entrepreneurship. Zahra et al. (1999), consistently, underline that knowledge integration is a very important aspect of the ability to exploit opportunities. Opportunity exploitation is also similar to the concept of integrative capabilities proposed by Verona (1999) when he describes them as a glue that allows an organization to blend technical knowledge in order to apply it into its operations.

The ability to exploit entrepreneurial opportunities relies on the integration of knowledge that resides within or outside an organization (Zhara et al., 1999). This concept is at the heart of the idea of "organizational capabilities" suggested by Grant (1996), by which a company can integrate specialist knowledge to produce a discrete task that is directly or indirectly related to a firm's value creation process. According to Grant, the ability to integrate specialized knowledge is the only way for the company to appropriate the rent deriving from this knowledge, that otherwise would be appropriated by individuals. In order to do so, Grant (1996), acknowledges that transferring tacit knowledge may be challenging, as it is difficult to codify and articulate. Therefore, he describes the role of organizational routines that allow people to interact on a regular basis and exchange tacit knowledge. Consistently, Verona (1999) indicates that firms cannot rely simply on communication in order to integrate both explicit and tacit knowledge into new products, but need managerial processes and systems, integrative structures and culture and values for integration. All these elements should favour a task-oriented cooperation between different actors to allow the exchange of tacit knowledge. In terms of structure, for example, the creation of formal networks with suppliers or customers is an effective way to absorb and integrate external knowledge (Nonaka, 1990; Iansiti and West, 1997). Similarly, the reduction of internal vertical and horizontal boundaries can favour the integration of knowledge detained by different actors within the organization (Leonard-Barton, 1992). In their review study on marketing and R&D integration in new product development, Griffin and Houser (1996) suggest that, in order to remove barriers to knowledge integration (namely, physic cal separation, personality, thought worlds, language, organizational responsibility), firms can use six different approaches. One of these is favouring the creation of informal social systems. Consistently, Henderson and Cockburn (1994) indicate that those firms where information flows across units having different knowledge background are more likely to outperform their competitors in terms of research productivity.

It emerges that the creation of networks with key actors within and outside the organization is at the base of the process of knowledge integration and leads to an improvement of the ability to exploit opportunities through new products, processes or services.

Middle managers, that stand at a central level within the organization, can easily create networks connecting the operating and the executive level. Moreover, they are able absorb innovative ideas from inside and outside the organization (Nonaka and Takeuchi, 19995). As Kuratko et al. (2005) indicate, middle managers facilitate information flows that lead to the development and application of entrepreneurial ideas that result in the extension of organizational competences. Consistently, King et al. (2001) underline the fundamental role of middle managers' set of relationships in identifying, developing and implementing organizational competences through their impact on day-by-day activities.

A summary of the three entrepreneurial capabilities is included in table

Table 1: Three network-based entrepreneurial capabilities

Capability	**Definition**	**Knowledge-related process**	**Role of middle managers**
Opportunity discovery	The ability to realize that an opportunity exists and has value	Acuire new market and technological knowledge to find new means-ends relations	Create external (but also internal) networks to create new information channels; Create internal (but also external) networks to make sense of the reality.
Opportunity evaluation	Understand whether an opportunity is worth further investigation or not	Knowledge exchange and recombination to develop, refine an opportunity and decide whether to pursue it or not.	Create networks to champion the idea from both technical and organizational aspect., facilitating its acceptance and resource allocation.
Opportunity exploitation	The ability of a firm to actually take advantage of	Knowledge integration in new	Create networks among different actors to

	the opportunities discovered	products or services in order to appropriate the entrepreneurial rent.	overcome barriers and help them integrate their knowledge into an innovation (product, process, organization).

3. Outcomes of the entrepreneurial capabilities

Several studies indicate the effects of corporate entrepreneurship on performance (Zahra, 1991, 1993; Zahra and Covin, 1995; Kaya, 2006). In the following section, I examine how the three entrepreneurial capabilities can directly or indirectly affect four different kinds of organizational performance. I start by presenting which kinds of organizational performance have been discussed in the literature on corporate entrepreneurship. Then, I analyze the outcomes of the three entrepreneurial capabilities I defined, as shown in figure 2.

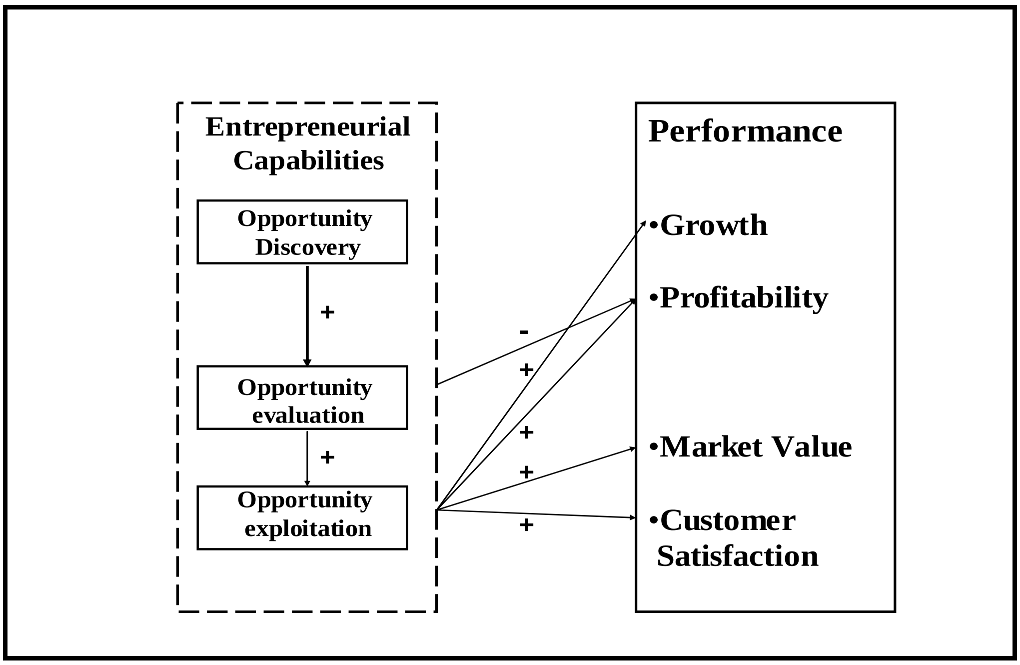

Fig.2 Outcomes of entrepreneurial capabilities.

3.1 Outcomes of opportunity discovery

The positive effect of corporate entrepreneurship on performance has been indicated by different studies in the literature. In their contribution linking entrepreneurial orientation to performance, Lumpkin and Dess (1996) show the relation between corporate entrepreneurship and multiple aspects of entrepreneurial performance. Zahra and Covin (1995) show the effects of corporate entrepreneurship on both short term and long term performance.

However, in the stage of opportunity discovery, the effects of corporate entrepreneurship on performance are only anticipated, as the opportunities discovered should be navigated through the organization until their exploitation becomes part of the actual operations of the firm.

To do so, after an opportunity is discovered by an individual, it should undergo the judgement of colleagues and supervisors, receive their support in order to become part of the official strategy and produce its benefits. The person that discovers an opportunity through his or her own subjective criteria, typically shares it with his or her colleagues. This is done in order to get empirical validation and navigate the opportunity through the organization, in order to implement it (Floyd and Wooldridge, 1999). The step of sharing one's entrepreneurial idea with other people becomes necessary when resources to develop this opportunity needs to be acquired (Ardichvili et al. 2003). In this way, by his/her championing activities, the entrepreneur initiates the process of organizational evaluation, with the final aim of implementing the opportunity and taking advantage of its benefits. Therefore, the discovery of an opportunity is not directly linked to the organizational performance, but it leads to the next step, that is the evaluation of the opportunity

2.2 Outcomes of opportunity evaluation.

By promoting an opportunity across the organization and "selling" it to senior managers, middle managers induce the company to bet on that opportunity. This implies committing resources to pursue the entrepreneurial activity whose payoffs are uncertain, thereby assuming an entrepreneurial risk. As Wiklund and Shepherd (2003) note, assuming a risk can lead to significantly higher performance in future, but also to high costs in case of failure. However, embarking in the pursuit of a new opportunity probably determines the subtraction of resources from short-run profitability (Lumpkin and Dess, 1996). Based on this, I suggest that championing opportunities has a negative impact on short-term profitability, while its effects on the long term performance are uncertain, depending on the probability of success of the entrepreneurial initiative.

In addition to this direct effect on performance, committing resources to the evaluation of a new opportunity is the first step towards the actual exploitation of that opportunity by the means of internal or external creation of new products or services. This is consistent with Day's (1994) contribution, indicating that the efforts of champions taking into account both technical and organizational aspects are likely to result in higher innovativeness.

3.3 Outcomes of opportunity exploitation

As discussed above, the ability to exploit opportunities determines the ability to appropriate the rent deriving from entrepreneurial activities. Thanks to this capability, the potential for performance is realized.

Literature investigating the effects of corporate entrepreneurship on performance has used a broad array of indicators to measure this construct. Several studies utilized accounting-based measures of performance. Zahra (1991), for example, tested correlations between formal and informal aspects of corporate entrepreneurship and four accounting-based measures of financial performance like earning-per-share, return on investments, return on assets and net income to sales. Many studies focused on profitability (Zahra 1991, 1993, Zahra and Covin 1995, Lumpkin and Dess, 1996, Kaya, 2006, Antoncic 2007), basing on the principle that introducing innovations made entrepreneurial firms take advantage from opportunities not yet exploited by other firms. The ability to create new products or services to fulfil an opportunity that is not yet exploited by other competitors is typical of proactive firms, like the entrepreneurial ones. Proactive organizations anticipate changes in the environment and act according to these changes and future needs (Venkataraman, 1989), thereby paving the way for increasing profits and expanding their presence into new markets in terms of sales and market shares. Such companies are likely to benefit from a pioneer position, (Zahra and Covin, 1995), that allows them to discover new market segments, introducing their products and establishing their distribution channels, therefore acquiring and sustaining high market shares, in addition to profitability. Consistently, sales growth and market share indicators have been typically included in many studies along with measures of profitability .

During the years, other measures of performance have been introduced. Lumpkin and Dess (1996) suggest to take into consideration not simply market and financial success but also to take into account the broader stakeholders' satisfaction. This is in line with what Zahra (1993) indicates when encouraging scholars to include both financial and non-financial performance measures. Therefore, measures like customer and employee satisfaction have been included in several studies (Lumpkin and Dess 1996, Barringer and Bluedorn, 1999; Wiklund and Shepherd 2003, Kaya 2006). Vozikis et al. (1999) proposed market value creation as a way to reflect the performance of a company based on market's expectations, and Zahra (1991) used market risk assessment to measure performance. Such measures not only help to overcome some limitations typical of the accounting-based measures but also take into account investors' perspective.

Therefore, four main groups of performance measures have been identified: market growth, profitability, market value and customer satisfaction, .

4. The role of HRM systems in developing entrepreneurial capabilities.

Behaviours underlying the three entrepreneurial capabilities are based on the creation of networks by middle managers. Such networks rely on the informal and discretionary behaviours of middle managers, that set up many different contacts to discover, champion and exploit opportunities. Such behaviours are not often explicitly indicated in job descriptions, as they usually rely on middle managers' free initiative. Typically, the emergence of an entrepreneurial idea takes place thanks to the subjective interpretation of the reality by the entrepreneur. Then, a process of empirical validation takes place, as the entrepreneurial idea undergoes the judgement of other individuals in the championing stage. Finally, after the idea survived the scrutiny of other people in the organization (like colleagues, supervisors, key resource holders), it is implemented and becomes formalized as a part of the organizational competences (Floyd and Woooldridge 1999, Zahra et al 1999). Therefore, in the process of opportunity discovery, evaluation and exploitation, there is an interplay between informal behaviours implemented by middle managers and other actors, and formal organizational structures, roles and procedures. From one hand, the entrepreneurial action starts from the informal initiatives of some key individuals within the organization (Sharma and Chrisman, 1999). On the other hand, these people need to perceive support from the organization formal structure, systems and roles (Kuratko et al. 2005).

In this context, the HRM systems play a fundamental role. The HR system is an important mechanism by which an organization signals to its member which behaviours are expected and rewarded, thanks to their ability to create psychological contracts and organizational cultures that exert strong influence through the development of social exchanges between the organization and its employees and among employees (Rousseau, 1995). This is valid also for those behaviours, like the ones I am interested in, that are not explicitly indicated in job descriptions . To do so, they should present practices that are internally consistent and send unambiguous messages (Huselid, 1995, Bowen and Ostroff, 2004) to employees about the behaviours they are expected, explicitly or implicitly, to implement. In addition to indicating the expected behaviours, a system of HRM practices is also able to affect the skills and the motivation of individuals, and provide them with opportunities to enact such behaviours (Locke and Latham, 1990). Basing on these properties of a HRM system, for example, Collins and Clark (2003) identify a set of HRM practices oriented at the creation of internal and external networks by top managers. Such practices are related to: a) performance appraisal and compensation systems, that should influence motivation, b) training systems, that should affect skills, and c) provision of resources in order to develop relations within and outside the organization.

Consistently with these considerations, I will describe how some particular sets of HRM practices can influence the creation of networks and, in particular, of those specific networks that underlie the three entrepreneurial capabilities of opportunity discovery, opportunity evaluation and opportunity exploitation. I first analyze the different characteristics of the networks that underlie the three entrepreneurial capabilities. I argue that these networks are different in terms of structural, cognitive and affective terms. Then, I indicate which sets of HRM practices can be suitable to foster them. In order to highlight the differences between the kinds of networks underlying the three different entrepreneurial capabilities, I adopt the classification proposed by Kang et al. (2007). According to this model, networks can be classified into "entrepreneurial" or "cooperative" according to their structural, affective and cognitive characteristics. *Entrepreneurial networks* are characterized by weak ties, dyadic trust and common component knowledge. Weak ties are defined as relatively infrequent social connections, that often arise outside of the formal work relations; dyadic trust is the trust that is specifically generated between two individuals; common component knowledge is the knowledge shared by two or more actors in relation to a subroutine or a discrete aspect of a firm's operations. *Cooperative networks* present, instead, strong ties, generalized trust and common architectural knowledge. Strong ties are characterized by frequent and often formal relations; generalized trust is the one deriving from being part of the same institution; common architectural knowledge exists when two or more parties share some knowledge on how to combine different components into a whole, as defined by Henderson and Clark (1990)

These elements (ties, trust and knowledge) represent the structural, affective and cognitive aspects of networks and are strictly related to the opportunity, the motivation and the cognitive ability of people to exchange their knowledge.

Based on these dimensions, I argue that the *opportunity discovery capability* is based on the creation of entrepreneurial networks, while the *opportunity exploitation capability* relies on the creation of cooperative networks. The *opportunity evaluation capability*, instead, is based on networks that combine the characteristics of both the entrepreneurial and the cooperative archetype.

I base my argument on the fact that the networks that middle managers create to discover, evaluate and exploit opportunities are like the kind of networks described by Kang et al. (2007). These networks, in fact, are built around some “core employees”, in our case middle managers, that hold firm-specific knowledge and build connections inside and outside the firm to exchange knowledge with different kinds of partners. This exchange of knowledge generates organizational learning, both explorative and exploitative, that leads to the development and extensions of organizational capabilities. This process is very similar to the one that takes place within corporate entrepreneurship (Zahra, Nielsen and Bogner, 1999; Floyd and Wooldridge, 1999).

Given that the three entrepreneurial capabilities require the creation of networks that can be either cooperative or entrepreneurial (or both), basing on the work by Kang et al. (2007) I suggest the use of different sets of HRM practices to foster specific entrepreneurial capabilities. The focus of the HRM system, therefore, will be on middle managers, as they have been indicated as crucial in helping entrepreneurial initiatives to develop from within the organization (Kuratko et al 2005, Hornsby et al 2002). They are the centre of the informal networks where the entrepreneurial idea develops, and are the critical players whose contribution is determinant for the success or failure of an entrepreneurial idea. Therefore, putting middle managers in the best conditions to develop their action is likely to lead to the success of the entrepreneurial initiative, from the discovery of the opportunity to its exploitation. The choice of focusing on key players is also in line with the suggestion of the literature on strategic HRM, that suggests that not all employees are equivalent in terms of their contribution and that firms should tailor their efforts on the specific characteristics of those players. Moreover, focusing on middle managers makes the causal link between HRM practices and their outcome more neat and easy to test.

In the followings two sections I first show how different kinds of networks underlie different entrepreneurial capabilities, then I point out how these networks, and the corresponding entrepreneurial capabilities, are supported by different sets of HRM practices.

4.1 Entrepreneurial capabilities and underlying networks

Opportunity discovery and entrepreneurial networks

The process of opportunity discovery involves the creation of *weak ties* by middle mangers, that makes it possible for the intrapreneur to deviate from the dominant mind set and make sense of new, emerging, opportunities (Floyd and Wooldridge, 1999). These ties, often informal, are established by middle managers on a personal basis with actors within or across organizational boundaries. These ties, therefore, are based on *dyadic trust* and not on the trust deriving from the fact of belonging to the same organization. As Kang et al. (2007) observe, dyadic trust is particularly suitable when parties explore new avenues of opportunity, as it offers the possibility to exchange a wide range of knowledge without the coordination costs deriving from norms and pressures typical of institutionalized communities. Finally, during the opportunity discovery process, middle managers share some degree of *common component knowledge* with their counterparts. Middle managers should have some overlapping knowledge in order to assimilate, interpret and recognize the value of their partners' expertise to apply it to their firm's commercial ends (Cohen and Levinthal , 1990). Consistently, several authors (Ardichvili et al. 2003, Shane et al., 2000) indicate that specific knowledge of the market, on how to serve customer and of customer problems are required in order to increase the chances of recognizing new opportunities.

Therefore, the opportunity evaluation capability is based on networks that present the typical features of entrepreneurial networks.

Opportunity evaluation and "hybrid" networks

When championing entrepreneurial opportunities, in order to make the organization evaluate it, middle managers become the centre of an informal network of actors that operate within (or eventually outside) the organizational boundaries. These ties are not necessarily established with people with whom middle managers have close work relations. Therefore, such ties could be either weak or strong in their nature. In the championing process, middle managers try to convince key players about the quality of the opportunity they propose, in order to get access to the resources, of varied nature, that are necessary to exploit that opportunity. To do so, they leverage on their personal reputation and credibility to inspire trust in the individuals they interact with (Kuratko et al. 2005). However, in the case of internal contacts, the level of trust that is given to the champion also depends on his/her tenure within the organization (Hayton and Kelley, 2006). Therefore, the trust that takes place in the case of opportunity championing is both dyadic and generalized, as it characterizes dyadic relations but is also affected by factors related to the organization to which the parties belong.

When championing opportunities, middle managers create contacts with those individuals that hold specific resources, including knowledge, that are critical for their goals. To do so, they share their thoughts on how to combine this specialized knowledge into products or services that could be of interest for the successful exploitation of opportunities. Therefore, both common component and architectural knowledge must be shared.

As a result, structural, affective and cognitive aspects pertaining to both cooperative and entrepreneurial network characterize the championing capability.

Opportunity exploitation and cooperative networks

In the process of opportunities exploitation, middle managers help other actors recombine their unique specialist knowledge and embody it into new products or processes. Knowledge exchanged in this process, as well as the ability to combine it, is firm-specific, tacit in nature and fine-grained. This leads to the creation of *strong ties* that, thanks to their frequency and redundancy, allow the exchange of in-depth knowledge (Dyer and Nobeoka, 2000). Trust has an essential role in this process (Zahra et al. 1999). Kang et al. (2007) further specify that *generalized trust* is instrumental for knowledge exchange and sharing in the case of exploitative learning, as it allows people to accord their trust to co-workers basing on the norms and expectations of their organizational community or group. In order to successfully recombine knowledge and integrate it into new products, individuals have to show a certain degree of *common architectural knowledge.* By so doing, they can easily understand the larger picture of their work and integrate their knowledge with that of other colleagues specialized in different domains.

Therefore, the opportunity exploitation process requires the creation of networks that present the typical characteristics of cooperative networks.

4.2 HRM practices and middle managers' networking behaviour.

As a consequence of these differences in their nature, the three entrepreneurial capabilities of opportunity discovery, evaluation and exploitation are likely to be influenced by different sets of HRM practices. Kang et al. (2007) identify two different HRM configurations that are compatible respectively with entrepreneurial and cooperative networks.

HRM for Entrepreneurial networks.

In order to favour the creation of a network of weak ties, Kang et al. (2007) suggest the implementation of *flexible work structures*, consisting of temporary assignments, broadly defined jobs and cross-functional (or cross-organizational) teams. The rationale for this is that core employees (in our case middle managers) can have the opportunity to explore new relations and benefit from the exchange of knowledge that takes place with internal or external partners.

Result- or output-based incentive systems are considered appropriate when trying to elicit middle managers networking behaviours, as they help to develop dyadic trust in the parties thanks to the mechanisms of codetermination (Kang et al 2007). Such systems could be eventually integrated by specific incentives oriented at the acquisition of new knowledge or ideas and their application to organizational operations. Finally, in order to foster the development of common component knowledge, Kang et. (2007) propose "*trans-specialist development*" practices that expose core-employees to the specialist knowledge of other partners. These practices are multiple career development, group training and cross training or job rotations.

HRM and Cooperative networks.

The creation of strong ties in cooperative networks is favoured, according to Kang et al. (2007), by the implementation of *interdependent work structures*, like team-based production, job rotations among core employees and their partners, and staffing patterns that include the exchange of personnel with other firms. In this way, interdependence is increased and consequently ties are strengthened.

Clan fostering initiatives are instead indicated by Kang et al (2007) as appropriate to encourage the creation of generalized trust, through the creation of shared goals and values. Selection based on organizational fit, for examples, helps in creating common expectations and values within the organization and are particularly indicated in those situations where behaviours cannot be specified in advance, like in the case of informal corporate entrepreneurial efforts. Development initiatives that are consistent with this one are socialization programs and the creation of communities of practices. On the side of performance management practices, Kang et al (2007) suggest to emphasize those that are based on collective achievements, like team-based appraisal systems, multirater feedback, participative goal setting and collective rewards systems.

In order to develop common architectural knowledge, Kang et al (2007) suggest the use of *broader skill development* practices, that include extensive orientation and socialization programs, that transmit an organization's goals, history, culture and cognitive schema. They also indicate mentoring and on the job training as well as team-building and group training as useful in building social and cognitive connections, therefore creating a common architectural knowledge among core employees and their partners.

Based on this, I argue that:

Hp1: "Entrepreneurial" HRM practices characterized by flexible work structures, result-based incentives and trans-specialist development, are positively related to opportunity discovery.

Hp2: "Cooperative" HRM practices characterized by interdependent work structures, clan fostering initiatives and broader skill development, are positively related to opportunity exploitation

Hp3: Both "entrepreneurial" and "cooperative" HRM practices will be positively related to opportunity evaluation.

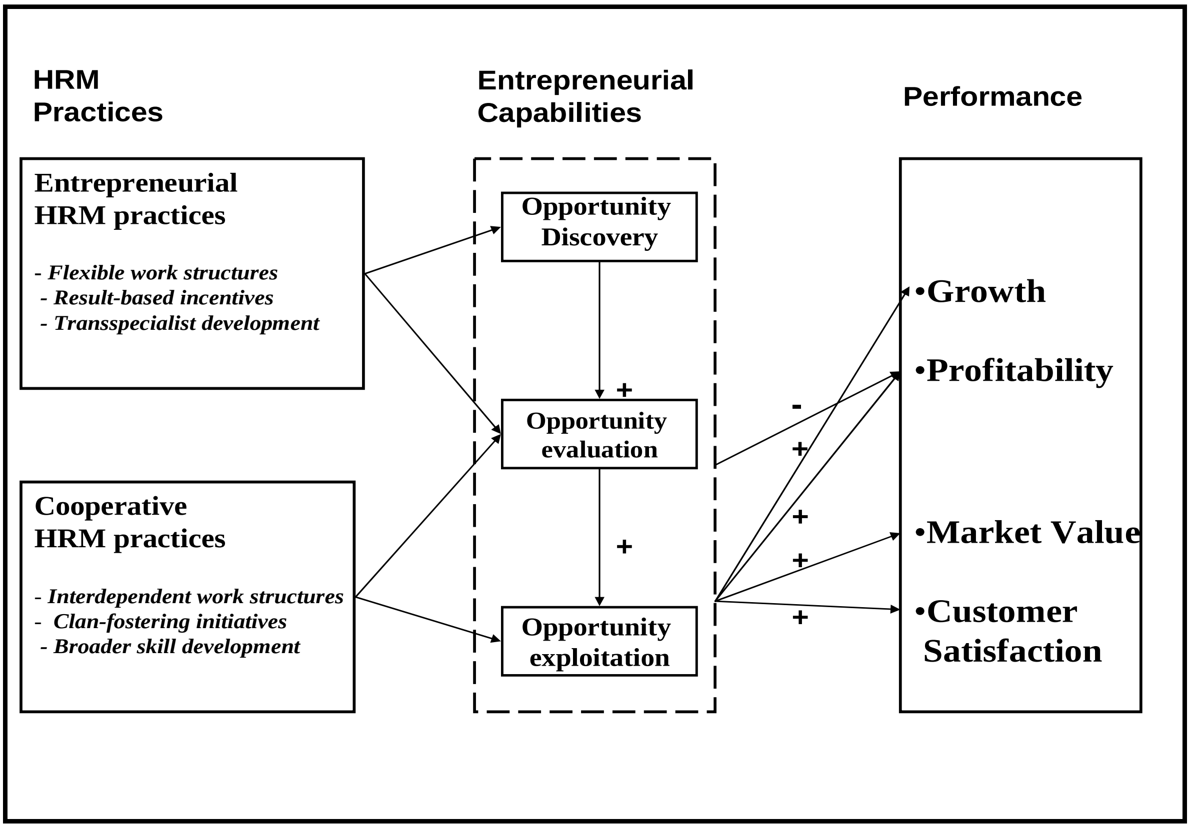

Fig.3 The relation between network-oriented HRM practices, entrepreneurial capabilities and perfromance

5. Methodology of the study

An appropriate setting for my study could be represented by medium-large companies in a high-velocity industry. The rationale for this choice is that entrepreneurial activities are particularly relevant for that kind of firms that operate in an environment characterized by rapid change, ambiguity and hyper competition (D'Aveni 1994, Eisenhardt and Martin 2000). Companies facing hostility and dynamism in the market are usually induced to be entrepreneurial as they have more windows of opportunity or try to escape from hostile environments by setting new businesses (Zahra 1991). The focus on medium and large companies is justified by the fact that larger firms are big enough to cope with the heterogeneity by serving different segments, being exposed to potentially new ideas or opportunities. Moreover, small firms often lack structured HRM sets of practices. Finally, middle managers' role is not always evident in small companies where many of the activities that do not relate to the operating level are centralized in the hands of top managers.

Information about HRM practices would be asked to an HR manager, while indications on middle managers' entrepreneurial behaviours would be asked to those senior managers that more closely work with them. Finally, information about performance would be taken by secondary sources of data. In this way I could avoid the common method bias.

In order to test the relations indicated above, I will implement a quantitative analysis.

In particular, I will specify a structural equation model, in order to test the multiple linear relations I identified simultaneously. Given the presence of a causal effect between HRM practices, capabilities and performance, I will collect data related to different points in time. HRM practices will be described at time t_0, entrepreneurial capabilities at time t_1 and performance measures will be taken at t_2. In this way I will be able to avoid problems in interpretation that arise when HRM practices refer to the same time period. By so doing, I will also be able to capture the dynamic nature of the process, in line with Eckhardt and Shane (2003) suggestions.

6. Expected contribution of the study

This study could provide a contribution to both the theory on strategic human resource management and to the literature on corporate entrepreneurship. The use of entrepreneurial capabilities as a mediating construct between HRM practices and performance provides an explanation of the mechanism underlying this relation. By so doing I contribute to explain what many authors defined as the "black box" between HR practices and performance. The fact that the entrepreneurial capabilities of discovering, evaluating and exploiting opportunities are conceptualized as the aggregation of middle managers' networking behaviours classifies them as employee-based capabilities. This should make the explanation of the process more compelling and help to overcome the problem of the level of analysis (Collins and Smith, 2005).

By using two different sets of HRM practices that belong to two distinct archetypes (the "entrepreneurial" and "cooperative" ones), I do not focus on single HRM practices but consider internally consistent bundles of practices. In this way, the effects of HRM initiative on performance, and on a firm's, strategic objectives that I describe are more plausible and realistic. The strategic relevance of HRM practices is also highlighted by the fact that they intervene on entrepreneurial capabilities that, in addition to their effect on performance, lead to the extension of organizational competences, as a consequence of the corporate entrepreneurship process (Zahra, Nielsen and Bogner 1999). By showing that the utilization of the two different archetypes of HRM practices depends on the particular entrepreneurial capability that is pursued, I add to Kang et al.'s (2007) work indicating when and how these two different archetypes take place. Moreover, entrepreneurial capabilities are usually sequential as they move from the discovery to the evaluation to the exploitation of opportunities; so do the underlying networks, that evolve from "entrepreneurial" to "hybrid" to "cooperative". In this way, I provide some insights on the dynamics of these networks. As entrepreneurial networks are typical of exploratory learning, and cooperative networks associated to exploitative learning, I indicate how a firm, by introducing HRM practices to foster the three entrepreneurial capabilities, can pursue exploration and exploitation at the same time, therefore being ambidextrous (Tushman and O'Reilly, 1996). In my model, I also show the effects of this ambidexterity on performance, that has not been clearly tested in the past (Gibson and Birkinshaw, 2004). Finally, by restricting the focus of the HRM practices on middle managers, I indicate the relevance of a particular group of employees to performance. In this way, my study can provide more specific indications to practitioners and theorists, as indicated by Lepak and Snell (2002).

With specific regard to the entrepreneurship literature, this study focuses on the discovery, evaluation and exploitation of opportunities. There is relatively few studies that concentrate on critical questions around the role of opportunities in entrepreneurship, as traditionally studies has predominantly investigated the characteristics of entrepreneurs (Eckhardt and Shane, 2000).

The definition of three different types of employee-based entrepreneurial capabilities and their relation with HRM practices helps to provide some indications on how the entrepreneurial initiative of corporate entrepreneurs can be elicited and somehow directed by the management. Many of the previous studies linking HR practices and entrepreneurship simply highlighted correlations between specific practices and some indicators of corporate entrepreneurial performance (Hayton, 2004). My study should be able to explain the causal relation between of consistent *sets* of practices on three different entrepreneurial capabilities. Establishing a link between the three different entrepreneurial capabilities and different aspects of corporate performance could finally enhance our understanding of the link between corporate entrepreneurship and performance, whose evidence has been told to be generic and anecdotic (Zahra and Covin 1995).

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