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**Article**

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# The internal mechanisms of entrepreneurs' social capital: A multi-network analysis

**Carlos Hernández-Carrión[1,2], Carmen Camarero-Izquierdo[2,3] and Jesús Gutiérrez-Cillán[2,3]**

**Abstract**

The present work addresses how and to what extent the personal and professional relationship networks of small-scale local entrepreneurs help improve their scarce resource endowments. Adopting a mechanistic and functioning oriented view of social capital, the paper suggests the existence of two different mechanisms which may explain the enrichment and entrepreneurial exploitation processes of social capital's resources: (1) the resource mechanism, based on a network's size and diversity, providing quantity and variety of social capital resources, and (2) the exchange mechanism, based on a network's cohesion and relational quality, favouring the interchangeability of these resources among network members. The empirical study individually explores both the personal and professional networks of 958 Spanish entrepreneurs. Findings reveal how the two mechanisms are necessary and mutually complementary, although the resource mechanism proves more advantageous when exploiting personal networks, whereas the exchange mechanism prevails in the case of professional networks.

**JEL CLASSIFICATION** L14; L26; M13; M14

**Keywords**

Social capital mechanisms, Relationship networks, Small entrepreneur, Resources

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## Introduction

The resource-based approach (Barney, 1991; Grant, 1991) underpins the potential of business resources and capabilities as a source of competitive advantage and value creation. However, given the highly competitive environment of modern-day economies, obtaining 'external' resources on the open market is proving increasingly challenging for small and medium enterprises compared to large-scale or multi-located firms. This is especially worrying in the case of small-scale local entrepreneurs, understood to be people who are starting up and running their own business in a local area (Stam et al., 2014; Zhao et al., 2010). In such a context of competitive disadvantage, relationship networks may prove a particularly valuable asset for these entrepreneurs, since they provide the latter with access to strategic resources, and afford entrepreneurs the opportunity to enhance their performance (Batjargal and Liu, 2004; Cousins et al., 2006; Davidsson and Honig, 2003; Pirolo and Presutti, 2010). Specifically, the notion of entrepreneurs' social capital refers to entrepreneurs' capacity to work their way into relationship networks which can provide them with essential resources. The social capital, which emerges when establishing relationship networks, thus becomes a strategic resource and a form of intangible capital deriving from relationships, as well as a further

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source of resources and the basis of true competitive advantage.

Nevertheless, a review of the research reveals differences in approaches to the relationship networks underlying social capital (Payne et al., 2011), major discrepancies regarding the advantages and drawbacks of certain aspects of relationship networks, and even some disagreement concerning the nature (networks versus resources) and composition (i.e., dimensions) of social capital (Stam et al., 2014). With regard to the latter point, since much of the network-centred literature has described and interlinked the three well-known basic components of social capital, namely its structural, cognitive and relational dimensions (Gulati et al., 2011; Hoang and Antoncic, 2003; Nahapiet and Ghoshal, 1998), in the current paper, in line with Batjargal (2003, 2006), we consider a fourth component of social capital that alludes to the resources embedded in a relationship network and that are potentially available to the individual: social capital's resource dimension (henceforth, *SC resources*). Thus, we adopt a more comprehensive view of social capital that combines both network-and resource-focused approaches. In addition, as an initial (purely theoretical or conceptual) contribution to this area of research, we posit that the usefulness of a relationship network as a source of resources depends on three features of SC resources: quantity, variety and interchangeability of resources embedded in that network. These three features define SC resource richness and will, in turn, determine the extent to which the entrepreneur can benefit from such networks in order to gain access to resources (henceforth, SC resource exploitation).

However, progress still needs to be made in improving how the formation, enrichment and exploitation process of SC resources may be explained (Newell et al., 2004; Stam et al., 2014; Vlaisavljevic et al., 2015). Indeed, Light and Dana (2013) stated that ''the frequent claim that social capital supports entrepreneurship is apparently overstated''. Although the literature has claimed that resources born out of social capital enable and enhance entrepreneurship, the conditions for entrepreneurs to access these resources need to be explored. With this in mind, we abandon, at least partially, the dimensional approach that has traditionally predominated in social capital research and adopt a more dynamic and functioning-oriented view. On this basis, as a second and more important contribution, we propose the existence of two internal functioning mechanisms of social capital and we explain how they work to enrich those features of SC resources and eventually to favour entrepreneurial access to them (i.e., to enable effective entrepreneurial exploitation of SC resources). Specifically, we hold that this process of transforming relationships into resources occurs through two different mechanisms: (1) the *resource mechanism*, which enriches SC resources with abundant and varied resources, and (2) the *exchange mechanism*, which facilitates a more fluid exchange of resources among network members. The resource mechanism is based on network size and diversity and provides quantity and variety of SC resources, while the exchange mechanism is based on the network's cohesion and relational quality and provides the necessary interchangeability of these resources.

Both mechanisms work in tandem to enrich SC resources (as an internal dimension of social capital and an immediate result of the mechanisms), which should ultimately be reflected in greater and easier access to SC resources for entrepreneurs (as a final result and external expression of the mechanisms). Quantity, variety and interchangeability of SC resources thus mediate the relations between network characteristics and SC resource exploitation. It must, however, be made clear from the outset that we skip the intermediate step (i.e., the enrichment of SC resource features) in our empirical study and directly analyse the external effects of the two mechanisms on the degree to which entrepreneurs exploit their networks and extract useful resources for their business activities (i.e., SC resource exploitation) from them. In other words, we examine the actual contribution networks make towards improving entrepreneurs' resource endowment.

Furthermore, when considering the relationship networks which generate SC resources, a comprehensive approach encompassing all the relationship networks (both professional and personal) should be taken into account in the case of small-scale local entrepreneurs (Hernández-Carrión et al., 2017). In this line, we propose that the differing nature of personal and professional networks means that each type of mechanism does not prove equally advantageous in the two kinds of networks. Thus, as the third and perhaps most original contribution, our investigation examines whether the efficacy of each mechanism depends on the type of network. In order to provide the entrepreneur with valuable resources, we maintain that the effective exploitation of personal networks is more dependent on the correct functioning of the resource mechanism, whereas the effective exploitation of professional networks depends to a larger degree on the correct functioning of the exchange mechanism. In other words, size and diversity will be decisive factors when exploiting personal networks for accessing SC resources, just as cohesion and relational quality will be so when exploiting professional networks.

To achieve these goals, the paper proceeds as follows. In the next section, we develop the conceptual framework and present our theoretical proposal. This then leads us to establish the hypotheses and specify the empirical model in the third section. The fourth section is devoted to explaining the empirical analysis and its results. Finally, we discuss the conclusions, implications, and limitations of the study in the fifth section.

## Conceptual bases

### The starting point: the dimensional view of social capital

Social capital is a concept developed or adopted by a number of distinct social sciences (Adler and Kwon, 2002; Batt, 2008; Partanen et al., 2008). Consequently, it is commonplace to encounter disagreement among authors as to what social capital actually is and what it is not (more specifically, what it is, what causes it, and what its consequences are), what its analysis unit is (the individual, the group, or society), what variables (as trust or resources exchange) are antecedents, consequences or social capital itself (Gedajlovic et al., 2013), and how it should be measured (Chetty and Agndal, 2007; Narayan and Cassidy, 2001; Woolcock, 1998).

Faced with a wide range of conceptualisations, the present work assumes that social capital comprises both the networks of relationships and the resources found and available in these networks (Batjargal, 2003; Nahapiet and Ghoshal, 1998). We feel this definition to be particularly pertinent since it embraces the notions of relationships, networks and resources, and considers relationship networks as social capital's framework and analysis unit. Moreover, this conceptualisation not only explains the defining elements of social capital (networks and resources) but also posits an approach for elucidating the internal functioning and the evaluation of social capital: relationship networks are valued according to how much they contain resources and provide means to access valuable resources.

The intrinsically multidimensional nature of social capital makes it a construct whose value may not be measured directly (Flap, 2002; Sabatini, 2009), but rather through its underlying dimensions (Koka and Prescott, 2002). Nahapiet and Ghoshal (1998) distinguish three dimensions: structural (ties and relationship configurations), relational (trust, reciprocity, and norms), and cognitive (shared values). Yet, as other authors point out (Adler and Kwon, 2002; Batjargal, 2003; Butler and Purchase, 2008; Galán and Castro, 2004), it would seem more appropriate to describe relationship networks and the resources contained therein, separately. Thus, Gedajlovic et al. (2013) distinguish between sources and resources of social capital. In this line, the current study considers network resources as a fourth dimension of social capital (SC resources) and holds that a network's structural, cognitive and relational characteristics (social capital's structural, cognitive and relational dimensions) are sources of SC resources.

Social capital's structural dimension refers to the structure or general fabric of an individual's or firm's networks of relationships (Batjargal, 2003; Burt, 2000; Butler and Purchase, 2008; Nahapiet and Ghoshal, 1998; Partanen et al., 2008; Tsai and Ghoshal, 1998). Structural social capital may be characterised by the size of the network (Burt, 2000; Flap, 2002; Greve, 1995) and by its cohesion and diversity (Galán and Castro, 2004). *Size* is measured by the number of individuals that make up a relationship network (Burt, 2000; Flap, 2002; Greve, 1995; Stone and Hughes, 2002). *Diversity* is seen as the network's heterogeneity (Stone and Hughes, 2002) and is perceived as the degree to which the relationship network embraces different individuals or those from a variety of groups. *Cohesion* reflects the extent to which a network's members are directly linked to one another (density) and are able to act as a group (Burt, 2000; Coleman, 1988; Galán and Castro, 2004; Stone and Hughes, 2002).

The cognitive dimension reflects the existence of a language and symbols, a history, and codes of conduct shared by a group of individuals, enabling them to recognise one another and act as a group (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998). However, as certain authors propose, the existence of socialisation mechanisms (e.g., homogeneity, sense of belonging or identification with the group) are not components of cognitive social capital, but a source of closure (Burt, 2000; Coleman, 1988) or antecedents of relational social capital (Chen and Chao, 2006; Cousins et al., 2006). Therefore, cognitive social capital might be regarded as a form of cohesion, such that we consider cognitive social capital (in terms of members' identification with the group) to be a further indicator of a network's level of cohesion.

The relational dimension of social capital embraces the features of relationships amongst the individuals in a network, in other words, the rules and principles governing the relational behaviour of those the network comprises. To describe relational social capital, the literature has focused on variables such as trust or cooperation (Batt and Purchase, 2004; Chetty and Agndal, 2007; Cousins et al., 2006; Galán and Castro, 2004; Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998), although other variables can also help to improve how the quality of relationships between network members is measured (Butler and Purchase, 2008; Cousins et al., 2006; Ojasalo, 2004; Partanen et al., 2008; Sasi and Arenius, 2008; Theingi et al., 2008). In particular, relationship marketing provides a more accurate and comprehensive description of the network's *relational quality* based on relational principles (Morgan and Hunt, 1994) of trust, mutual respect, commitment, and reciprocity, two-way fluid communication, as well as cooperation and functional conflict resolution (Camarero et al., 2008). The first column of the table presented in the Appendix graphically illustrates the meaning of all these structural and relational variables.

Finally, the SC resource dimension refers to the resources located in and accessible through a given network (Batjargal, 2003; Coleman, 1988; Van Der Gaag and Snijders, 2005). From our perspective, SC resources not only reflect the quantity and variety of resources, but also

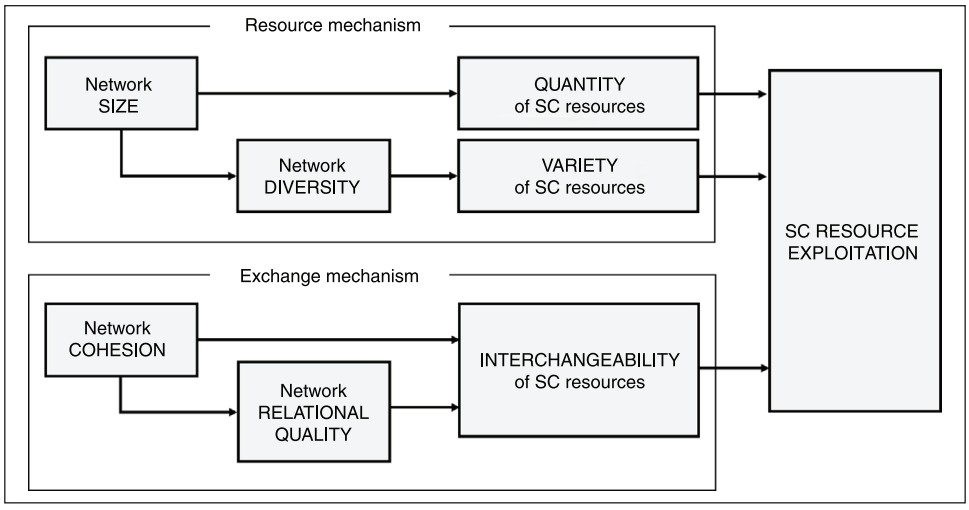


**Figure 1.** Theoretical proposal: the internal mechanisms of social capital.

their interchangeability between network members (as a pre-requisite to accessing available resources). Thus, quantity, variety and interchangeability of the resources located in a network are the key elements of SC resources and, in turn, the determinants of the extent to which individuals may extract useful resources from their relationship networks.

## *Towards a mechanistic view of social capital*

In addition to the already mentioned differences in criteria vis-à-vis the notion and dimensions of social capital, there is also a lack of consensus concerning how networks contribute to enriching SC resources (Burt, 2000) and to facilitating effective access to these resources. Consequently, there is a need to explore the effect each feature of entrepreneurs' networks has on exploiting the embedded resources.

To overcome some of limitations of the social capital dimensional approach and to improve the explanation of the enrichment and exploitation process of SC resources, we adopt a more functioning-oriented view. On this basis, the present work focuses on what might be termed the *internal functioning mechanisms of social capital*, in reference to the mechanisms involved in transforming relationships into resources. This shift in approach requires reorganizing the features that characterise the structural and relational dimensions of social capital in order to specify the elements of its functioning mechanisms. Conceptually, the size, diversity, cohesion and relational quality of a network cease to be regarded as structural and relational characteristics of social capital and are now considered as components that form part of two different mechanisms:

- The *resource mechanism*, whose basic components are the size and diversity of the network and which determines the quantity and variety of available resources.
- The *exchange mechanism*, whose basic components are the cohesion and relational quality of the network and which determines the interchangeability of said resources.

Among other benefits, such a notion of mechanisms helps to overcome the classical conflict between diversity (related to weak ties) and cohesion (related to strong ties), which will no longer be seen as the opposing poles of a network's structural dimension (Newell et al., 2004) but rather as components that form part of two different, yet at the same time, complementary mechanisms.

Both resource and exchange mechanisms contribute to enrich SC resources in terms of their quantity, variety and interchangeability, and eventually determine entrepreneurs' actual access to embedded network resources, i.e., *SC resource exploitation*. This theoretical proposal is shown in Fig. 1. Nevertheless, since SC resource richness is extremely difficult to assess, as stated above, when formulating and empirically testing hypotheses we do not explicitly consider the immediate effects of mechanisms on SC resources, but rather their external manifestation in terms of effective exploitation of SC resources. With regard to this issue, it is important to underscore that the main aspect of SC resources is not their mere existence, but the fact that they may be accessed and mobilised in purposive actions (Lin, 1999). Bearing this in mind, we assume that the two mechanisms are operating correctly when a network's size, diversity, cohesion and relational quality determine the extent to which the entrepreneur accesses abundant and varied resources through such a network. Therefore, effective SC resource exploitation (i.e., the quantity and variety of SC resources the entrepreneur has actually obtained) will provide evidence of the

existence of such mechanisms and will also serve as a reliable indicator of how successful they are.

### Network types and social capital

By belonging to diverse social groups and relationship networks, individual entrepreneurs can use and exploit both personal as well as professional networks. In their dual role as both business owners and managers, in other words, given the lack of agency problems or separation between ownership and control, small-scale local entrepreneurs benefit from placing each and every one of their personal and professional relationship networks at their firms' disposal (Gedajlovic and Carney, 2010; Hernández-Carrión et al., 2017; Stam et al., 2014), which is not necessarily true in the case of board members who are not involved in their firms' ownership structures (Acquaah, 2007; Burt, 2004; Gedajlovic and Carney, 2010; Rejeb-Khachlouf et al., 2011).

The literature has linked different relationship networks to different types of social capital. Indeed, when exploring an individual's relationships with his/her environment, the literature distinguishes between two kinds of social capital (Adler and Kwon, 2002; Chetty and Agndal, 2007; Davidsson and Honig, 2003; Putnam, 2000): bonding social capital (a close-knit network, based on strong ties and containing relatively homogeneous resources) and bridging social capital (not very dense but diverse network, based on weak ties and containing more heterogeneous resources). Bonding social capital refers to normally symmetrical relationships between people in a group who know each other well (i.e., family members and close friends). Such networks are associated with strong ties, cohesiveness, trust, collective goals, and reciprocity, which facilitate the exchange of resources between group members (Davidsson and Honig, 2003). Bridging social capital, a concept closely related to the notions of weak ties (Burt, 2000; Granovetter, 1973) and structural holes (Burt, 2000, 2004), refers to ties that shape more diverse groups of people who have different backgrounds, such as professional networks (Davidsson and Honig, 2003). As these networks are more diverse, they can provide their members with more varied resources (Adler and Kwon, 2002).

Since an entrepreneur's personal and professional networks differ in terms of their nature as well as structural and relational characteristics (Butler and Purchase, 2008; Huggins, 2010; Stone and Hughes, 2002; Woolcock, 2001), they are not likely to be equally conducive to SC resources (Hernández-Carrión et al., 2017). Likewise, each type of mechanism is not likely to prove equally advantageous in the two kinds of network. Accordingly, it seems appropriate to analyse the relevance and external efficacy of social capital's functioning mechanisms separately for each network type.

## Hypotheses development

### The resource mechanism: network size and diversity

The resource mechanism is the social capital mechanism responsible for providing resources (only in terms of their quantity and variety). As mentioned earlier, we propose two features of a relationship network that act as components of the social capital's resource mechanism: size and diversity.

As regards size, it would seem reasonable to assume that, ceteris paribus, the bigger an individual's relationship network, the larger the number of relationships with other individuals, organisations and groups possessing resources and, hence, the larger the amount of potential resources available to the individual. In this sense, we maintain that network size determines the quantitative component of SC resources and, therefore, the amount of resources the entrepreneur can obtain. As the literature has already evidenced in a number of areas, a firm's capacity to access strategic resources increases with the size of its managers' personal and professional networks (Peng et al., 2005; Westerlund and Svahn, 2008). This positive link between network size and the potential to access strategic resources proves particularly relevant in the case of innovation capacities (Capaldo, 2007) and commercial capacities for tackling new markets (Coviello and Munro, 1995; Lee, 2007). In the domain of entrepreneurship, it can be seen how the size of the personal and professional networks of the individual entrepreneur and of the firm's founding members has a positive impact on the level of access to the resources required to set up the business (Chetty and Wilson, 2003; Greve, 1995; Jack and Anderson, 2002; Sasi and Arenius, 2008) and gain entry into new markets that are characterised by major uncertainty, such as transition economies (Batjargal, 2003; Björkman and Kock, 1995). Therefore, we propose the following hypothesis in reference to the total effect of network size:

> **H1.** The size of a local entrepreneur's relationship network favours the entrepreneur's effective exploitation of SC resources.

With regard to the second component of the resource mechanism, it is clear that network diversity enriches SC resources, at least in terms of their variety. A broader network would provide the entrepreneur with more valuable resources since it affords a wider range of diverse relationships.

The literature has evidenced the positive effect of network diversity on individuals' access to resources and capabilities, ideas and opportunities. It has been shown that managers and workers who have more varied professional connections obtain more economic resources and develop a

greater capacity to generate new ideas (Brass, 1984; Burt, 2004; Sabatini, 2009). This positive effect of diversity is also observed in networks that contain structural holes (Granovetter, 1973), which serve as bridges between individuals who would not otherwise be linked, principally because they belong to different unconnected groups. In an industrial network, firms occupying structural holes (i.e. those with a greater range of contacts with diverse firms and institutions) achieve better performance since they are able to enhance their resources and capacities to innovate (Batt and Purchase, 2004; Capaldo, 2007; Lee, 2007), their capacities for team work (Auh and Menguc, 2005; Nahapiet and Ghoshal, 1998), their organisational capacities (Koka and Prescott, 2002), and their commercial capacities (Sasi and Arenius, 2008). An individual occupying this privileged position is better connected and has direct access to more unusual resources (Burt, 2004), although the remaining members of the network will also benefit from the structural hole, since through it they may also access varied resources. There is also evidence to show that the diverse networks enable entrepreneurs to access key resources which allow them to start up their business (Batjargal, 2003, 2007; Greve, 1995) or internationalise their firm successfully (Sasi and Arenius, 2008). Specifically, in local environments, entrepreneurs with greater innovation capabilities are those who maintain contacts with individuals outside the area in which their business is located (Kalantaridis and Bika, 2006).

It may also be argued that a network's size and diversity are related. Indeed, it seems logical to expect diversity to be more commonplace in larger networks: the larger the network, the greater the number of individuals and groups it comprises and thus the greater also the likelihood that it will contain diverse individuals and groups (Greve, 1995). Likewise, these different individuals and groups will in turn possess equally different and, therefore, more valuable resources. For example, Burt (2000) observes how large networks lead to the appearance of structural holes that bring about diversity.

As a result of this, we hold that larger networks (particularly those containing structural holes) tend to be more diverse, and that the greater diversity of a network leads to a greater variety of SC resources, which should be reflected in an increased contribution by the network to the entrepreneur's resource endowment. Network size benefits the variety of resources that entrepreneurs have access to when a larger network entails a wider range of individuals and groups, that is, when a network's size increases its diversity. To sum up, we propose that the relationship suggested in hypothesis H1 is also mediated, either partially or fully, by diversity:

**H2.** The diversity of a local entrepreneur's relationship network mediates the effect of network size on the entrepreneur's effective exploitation of SC resources, insofar as the network's size favours its diversity (H2a) and, in turn, network diversity promotes the effective exploitation of SC resources (H2b).

### *The exchange mechanism: network cohesion and relational quality*

While the resource mechanism shapes the quantity and variety of the resources that may be accessed through a network, the exchange mechanism determines network members' will to interchange them (sell them, transfer them, loan them, or share them). In this sense, the exchange mechanism is responsible for providing interchangeability. Two other features of a relationship network are that they act as components of the social capital's exchange mechanism: cohesion and relational quality.

Network's cohesion facilitates interpersonal contacts, favours exchange and thus promotes individuals' effective access to the resources available in the network (Burt, 2000, 2004; Granovetter, 1973). In Burt's view (2000), closely-knit networks encourage group action and interchange of resources within the group.

This positive effect of cohesion on access to resources has been evidenced empirically in the domain of labour relations, in the case of employees (Brass, 1984), managers (Björkman and Kock, 1995) and work teams (Nahapiet and Ghoshal, 1998; Tsai and Ghoshal, 1998), and in the sphere of industrial networks and strategic alliances (Andersson et al., 2007; Batt and Purchase, 2004; Chetty and Wilson, 2003; Coviello and Munro, 1995; Koka and Prescott, 2002; Sasi and Arenius, 2008). The presence of closely-knit and unified networks in a given area has been linked to greater levels of socio-economic development (Landman, 2004) and competitive skills of the local firms (Sabatini, 2009; Walker et al., 1997). Finally, with regard to our study context, the empirical literature has shown that entrepreneurs and small businesses tend to rely more on cohesive networks for access to the resources required to undertake their activities (Batjargal, 2003, 2007; Batjargal and Liu, 2004; Björkman and Kock, 1995; Chetty and Wilson, 2003; Jack and Anderson, 2002; Partanen et al., 2008; Prashahtham, 2011).

Thus, we formulate the following hypothesis in reference to the total effect of network cohesion:

**H3.** The cohesion of a local entrepreneur's relationship network favours the entrepreneur's effective exploitation of SC resources.

With regard to relational quality, social capital literature maintains that the variables defining relational social capital (mutual respect, trust, common goals, cooperation, or functional conflict resolution) have two positive effects:

they facilitate collective action (Putnam et al., 1993; Coleman, 1988) and encourage the flow and interchange of resources amongst network members (Burt, 2000; Capaldo, 2007; Granovetter, 1985; Lin, 1999). While size and diversity determine the quantity and variety of social capital resources, the network's relational quality oils the machine that makes it possible for these resources to flow smoothly through each relation (Butler and Purchase, 2008). This positive effect of a network's relational quality on the interchange of resources has been borne out empirically in the area of industrial networks (Batt and Purchase, 2004; Butler and Purchase, 2008; Capaldo, 2007; Kale et al., 2000; Koka and Prescott, 2002; Saxenian, 1994) and, more specifically, in the case of entrepreneurship and SMEs (Batjargal, 2007; Batjargal and Liu, 2004; Cuevas-Rodríguez et al., 2014; Liao and Welsch, 2003; Partanen et al., 2008; Sasi and Arenius, 2008; Theingi et al., 2008).

Yet, relational quality does not emerge spontaneously. Rather, we consider it is, at least in part, an expression or consequence of network cohesion. In fact, cohesion holds a network together, facilitating contacts and flow of information amongst network members, thereby engendering an improved relational climate in key areas such as mutual trust, commitment, and reciprocity (Butler and Purchase, 2008; Newell et al., 2004). In doing so, by indirect route (through relational quality), cohesion may prove beneficial for accessing resources.

This indirect effect of cohesion is explained as a chained sequence of events (Burt, 2000; Coleman, 1988; Granovetter, 1985, 2005; Leitch et al., 2013; Liao and Welsch, 2003): (1) cohesion makes it possible for information concerning the (positive and negative) behaviour of the network members to flow fluently and quickly; (2) it encourages compliance with shared norms, discouraging opportunistic behaviour, and engenders a climate of trust; finally, (3) this general air of trust and absence of fear of opportunism fosters interchange of resources amongst network members.

This reasoning allows us to put forward the mediating effect (either total or partial) of a network's relational quality on the relationship suggested in hypothesis H3.

> **H4.** The relational quality of a local entrepreneur's relationship network mediates the effect of network cohesion on the entrepreneur's effective exploitation of SC resources, insofar as the network's cohesion favours its relational quality (H4a) and, in turn, the network's relational quality promotes the effective exploitation of SC resources (H4b).

### *The role of network type*

The social capital theory states that social relationships are embedded with economic relationships (Batjargal, 2003; Batt and Purchase, 2004; Granovetter, 1973, 1985; Nahapiet and Ghoshal, 1998; Theingi et al., 2008), particularly in the case of entrepreneurs (Coviello and Munro, 1995; Jack and Anderson, 2002) since, regardless of the social or business nature of such relationships, entrepreneurs may use all of them to secure resources for their firm. We thus considered two types of networks when exploring local entrepreneurs' social capital: *personal networks* (informal relations of a social nature which the individual maintains with family, friends, acquaintances, and neighbours) and *professional networks* (relations of a professional nature which the individual maintains, in a more formal context than the previous ones, with partners, suppliers, clients, work colleagues, and former classmates).

The specific characteristics of each network might mean that how SC resources are exploited is not the same for personal as it is for professional networks (Davidsson and Honig, 2003; Granovetter, 2005). In our case, the two internal mechanisms will not prove equally relevant and effective for the two networks.

Due to their nature, an entrepreneur's personal networks are generally based on strong ties and are considered to be a source of bonding social capital (Davidsson and Honig, 2003). They are typically more voluntary, symmetrical, informal, tightly-knit and relationally oriented thanprofessional networks, but do not tend to be endowed with industry-specific resources (Hernández-Carrión et al., 2017). As a result, entrepreneurs usually resort to personal contacts to obtain basic and generic resources, such as financial capital or low-qualified human and non-specialised commercial resources, apart from motivational and emotional support (Batjargal and Liu, 2004; Bosma et al., 2004). Since personal relationships are characterised by relational aspects such as mutual trust and reciprocity and are seen among individuals who share common characteristics and interests, the personal network exchange mechanism operates almost automatically, fluently and satisfactorily. In this context, the exchange mechanism affords no differentiation between entrepreneurs, and the resource mechanism (not so much the exchange mechanism) emerges as the main determinant of the SC resources' richness. Network size stands out as the key factor in the mechanism: one the one hand, a wide personal network will enable many (small) general contributions to be added, whilst on the other, size will offer diversity (see H2a) and will reduce the natural redundancy of the personal network.

By contrast, professional networks have been related to bridging social capital and ties that are normally less strong (Davidsson and Honig, 2003). They are not necessarily so closely knit and not so much governed by relational principles, but are less redundant and contain more specialised resources (Batjargal, 2003; Burt, 2004; Hernández-Carrión et al., 2017). In fact, these business networks are usually oriented towards acquiring business-related resources (Casson and Della Giusta, 2007). In this context, network diversity (and not so much size) plays a relevant role,

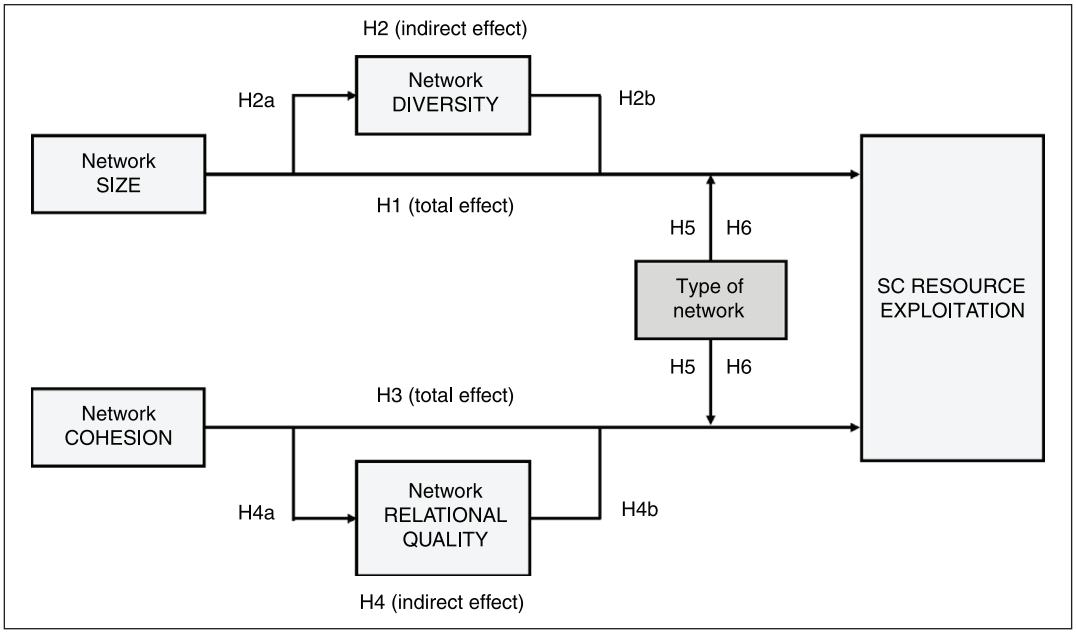


**Figure 2.** Empirical model and proposed hypotheses.

although the really critical elements are the network's cohesion and relational quality: entrepreneurs will not be able to gain easy access to the resources available in the network if the exchange mechanism does not function correctly. The first problem facing small entrepreneurs is clearly to construct their network of professional relationships (Dieleman and Sachs, 2008), although once these have been set up, the key issue is not so much the quantity and variety of available resources as the cohesion and relational quality of these networks (Batjargal, 2003; Davidsson and Honig, 2003; Granovetter, 2005). In this professional context, the resource mechanism does not amount to much (always as a differentiating factor) and the exchange mechanism that provides interchangeability stands out as the main explanatory factor for SC resource exploitation.

Taking all of this into account, it might be assumed that, when transforming entrepreneurs' relationships into valuable resources, the resource mechanism potential (approximated by the total effect of network size) will be greater in personal networks, while the exchange mechanism potential (approximated by the total effect of network cohesion) will be greater in professional networks. This sup-position leads us to posit our two final hypotheses, which correspond to a twofold comparison of effects: an inter-network comparison (H5) and an intra-network comparison (H6), respectively.

**H5.** The total effect of network size will be greater for personal networks than for professional networks (H5a), while the total effect of network cohesion will be greater for professional networks than for personal networks (H5b).

**H6.** For personal networks (H6a), the total effect of network size will be greater than the total effect of network cohesion. However, for professional networks (H6b), the total effect of network cohesion will be greater than the total effect of network size.

All these hypotheses are collected in the empirical model shown in Fig. 2.

## Empirical study

### *Sample selection and measurement variables*

The empirical study was conducted on a sample of small Spanish entrepreneurs. The requirements to form part of the sample were: (1) being both owner and manager of the business, and (2) the business employing no more than 50 workers. Judgement sampling, a procedure in which the researcher (or an expert) endeavours to select an appropriate sample for a study (Parasuraman et al., 2004), was carried out. We sought the cooperation of 92 local development agencies in 24 Spanish provinces, which sent the questionnaire to entrepreneurs in their areas. In our case, the expert selecting the sample was the head of the local development agency. Judgement sampling is deemed appropriate when the sample size is small and indeed it can provide better results than probabilistic sampling if the expert is very familiar with the population studied. The local development agencies were located in the regions of Aragón,

**Table 1.** Sample description.

| Area | % | Industry | % | Employees | % |
|---|---|---|---|---|---|
| Rural area | 62.6% | Manufacturing | 26.3% | 1 | 30.1% |
| Urban area | 27.4% | Commerce & Retailing | 27.6% | 2–4 | 41.9% |
| | | Tourism & Hospitality | 16.3% | 5–15 | 23.5% |
| | | Other services | 29.9% | More than 15 | 4.5% |

Asturias, Andalucía, Baleares, Canarias, Cantabria, Castilla La Mancha, Castilla y León, Cataluña, Madrid, País Vasco, and Comunidad Valenciana. After eliminating some incomplete questionnaires as well as those corresponding to firms with over 50 employees, a useful sample of 958 entrepreneurs was obtained. The sample description is shown in Table 1.

The questionnaire was divided into sub-sections, one for personal networks and the other for professional networks. Each section began with a description of personal and professional networks.

To measure the *network's size*, we used Stone and Hughes (2002) and asked about the number (count) of relatives, friends, and neighbours with whom they maintained monthly contact (for personal networks) and the number of people in the professional area with whom they maintained monthly contact (for professional networks). These data were transformed into a five-point scale (1: few contacts; 5: a large number of contacts) in line with 0–20%, 20–40%, 40–60%, 60–80%, and 80–100% percentiles.

*Cohesion* was measured with three items scored on five-point Likert scales. Items were based on the proposals of Narayan and Cassidy (2001), Stone and Hughes (2002) and Cousins et al. (2006). Since cohesion stems from several features of the relationship (density, strong ties, and identity), it was treated as a formative construct.

*Diversity* also was measured with three items scored on five-point Likert scales that combine the multi-item scale used by the Australian Institute of Family Studies (2001) with the proposals of Onyx and Bullen (2000) and Stone and Hughes (2002). Diversity may be educational, professional, or anthropological in origin, such that it was also measured as a formative construct.

To evaluate a *network's relational quality* (again on five-point Likert scales), we opted for the dimensions and indicators traditionally highlighted by relationship marketing literature, such as mutual respect, mutual trust, mutual help, cooperation and functional conflict resolution. Specifically, we used a reflective scale based on the items proposed by Kale et al. (2000) and Batt and Purchase (2004).

One widely accepted tool for measuring the social capital resource dimension is the Resource Generator (Van Der Gaag and Snijders, 2005). We adapted this tool to the business context and, using a list of resources suggested by several authors (Coviello and Cox, 2006; Greene et al., 1997; Yiu et al., 2005), focused our interest on resources which, in line with the resource-based view, generate competitive advantages for firms. On this basis, in order to measure *entrepreneurial exploitation of SC resources*, the dependent variable, we used a five-point scale to evaluate to what extent the entrepreneur obtained each type of resources from a given network: financial resources, technology and innovation capabilities, marketing resources, quality management capabilities, human resources, and organisational capabilities. The questionnaire included a brief description of what we understand each resource type to be. Since we measured six different categories of resources, we treated SC resource exploitation as a formative construct. This composite variable jointly, but not separately, reflects the quantity and variety of resources accessed. In fact, a high score on the formative variable indicates that the entrepreneur is accessing a large amount of the various SC resource categories.

Obviously, all the variables of the model (network's size, diversity, cohesion and relational quality, and the entrepreneur's exploitation of SC resources) are measured separately for personal and professional networks. The appendix provides precise details on the set of items used to measure each core variable, as well as regarding the original scales on which they are based.

Finally, we also included five control variables which might affect entrepreneurs' capacity to obtain resources in the market compared to their own networks (Xin and Pearce, 1996): the entrepreneur's gender, his/her level of experience (whether work, professional or entrepreneurial) within the sector (number of years), the business size (number of employees), the business location (rural vs. urban context), and the sector of business activity (manufacturing, commerce, tourism, and others services).

To assess the possible impact of common method variance, we performed Harman's single-factor test. Evidence for common method bias exists when a single factor emerges from the factor analysis or when one general factor accounts for the majority of covariance among the measures. Exploratory factor analysis with all the indicators gave four factors with an eigenvalue of over 1.0 (total variance explained = 57%), with a first factor explaining only 23% of variance. While we are unable to completely rule out the possibility that common method bias affected our findings, results from the mentioned test suggest the possible impact was minimal at most.

## Analysis and results

Due to the presence of multiple indicators of a formative nature in the model (all except the indicators of relational quality), the partial least squares (PLS) technique is recommended as opposed to conventional structural equations systems (Henseler et al., 2009). The model was estimated using the *SmartPLS 3.0* software (Ringle et al., 2005). Specifically, we used PLS multi-group analysis (Henseler et al., 2009) to compare personal and professional networks. A bootstrap resampling by substitution with replacement (500 subsamples) was made. Table 2 shows the formative-item weights and the reflective-item loadings of the corresponding constructs, as well as the significant differences of weights and loadings between networks. The reflective scale of relational quality exhibits reliability ($\rho_c > 0.8$; C.R. $> 0.8$; AVE $> 0.6$), just as convergent (standardised loadings $>0.7$) and discriminant validity (AVE exceeds the value of its squared correlation with the other variables, in line with Fornell and Larcker, 1981). As regards formative scales (network diversity, cohesion and SC resource exploitation), we calculated the VIF for each item of the formative constructs in order to ensure there was no multicollinearity. The correlation matrix and discriminant validity are shown in Table 3.

Comparing the effects and relationships between groups (networks, in our case) requires measurement model invariance. Since full metric invariance is highly unlikely (Steenkamp and Baumgartner, 1998), partial metric invariance is commonly admitted for meaningful group comparison. As can be seen in Table 2, configural invariance can be accepted, apart from one item of SC resource exploitation. As for metric invariance, it is achieved for most items, except for one item of diversity, two items of relational quality and one item of SC resource exploitation. Overall, these results provide evidence that we have sufficient group equivalence to make cross-group inferences.

Table 4 summarises the results of the estimation of the multi-group structural model for each network. In order to check hypotheses H1–H4, a one tailed *t*-test was used since all the foreseen effects are positive. In order to test H5 (inter-network comparison), we used the non-parametric significance test for the difference of group-specific results provided by SmartPLS. Finally, in order to test H6 (intra-network comparison), we analysed the confidence intervals of the total effects of size and cohesion within each network. Table 4 also shows the indirect and total effects.

Analysing the results for each dimension, first, we observe that network size favours the exploitation of SC resources by the entrepreneur, although its total effect on the dependent variable only proves significant in personal networks ($\beta_{pers} = 0.139$, $p < 0.01$). Thus, we are unable to accept hypothesis H1 in general terms. In contrast, the network diversity's mediating effect foreseen in H2 does prove significant for the two kinds of network. In fact, we observe a significant positive effect (H2a) of size on diversity ($\beta_{pers} = 0.204$, $p < 0.001$; $\beta_{prof} = 0.204$, $p < 0.001$), a significant positive effect (H2b) of diversity on resource exploitation ($\beta_{pers} = 0.118$, $p < 0.05$; $\beta_{prof} = 0.106$, $p < 0.05$) and a significant indirect effect (H2) of network size on SC resource exploitation through network diversity ($\beta_{pers} = 0.024$, $p < 0.05$; $\beta_{prof} = 0.022$, $p < 0.05$). This mediating role of diversity on the resource mechanism is partial in the case of personal networks. In the case of professional networks, the result is unclear and inconclusive. Although the significant indirect effect of network size through diversity would point to total mediation, the total effect of size is not statistically significant.

As for the exchange mechanism, network cohesion has a positive influence on effective SC resource exploitation. Since its total effect on the dependent variable proves significant for both network types ($\beta_{pers} = 0.096$, $p < 0.05$; $\beta_{prof} = 0.153$, $p < 0.01$), we can confirm hypothesis H3 in general terms. It should be emphasised that the corresponding direct effect of cohesion is only significant for professional networks ($\beta_{prof} = 0.097$, $p < 0.05$). Results clearly support hypothesis H4, since the effect (H4a) of cohesion on relational quality ($\beta_{pers} = 0.487$, $p < 0.001$; $\beta_{prof} = 0.324$, $p < 0.001$) and the latter's effect (H4b) on SC resource exploitation ($\beta_{pers} = 0.119$, $p < 0.01$; $\beta_{prof} = 0.173$, $p < 0.001$) are positive and significant for both types of networks. In addition, the indirect effect (H4) of network cohesion on access to SC resources through network relational quality is also positive and significant in both cases ($\beta_{pers} = 0.058$, $p < 0.051$; $\beta_{prof} = 0.056$, $p < 0.001$). In this second mechanism, the mediating role of a network's relational quality is total for personal networks and only partial for professional networks.

Comparing the total effects of network size and cohesion on SC resource exploitation for the two networks (see the final columns of Table 4) allows us to test hypothesis H5. On the one hand, the total effect of size is positive and significant in personal networks, but non-significant in professional networks. Moreover, the non-parametric test for the difference between personal and professional networks reveals that the total effect of size is significantly greater (i.e., the resource mechanism is more relevant) in the case of personal networks, as suggested in H5a. On the other hand, the total effect of cohesion on SC resource exploitation is positive and significant for both networks. However, although this cohesion effect is greater in professional networks, the difference is not statistically significant. We cannot accept that the exchange mechanism plays a more relevant role in the case of professional networks than in personal networks. We should therefore reject the hypothesis H5b.

Complementing the above, in order to offer additional information concerning the inter-network analysis of

**Table 2.** Items, descriptive statistics, weights, and loadings.

| Variable/items | Personal networks | | | | Professional networks | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Weights (*p*)/ loadings (*p*) | VIF/reliability | Mean | SD | Weights (*p*)/ loadings (*p*) | VIF/reliability |
| **Network size** | | | | | | | | |
| *S1: Number of contacts* | 3.14 | 1.02 | 1.000 | | 3.02 | 1.41 | 1.000 | |
| **Network diversity** | | | | | | | | |
| *D1: Socio-economic heterogeneity* | 4.05 | 0.97 | 0.336 (0.021)* | VIF = 1.207 | 3.97 | 0.98 | 0.674 (0.000)* | VIF = 1.108 |
| *D2: Cultural heterogeneity* | 2.96 | 1.38 | 0.726 (0.000) | VIF = 1.153 | 2.81 | 1.36 | 0.496 (0.000) | VIF = 1.058 |
| *D3: Diversity acceptance* | 4.14 | 0.94 | 0.221 (0.109) | VIF = 1.104 | 4.00 | 0.99 | 0.093 (0.788) | VIF = 1.085 |
| **Network cohesion** | | | | | | | | |
| *C1: Density of links* | 3.98 | 0.95 | 0.210 (0.025) | VIF = 1.575 | 3.43 | 1.04 | 0.027 (0.832) | VIF = 1.307 |
| *C2: Strength of the ties* | 3.77 | 0.97 | 0.487 (0.000) | VIF = 1.291 | 3.31 | 1.05 | 0.528 (0.000) | VIF = 1.109 |
| *C3: Identification with the group* | 3.75 | 1.06 | 0.526 (0.000) | VIF = 1.715 | 3.27 | 1.08 | 0.701 (0.000) | VIF = 1.284 |
| **Network relational quality** | | | | | | | | |
| *Q1: Mutual respect* | 4.21 | 0.79 | 0.738 (0.000)* | | 4.25 | 0.92 | 0.645 (0.000)* | |
| *Q2: Mutual trust* | 3.88 | 0.85 | 0.815 (0.000)* | $\alpha = 0.856$ | 3.63 | 0.99 | 0.767 (0.000)* | $\alpha = 0.817$ |
| *Q3: Mutual help* | 3.83 | 0.89 | 0.848 (0.000) | C.R. = 0.896 | 3.47 | 1.06 | 0.833 (0.000) | C.R. = 0.873 |
| *Q4: Cooperation* | 3.71 | 0.98 | 0.829 (0.000) | AVE = 0.635 | 3.45 | 1.10 | 0.820 (0.000) | AVE = 0.582 |
| *Q5: Functional conflict resolution* | 3.88 | 0.91 | 0.747 (0.000) | | 3.60 | 1.05 | 0.731 (0.000) | |
| **SC resource exploitation** | | | | | | | | |
| *Contribution made by the network to access resources and capabilities*: | | | | | | | | |
| R1: Quality management | 2.66 | 1.31 | 0.199 (0.226) | VIF = 2.011 | 3.73 | 1.14 | 0.204 (0.149) | VIF = 1.484 |
| R2: Commercial/marketing | 3.00 | 1.31 | 0.309 (0.066) | VIF = 1.550 | 3.69 | 1.13 | 0.018 (0.938) | VIF = 1.581 |
| R3: Financial | 2.61 | 1.34 | 0.348 (0.034) | VIF = 1.532 | 3.22 | 1.32 | 0.152 (0.367) | VIF = 1.450 |
| R4: Human | 3.02 | 1.29 | 0.060 (0.885) | VIF = 1.616 | 3.64 | 1.21 | 0.323 (0.106) | VIF = 1.449 |
| R5: Organization | 2.64 | 1.28 | 0.414 (0.024) | VIF = 2.057 | 3.59 | 1.20 | 0.299 (0.019) | VIF = 1.594 |
| R5: Technological/innovation | 2.43 | 1.27 | –0.179 (0.356)* | VIF = 1.620 | 3.36 | 1.25 | 0.387 (0.051)* | VIF = 1.556 |

*Significant differences between groups (networks) in weight and loadings ($p < 0.05$ or $p > 0.95$) according to the non-parametric significance test.

resource and exchange mechanisms, we calculated the confidence intervals of the total effects of size and cohesion on SC resource exploitation for both network types. These results are shown in Table 5 (by rows) and depicted in Fig. 3. In general, two estimates can be considered significantly different from each other when the corresponding 95% confidence intervals overlap by no more than 50% (Cumming and Finch, 2005). According to this rule, the magnitude of the total effect of cohesion does not differ significantly with the type of network, thus supporting the previous rejection of H5b. However, the total effect of size is significantly greater for personal networks than for professional networks, thus supporting the previous confirmation of H5a.

Table 5 (by columns) and Fig. 4 provide the information needed to test H6, that is, information concerning the different role played by resource and exchange mechanisms when exploiting each network type. This intra-network analysis indicates that the magnitude of the total effects of size and cohesion on SC resource exploitation does not differ in personal networks, leading us to reject H6a. Nevertheless, in professional networks, the total effect of cohesion on SC resource exploitation is significantly higher than the corresponding effect of size, thus allowing us to accept H6b. Therefore, we can now add that the exchange mechanism is more relevant than the resource mechanism in the case of professional networks, but that the resource mechanism is not more statistically relevant than the exchange mechanism in the case of personal networks.

Finally, as regards control variables, we found some significant effects on entrepreneurial exploitation of SC resources: the negative effect of business size in personal networks and the effect of the activity sector in professional networks. These results indicate that: (1) smaller firms access relatively more resources through their personal networks than larger firms do, and (2) entrepreneurs in the touristic and commercial sectors rely on professional networks less as a means of accessing resources than entrepreneurs in other services sector.

## Discussion

### Conclusions

In this research, we first attempt to improve the theoretical explanation concerning the formation, enrichment and

**Table 3.** Correlation matrix.[a]

| Personal network | Size | Diversity | Cohesion | Relational quality | Resource exploitation | Gender | Experience | Employees | Location | Manufacturing | Commerce |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | - | | | | | | | | | | |
| Diversity | 0.204 | - | | | | | | | | | |
| Cohesion | 0.126 | 0.245 | - | | | | | | | | |
| Relational quality | 0.126 | 0.315 | 0.487 | *0.796* | | | | | | | |
| Resource exploitation | 0.157 | 0.194 | 0.136 | 0.180 | - | | | | | | |
| Gender[b] | −0.053 | 0.077 | 0.034 | 0.066 | 0.077 | - | | | | | |
| Experience | 0.071 | −0.069 | 0.085 | 0.042 | −0.014 | −0.125 | - | | | | |
| Employees | 0.022 | −0.091 | 0.058 | −0.001 | −0.120 | −0.227 | 0.278 | - | | | |
| Location[c] | −0.110 | 0.111 | −0.043 | 0.066 | −0.050 | 0.032 | −0.097 | 0.061 | - | | |
| Manufacturing[d] | 0.043 | −0.091 | 0.087 | 0.017 | −0.003 | −0.302 | 0.184 | 0.299 | −0.212 | – | |
| Commerce[e] | 0.034 | 0.045 | 0.016 | 0.059 | −0.032 | 0.249 | 0.082 | −0.168 | 0.016 | −0.368 | – |
| Tourism[f] | −0.005 | 0.013 | −0.025 | −0.081 | 0.055 | 0.009 | −0.078 | −0.058 | −0.037 | −0.263 | −0.272 |
| **Professional network** | **Size** | **Diversity** | **Cohesion** | **Relational quality** | **Resource exploitation** | **Gender** | **Experience** | **Employees** | **Location** | **Manufacturing** | **Commerce** |
| Size | - | | | | | | | | | | |
| Diversity | 0.204 | - | | | | | | | | | |
| Cohesion | 0.023 | 0.165 | - | | | | | | | | |
| Relational quality | 0.001 | 0.237 | 0.324 | *0.763* | | | | | | | |
| Resource exploitation | 0.047 | 0.160 | 0.187 | 0.236 | - | | | | | | |
| Gender[b] | −0.08 | 10.012 | 0.041 | 0.055 | −0.062 | - | | | | | |
| Experience | 0.131 | −0.036 | 0.069 | −0.013 | 0.049 | −0.125 | - | | | | |
| Employees | 0.141 | −0.068 | 0.075 | −0.026 | 0.109 | −0.228 | 0.278 | | | | |
| Location[c] | 0.045 | 0.146 | 0.041 | 0.120 | 0.090 | 0.032 | −0.097 | 0.061 | | | |
| Manufacturing[d] | 0.004 | −0.117 | 0.043 | −0.006 | 0.091 | −0.302 | 0.184 | 0.299 | −0.212 | | |
| Commerce[e] | 0.044 | 0.028 | −0.032 | −0.008 | −0.145 | 0.249 | 0.082 | −0.168 | 0.016 | −0.368 | |
| Tourism[f] | 0.004 | 0.040 | −0.024 | −0.024 | −0.049 | 0.009 | −0.078 | −0.058 | −0.037 | −0.263 | −0.272 |

[a]On the diagonal (italics): square root of the AVE. Under the diagonal: correlation matrix.
[b]Entrepreneur's gender: Male (1)/Female (0).
[c]Firm's location: Rural (1)/Urban (0).
[d]Sector: Manufacturing (1)/Other services (0).
[e]Sector: Commerce (1)/Other services (0).
[f]Sector: Tourism (1)/Other services (0).

**Table 4.** Multi-group analysis: direct, indirect and total effects.

| | | Personal networks[a,b] | | | Professional networks[a,b] | | | Non-parametric test (*p*-value) for inter-network difference[c] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct effect | Indirect effect | Total effect | Direct effect | Indirect effect | Total effect | Direct effect | Indirect effect | Total effect |
| Resource mechanism | H1: Size → Resource exploitation | 0.115** | 0.024* | 0.139** | 0.012 | 0.022* | 0.034 | **0.036** | 0.445 | **0.029** |
| | H2a: Size → Diversity | 0.204*** | | | 0.204*** | | | 0.531 | | |
| | H2b: Diversity → Resource exploitation | 0.118* | | | 0.106* | | | 0.436 | | |
| Exchange mechanism | H3: Cohesion → Resource exploitation | 0.038 | 0.058** | 0.096* | 0.097* | 0.056*** | 0.153** | 0.791 | 0.468 | 0.798 |
| | H4a: Cohesion → Relational quality | 0.487*** | | | 0.324*** | | | **0.000** | | |
| | H4b: Relational quality → Resource exploitation | 0.119** | | | 0.173*** | | | 0.796 | | |
| Control variables | Gender → Resource exploitation | 0.057 | | | −0.020 | | | 0.109 | | |
| | Experience → Resource exploitation | 0.021 | | | 0.037 | | | 0.652 | | |
| | Business size → Resource exploitation | −0.120** | | | 0.058 | | | **0.993** | | |
| | Location → Resource exploitation | −0.040 | | | 0.047 | | | 0.946 | | |
| | Manufacturing → Resource exploitation | 0.028 | | | 0.000 | | | 0.311 | | |
| | Commerce → Resource exploitation | −0.061 | | | −0.153*** | | | 0.070 | | |
| | Tourism → Resource exploitation | 0.046 | | | −0.079* | | | **0.018** | | |

[a]Total effect is showed only when it is different from direct effect, that is, when indirect effect exists.
[b]$R^2$ coefficients for personal/professional networks: $R^2$ (Diversity) = 0.042/0.043; $R^2$ (Relational quality) = 0.239/0.108; $R^2$ (Resources' exploitation) = 0.113/0.137.
[c]A result is significant at the 5% probability of error level, if the *p*-value is smaller than 0.05 or larger than 0.95 for a certain difference of group-specific path coefficients (Henseleret al., 2009). Bold type indicates significant difference between personal and professional networks.
*$p < 0.05$.
**$p < 0.01$.
***$p < 0.001$.

**Table 5.** Confidence interval of the total effects.

| | Personal networks | | Professional networks | | Inter-network difference test |
|---|---|---|---|---|---|
| | CI Low | CI High | CI Low | CI High | |
| Size → Resource exploitation | 0.072 | 0.212 | −0.025 | 0.091 | (H5a) Significant |
| Cohesion → Resource exploitation | 0.026 | 0.179 | 0.078 | 0.248 | (H5b) Non-significant |
| Intra-network difference test | (H6a) Non-significant | | (H6b) Significant | | |

exploitation of entrepreneurs' social capital. In this line, as a theoretical contribution, our research (1) advocates adopting a more comprehensive view combining both network- and resource-focused approaches, and (2) shifts attention from the traditionally dominant dimension-based view to a more functioning-oriented view.

On these bases, we posit the existence of two internal functioning mechanisms of social capital which may explain ''why'', ''how'' and ''how much'' an entrepreneur's relationship networks contribute to enrich SC resources in three directions: quantity, variety and interchangeability. Our theoretical arguments focus on the idea that the process of transforming relationships into accessible resources acts through two different mechanisms: the resource mechanism and the exchange mechanism. The former describes the positive effects of a network's size and diversity. The second describes the positive effects of a network's cohesion and relational quality. The two mechanisms complement each other and help to enrich SC resources. However, we argue (although it has not been empirically tested) that each mechanism leads to a different internal result. The resource

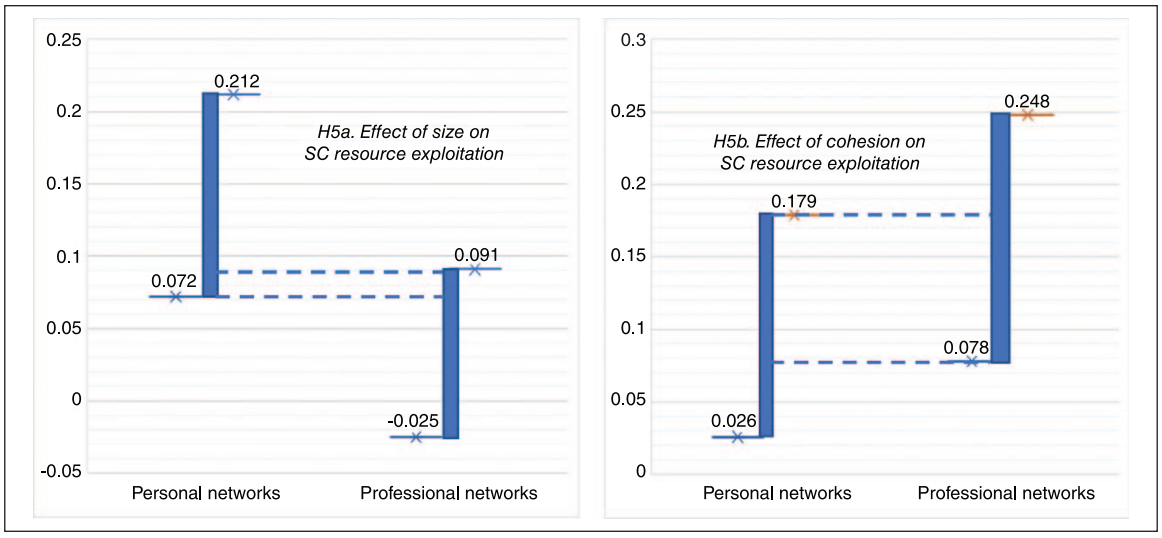


**Figure 3.** Test of H5 (inter-network difference).

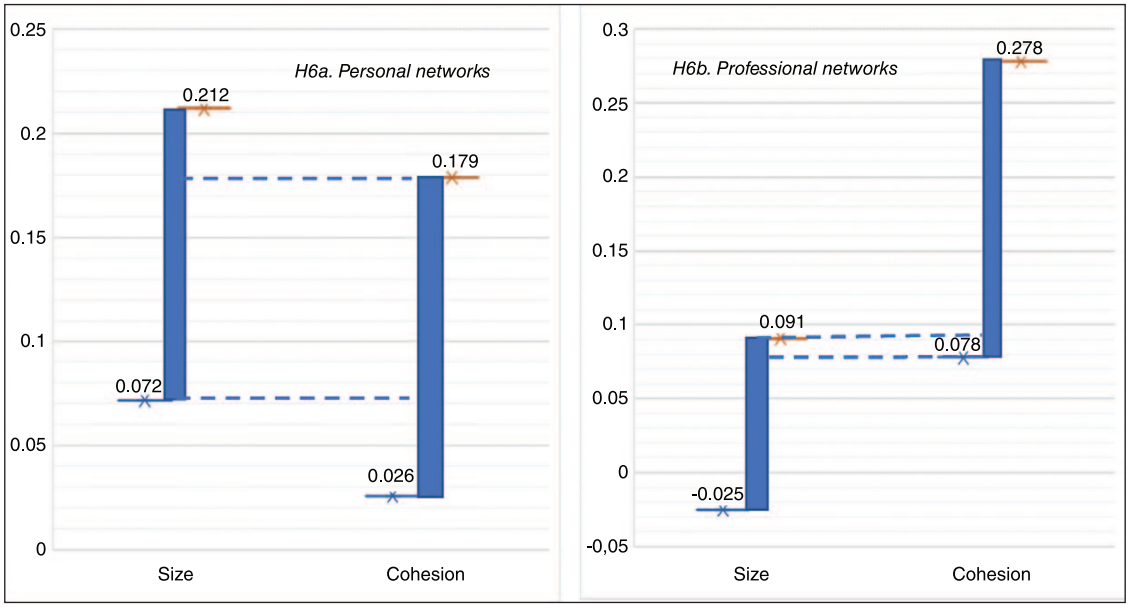


**Figure 4.** Test of H6 (intra-network difference).

mechanism affects the quantity and variety of SC resources: the wider and more diverse an entrepreneur's network is, the greater and more varied the SC resources the entrepreneur has access to. In contrast, the exchange mechanism influences the interchangeability of SC resources: the greater the network's cohesion and relational quality, the easier the interpersonal contact between the network members and the more fluid the resource interchange.

In the following points, empirical findings are discussed bearing in mind that our analysis does not consider the immediate effect of social capital mechanisms on SC resource enrichment (and certainly not on their quantity, variety and interchangeability), but the external effect of such mechanisms on effective access by entrepreneurs to SC resources, which we term SC resource exploitation.

As an initial conclusion, we can state that, to gain access to their business resources, entrepreneurs use both their professional and socio-personal relations. This bears out the importance of the notion of embeddedness (Granovetter, 1985; Jack and Anderson, 2002), according to which business relations and social relations prove relevant when accounting for entrepreneurs' access to the required resources. In fact, our work highlights the value of relationship networks as an asset endowing entrepreneurs with the capacity to access resources and capabilities which the literature deems to be strategic for their business: financial

resources, commercial resources, technological resources, resources for managing quality, human resources, and organisational resources. However, an unrelated sample *t*-test of the indicators of resources accessed by small entrepreneurs through their relationship networks reveals how the average entrepreneur makes greater use of professional networks, regardless of resource type, suggesting that the SC resources provided by professional networks are richer and more valuable than those provided by personal networks.

Secondly, and still in a descriptive line, the extent to which each type of network is used differs depending on the type of business in question. On the one hand, intra-network analysis shows that small entrepreneurs in the tourist and commercial sectors exploit professional network SC resources less than their counterparts in other services. However, no difference is evident regarding the extent to which personal network SC resources are exploited depending on the business sector. Additionally, inter-network comparison reveals that entrepreneurs in the (normally rural) tourist sector obtain more resources through personal than through professional networks. This different behaviour in the tourist (small hotels and restaurants) and commercial sectors could be due to the fact that these business activities are usually less professionalised and require less specialised resources than other services (consulting, education, veterinary, etc.) and manufacturing. Insofar as these low-qualified and non-specialised resources are easily available in personal networks, entrepreneurs in tourist and commercial sectors need not resort to their professional networks.

On the other hand, the size of the firm has a negative influence on entrepreneurs' access to strategic resources through their personal networks. This finding is consistent with the idea that personal relationship networks replace other sources of resources when firms are small (Xin and Pearce, 1996), particularly when these small firms are located in rural areas (2/3 of those in our sample). As the firm's size increase, so do the possibilities of securing resources through professional networks or on the open market, reducing the need to resort to personal networks.

Thirdly, in line with our resource mechanism argument, diversity has a direct positive effect on SC resource exploitation whatever the network in question, with its role being essentially qualitative in the sense that it provides access to non-redundant and therefore more valuable resources. Confirming this positive effect of diversity offers empirical support for the argument of Granovetter (1973) and Burt (2000) regarding structural holes. Moreover, in both types of networks, the effect of size on SC resource exploitation can be seen indirectly through diversity. In the indirect link between network size and SC resource exploitation, this mediating role of diversity (which is partial in personal networks) allows us to conceive diversity as the core of the resource mechanism. Indeed, network size has a direct effect on SC resource exploitation, which can only be seen in the case of personal networks but not in professional networks. The general nature of the resources which entrepreneurs tend to ask relatives, friends, and acquaintances to provide (such as financial resources and non-specialised cooperation) explains the need for a sufficiently wide although not so diverse personal network. On the contrary, the specific and specialised nature of the resources which entrepreneurs seek to obtain from their professional networks (such as R&D, technological, or quality management resources) likely means that having a wide network of contacts is not as important as having one which is sufficiently diverse.

Fourthly, as for the exchange mechanism argument, there is little point in having a rich and varied network if network members are not willing to share their resources. This is where a network's cohesion and relational orientation come into play, their role being to create an atmosphere of understanding, mutual trust and cooperation which proves vital if effective interchange is to take place.

According to our findings, the direct effect of cohesion on SC resource exploitation is only seen in professional networks. In the case of personal networks, the absence of this direct cohesion effect might be accounted for by the very nature of entrepreneurs' personal relationships, which are often close, intimate, governed by mutual understanding and evidence a genuine group feeling. Thus, personal network cohesion brings no differential competitive advantage in terms of SC resource access. However, as suggested by Granovetter (1985, 2005), network cohesion does have a clear indirect effect on SC resource exploitation in both types of networks, this indirect effect occurring through the mediation of relational quality. Although insufficient by themselves, dense and close-knit networks are therefore the ideal breeding ground where the relational spirit may flourish. This relational climate will in turn oil the mechanism facilitating interchange of SC resources between the parties involved. This is what we mean when we state that a network's relational quality is the core of the exchange mechanism.

To sum up the above-mentioned findings, contrary to the initial ideas of Granovetter (1973) concerning the pre-eminence of weak ties (associated to diversity) compared to strong ties (associated to cohesion and relational social capital) when accessing valuable resources, our findings suggest that strong ties (in the form of close-knit and highly relational oriented networks) also act as a means for generating, enriching and accessing SC resources. Diversity and cohesion are not, therefore, contrasting concepts, but rather key components of two different mechanisms (the resource mechanism in the first instance, and the exchange mechanism in the second) which explain how social capital works as a source of competitive advantage, as posited by authors such as Galán and Castro (2004) or Butler and Purchase (2008).

Lastly, a comparative two-pronged analysis of the two mechanisms for the two networks allows us to affirm that (1) when exploiting a professional network (intra-network analysis), the exchange mechanism is significantly more relevant than the resource mechanism, and (2) the resource mechanism (inter-network analysis) is significantly more determinant when exploiting personal networks than in the case of professional ones. Even if the remaining possible comparisons fail to show any other significant differences, we can infer that the resource mechanism (approximated by the role of network size) has a greater relative importance in exploiting personal relations, whereas the exchange mechanism (approximated by the role of network cohesion) has a greater relative importance in exploiting professional relations. All this seems reasonable when considering the different relational nature of personal and professional contacts.

As a general conclusion, the study carried out highlights the fact that the resource mechanism and the exchange mechanism are two well-differentiated internal functioning mechanisms of social capital, focusing respectively on a network's diversity and relational orientation, although embracing important contributions from size in personal networks and cohesion in professional networks. Both mechanisms are necessary and complement each other, and explain how the structural, cognitive and relational features (to use traditional terminology) of a relationship network can generate SC resources and favour their effective exploitation by the entrepreneur.

## *Managerial implications*

As regards managerial implications, it has been shown that entrepreneurs can use their networks of relations to obtain the strategic resources they require to conduct their business activity. Entrepreneurs should treat social capital as an intangible capital which is relational in origin, as a strategic asset that is the basis of other resources, and as a source of competitive advantage. Entrepreneurs who have large, diverse, and well-structured networks where relations are characterised by reciprocity, cooperation, trust and mutual respect and where conflicts are dealt with functionally, can benefit from such networks to gain access to these resources that will enable them to enhance their business performance. Entrepreneurs should thus be encouraged to invest both time and effort in widening, enriching, and bringing together all of their relationship networks and, more importantly, should be urged to take advantage of these to access resources. This final point is crucial, since social capital is the only form of capital which is not depleted with use but, on the contrary, increases (Hirschman, 1984; Kliksberg, 1999).

Personal networks prove particularly relevant in the case of microfirms. Hence, small local entrepreneurs must be aware of the need to integrate well into their community and increase their number of personal contacts as well as the frequency and intensity of their social relations, which may prove easier for rural entrepreneurs. Importantly, fostering diversity in such networks involves being open to including a range of different individuals and to seeking contacts beyond the immediate area. There is also the need to contribute, as far as possible, to generating the necessary relational climate in their new personal contacts, such that their wider and more diverse personal networks continue to be characterised by strong cohesion and a clear relational orientation, thus ensuring the exchange mechanism continues to operate.

The likelihood of entrepreneurs accessing SC resources through their professional networks increases as their business expands. As the firm grows and its presence in the sector spreads, entrepreneurs' professional networks gradually replace personal networks. In this case, entrepreneurs are urged to maintain and strengthen ties with partners, employees, suppliers, and clients as well as with other entrepreneurs. Joining professional associations and frequently attending trade fairs and sectorial meetings are excellent ways of expanding in terms of both size and diversity and of strengthening the cohesion and relational orientation of their professional networks. In fact, the positive effect of increasing the professional network's size and diversity will also be boosted if an additional effort is made to improve the functioning of these networks and to endow them with cohesion and a truly relational orientation. This additional effort will be crucial to activate the exchange mechanism.

Although it does not follow on directly from our work, we might say that in this process of enriching small-entrepreneurs' networks and SC resources, local development agency programmes that support entrepreneurship may play a vital role by: (1) promoting activities which expand and strengthen entrepreneurs' relationship networks, (2) filling the structural holes that link various entrepreneurs' networks, (3) acting as a bridge between entrepreneur and certain public as well as private stake-holders, such as universities and technology centres, and (4) fostering cohesion and a relational climate in the entrepreneurs' networks.

## *Limitations and further research*

The present study is not without its limitations, which also point the way to future lines of research. Firstly, although we have made it clear from the beginning, it must be stressed that we directly explained the degree to which entrepreneurs effectively exploit SC resources without going through the intermediate phase: enrichment of SC resources in terms of their quantity, variety and interchangeability. Features of SC resources have been used to argue and substantiate the hypothesised effects of SC mechanisms. Regrettably, however, it is not possible to state categorically that a network's size and diversity (as parts of a resource mechanism) really produce quantity and variety of SC resources, while the network's cohesion and relational quality (as components of an

exchange mechanism) are responsible for providing their interchangeability.

Secondly, we presented two different, yet at the same time, complementary internal functioning mechanisms of social capital. Nevertheless, they have been analysed as independent mechanisms. Further research is needed to evaluate possible cumulative effects derived from the interaction between the components of mechanisms.

Thirdly, the study was carried out on a varied sample of small entrepreneurs from a very wide range of business sectors. In our proposal, the business activity sector has been considered as a control variable affecting the dependent variable. Our *model* could be enriched by adding the possible moderating effect of the business sector on the two internal functioning mechanisms of social capital. A differential analysis by sectors would allow us to detail the extent to which each mechanism is relevant in each type of business.

Fourthly, although entrepreneur location does not affect the dependent variable, it might be shaping (1) the extent to which both rural and urban entrepreneurs, with different traditions and cultures (Rooks et al., 2016), use each network type and (2) the relevance and efficacy of each social capital mechanism. Future research should therefore consider the possibility of adding these moderating effects of an entrepreneur's location.

Fifth and finally, it would prove interesting to replicate the study for each type of resource separately (not in aggregate terms). This would provide insights into whether the efficacy of each SC mechanism varies depending on the type of resource considered.

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## Supplemental material

Supplemental Material for this article is available online.

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