THE ROLE OF INTELLECTUAL CAPITAL IN THE INTRAPRENEURSHIP PROCESS

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ABSTRACT

Purpose of the paper

The purpose of this theoretical paper is threefold. First, it proposes a model based on a consensual process-approach including the key concepts underpinning entrepreneurship, in order to clarify and make progress on the study of intrapreneurship. Second, this paper intends to highlight the major role that plays intellectual capital in the intrapreneurship process as a leveraged resource. Third, this paper aims to develop a theoretically justified measure of the intrapreneurship process, in order to successfully tackle future empirical research.

Design/Methodology/Approach

The methodology involves the literature review of key concepts underpinning entrepreneurship in order to build the proposed model from a deductive reasoning, and to lay the theoretical foundations of a future empirical research.

Findings

The proposed model based on a process-approach offers many advantages on the intrapreneurship study: First of all, entrepreneurship becomes a manageable event, and can be applied even in an organization context. Second, the proposed model contributes to frame the entrepreneurship on the resource-based theory. Third, the model allows the integration of the intellectual capital as a critical resource on the process, and thus, the entrepreneurial cognition theories. Foremost, the model predicts the moderating effect on the relationships between the intensity with which the opportunities are identified and exploited in the intrapreneurship process, and the innovation radicalness resulted from it.

Research limitations/implications

The theoretical assumptions of this work should be supported with an empirical research.

Practical implications

Intrapreneurship is highly worthwhile for firms because it can be used as a strategy to maintain a high level of innovation radicalness in the dynamic environment of today. We propose to managers a relatively simple model and a theoretically justified measure of the intrapreneurship process.

Originality/value of the paper

To our knowledge, little work has been carried out on the relationships between intrapreneurship, innovation and intellectual capital, all together. Wu et al (2008) propose some relationships including moderator effects, but in this case, entrepreneurship, tackled from another perspective, is not defined as a process. This work fills these gaps in the intrapreneurship literature proposing an integrated model, as we seen it before, where intellectual capital positively moderates the relationships between the intensity with which the opportunities are identified and exploited in the process, and the innovation radicalness resulted from it.

Key words: Intrapreneurship; Entrepreneurship; Corporate Entrepreneurship; Intellectual Capital; Innovation; Opportunity.

INTRODUCTION

In the dynamic environment of today, intrapreneurship is highly worthwhile for firms, because it can be used as a strategy for inducing innovation (Zahra, 2015). The concept of intrapreneurship also referred to by many as corporate entrepreneurship (Parker, 2011), has evolved over time and definitions have varied considerably (Kuratko, 2010). The entrepreneurship developed within an existing organization is a simple and practical way to define intrapreneurship (Antoncic & Hisrich, 2001, 2003; Ulhoi, 2005; Parker, 2011; Bloodgood et al. 2015); as it stands, this definition leads us to focus directly on the entrepreneurship phenomena in order to give insight into the intrapreneurship concept.

Entrepreneurship is currently defined as the process by which opportunities are identified and exploited (Davidsson, 2015). Since the seminal paper of Shane & Ventakaraman (2000), there seems to be a consensus with this process-approach even if it has been widely studied from other many approaches for the last decades. In fact, to tackle the entrepreneurship phenomenon from this process-approach offers some advantages. For instance, it can be applied in an organization context. In this vain, some authors claim that the intrapreneurship and the entrepreneurship are both the same process (Ulhoi, 2005; Parker, 2011). Thus, from a deductive reasoning, intrapreneurship could be defined as the process within the organization by which opportunities are identified and exploited. A further advantage of this process-approach relies on its straightforward to integrate others approaches. We notice that this process approach can include the concept of innovations, which has been traditionally referred as an outcome of the entrepreneurial process (Schumpeter, 1934). It is important to achieve higher levels of innovation radicalness because it is one of the best ways for reaching firm competitive advantage position in the competitive scenario of today, where competition forces the firms to launch new products and services to the market on an ongoing basis (Marvel & Lumpkin, 2007). In addition, the process-approach can easily include the concept of entrepreneurial opportunities as an input. In fact, opportunities have recently become the core construct of entrepreneurship for some scholars (Busenitz et al 2014), and even opportunities may be presumed to exist objectively in reality, they can only be identified and by individuals (Ramos-Rodríguez, et al 2010, Kuratko et al. 2015). In this sense, several authors study entrepreneurship through the entrepreneur´s personality, knowledge or social networks (Shepherd & Grégoire, 2012). The human capital represents the knowledge and skills that entrepreneurs bring to the entrepreneurship process they set out to perform (Dimov, 2010), and the social capital refers to the entrepreneur´s social relationships needed to ensure the success of the venture. In the intrapreneurship context, the human capital, the social capital, together with the organizational capital represents the intellectual capital that allows for the entrepreneurship process to be completed. To our knowledge little work has been carried out on the relationships between intrapreneurship, innovation and intellectual capital, all together. Wu et al (2008) propose some relationships including moderator effects, but in this case, entrepreneurship, tackled from another perspective, is not defined as a process, as we propose to do.

The purpose of this theoretical paper is threefold. First, it defines intrapreneurship as an entrepreneurship process within an existing organization and proposes a model to study based on a consensual process-approach. The proposed model contributes to frame the entrepreneurship on the resource-based theory RBT and includes the key concepts underpinning entrepreneurship, namely opportunities, identification and exploitation of opportunities, innovation, and intellectual capital. Second, this paper tends to highlight the major role that intellectual capital plays in the intrapreneurship process. To our knowledge, little work has been carried out on the relationships between intrapreneurship, innovation and intellectual capital, all together. Finally, this paper develops a theoretically justified measure of the intrapreneurship process, in order to successfully tackle future empirical research.

The work is structured as follows: first of all, we provide a review on the existing literature in order to lay the theoretical foundations of the study. Then we propose a model to study the intrapreneurship, based on a process-approach including key elements of the intrapreneurship framework. Based on this model, we suggest some propositions linking identification and exploitation of opportunities, innovations and intellectual capital. Finally we develop a theoretically justified measure for the intrapreneurship and the main elements involved in the process, in order to facilitate future empirical studies with such insights.

LITERATURE REVIEW

Theoretical Background

The concept of intrapreneurship has evolved over the last decades (Kuratko, 2010) and the Resource Base Theory RBT (Doh, 2000; Dushnitsky & Lavie, 2010), the Organizational Learning OL (Dess et al. 2003) and Entrepreneurial Orientation EO (Covin & Slevin, 1989; Lumpkin & Dess 1996; Zahra & Garvis, 2000) are the three most frequently theories employed in the field. OL refers to the creation, the retention and the transfer of knowledge within an organization. Even there may be important linkage between learning and intrapreneurship, especially when this latter evolves over time, OL starts predominantly from what already exists, improving it, whereas intrapreneurship leaps into the relatively unknown, regardless of its starting base in terms of knowledge, routines or resources (Antoncic & Hisrich, 2003). Furthermore, intrapreneurship may create disruptions that may not have any impact on learning (Fiol & Lyles, 1985). EO literature was introduced by Covin & Slevin (1989), based on earlier work of Khandwalla (1977) and Miller & Friesen (1982), and developed by Lumpkin & Dess (1996). EO reflects the firm's strategy concerning risk-taking, innovativeness, proactiveness, competitive aggressiveness and autonomy (Lumpkin & Dess, 1996). In fact, EO is an organizational state or quality that is defined in terms of several behavioural dimensions (Ireland, et al. 2009), and is developed at firm-level and promoted by the organization.

The RBT suggests that endogenous factors explain the sustainable competitive advantages of a firm. Early works on RBT acknowledge that entrepreneurship is an intricate part of the RBT (Conner, 1991; Rumelt, 1987). In this sense, Alvarez & Busenitz (2001) integrate the theory of entrepreneurship into the RBT and so, in the strategic management, arguing that not only both adopt precisely this same unit of analysis that is the resource, but they overlapping interests, such as knowledge, firm adaptation to environmental change, modes of organizing and the exploitation of opportunities (Venkataraman & Sarasvathy, 2001). In fact, The RBT considers intrapreneurship as a fundamental instrument for the accumulation, conversion and leveraging of resources for competitive purposes (Augusto-Felicio et al. 2012). In this vain, Covin & Slevin (1991) affirm that the greater entrepreneurial activity can be considered as one of the most important sources of competitive advantage. Furthermore, Floyd & Wooldridge (1999) suggest that intrapreneurship is a key means of accumulating, converting, and leveraging resources for competitive purposes (Dess et al. 2003). Nevertheless, not all the researchers agree to include the entrepreneurship into the RBT neither into the strategic management. Shane (2012) argues that entrepreneurship examines many outcomes other than business performance, which is the focus of strategic management, but also entrepreneurship does not require the existence of firms, focus on an individual's choice relative to his other alternatives, and on efforts to identify and exploit opportunities rather than sustain competitive advantage. In light of the foregoing, we suggest to frame the intrapreneurship into the RBT theory.

Since it was first coined by Pinchot (1985), intrapreneurship had been referred to by many as corporate entrepreneurship CE, corporate venturing or internal corporate entrepreneurship (Antoncic, 2007). In this vain, some authors draw a distinction between corporate entrepreneurship and intrapreneurship: CE should be related to the level of organization, or top down process promoted by the firm, while intrapreneurship should be referred to the individual level or down top process as a personal initiative (Sharma & Chrisman, 1999; Amo, 2006). According to the model of corporate entrepreneurship strategy suggested by Ireland et al. (2009) the entrepreneurial process by which opportunities are identified and exploited, corresponds to the down level of analysis, and is set at the same level of the individual entrepreneurial cognition. That is the reason why we suggest using the term intrapreneurship rather than CE, even if literature does not always distinguish between these terms.

The initial research in intrapreneurship focused on the characteristics on the intrapreneurs and of such organizations (Antoncic & Hisrich, 2003). As in the independent entrepreneurship case, these approaches have emphasized the intrapreneur's traits (Cooper, 1981) but also the characteristic of entrepreneurial organizations (Stevenson & Jarillo, 1990). More recently, intrapreneurship has evolved into the organizational strategy at the firm-level (Kuratko et al. 2015) Thus, the term CE is currently most often used. But what does it mean to have CE as a firm's strategy? For Ireland et al 2009, Entrepreneurial Strategy or Corporate Entrepreneurship Strategy is defined as a vision-directed, organization-wide reliance on entrepreneurial behaviour that purposefully and continuously rejuvenates the organization and shapes the scope of its operations through the recognition and exploitation of entrepreneurial opportunity. However, Kuratko et al. (2015) differentiate between corporate venturing and strategic entrepreneurship: While corporate venturing refers to any innovation that is created within or outside the organization and involves the creation of new businesses, strategic entrepreneurship corresponds to a broader array of entrepreneurial initiatives which do not result in a new business for the firm, and refers to the innovations that are adopted in the firm's pursuit of competitive advantage and can be in any of five areas—the firm's strategy, product offerings, served markets, internal organization (i.e., structure, processes, and capabilities), or business model (Kuratko & Audretsch, 2013). Either way, we distinguish the terms innovation and identification and exploitation of opportunities, as key elements on the firm level and so from an organizational strategy point of view, even if the innovations are created within or outside the firm, or for the firm; in fact, the model proposed fits in both cases.

As theories, definitions have varied considerably over time. One of the most cited is Sharma & Chrisman (1999)'s one, who define CE as the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization (Dess, et al. 2003; Kuratko et al. 2015). Some researchers use narrower definition excluding smaller firms and focusing on corporation or limiting the term only to new venture formation. In order to avoid retrenchment of new knowledge or narrow definitions, according to the literature's consensus and keeping it simple, we define intrapreneurship as the entrepreneurship developed within an existing organization (Antoncic & Hisrich, 2001, 2003; Ulhoi, 2005); in fact, some scholars suggest that intrapreneurship is just a particular entrepreneurship case. In a practical way, this definition leads us to focus directly on the entrepreneurship phenomena carried over into the field of firms.

Literature propose to explain the entrepreneurship phenomenon from different multiple approaches, the most important being the performance of the new venture (McKelvie & Wiklund, 2010), the traits and the cognition of the entrepreneur (Shepherd & Grégoire, 2012) and finally the process itself, by which entrepreneurial opportunities are identified and exploited (Shane & Ventakaraman, 2000). As an outgrowth of strategic management research, entrepreneurship literature has paid considerable attention during the past 20 years to the performance of the new venture (Michell et al. 2002). Scholars have distinguished two major criterions in this approach: firm growth (Delmar & Shane, 2003; McKelvie & Wiklund, 2010, Clarysse et al, 2011) and innovation or innovative activity (Kuratko et al. 2001, 2005; Ireland et al. 2009….). Thus, entrepreneurship has been studied through the factors and characteristics that leads some firms to achieve certain rates of growth and/or generate a stronger innovative performance. For the most part, this stream of literature examines growth and innovation as an outcome and uses constructs of growth and innovation as the dependent variable (McKelvie & Wiklund, 2010).

The traits and characteristics of the entrepreneur was a favored research topic in the late 1970s and early 1980s (Colton & Udell, 1976; McClelland, 1965; Morris et al. 1994). Thus, entrepreneurship has been study through the entrepreneur´s role in the new venture formation, and entrepreneurial personality becomes the key component in the field. Nevertheless some authors criticize this approach, arguing that researchers have been unable to report a unique set of personality and their results were weak and nonsignificant (Mitchell et al. 2002). Therefore, the trait approach has evolved to a cognitive perspective. It was in the 1990s when the entrepreneurial cognition research emerged (Bird, 1992), defining entrepreneurial cognition as the knowledge structures that people use to make assessments, judgments or decision involving opportunity evaluation, venture creation and growth (Mitchell et al. 2002).

While the findings and implications of the traits and characteristics of the entrepreneur's literature remain controversial, attention has moved from examining the person to examining the process (Morris et al. 1994). In fact, the process-approach is currently experiencing the greatest consensus since the publication of Shane & Ventakaraman (2000) seminal article, which is the most cited entrepreneurship article in the last decade (Davidsson, 2015). This stream of literature defines entrepreneurship as the process of identification and exploitation of opportunities (Antoncic & Hisrich, 2001, 2003; Dimov, 2010; Davidsson, 2015). But what a process is? For ISO 9001:2000, a process is a series of actions that transform inputs into outputs through use of resources. Based on this simple definition and by analogy, we can easily identify each element of the entrepreneurship phenomenon for the integrative model suggested, as follows:

As an output of the process, we distinguish the firm performance (Morris et al. 1994). Even some scholars remain interested in others outputs as learning and knowledge (Dess et al, 2003), growth and profitability are typically being among the set of desired outcomes. Using economics benefits as an output in an empirical research may be an issue because they may not be readily apparent in the short run, but take several years to come to fruition (Zahra & Covin, 1995). In this sense, the degree of novelty of innovation could be a better outcome, also knowing that higher levels of innovation radicalness become the best way for reaching firm competitive advantage in the dynamic environment of today (Marvel & Lumpkin, 2007). Furthermore innovation is a single common theme underlying all forms of entrepreneurship including corporate entrepreneurship (Covin & Miles, 1999). From the literature review, there is no consensus definition of innovation, and several approaches have been proposed to study it, being the process approach and the result approach, the most relevant. This study opts for the result approach; consequently, innovation is defined as the introduction to the market of something new that can be a sustainable competitive advantage over time. Literature typically distinguishes between radical innovations and incremental innovations. Radical innovations have very high economic and social impacts, increasing technological knowledge and providing new products or services (Marvel & Lumpkin, 2007). In contrast, incremental innovations are more common and the reward is smaller, leading to small incremental improvements in an existing product or service (Laursen & Salter, 2006).

Opportunities are unequivocally recognized as the input of the process. Scholars are focusing on it and this literature is growing very rapidly (Ucbasaran et al. 2009). In fact, opportunities have become for many researchers the core construct in the entrepreneurship framework to the point of becoming the most unique domain of entrepreneurship research, according to Busenitz et al (2014). In Shane’s theory of entrepreneurship (2003), the individual–opportunity nexus becomes the cornerstone of analysis. Nevertheless, there is no consensus on the definition and some authors criticize the approach proposed for this construct (Dimov, 2010). Davidsson (2015) highlights the minority of works that offer a definition of opportunity and argues that the lack of construct clarity is the major reason why there is little progress on the study of entrepreneurship. Opportunity carries a connotation of favorability and, a priori, denoting success: we can only confirm that an opportunity is a truly opportunity once the product or service has been launched successfully into the market (Eckhardt & Shane, 2010). If we define opportunity as a set of circumstances that makes it possible to do something, the causes for failure in the entrepreneurship process are attributed solely to the entrepreneur (Dimov, 2010). Consequently, the term opportunity becomes tautological, proof of which Gaglio & Katz (2001) distinguish between opportunities and successful opportunities. But, in its most elemental form, an opportunity is an underemployed or underutilized resource (Ardichvilli et al, 2003). The term underutilized resource does not necessarily imply success a priori. That is the reason why, the term underutilized resource, instead of opportunity may be more practical. Although it is true that discoveries provide new opportunities, we suggest adding undiscovered resource to the term. In this way, underutilized or undiscovered resource depends on its own characteristics, on the entrepreneur and on the entrepreneurship process. Once the process has been successfully completed, it could consequently be described as a real opportunity. To employ the term under-employed or undiscovered resource rather than opportunity offers the advantage to use the same unit of analysis as in the resource-based theory RBT: the resource. This helps us to frame the entrepreneurship on the RBT.

The identification and the exploitation of opportunities are the actions of the process. In fact, these actions are concatenated, and consequently no exploitation is expected without a previous identification, been both necessary to accomplish the entrepreneurship process. If an entrepreneur or a firm just identifies an opportunity but do not exploit it, the entrepreneurship process is not completed. The identification of opportunities corresponds to the first process step and is defined as the action of entrepreneurial alertness (Shepherd & DeTienne, 2005), and the action of evaluation and decision-making (Davidsson, 2015). Kirzner (1979) defines entrepreneurial alertness as the ability to notice opportunities that have hitherto been overlooked (Gaglio & Katz 2001). In practice, this means scanning and searching for information and connecting previously-disparate information (Tang et al 2012). After that phase, an evaluation and decision-making action arises, in order to decide whether or not to continue with the process (Shepherd & DeTienne, 2005; Davidsson, 2015). The exploitation of opportunities corresponds to the last process step and is defined as the action of planning the business (Dimov, 2010) and the action of the gestation activities (Davidsson & Honig, 2003). Business planning deals with the information corresponding to the identify opportunity (Castrogiovanni, 1996). This involves the processes of analyzing information, evaluating required tasks, identifying risks and strategy, projecting financial developments, and also, documenting these actions (DelMar & Shane, 2003). After planning, the process becomes more complex, redirecting or recombining resources in order to create and deliver value superior to that currently available (Ardichvilli et al, 2003). All the activities that might be undertaken in the process of trying to get a new venture up, is what we call gestation activities (Davidsson & Honig, 2003).

Opportunities are a fundamental requirement in the entrepreneurial process, as seen it before, but they do not explain by themselves the phenomenon, for the reason that someone has to identify and exploit them (Ramos-Rodríguez, et al 2010). While opportunities may be presumed to exist objectively in reality, they can only be identified by individuals. Several authors study entrepreneurship through the entrepreneur´s personality, knowledge or social networks (Shepherd & Grégoire, 2012). Those knowledge and skills that individuals bring to the process they set out to perform, is commonly known as human capital (Dimov, 2010). Originally developed to predict the influence of education on economic growth (Becker, 1964), the human capital is considered a vital factor to discover opportunities (Marvel et al. 2016). Individuals with more or higher quality human capital perceive profitable opportunities (Davidsson & Honing, 2003). However, human capital is neither the sole factor nor, often, the most important, because there are some external factors that also play a critical role, as social capital which represents all the resources resulted from social relationships of the entrepreneur, and provided by family, friends and colleagues (De Carolis & Saparito, 2006). Entrepreneurs with networks that are comprised of a large number of contacts are better able to identify opportunities and to acquire the resources to exploit them (De Carolis et al, 2009).

In the field of intrapreneurship, the human capital, the social capital and together with the organizational capital, represents what is called intellectual capital. The intellectual capital is defined as all the intangible resources related to knowledge which provides sustainable competitive advantage to the firm (Subramaniam & Youndt, 2005). In this context, human capital does not refer to an individual person, but to the knowledge and the skills of each employee as a whole. Social capital represents the firm´s knowledge gained from social exchanges, as customers and suppliers relationships, but also in networks of their own employees. Organizational capital is defined as all the know-how, methods, processes, procedures, routines, task, and activities; in short, all the intangible resources which leverage the organization's productivity. Organizational capital only makes sense in an intrapreneurship framework because the firm is already established. In the proposed model of entrepreneurship process, the intellectual capital is identified as a resource by which identification and exploitation of opportunities are developed. This helps us again to frame the entrepreneurship on the RBT.

The research model

In light of the foregoing, we propose a model based on a process-approach that identifies:

i. the innovations as the process output,

ii. the entrepreneurial opportunities as a process input,´

iii. the entrepreneurial alertness, the evaluation and the decision-making, corresponding with the identification of opportunities, as the first actions of the process.

iv. the business planning and the rest of gestation activities evaluation corresponding with the exploitation of opportunities, as the last actions of the process.

v. the intellectual capital as an enabler process resource,

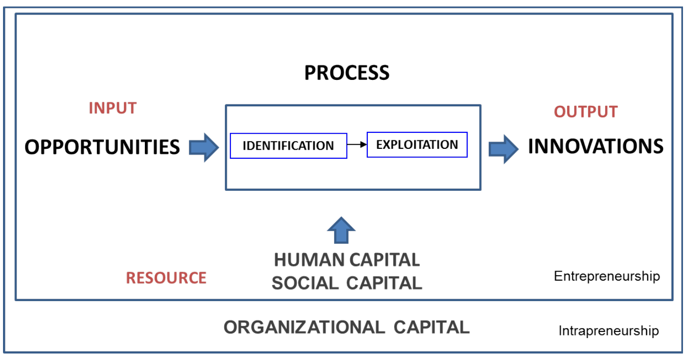

Figure 1: Synoptic Model.

As explained above, intrapreneurship literature has paid little attention to the process as it is. To explain entrepreneurship from this process-approach and especially through the model proposed, offers many benefits rather than other approaches, and other models. First, the model is simple to understand and to deploy. In an attempt to make a "lean" model, it includes just the principal's key concepts underpinning entrepreneurship, namely opportunities, identification and exploitation of opportunities, innovation, and intellectual capital. In fact the model could be summed up in one phrase: opportunities (input) are transformed into innovations (output) by the actions of identification and the exploitation, which are leveraged by the intellectual capital (resource). It implies a broad definition of entrepreneurship as a process that avoids a retrenchment of new knowledge but also narrower definitions excluding levels of analysis. Second, the focus is on the process. One of the major advantages of the process-approach is that the phenomenon becomes a manageable event, and can be applied not just for an individual entrepreneur but also in an organization context (Kuratko et al. 2015). When referring to the firm-level, the model is not just useful for venturing into new business (CE) but also for obtaining the innovations that allows the firm's pursuit of competitive advantage (SE). Furthermore, it makes possible to focus on HOW rather than on who or on what end . To our knowledge, little work has been carried out on the process itself even there is a wide consensus to characterize it as the identification and exploitation of entrepreneurial opportunities. Third, the model is flexible and integrative. It is helpful to distinguish components that are outputs during the process and those that are inputs or resources; furthermore the model makes easier to add new inputs, outputs or resources, which makes the model flexible. Besides, the model allows tackling each component from different approaches. In this sense, the literature referred to innovation as an outcome of the process or the extended literature of entrepreneurial opportunities and the research concerning the traits and the cognition of the entrepreneurs or intrapreneurs can be easily integrated through the model.

THE RESEARCH PROPOSITONS

Entrepreneurship, as a scholarly field, seeks to understand how, by whom, and with what effects opportunities are discovered and exploited (Shane & Venkataraman, 2000). In this vain, relationships between entrepreneurship, innovation and firms are present right from the start of the entrepreneurial literature in Schumpeter's (1934) work (Peris-Ortiz & Sahut, 2014) and since then, these concepts have been strongly related (Autio et al. 2014). More precisely, radical innovations have been linked to the entrepreneurship phenomenon (Baumol, 2002). In fact, the venture performance at the end of the process, is determined by how effectively the entrepreneur deals with entrepreneurial process activities relating to opportunity identification and exploitation (Ardichvili et al., 2003; Ucbasaran et al., 2008). Identifying the right opportunities are among the most important abilities in the entrepreneurship process (Ardichvili, et al. 2003) to the point of representing a core question for the domain of the entrepreneurship process (Gaglio & Katz 2001). In this sense, Shepherd & DeTienne (2005) affirm that the degree of novelty depends on the number of opportunities identified and Ucbasaran et al. 2009 justify that the higher the number of opportunities identified, the greater the sample, consequently there is more variety to choose from.

As previously mentioned, the identification of opportunities is characterize by the action of entrepreneurial alertness and the action of evaluation and decision-making. Alertness consists on a first phase of scanning. If the scanning is more extensive, the collected information can be much richer, and continually updated information. Thus, the range of knowledge and information is wider and consequently it makes sense that an intense phase of scanning contributes to create breakthrough innovations. The fact that the scanning phase consists on an active and a regular search for information (Baron & Shane, 2008), means that it can proceed in a relatively automatic manner and so it could be implemented methods and resources to foster these actions. The second phase of alertness refers to association and connection of the receiving new information. This phase is related with cognitive ability. If the abilities to connect the dots, think outside the box, and perceive links between seemingly unrelated events are promoted, the association and connection of information would be more intense; consequently it makes sense that it contributes to create radical innovations. The action of evaluation and decision making refers to the crucial process in which the question of the viability of the business opportunity arises (Amato et al. 2016). Tang et al. (2012) suggest that the better ability to decide on the right information, the higher possibility to achieve the correct identification . Given the importance attached to the evaluation and decision-making, Ardichvili et al., (2003) suggest to implement formal methods to evaluate the viability, as the stage-gate procedure and McMullen & Shepherd (2006) propose a two stage judgement namely first-person and third-person opportunities.

The exploitation of opportunities is characterized by the action of gestation activities. The U.S. Panel Study of Entrepreneurial Dynamics (PSED), propose some gestations activities supposed necessaries to accomplish with success a process of exploitation and venturing creation. These activities are related to business planning, development of product/service, marketing, patent/copyright, raw material and equipment, gathering information, finance, workforce, training and education, contact information, obtained licenses, authorizations and legal Form. Stuetzer et al (2013) state that the higher number of gestation activities achieved the more chances of success in the entrepreneurship process. In this sense, Samuelsson & Davidsson (2009) precise that obtain radical or incremental innovations depend on the number of gestation activities completed. In fact, radical innovations require more recombination of resources and a large number of gestation activities because the process is more complex (Liao & Welsch, 2003).

In light of the foregoing, we propose the following propositions:

H1: In the intrapreneurship process, the innovation radicalness is positive influenced by:

a. The intensity with which the opportunities are identified.

b. The intensity with which the opportunities are exploited.

Although entrepreneurship and innovation have been closely linked in the popular mindset, literature has also provided empirical evidence of the strong relationship between intellectual capital and innovation in the field of entrepreneurship. The interest in human capital within the entrepreneurship literature is longstanding because of its importance (Ardichvili et al., 2003). Human capital is vital to identify entrepreneurial opportunities (Alvarez & Barney, 2007; Marvel, 2013) but also to exploit them (Dimov, 2010). In fact, human capital is related with entrepreneurial success (Marvel et al. 2016) because higher quality human capital allows to reap more desirable outcomes (Davidsson & Honing, 2003). In this sense Marvel & Lumpkin (2007) affirm that radical innovations are the result of individuals with high experience and level of education.

As human Capital, literature clearly indicates that social capital also contributes to identify opportunities (Stam et al. 2014). For instance, social networks affect opportunity identification (Kingsley & Malecki, 2004), because the more contacts they have, the more ideas and opportunities are exchanged. In this sense, Stam et al. 2014 et al. highlight that weak ties, structural holes and network diversity are all positively related to performance whereas Subramaniam & Youndt (2005) affirm that social capital increase radical innovations. As organizational capital only makes sense within a firm already establish, it has received less attention. Organizational capital as we seen it before, refers to information system, operation process and organization culture methods. It makes sense, that the more effective information system is implemented in a firm, the easier it is to collect, filter, process or distribute information in order to identify and exploit opportunities. In this vain, Tseng & Goo (2005) affirm that high levels of organizational capital in a firm, allow for faster knowledge transfer, having a positive impact on innovation. Whereas Hayton (2005) specifies there is empirical support for the positive impact of intellectual property on the firm resource acquisition and deployment. To our knowledge little work has been carried out on the relationships between intrapreneurship, innovation and intellectual capital, all together. Wu et al (2008) propose some relationships including moderator effects, but in this case, entrepreneurship, tackled from another perspective, is not defined as a process.

In light of the foregoing, and we propose the following propositions:

H2: In the intrapreneurship process, the relationship between the intensity with which the opportunities are identified and the innovation radicalness, is moderated by:

a. Human capital.

b. Social Capital.

c. Organizational Capital.

H3: In the intrapreneurship process, the relationship between the intensity with which the opportunities are exploited and the innovation radicalness, is moderated by:

a. Human capital.

b. Social Capital.

c. Organizational Capital.

The next figure represents the theoretical model and the hypotheses:

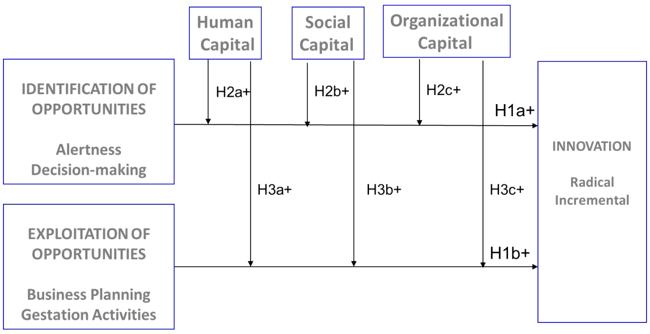

Figure 2: Theoretical model and propositions.

MEASURES

Identification of opportunities intensity

From a wide review of entrepreneurship literature, there are little empirical studies related with the identification of opportunity. Ucbasaran et al. (2009) and Shepherd & DeTienne, (2005) propose to measure this process just in terms of numbers of opportunities identified. This study proposes to measure this independent variable through the dimensions of search and scanning for opportunities; association and connection of information; and evaluation and decision-making. Based on the alertness scale developed by Tang et al. (2012), we propose a version with their 13 items, specifically aimed at and adapted, not for the individual entrepreneur, but for an organization as a whole. Five items are used for search and scanning; this phase refers to information-seeking behaviors that provide the organization with valuable information which together constitutes a broad store of knowledge in a particular domain. Three items are used for association and connection of information. These items reflect the organization's ability, or more specifically the employee's ability, to connect the dots . Finally, three items are used for the evaluation and decision-making phase. These items reflect the organization's ability assess different opportunities and identify the best, in order to exploit it. These three dimensions are subjective, continuous and are measured by a seven-point Likert scale (Appendix A).

Exploitation of opportunities intensity

As the identification of opportunities, the empirical studies related with the exploitation of opportunities are rare. Ucbasaran et al. (2008), propose to measure just in terms of numbers of opportunities for creating and purchasing a business that are pursued. This study proposes to measure this independent variable in terms of the total number of gestation activities being undertaken before the first commercial trade of the opportunities pursued. Based on the sequences developed by Davidsson & Honig, (2003) and the activities listed on the U.S. Panel Study of Entrepreneurial Dynamics (PSED), we propose 26 gestations activities supposed necessaries to accomplish with success a process of exploitation and venturing creation. These activities are related to business planning, development of product/service, marketing, patent/copyright, raw material and equipment, gathering information, finance, workforce, training and education, contact information, obtained licenses, authorizations and legal Form. Each gestation activity is a dichotomous variable scored with 1 if completed before the first commercial trade and 0 otherwise (Appendix A). Thus, the more activities completed by the organization, the higher the intensity in the exploitation process.

Intellectual Capital

Intellectual capital is being widely researched and debated, thus empirical literature offers many dimensions and variables to measure it. Human Capital reflects the knowledge and the skills of each employee as a whole. We propose to measure this moderate variable through the dimensions of education and training employee's experience and abilities, and employee's motivation. We propose 7 items based on the scale developed by Delgado-Verde (2015). Social capital reflects the firm´s knowledge gained from social exchanges. We propose to measure this moderate variable through the dimensions of external relationships with clients, suppliers and stakeholders, and internal relationship among colleagues. We propose 7 items based on the scale developed by Subramaniam & Youndt (2005). Organizational capital reflects the firm´s knowledge institutionalized within processes, databases, documents, patents and manuals. We propose to measure this moderate variable through the dimensions of organizational culture and knowledge store. We propose 4 items based on the scale developed by Subramaniam & Youndt (2005). The three constructs of the intellectual capital are subjective, continuous and are measured by a seven-point Likert scale (Appendix A).

Innovation radicalness

The empirical studies dealing with radicalness of innovations are plentiful in the literature. Based on Carmona-Lavado et al. (2010), we propose to use a 7-point bipolar scale where the statement on the left represents incremental innovation and the statement on the right, radical innovation. The degree of novelty is determined through a unique variable, such high scores represents radicalness on the innovations. We propose 6 items in order to measure the independent variable (Appendix A).

CONCLUSION

In order to study the intrapreneurship phenomenon, we propose a process-approach model that contributes to frame the entrepreneurship on the resource-based theory, distinguishes between entrepreneurship and the intrapreneurship, and clarifies the relationships between the key concepts underpinning entrepreneurship. In this way, the proposed model identifies the opportunities as an input, the innovations as an output, the identification and exploitation of opportunities as the actions of the process, and finally the intellectual capital as a leveraged resource for the intrapreneurship process. In fact, we expect that intellectual capital moderates the relationship between the intensity with which the opportunities are identified and exploited in the intrapreneurship process, and the innovation radicalness resulted from it. Obviously, future empirical research should confirm these findings. In any case, we point out that intellectual capital facilitates the integration of other theoretical approaches in the field of entrepreneurship, such those focused on knowledge, social relations, and other intangible resources. Finally, due to the entrepreneurship and the intrapreneurship are the same process, we suggest, to extrapolate and adapt the variables, dimensions and items used to measure the identification and exploitation of opportunities by the entrepreneurship empirical literature, to the context of the firm. Thus we obtain a theoretically justified measure for the intrapreneurship process, developing the dimensions of alertness and, evaluation and decision-making, for the identification of opportunities measurement, and the dimensions of business planning and gestations activities for the exploitation of opportunities measurement. As a practical implication, we suggest firms to deploy an intrapreneurship strategy to launch radical innovations. This means to implement effective mechanisms for scanning and searching for information, connecting the dots, and decision-making, but also to boost the process of venturing creation, and promote training, networking, for the employees.

APPENDIX A. VARIABLE AND SCALE ITEMS.

Radicalness of innovation

7-point bipolar scale: (1) All new and improved products possess the characteristic appearing on the left. (7) All new and improved products possess the characteristic appearing on the right. Indicates the characteristics of product innovation performed in the company over the previous 3-year period (From Carmona- Lavado et al.2010):

1. (1) Incorporates basically an existing technology - (7) Incorporates new technology or an original combination of existing technologies.

2. (1) Represents a minor improvement or simple adjustments - (7) Represents a revolutionary change in the technology it integrates.

3. (1) Includes the same functions that already exist in other products - (7) Includes new functions that do not exist in other products.

4. (1) Is based on technology that is well-known - (7) Is based on technology that is on the initial stages of development.

5. (1) Presents a low level of uncertainty on the scientific and technical knowledge which it is based - (7) Presents a high level of uncertainty on the scientific and technical knowledge which it is based.

6. (1) Is new exclusively to his/her firm (not for the market) - (7) Is new to the market in which his/her firm operates.

Human Capital

Seven-point Likert scale (From Delgado-Verde et al. (2015):

1. My company allocates resources (money, time, etc.) to employee training to a greater extent than in my competitors.

2. In my company, the percentage of people who receive training is higher than in my competitors.

3. In my company, the percentage of people with a superior degree (bachelor, engineer, masters, etc.) is higher than in my competitors.

4. The experience that our employees have is appropriate to carry out satisfactorily their work.

5. Our employees' own abilities are widely considered the best in our industry.

6. Generally speaking, our employees are satisfied in the company.

7. Employees feel a strong sense of commitment and loyalty to the company.

Social Capital

Seven-point Likert scale (From Subramaniam & Youndt, 2005):

1. Our employees are skilled at collaborating with each other to diagnose and solve problems.

2. Our employees share information and learn from one another.

3. Our employees interact and exchange ideas with people from different areas of the company.

4. Our employees partner with customers, suppliers, alliance partners, etc., to develop solutions.

5. Our employees apply knowledge from one area of the company to problems and opportunities that arise in another.

Organizational Capital

Seven-point Likert scale (From Subramaniam & Youndt, 2005):

1. Our organization uses patents and licenses as a way to store knowledge.

2. Much of our organization's knowledge is contained in manuals, databases, etc.

3. Our organization's culture (stories, rituals) contains valuable ideas, ways of doing business, etc.

4. Our organization embeds much of its knowledge and information in structures, systems, and processes.

Identification of opportunity

Seven-point Likert scale (Adapted from Tang et al., 2012):

1. My company has frequent interactions with others to acquire new information.

2. My employees keep an eye out for new business ideas when looking for information.

3. My employee read news, magazines, or trade publications regularly to acquire new info.

4. My employees browse the Internet every day.

5. My employees are avid information seekers.

6. My company is actively looking for new information.

7. My employees see links between seemingly unrelated pieces of information.

8. My employees are good at connecting dots.

9. My employees see connections between previously unconnected domains of information.

10. My company has gut feeling for potential opportunities.

11. My company can distinguish between profitable and not-so-profitable opportunities.

12. My employees have a knack for telling high-value apart from low-value opportunities.

13. When facing multiple opportunities, my company is able to select the good ones.

Exploitation of opportunity

Dichotomous variable scored with 1 if completed before the first commercial trade and 0 otherwise (Adapted from Davidsson & Honig, 2003).

Before completed the first commercial trade:

1. Have you prepared a business plan?

2. Is your plan written, (includes informally for internal use)?

3. Is your plan written formally for external use?

At what stage of development is the product or service that will be provided to the customers?

4. Idea or concept

5. Initial development

6. Tested on customers

7. Ready for sale or delivery

8. Have you started any marketing or promotional efforts?

9. Have you applied for a patent, copyright, or trademark?

10. Has the patent, copyright, or trademark been granted ?

11. Have you purchased any raw materials, inventory, supplies, or components?

12. Have you purchased, leased, or rented any major items like equipment, facilities or property?

13. Have you gathered any information to estimate potential sales or revenues, such as sales forecasts or information on competition, customers, and pricing?

14. Have you discussed the company’s product or service with any potential customers yet?

15. Have you asked others or financial institutions for funds?

16. Has this activity been completed (successfully or not)?

17. Have you developed projected financial statements such as income and cash flow statements, break-even analysis?

18. Have you established credit with a supplier?

19. Do you have any part time employees working for the new business?

20. Do you have employees are working full time for the new business?

21. Have you hired employees exclusively for the new business?

22. Have you hired managers exclusively for the new business?

23. Do you have employees that have taken classes or workshops on the new business?

24. Does the new business or venture have its own new contact: phone number, email, etc.

25. Has the new business obtained any business licenses or operating permits from any local, county, or state government agencies?

26. Has the new business received a company tax certificate?

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