

**EXPLORING HOW SOCIAL CAPITAL FACILITATES INNOVATION:
A THEORETICAL STUDY THROUGH THE ROLE OF PERSONAL
NETWORK DYNAMICS AND ORGANIZATIONAL CULTURE**

**EXPLORER COMMENT LE CAPITAL SOCIAL FACILITE
L'INNOVATION : ETUDE THEORIQUE A TRAVERS LE ROLE DE LA
DYNAMIQUE DU RESEAU D'EGO ET DE LA CULTURE
ORGANISATIONNELLE**

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Abstract

In a competitive and constantly changing context, this article proposes a critical analysis of the role of social capital as a determinant of innovation. While this relationship has been widely studied, the way in which individual social capital affects both types of innovations, exploratory and exploitative, has not yet been sufficiently taken into account. This paper contributes to the theory of exploratory and exploitative innovations by redefining how individual social capital can affect it. We discuss the factors that can accelerate or hinder any innovation initiative in firms.

Our first contribution shows that each dimension of social capital (relational, structural, cognitive) is likely to have a different effect on the innovation process. Our second contribution studies the dynamics of ego networks as important mediators of the social capital-innovation process. We show how the stability and expansion of the partner network influence the relationship between social capital and two types of innovation. Our third contribution sheds light on the contextual variables to be taken into account in the implementation of an innovation process. We analyze the constraints specific to the organizational culture.

KEYWORDS: Exploratory and exploitative innovation, social capital, ego network, mechanistic organizational culture, organic organizational culture

Résumé

Dans un contexte concurrentiel et en transformation continu, cet article propose une analyse critique du rôle du capital social comme un facteur déterminant de l'innovation. Si cette relation a été largement étudiée, la manière dont le capital social individuel affecte les deux types d'innovations, exploratoires et d'exploitation, n'a pas encore été suffisamment prise en compte. Ce document contribue à la théorie des innovations exploratoires et d'exploitation en redéfinissant la manière dont le capital social individuel peut l'affecter, nous discutons les facteurs susceptibles d'accélérer ou d'entraver toute initiative d'innovation dans les entreprises.

Notre première contribution montre que chaque dimension du capital social (relationnel, structurel, cognitif) risque d'avoir un effet différent sur le processus d'innovation. Notre deuxième contribution étudie la dynamique des réseaux d'ego en tant que médiateurs importants du processus capital social-innovation. Nous montrons comment la stabilité et l'expansion du réseau des partenaires influencent la relation entre le capital social et les deux types d'innovation. Notre troisième contribution apporte un éclairage sur les variables contextuelles à prendre en compte dans l'implémentation d'une démarche d'innovation. Nous analysons les contraintes spécifiques à la culture organisationnelle

MOTS-CLES : Innovation exploratoire et exploitante, capital social, réseau d'ego, culture organisationnelle mécaniste, culture organisationnelle organique

Introduction

In a competitive and changing context, the constraint of combining efficiency and flexibility becomes necessary. An organization is efficient if it can satisfy today's customers in terms of product, price, time, quantity and distribution. Efficiency is based on operating capabilities (March, 1991), which are embedded in processes, procedures, organizational and managerial systems, etc. (March, 1991). In addition, an organization is flexible when it succeeds in developing new configurations in terms of product-market-technology-organization to enable the satisfaction of tomorrow's customers. Strategic flexibility is based on exploration capabilities (March, 1991). The combination of efficiency and flexibility forces companies to develop a dual capacity for continuous innovation to manage both exploitation and exploration processes.

Moreover, recent work has argued that social capitalism is essential for innovation (Yan and Guan, 2018 and Popa et al. 2017). Social capital theory offers important insights to explain innovation activities. Despite the importance of social capital in innovation, the relationship

between the two concepts has not found consensus among scholars (Yan and Guan, 2018). In some cases, social capital has had a positive effect on innovation (Sanchez-Famoso et al. 2014). In others, the risk or negative effect was dominant (Edelman et al., 2004).

One of the main reasons for these mixed results is that different types of innovation require the development of different dimensions of social capital. At a time when researchers generally adopt a single view of social capital. This difference is all the more important since social capital, being an investment, must be recouped (Adler and Kwon, 2002) and social units generally need to adopt different strategies to innovate (Li et al., 2008). Moreover, while studies have been conducted for years to show the effect of social capital on innovation (Sanchez-Famoso et al. 2014; Carrasco-Hernandez and Jimenez-Jimenez, 2013, Zellweger, al. 2012), to our knowledge few studies have analyzed the relationship between social capital and innovation by integrating the dynamics of the network of partners, and even less by including the moderating impact of organizational culture. To this end, our study attempts to fill this gap and contribute to improving the capacity of enterprises to identify and develop innovative opportunities.

We will first try to integrate the notion of the "ego network" into our reflection, more specifically, the expansion and stability of the "personal network" as mediators between their social capital and innovation. On the one hand, the network is a strategic option allowing individuals to strengthen their capacity to pursue new opportunities by trying to occupy and develop information channels through the dynamics of their network (Arikan and Knoben, 2014; Li et al., 2013; Cannella and McFadyen, 2013). On the other hand, it is the establishment of strong relationships with its partners that constitutes a key strategy for innovation, enabling them to acquire and exploit specific and new knowledge (Aït Errays, 2018).

Secondly, we will try to mobilize organizational culture as a moderating factor in the relationship between social capital and innovation. Organizational culture has been identified in the literature as an essential prerequisite for innovation performance. We integrate this concept as a moderating factor in the relationship between social capital and innovation that can condition the dynamics of the personal network. From this perspective, Kotter (2017) suggests that exploratory innovation strategies are more appropriate for network culture that promotes flexibility, while the bureaucratic (hierarchical) culture that supports efficiency is more appropriate for operational innovation strategies.

In order to achieve our objectives, and based on a diversified theoretical corpus, our discussion will be structured as follows: the first part analyses the diversity of approaches and concepts

that structure the field of innovation. We show that, in addition to approaches focused on the development of innovative projects, the innovation dynamic currently focuses on the design of new original models by re-examining the role of social capital in all its dimensions and distinguishing between two types of innovation: exploitative and exploratory. The second part of the article analyzes the role of personal network dynamics in the relationship between social capital and exploitative and exploratory innovation. We propose that the deployment of innovation approaches is made more complex by taking into account the dynamics of the partners' network, requiring differentiated approaches in terms of steering. In the end, our analysis relativizes the approaches that link social capital to innovation by examining the cultural characteristics that affect personal network dynamics and innovation. We will take into account the factors of organizational culture that impact social capital, partner network dynamics, and innovation research. Our analysis of the effect of organizational culture can provide a useful perspective for researchers studying social capital, network dynamics, and innovation.

1. The impact of social capital on innovation

1.1 Exploratory innovation

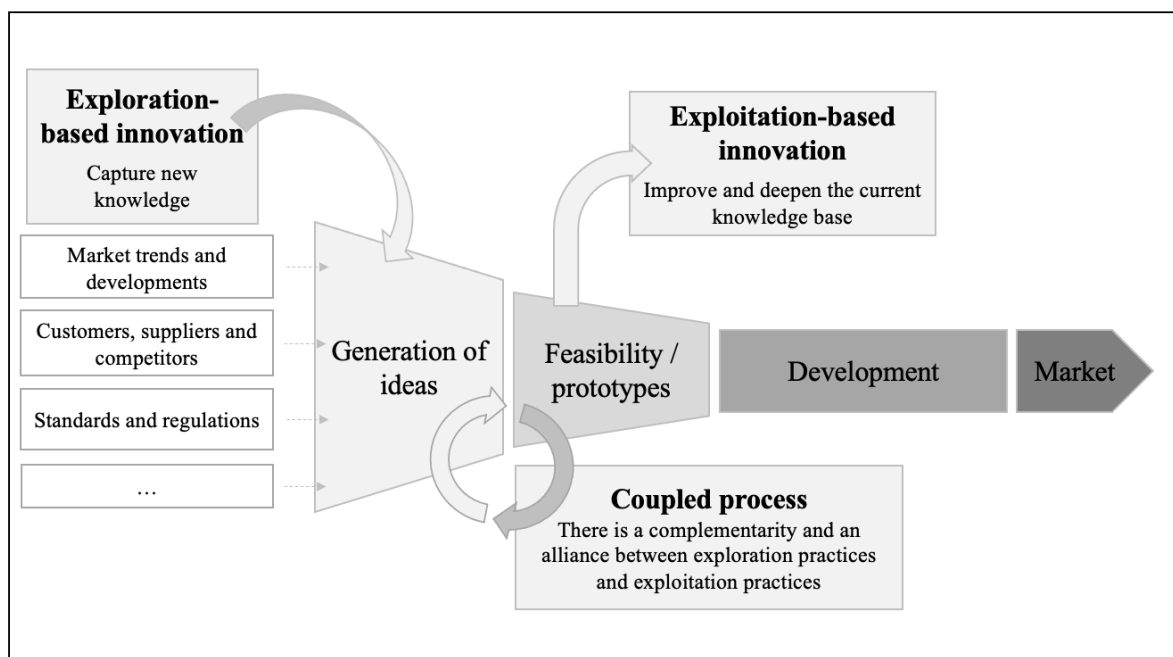
The idea that the long-term success of a company depends on its ability not only to mobilise existing skills and improve the efficiency of the company, but also to explore totally new fields, is widely held in organisational theory. However, little is known, however, about how organizations deal with the dilemma between exploitation and exploration, and whether these two activities can be combined simultaneously. Existing management research has mostly presented this phenomenon in terms of discrete and dichotomous categories, forcing companies to choose between the two types of activities.

Drawing on Chesbrough's perspective on open innovation, most researchers decompose it in terms of inward and outward practices (Cheng and Shiu, 2015). The input dimension encompasses intentional knowledge inputs that allow firms to explore and capture new knowledge and technologies from external sources such as customers, suppliers, competitors, governments, consultants, universities or research organizations (Cheng and Shiu, 2015). Yan and Guan, (2018) prefer to refer to it as exploratory innovation. This implies an exploratory learning behaviour that allows a firm to look beyond its boundaries, thereby enriching its own body of knowledge. This type of innovation advances new and different technological

trajectories requiring the recombination of diverse and recent information (Yan and Guan, 2018). In contrast, outgoing practices refer to exploitable innovation. It involves a research process that improves and deepens the current knowledge base without changing the essence of the technological trajectory (Yan and Guan, 2018).

However, these two types of practices are not mutually exclusive (Cheng and Shiu, 2015). Firms that adopt exploration practices are more likely to identify new opportunities for innovation, thereby enhancing their ability to adopt effective exploitation practices (Hung and Chou, 2013). Similarly, firms that apply both exploration and exploitation practices are more likely to make greater use of their knowledge and technological capabilities (Van de Vrande et al., 2009). Therefore, and with reference to Gassmann and Enkel (2003), we will distinguish three key innovation processes in development and production: exploration processes, exploitation processes, and coupled processes, as illustrated in Figure 1.

Figure 1: the three archetypes of innovation: exploitative and exploratory



Despite the broad consensus on the benefits of opening up the innovation strategy, empirical studies show that many firms are still reluctant to open up their innovation strategy (Popa et al. 2017). In this sense, the NIH syndrome (literally not invented here, or this is not developed for us) has been highlighted as one of the main factors that may prevent firms from adopting open innovation practices (Popa et al. 2017). This syndrome reflects the internal resistance of a firm's

employees, which prevents firms from taking advantage of external knowledge (Laursen and Salter, 2006). It is a behavioural response of individuals who reject external knowledge because of the belief that they possess power by maintaining the status quo. However, Chesbrough adds that resistance could also result from the "Only-Used-Here" (OUH) syndrome, which translates into barriers to knowledge flows across corporate boundaries (Popa et al. 2017). These barriers draw attention to the importance of the firm's social capital on the one hand, and of the organizational culture in place on the other.

From this perspective, social capital is considered an important asset that affects activities that cover the creation and transfer of knowledge within and between organizations (Inkpen and Tsang, 2005; McFadyen and Cannella, 2004). It is often presented as a key determinant. For example, in the specific context of SMEs, the study of open innovation is even more relevant to their sustainable competitiveness as they face greater resource constraints.

1.2 Social capital and exploratory innovation

In the sense of Nahapiet and Ghoshal (1998), social capital refers to all current and potential resources acquired from the network relationships of individuals or social units. It thus includes both the network and the assets that can be mobilized through that network. The authors also propose to discern three interconnected dimensions of social capital: the structural dimension, the cognitive dimension, and the relational dimension.

Relational capital indicates the strength and quality of the relationship with familiar people and shared experiences (Nahapiet and Ghoshal, 1998), measuring the capacity to exchange different information, the frequency of interactions between different actors and the trust in each. We argue that relational capital influences exploration and exploitation innovations in a distinct way, with an advantage for the latter.

Exploitation requires information obtained through the reuse of current routines (Baum et al., 2000). We consider it to be positively associated with strong and stable relationships (i.e., relational capital) in three ways:

- Firstly, actors are more likely to provide resources, know-how or help other actors close to them than those who are unfamiliar (Moran, 2005).
- Second, relational trust can provide an assurance that actors can rely on, especially in the context of opportunism and uncertainty, to obtain resources for innovation (Tsai and Ghoshal,

1998). Trust can also lead to overdependence on old partners and a reluctance to seek new partners,

- Thirdly, higher relational capital can facilitate knowledge transfer with existing partners and create reciprocal links, which reduces the actor's flexibility and ability to meet new partners (Zaheer et al., 2000).

Thus, if relational capital is able to reduce barriers to the coordinated action required for exploitation, it is likely to impose greater obstacles to the production of new and heterogeneous ideas.

Structural capital refers to structural inking, which represents the configuration of links between actors (Nahapiet and Ghoshal, 1998). This dimension refers to the presence or absence of links between actors in the network, the configuration of the network and its morphology (density, connectivity, and hierarchy).

Based on structural hole theory, developed by Ronald Stuart Burt, we adopt structural holes as a proxy for structural capital to illustrate its effect on innovation (Zaheer and Bell, 2005). According to this approach (Burt, 2009), structural holes offer a significant opportunity for innovation. An individual mediating between two or more closely related groups can gain many advantages.

According to Burt (2004), social capital is linked to the structure of an individual's network and, in particular, to the place and number of contacts in that social structure. Thus, the more an individual's contacts are directly connected to each other without an intermediary, the more redundant they are and the more "constrained" the individual is. He cannot play his contacts off against each other and obtain information and services from them.

According to Burt (2009), the development of social capital leads the main actor to eliminate redundant contacts, which are more constraining and less profitable, and to develop structural holes in his network. This type of strategy can certainly weaken the unity and cohesion of the group, but can be beneficial to the main actor, who becomes a structural bridge in the network. In particular, its position as a structural bridge between distinct networks allows it to be the conduit or custodian of valuable information from one group to another (Burt, 2004). Furthermore, the individual creating a structural bridge can combine all the ideas he or she receives from these different sources and arrive with the most innovative idea. However, his or her position remains precarious, since maintaining these disparate links between distinct networks can be fragile and costly in terms of time and energy.

As a result, occupying a structural hole may be more beneficial for a business innovation.

- First, researchers suggest that occupying structural holes, in order to play an intermediary role, can provide access to the private information and knowledge of other disconnected actors (Lin et al., 2009). In this case, actors who cover more structural holes can control more information flows.
- Second, an actor covering fewer structural holes may have limited or weak power to control collaborations between partners. In this case, the central actor may be less important than when it occupies a position as a structural bridge and thus easily abandoned by connected partners.
- Thirdly, some experts have suggested that covering more structural holes could lead to overloaded and different information. However, this does not appear to be a threat to exploitative innovation.

Moreover, exploratory innovation requires rich, heterogeneous and non-redundant knowledge (Harryson et al., 2008). From the perspective of structural holes, they are an opportunity to negotiate new knowledge and information flows between actors (Burt, 2004). Therefore, structural capital will present a structure of opportunities to generate new ideas.

Cognitive capital indicates the resources developed by an individual to share expertise and experience, learn knowledge, develop specialized discourse and form the basis for practice (Ansari et al., 2012; Tsai and Ghoshal, 1998). Engaging in knowledge sharing and learning requires shared understanding among members, such as shared values and visions, shared language and codes, and permanence in shared practice (Tsai and Ghoshal, 1998; Nahapiet and Ghoshal, 1998)).

An individual's cognitive capital will develop as he or she gains more experience in expertise and learning and as he or she interacts with others over time.

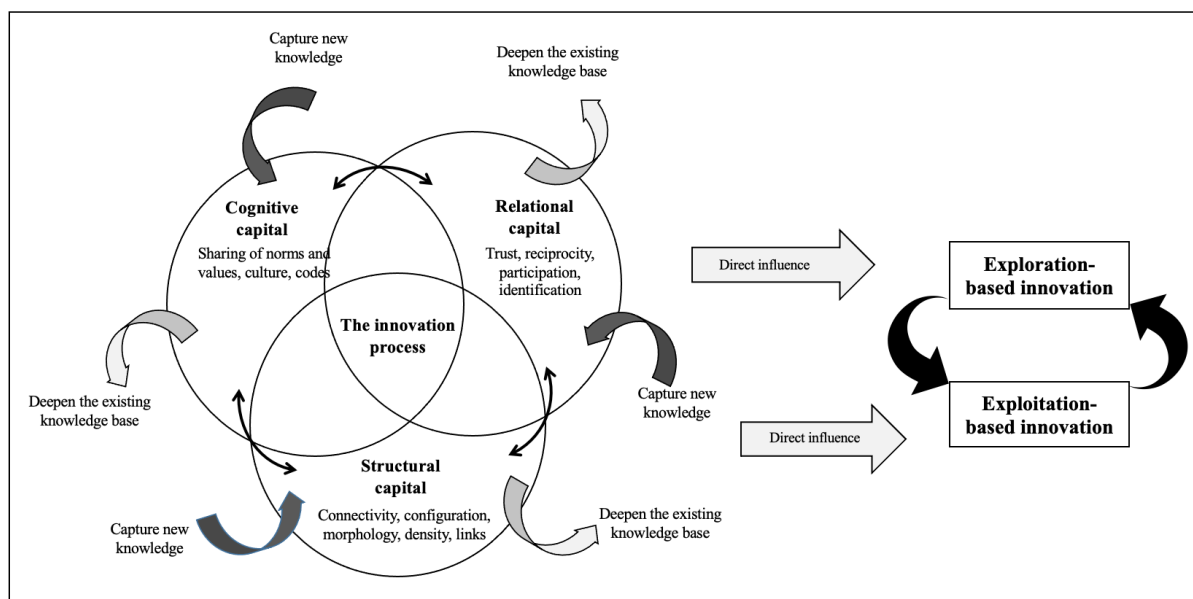
Previous research has shown that cognitive capital has positive effects on exploitative innovation for two reasons :

- First, exploitative innovation is based on a fundamental knowledge base and requires a thorough understanding of available knowledge and the accumulation of existing resources. Thus, individuals in long-term positions are likely to benefit more from their expertise and thus have a better understanding of what can be exploited in the innovation process (Wasko and Faraj, 2005).
- Second, exploitative innovation is characterized by a thorough, local search for existing rules, routines and norms. Cognitive capital has significant effects on the search for knowledge from existing partners. In this case, cognitive capital can nurture an atmosphere of frequent

communication and discussion that is conducive to exploitative innovation (Atuahene-Gima and Murray, 2007).

For other researchers, exploratory innovation generally involves risk and uncertainty, and the individual with a long mandate can easily take the risk. More experienced individuals have a better knowledge of the latest trends and unexplored opportunities. They can thus determine whether the opportunity is exploratory or not and seize it more efficiently and effectively (Kearney et al., 2000). In addition, actors with longer mandates have greater expertise and understanding of problems and know how to use the resources they have mastered to lead in finding solutions.

Figure 2: The Effect of Social Capital on Exploitation and Exploration Innovation



2. The mediating effect of the ego-network

The notion of "personal network" refers to the set of relationships and ties maintained by an individual, most often generically referred to as an ego. An individual's ego network refers to all the contacts (egos) having direct collaborative ties with a main actor, called "ego", as well as all the ties that unite them (Borgatti et al., 2009). It is thus a question of taking into account both the direct ego relations but also those that exist between the different ego contacts. We define the expansion and stability of the ego network as the addition of new direct partners or

the maintenance of old direct partners. According to previous research on network dynamics, social capital may be one of the drivers of ego network dynamics (Ahuja et al., 2012). The network actor theory will thus allow us a dynamic reading that is different and complementary to those of social capital theories applied to the field of innovation.

2.1. Dynamics of the network of the self, exploratory and exploitative innovation

The processes of expansion and stability of the ego network will have different effects on exploratory and exploitative innovation.

- On the one hand, according to the theory of organizational learning, exploration arises from the search for new knowledge and skills (March 1991). The expansion of the ego network could be a source of new and heterogeneous knowledge, which could effectively contribute to producing more exploratory innovations. In addition, taking risks and collaborating with new partners will facilitate learning by accessing new knowledge residing outside the boundaries of the firm, thus contributing to exploratory innovation (Lavie and Rosenkopf, 2006).

- On the other hand, exploitation is associated with the reuse of available knowledge and the refinement and use of current routines (March 1991). Ego network stability refers to the long-term tactics that individuals apply to conduct in-depth evaluations of familiar collaborators (Guan et al., 2017a). Thus, maintaining valuable partners brings more certainty and low risk. In addition, actors engaged in long-term relationships communicate and understand each other better, facilitating mutual information and reciprocal sharing (Dahlander and McFarland, 2013). Thus, frequent collaboration with familiar people is more useful for exploitative innovation than for exploratory innovation.

2.2 Social capital, ego network dynamics, exploratory and exploitative innovation

2.2.1. Relational capital, ego network dynamics and innovation

As mentioned above, the development of relational capital increases the stability of personal networks but reduces their expansion. First, relational capital is based on mutual trust and close interaction at the individual level (Kale et al., 2000). Trust facilitates exchange and learning through close individual interaction between collaborators (Kale et al., 2000). In this case, actors cannot break the trust obligation, as opportunistic behaviour is too costly. Second, relational capital creates a basis for mutual learning and transfer of know-how, which provides an incentive to maintain the stability of the current network. In addition, strong relational capital can create inertia in relationships by limiting the expansion of the personal network.

Consequently, it can be said that relational capital has a positive influence on the stability of the ego network, but a negative effect on the expansion of the network.

2.2.2. Cognitive capital, ego network dynamics and innovation

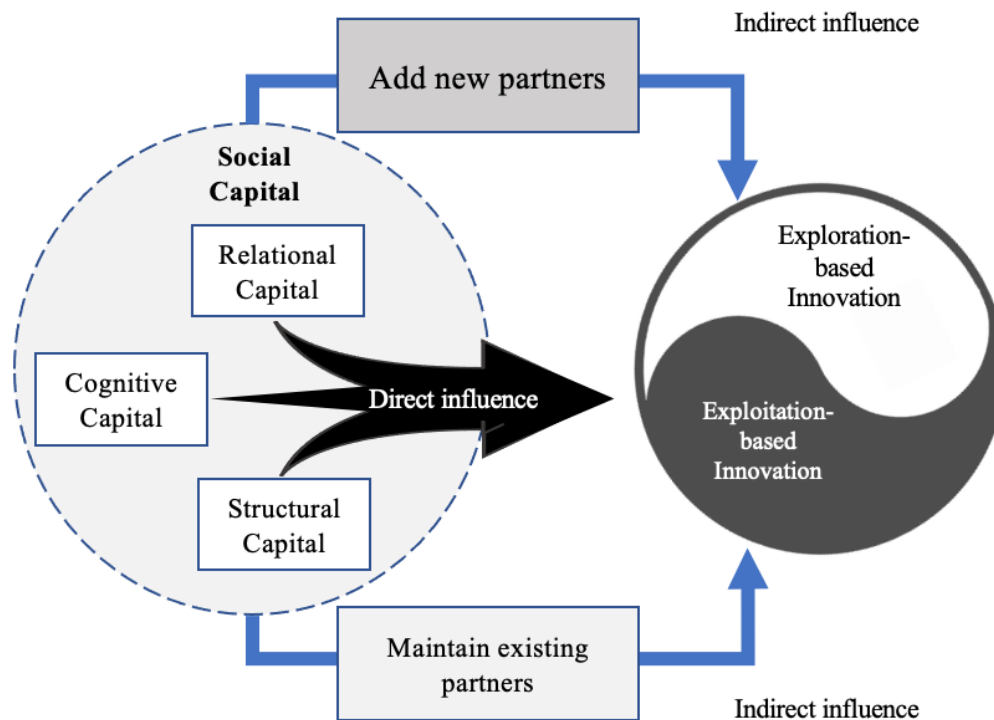
Cognitive capital could increase both the stability and expansion of the ego network. There are three reasons for this:

- First, cognitive capital is a resource for an individual as he or she develops over time to acquire new knowledge and skills, share old knowledge and skills, and form norms of practice (Li et al., 2013). An individual with high cognitive capital may have a better understanding of the behavioural norms in his or her network, which may facilitate network stability.
- Second, high cognitive capital means that individuals have high cognitive abilities to understand and use their knowledge (Wasko and Faraj, 2005). Under these conditions, new partners are likely to cooperate with individuals with high cognitive capital. Thirdly, cognitive capital can provide social support enabling actors to take risks and forge new links.

2.2.3. Structural capital, ego network dynamics and innovation

According to network rootedness theory, actors rooted in a network have considerable influence on promoting the stability of existing relationships and the formation of new links (Polidoro et al., 2011). Previous studies have shown that networks are self-reinforcing because actors, deeply rooted in the pre-existing network structure, tend to favour collaborations with former partners (Gulati and Gargiulo, 1999). Thus, structural capital provides an incentive to cooperate only with existing partners. The formation and maintenance of new relationships is energy- and cost-intensive, and also risks destroying the initial position of the network, thus losing competitive advantage. For this reason, structural capital will increase the stability of the ego network, but may reduce its expansion.

Figure 3: The mediating effect of the network of partners in the relationship between social capital and innovation



3. The moderating effect of organizational culture

While the impact of leaders' social capital on innovation has been widely studied, the influence of contextual variables that could weaken or strengthen it has been routinely ignored. In terms of research, many researchers have attempted to identify the cultural traits that distinguish between successful and unsuccessful cases of innovation projects. Organizational culture influences the behaviour of the members of an organization and conditions their attitudes, processes and communication systems (Brown and Starkey 2007). It is therefore a framework of thought, a system of values and rules, and a relatively organized system of shared meanings (Bournois 1996). Therefore, the challenge for leaders is to create an organizational culture that fosters innovation in a competitive environment.

Of course, there are many types or levels of culture that affect individual and organizational behaviour. Some organizational cultures may hinder rather than promote and support it. With respect to a set of values, Quinn and Rohrbaugh (1983) have highlighted two key dimensions

related to these values. The first dimension reflects organizational interest, distinguishing between organizations that emphasize internal cohesion (the integration, unification, well-being and development of people within the organization) and organizations that emphasize openness to the outside (rivalry, health and development of the organization itself). The second dimension relates to organizational structure, and distinguishes organizations that emphasize discipline and control from organizations that aim for flexibility and change. Consequently, Dextras-Gauthier, Marchand and Haines (2012) deduced two types of organizations, those seen as stable and mechanistic and those seen as agile and organic organizations. It is this distinction that we will adopt in this section.

Each of these organizational cultures has an implicit model for its means and ends. In other words, each represents basic assumptions, orientations and values. For example, the assumptions, orientations and values corresponding to the organizational culture are characterized by an emphasis on aspects of flexibility (Ouchi 1980; Wilkins and Ouchi 1983). Flexibility and tolerance of change are seen as the primary means by which the ultimate end is achieved. This organizational culture corresponds to networked organizations that focus on flexibility and adaptability (Cameron and Ettington 1988). It promotes the breakdown of their structure into autonomous units articulated in a network, built on the basis of individual relationships (Ferrary and Pesqueux, 2004). In this case, adaptability and agility are seen as primary means of growth expansion, resource acquisition and exploratory innovation development.

As for the mechanistic culture, it shares the same orientations as those of the hierarchical, or bureaucratic model, which focuses on internal cohesion, discipline and control. Information management and communication are seen as means to achieve the goal of stability, order and control. It partly corresponds to market culture (Ouchi 1980; Wilkins and Ouchi 1983), but shares the same assumptions and values as the rational objectives model emphasizing order and control. In it, planning and goal setting are the means by which the organization achieves its goal of productivity and efficiency. Within this framework, this culture would be conducive to exploiting business opportunities by mobilizing existing resources.

From an exclusively hierarchical culture...

The usefulness of hierarchy is no longer in doubt. A hierarchical, or bureaucratic, organizational culture is seen as a means to the end of stability, order and control (Lassoued, 2005). It allows companies to be efficient by dividing work among operators with expertise, proven procedures and clear responsibilities to carry out their tasks in an efficient and predictable manner. It

mobilizes proven management methods to plan, organize, coordinate, communicate, animate, motivate, and measure results.

In the 19th and early 20th centuries, the Scientific Work Organization (SWO) set the rules for organizations to manage effectively and efficiently while extolling the virtues of hierarchy. Subsequently enriched by other authors, it taught us to identify new problems, find and analyse data, develop arguments for change and get green lights (Meier, 2017). Later, the assumptions, orientations and values of the human relations model came to the forefront by valuing aspects of flexibility and cohesion (Ouchi 1980; Wilkins and Ouchi 1983). This new model taught us the usefulness of task forces, project management and change management teams. This works particularly well if the structure is less bureaucratic (fewer levels and fewer rules), and if those at the bottom of the hierarchy have more autonomy. The disadvantage is that theorists have presented flexibility as a substitute for discipline. Oriented towards their internal environment, hierarchical organizational cultures are particularly distinguished by their stability, efficiency, formalism in rules and procedures, and control in their decisions.

However, in turbulent contexts that require more courageous innovations, these old methods have shown their inefficiencies. Indeed, while greater cohesion among the members of an organization can have a positive effect, the increase in administrative procedures and bureaucratic control is not likely to be as positive (Dextras-Gauthier, Marchand and Haines, 2012). By their nature, hierarchies, even when unbureaucratic, remain risk-sensitive and resistant to change. Specifically, organizational values, which promote control and order within the organization (Cameron and Quinn, 1999; Dextras-Gauthier, Marchand and Haines, 2012), are not up to the challenge of managing rapidly changing environments.

Some firms may choose to adopt more flexible hierarchical structures (e.g., matrix or process-based). These structures can be strengthened or accelerated by integrating more resources, more sophisticated variants of older methods or more skilled people; but only up to a certain level. Once this level is reached, using this approach to launch innovative projects, requiring the company to explore new resources, can be confusing, resistant, depleted and costly. Referring to Quinn and Rohrbaugh (1983), this is for two reasons. First, an organisation is confronted, during its innovation process, with the standards defined by its competitive environment. This requires a greater openness of the organisational culture to the outside world. In addition, the management of innovation processes is likely to increase the pressure on staff internally. It also contributes to formalising a whole series of internal processes. Secondly, meeting the quality standards demanded by international clients implies continuous organisational adaptation and

the acquisition of new resources. These changes go hand in hand with increased flexibility and innovation in the organisational culture. At the same time, innovation is likely to increase the burden on internal communication and documentation mechanisms, leading to more bureaucracy. In other words, innovation management strengthens both control and flexibility. As a result, hierarchical organizational cultures that value stability, authority, and cohesion could have a negative effect on the relationship between social capital and innovation. Overall, innovation based on traditional management tools and methods can be valuable when trying to solve episodic problems for which the exploitation of existing resources is largely sufficient. From this perspective, leaders will often tend to act between two ambidextrous systems, between the strength of discipline and flexibility, in other words between hierarchy and network to promote the exploitation and exploration of business opportunities.

Towards an ambidextrous organizational culture

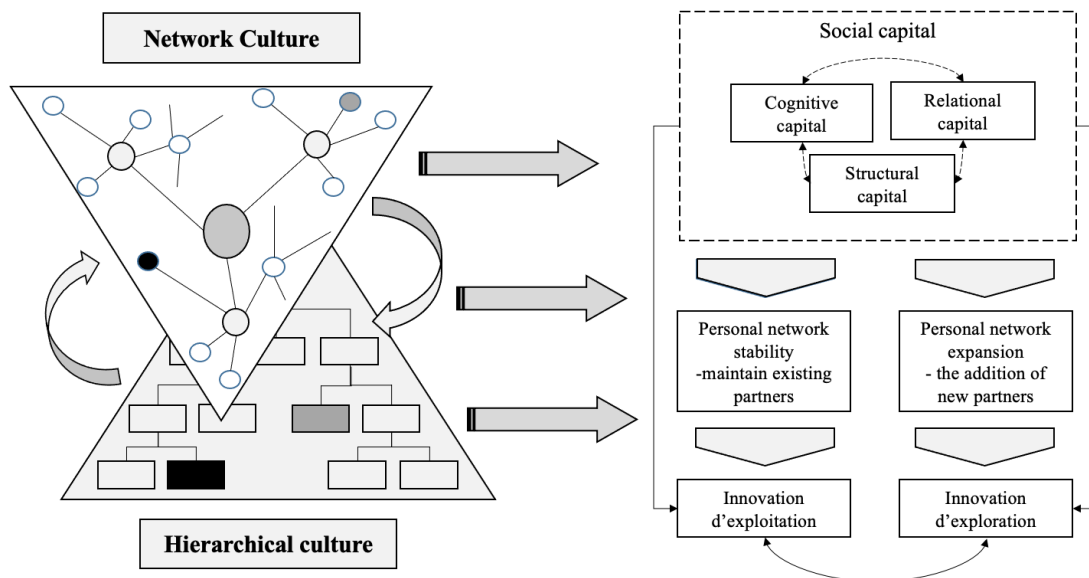
In a highly competitive and constantly changing environment, innovation creates strategic challenges that even a flexible hierarchy cannot manage. Indeed, it forces leaders to focus on opening up and exploring new resources. This increases the emphasis on the values of learning, creativity and adaptability (Cameron and Quinn, 1999; Dextras-Gauthier, Marchand and Haines, 2012). For this reason, cultures that simultaneously favour flexibility and efficiency may be conducive to the development of social capital, and subsequently positively influence the success of innovation projects. This is why a dual operating system (a hierarchy working hand in hand with a network) will work remarkably well.

The network and the hierarchy must be juxtaposed and inseparable, with a constant exchange of information and activities between them. This approach seems effective because the network members all work within the hierarchy. In this type of organization, the network will bring flexibility and agility; leaders can promote problem solving, collaboration and creativity; and other collaborators will be more focused and involved. Firms that value network and hierarchy, flexibility and discipline, are more entrepreneurial when facing competitive environments than firms in adaptive mode. Miller and Friesen (1982) had already stated that entrepreneurial firms seek competitive advantages by developing innovative activities and choosing proactive and aggressive orientations in the face of competition. Mintzberg (1973, cited by Dess et al., 1997) had also associated this behaviour with a leader who will take risky and bold actions within the organization.

It is a dynamic structure where members choose to collaborate or not as needed. Whereas a traditional hierarchical structure tends to remain fixed and not evolve. A network structure, on

the other hand, can easily metamorphose. In the absence of bureaucratic factors, authoritarian prohibitions and standardized processes, the network becomes the fertile ground for the emergence of individualism, creativity and innovation that even the least bureaucratic hierarchy cannot provide. Composed of employees from across the company and from all hierarchical levels, the network, in turn, releases the energies present in hierarchical structures, allowing it to function quickly and freely. This is an organizational culture that fosters both discipline and openness (Dextras-Gauthier, Marchand and Haines, 2012).

Figure 4: The moderating effect of organizational culture in the relationship between social capital and innovation



The hierarchical culture differs from almost all other organizational cultures in one very important respect: the things that are usually in charge of carrying out innovation projects have been moved to the network. Hierarchy will be more effective by focusing on what it exists for: performing day-to-day tasks, improving productivity and managing predictable adjustments. At the same time, the network in charge of carrying out the innovation processes becomes part of the hierarchy on an equal footing. It is not a super "task force" reporting to a hierarchical unit or manager. The network is harmoniously aligned with the hierarchy mainly through employees who belong to both systems. The establishment of the network is the responsibility of the manager. His or her role is to create, enhance and support it explicitly. The network

cannot be seen as a hacking operation. It is up to the manager to strengthen his legitimacy within the company, otherwise he will be crushed by the hierarchy.

According to Kotter (2018), the success of such a system, which associates hierarchy with the network, will be based on several factors, in particular :

- The involvement of many players in the innovation project, and not just a few people usually appointed. In order to move faster and further, it is necessary to involve as many people as possible in the innovation project in an economically realistic way. This means not attracting a large number of full-time or even part-time appointees, but mainly involving volunteers. Indeed, the interaction between formally full-time committed people and informally highly involved volunteers seems to improve the chances of strengthening the learning of their organisation through the exchange of knowledge and know-how (Salvetatdu et al. 2011). These interactions involve not only repeated efforts to exchange knowledge, but also greater receptivity to information from other exchange partners (Van den Hoof and Van Weenen, 2004). As a result, network members who are highly involved are more likely to exchange a richer body of knowledge with each other, which can improve the organization's ability to exploit and explore entrepreneurial opportunities.
- The creation of a voluntary, entrepreneurial and not just disciplined mindset. Usually, it is difficult for leaders to mobilize the energy and brainpower of volunteers if other staff members oppose or even remain indifferent, or if they do not feel they have permission to become volunteers. The desire to collaborate with others on a unifying goal (the spirit of volunteerism) is a key factor in network dynamics.
- The simultaneous mobilization of reason and emotion. Leaders should not be content to appeal only to logic and reason, using figures and arguments. They must also awaken emotions and arouse the desire and willingness to participate in the innovation process and lead the company towards a better future in a strategically intelligent way, giving more feeling to their role. This is the only way to involve and unite stakeholders with divergent interests.
- Recruiting leaders, not just more managers. Effective leadership requires competent managers. On the other hand, a network structure needs leaders, which means that it operates with different expectations, processes and languages. In this case, the leader must always wear his leader's hat: free from the burdens inherent in hierarchy, his position in his network gives him ease of movement, varied and first-hand information, and a role of rapid decision making that often corresponds to his approach to management. Here again, his social capital and his experience as a manager generally enable him to get involved quickly in a case, if he considers it desirable.

This implies a very individual assessment of the risks and opportunities it entails, of his ability to seize them, as well as of his team's ability to successfully complete the project (De Carolis and Saporito, 2006). For the leading leader, it is about vision, opportunity, agility, inspired action and celebrating success. For the manager, it is about project management, budget reviews, reporting, compensation and discipline.

Conclusion

We began this paper with an interesting objective, which is to link social capital and network dynamics to innovation. Much research has delineated the differences between exploratory and exploitative innovation (Gupta et al., 2006). In response, researchers have begun to investigate the antecedents of these two well-known types of innovation. Next, we distinguished three dimensions of social capital and showed that each has different direct or indirect effects on the two types of innovations. Next, we integrated into our analysis the dynamics of personal networks as mediators in the relationship between social capital and innovation. Finally, we integrated into our analysis organizational culture as a moderating factor likely to influence this relationship.

The results of our investigation led us to three conclusions. First, all three aspects of social capital can predict exploratory and exploitative innovation, at least in a context where digital technologies are under pressure. Second, all three aspects of social capital are related to the expansion and stability of personal networks. They are linked to innovation through their influences on the dynamics of personal networks. Third, a mixed organizational culture, which juxtaposes hierarchy and network, can be a factor that triggers or inhibits the innovation process.

In light of these findings, below we present our main theoretical contributions. First, based on the differences between exploratory and exploitative innovation described above, we have tried to understand how they vary according to the type of social capital mobilized. Second, firms should recognize the potential to create a balance between exploratory and operational innovation by creating an organizational context that fosters both discipline and flexibility. In this sense, change management plays an important role in the success of business innovation projects. It can lead to a reversal or rethinking of old practices and habits. For example, a company's involvement in an innovation process could discourage repeated collaborations and encourage inter-organizational efforts (e.g., R&D alliances) by increasing their portfolio of partners.

Second, our study extends previous research by highlighting the important role of ego network dynamics as mediators in the relationship between social capital and innovation. According to previous research on network dynamics, social capital may be one of the drivers of personal network dynamics (Sun, 2016; Ahuja et al., 2012). In this article, we have attempted to highlight the mechanism by which social capital impacts exploratory and exploitative innovation. From this perspective, our investigation revealed the important mediating role of ego network dynamics. Thus, we cannot talk about the real effects of social capital on innovation without taking into account the dynamics of the personal network. The latter can modify the impact of social capital on innovation. However, there is a lack of literature to understand why innovation ego networks emerge and develop (Ahuja et al., 2012). To do so, we considered both the antecedents and consequences of network dynamics. In our study, we distinguished the expansion from the stability of ego networks. We showed that the latter are important antecedents of both types of innovations.

Third, we obtained enlightening results by examining the cultural characteristics that affect, the emergence of social capital, ego network dynamics, and innovation. In this article, we distinguished between organizational culture that promotes discipline and respect for norms and organizational culture that values flexibility and adaptability. The results of our review of the literature showed us that the reassuring virtue of the pyramidal hierarchy, which refers to authority and discipline, would tend to fade behind the flexibility and adaptability offered by the network. Faced with the demands of innovation, the network mode presents itself as a solution to all the ills that the hierarchy has failed to solve. The network mode is characterized by a complex open structure of interconnected elements. However, it has often been proposed as a substitute for the hierarchical mode. Today, the spread of digital technologies is breaking down the old world of hierarchies. Their use requires more collaboration than even the most flexible hierarchies offered. The business is constantly reconfiguring itself in an ever-changing and increasingly demanding environment. This is why the company is led to invent structures that balance flexibility and discipline.

These results not only have a theoretical contribution, they also have managerial implications. They confirm the idea that new partners have more advantages in terms of exploratory innovation, and that old partners are more inclined to exploit innovation. This interesting finding has managerial implications. In general, it implies that managers need to be aware of the configuration of their portfolio of partners. They can seek a balance between exploring new opportunities and exploiting old ones. For exploratory innovation, leaders should rely primarily

on broadening their portfolio of partners. However, the persistence of collaborative relationships with former partners is particularly interesting for the creation of exploitative innovation. Leaders may also find that simply using social capital to facilitate various innovations is often not enough, especially when faced with exploitative and exploratory opportunities. Different types of innovation require different types of social capital. For example, in order to achieve exploration results, leaders could fill large structural holes and reduce frequently repeated linkages. However, our findings show that the benefits created by social capital do not directly influence innovation performance. On the contrary, network dynamics play a mediating role between the benefits generated by social capital and innovation performance. Leaders need to pay attention not only to the social capital they possess, but also to focus on the formation of new ties and the maintenance of old and valuable ties.

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