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# **The role of social capital in territorial development: The case of a French post-industrial region**

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## **Title Page Information**

**Title:** The role of social capital in territorial development: The case of a French post-industrial region

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## **The role of social capital in territorial development: The case of a French post-industrial region**

### **Abstract**

This article analyses the role of social capital in territorial development by investigating the case of a post-industrial territory in France. We use semi-structured interviews with actors in the territory that are linked through a cluster network. The results are structured according to three dimensions of social capital (relational, cognitive and structural) and provide insights for policy makers and members of local business networks. Our study reveals micro-economic factors that lead to social capital formation in a specific territory and sheds light on the impact of social capital on territorial development.

### **Key words**

Territorial development; social capital; cluster; proximity; micro-economic; network

## INTRODUCTION

Spatial agglomerations of economic actors on a local or regional level have received considerable attention from academics (García-Lillo et al., 2018; Lazzeretti et al., 2014) but also practitioners including economic and political leaders (Ketels, 2013). Various approaches have been taken to the conceptualisation of spatial agglomerations: industrial districts (Becattini, 2002; Marshall, 2000[1890]), innovation systems (D’Allura et al., 2012), innovative milieus (Camagni, 1995; Crevoisier, 2004), regional systems (Buesa et al., 2006) and clusters (Porter, 1998). However, a new conceptual approach for analysing spatial agglomerations has recently emerged, namely territorial development (Torre, 2015, 2019).

The territorial development approach goes further than previous approaches by including territorial stakeholders other than actors of production and innovation and by paying special attention to cooperation and social construction processes, as well as land use and planning (Torre, 2019). Other concepts studying spatial agglomerations focus on economic actors; for example, the cluster concept focuses on ‘interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition’ (Porter, 1998, p. 78). The regional innovation system approach concentrates on administratively or politically defined geographical zones (Cooke et al., 1997) and their ‘subsystems that interact in an architecture to produce “outputs”’ (Komninaki, 2015, p. 333). Even if institutional actors are included in some approaches, this category barely extends further than political actors or local development agencies. The latter are usually considered as supporting organisations to production and innovation actors rather than fully-fledged members that may have their own objectives. Torre (2019) thus emphasises the need to address questions related to governance and different forms of proximity with regard to a great variety of economic, social and environmental actors within the context of spatial agglomerations and territorial development in addition to the production structures and innovation dynamics that are traditionally the focus of analysis.

One central question still under debate around spatial agglomerations and localised economies across various theoretical and conceptual perspectives (cluster, regional systems, etc.) concerns the

role of geographical (Rychen & Zimmermann, 2008; Torre, 2008) and other forms (Boschma, 2005) of proximity. Even though some research has looked at the nature of interorganisational linkages and their development in clusters (Gerke et al., 2018), there is still insufficient knowledge on possible antecedents of different types of proximity in interorganisational relationships and their potential benefits (Molina-Morales et al., 2013). Furthermore, while some research has been carried out on this question in the context of cluster governance (De Propris & Wei, 2007; Ebbekink, 2017), the role of local institutions remains limited to their support function for the innovation activities of productive actors (Molina-Morales & Martínez-Cháfer, 2013).

In this article, we intend to further the theory of territorial development by investigating the role of social capital in a specific territory. The social capital concept embodies various forms of proximity. It is ‘the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit’ (Nahapiet & Ghoshal, 1998, p. 243). If social capital is to have a heuristic value regarding territorial development, this value has to be grounded in strong empirical evidence. Hence, mechanisms through which social capital is created in a territory, as well as the way social capital then contributes to territorial development, require careful examination.

Empirical data presented in this paper relate to the case of a French post-industrial territory located in the Rhône-Alpes region, mainly around Saint-Etienne, Lyon, Grenoble and Annecy. This territory specialised in mining and textiles until the 1970s–1980s, a period in which it suffered a sharp and rapid economic decline. Since the early 2000s, however, it has benefited from the emergence of a new economic specialisation related to sports innovation. Relying on semi-structured interviews, we analyse various forms of social capital and their role in territorial development. Based on our review of extant research on spatial economic agglomerations, outlined above, and building on the emerging theory of territorial development, we address the following questions: (1) How does social capital develop in a specific territory, and (2) How does it contribute to territorial development?

This study first contributes to knowledge on territorial development by thoroughly examining three dimensions of social capital – relational, cognitive and structural (Nahapiet & Ghoshal, 1998; Westlund et al., 2014) – and the antecedents and externalities in the context of the territorial

development concept (Molina-Morales et al., 2013). The second contribution of this study is to highlight that the territorial development concept enables a deeper understanding of the micro-economics of local and regional development by considering a larger number of actors and the different dimensions of the relationships between them. We therefore emphasise the overarching nature of this concept, which proves able to encompass previously existing theories and models.

The next section presents a literature review on territorial development and social capital. We then present the methods employed for the empirical data collection in the third section. The fourth section summarises results, which are then discussed in the discussion section. The paper concludes with implications for research and practices and outlines limitations and avenues for future research.

## **LITERATURE REVIEW**

### **Territorial development theory**

While works on regional and local development have predominantly taken a macro perspective when analysing the development of spatial agglomerations of economic actors (Pike et al., 2017; Torre, 2019), the territorial development perspective aims to consider three micro-level aspects that the latter perspective neglects. First, it extends the scope of analysis beyond the productive actors and related institutions (Porter, 1998) to other territorial stakeholders, including local and territorial authorities, decentralised state services, associations, non-governmental organisations and others (Torre, 2019). Second, it takes into account not only purely economic and transactional relationships but other forms of cooperation and dimensions of the social construction process (Granovetter, 1985; Uzzi, 1997). Third, the theory of territorial development focuses the debate on the question of land use (Torre, 2019).

According to Sack (1986), the way human populations consider territories refers to ‘territoriality’, a concept which exceeds the basic geographical dimension. He defines territoriality as ‘a spatial strategy to affect, influence or control resources and people, by controlling area’ (Sack, 1986, pp. 1–2). The term *development* refers primarily to economic and technological advancement, according to Torre (2015, 2019). However, a wider definition includes the social, cultural and political dimensions of development (Perret, 2011). Consequently, more research is necessary on the

embeddedness of economic activities in local cultures and habits as well as on local political or organisational rules and the existence of a feeling of belonging to the territory and its economic, social and environmental structure (Molina-Morales et al., 2013).

Regional development mainly refers to top-down public policies targeting an institutional or a political geographical unit. Territorial development, in contrast, is more aligned with the way local actors themselves – within the economic field but also outside it (e.g., local authorities or development agencies, voluntary sector) – involve themselves in the promotion of the territory to which they belong. In this respect, territorial development should be analysed above all as a social construct whose governance involves a wide range of actors having various areas of expertise and seeking more or less reconcilable objectives (Ebbekink, 2017).

Consequently, the territorial development approach is built on the assumption that interpretations and implications of interorganisational relationships between actors located within a territory go beyond the notion of complementarity linked to production structures and organisational proximity facilitating innovation. Thus, the approach also includes informal relationships motivated by other forms of proximity (Callois & Aubert, 2007; Gerke et al., 2018; Molina-Morales et al., 2013). Previous research on territorial development has highlighted additional forms of proximity as crucial for innovation (Boschma, 2005; Torre & Rallet, 2005). Organised proximity, in particular, is a key notion in territorial development theory and encompasses different forms of relational proximity relying on belonging or similarity logics (Torre & Rallet, 2005). On this specific point, the forms of proximity identified by Boschma (2005) – organisational, social, cognitive and institutional – may be considered as components of organised proximity.

When qualifying the nature of relationships between local actors, cooperation turns out to be a central mechanism aiming at fostering territorial development, as it is a key factor for technological but also organisational, institutional (Hargrave & Van De Ven, 2006) or even social (Klein et al., 2014) innovation at the local scale. However, conflict also plays a central role, as it may compel local actors to come up with new and better ways of planning and carrying out their activities in order to overcome their divergences and benefit from their respective expertise. At the micro level, focusing on

cooperation and conflict requires consideration not only of the type and frequency of interactions but also the degree of trust between local actors (Torre, 2019).

In conclusion, interactions between local actors should be given special attention when considering territorial development, which definitely extends beyond economic and geographical aspects to encompass social and even environmental dimensions. Social capital, which accounts for the resources arising from participation in social relationships and networks, is an appropriate concept to rely on, as it encourages a more systematic examination of local interactions and sheds light on the way such interactions contribute to the production of local resources which are critical to territorial development.

### **The concept of social capital**

While much work on social capital exists, there are some major divergences in its foundational underpinnings. First, Bourdieu (1980) introduces the concept of social capital to describe one of three types of capital – economic, cultural and social – that an individual can mobilise to preserve interests or achieve goals (Meda, 2002). This approach to social capital suggests that social capital belongs to an individual or a group and relies on an accumulation process. However, Putnam (1993, 1995) establishes a different definition of social capital. In his view, social capital does not belong to an individual or a group, but may be attached to a larger community (e.g., a city). Social capital thus appears to be at the same time a private and a public attribute. This makes it difficult to measure and therefore to submit to a return on investment analysis.

Second, this concept accounts simultaneously for the nature of social capital (i.e., social relationships and networks) and the benefits individuals can derive from it (i.e., access to information, influence and control, and social solidarity) (Sandefur & Laumann, 1998). Consequently, one research stream around social capital mainly focuses on its externalities (Coleman, 1988; Sandefur & Laumann, 1998), while another concentrates on the nature of social capital itself (Nahapiet & Ghoshal, 1998).

Nahapiet and Ghoshal (1998) define social capital as all resources embedded within relationships possessed by individuals or social units. Hence, they include not only the structure of relationships that exist in a given unit of analysis but also the resources that are accessible through

these relationships. The rationale for this social capital theory is the social embeddedness of rational economic action, which may also be referred to as social proximity in Boschma's (2005) typology, and the positive and negative consequences that result from this embeddedness (Granovetter, 1985; Uzzi, 1996, 1997). Building on Granovetter's (1973) theory of strong and weak ties<sup>1</sup>, Putnam (1993, 1995) assumes that strong ties constitute the social glue that unifies individuals within a community and thus generate a sense of security (i.e., bonding). He considers weak ties as bridges that connect individuals belonging to separate communities and thus create new opportunities for them to access resources.

Nahapiet and Ghoshal (1998) distinguish three types of social capital: structural, relational and cognitive. These three dimensions have been reviewed by Westlund et al. (2014). We use these categories as our theoretical and analytical framework and define them as follows: (1) *relational* social capital refers to individual relationships that actors have developed with each other over the course of interactions (e.g., friendship, respect, trust) and that affect their behaviour; (2) *cognitive* social capital encompasses resources providing shared representations, interpretations and systems of meaning among actors (e.g., norms and values); and (3) *structural* social capital<sup>2</sup> may be associated with the overall pattern of connections between actors – thus, to whom an actor is connected and how (e.g., number and strength of ties).

In the next section, we review existing research on the role of social capital in territorial development and point out how our article contributes to this field of knowledge.

### **The role of social capital in territorial development theory research**

The concept of territorial development postulates that relationships between actors of territories cannot be reduced to market transactions (Angeon & Callois, 2006). Territories are constructed by a wide range of actors which stretches beyond the economic world. Therefore, their coordination is a central research question, and social capital, as a key concept in explaining the value of relationships, is a promising perspective to advance the territorial development theoretical framework.

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<sup>1</sup> Strong ties are links characterised by a high shared amount of time, emotional intensity, intimacy and reciprocal services. Weak ties are links outside the network of strong ties (Granovetter, 1973).

<sup>2</sup> The distinction between structural and relational dimensions is inspired by Granovetter (1992). Gulati (1995) also relies on such analytical subdivision.

If we link social capital to territorial development, we need to consider the role of space within spatial agglomerations. Seminal work on social capital and territorial development assumes that space is continuous and, hence, that social capital decreases with increasing spatial distance at a linear or exponential rate (Westlund & Larsson, 2016). However, further research has shown that there are different kinds of horizontal and vertical barriers (e.g., geographical, cultural, economic) that may inhibit the flow of social capital within space regardless of spatial proximity.

Human activities tend to concentrate in space, resulting in networks of flows of tangibles and intangibles. The networks occurring between both humans and organisations due to these activities embody social capital. Hence, territorial development as a form of spatial agglomeration is tightly linked to the phenomenon of social capital (Westlund & Larsson, 2016).

Various factors influence the creation of and possibility of seizing social capital in an agglomeration, principally the spatial distribution of people in a given space, the number of links between them and the quality, quantity and durability of resources available through those links. Furthermore, the cost of the interactions that lead to the generation of social capital needs to be lower than the perceived utility of such interactions and associated social capital (Westlund & Larsson, 2016). Due to technology, interaction costs have decreased radically over the last century, and social capital has become possible over larger distances. However, increasing distance leads to increased interaction cost and thus reduces the potential for social capital building (Westlund & Larsson, 2016).

Two positive externalities are usually mentioned in terms of how social capital fosters economic development. First, social capital improves information collection and circulation. Second, it strengthens forms of collective action that lead to common actions or knowledge sharing (Angeon & Callois, 2006). In addition, Callois and Aubert (2007) highlight that both local cohesion ('bonding') and external links ('bridging') are critical to explaining the impact of social capital on economic performance and development (see Granovetter (1985)). However, positive externalities are neither mechanical nor guaranteed. Excess trust or diversity within a territory may lead to negative externalities as (1) failures may arise from an excess of mutual trust, and (2) too high a diversity of actors increases the need for coordination to overcome antagonism between local members. Particular attention should also be devoted to the equilibrium between internal ('bonds') and external ('bridges')

links in order to prevent lock-in effects or, at the other end of the spectrum, a lack of local cooperation (Westlund & Larsson, 2016).

Regarding the above research, our study focuses on a French post-industrial territory located in the Rhône-Alpes region. Relying on the typology of social capital established by Nahapiet and Ghoshal (1998) and revised by Westlund et al. (2014), who distinguish relational, cognitive and structural social capital, the purpose of our study is to 1) uncover how social capital develops in individuals' and organisations' relationships and networks located in a specific territory and 2) analyse the role of social capital for territorial development.

## **METHODS**

This research aims at understanding a social phenomenon in a real-life context. Qualitative research methods, especially single case study research designs (Yin, 2018), are suitable in this case as they are designed to study humans as social actors and their behaviours (Saunders & Lewis, 2018). Our main data source is interviews, which not only allow us to investigate interviewees' practices and relational behaviours but also enable a comprehensive perspective (Weber, 1978 [1922]) of the particular sense they give to such practices and behaviours, thus enhancing our understanding of the studied case.

### **Data collection**

We purposefully created a sample from within a French post-industrial territory, located in the Rhône-Alpes region, mainly around Saint-Etienne, Lyon, Grenoble and Annecy, to understand how various actors socially construct their territory through relationships and social capital.

This territory specialised in mining and textiles until the 1970s–1980s, a period in which these industries suffered a sharp and rapid economic decline in France. Since the early 2000s, however, the territory has benefited from the emergence of a new economic specialisation related to sports innovation. A formalised cluster governing body on sports innovation named Sporaltec was created in 2005 but merged with another cluster (Outdoor Sports Valley) in 2018.

One might therefore have expected economic activity and innovation to develop within these clusters, with the assistance of their formalised governing body. However, many of the interviewees are not (or not yet, or no longer) members of the clusters. Moreover, the territory's borders extend

beyond these clusters, do not correspond to any administrative definition and are not subject to historical determinism. Cities such as Lyon (a rich city historically specialised in the silk industry) and Saint-Etienne (a former mining region) long embodied two separate and opposing territories (clues to these strong rivalries still remain, for instance in sport competitions). This case thus requires an understanding of how sports innovation actors – whether or not they belong to the cluster – managed to define themselves as legitimate members of a single territory specialising in sports innovation, sweeping away old political and cultural rivalries. Territorial development therefore appears more relevant than cluster or regional development theoretical frameworks, as this concept focuses on the way local actors take possession of the territory, regardless of administrative considerations. It pays specific attention to the coordination mechanisms of local actors. Even though some of these actors have production relations, they are likely to show cognitive and relational capital due to their social and cultural embeddedness in the local territory. Hence, this empirical context fits our research objective of exploring social capital in an agglomeration to better understand territorial development theory.

The data collection comprises interviews, observations and secondary data. We interviewed 19 firms, of which ten were members of the formal cluster and nine used to be members, were considering membership or were in the process of becoming members. We also interviewed the cluster governing body itself. In total, we interviewed 20 individuals. On average, the interviews lasted 53 minutes, and they were conducted face-to-face, through video calls or by phone. Table 1 provides details of the interview data set.

----- Insert Table 1 -----

Secondary data were collected and observations were conducted at the General Assembly of the cluster governing body during a full day. Regular informal exchanges with staff from the cluster governing body, as well as website extracts, online articles and paper brochures collected on site, completed the data collection.

## **Data analysis**

A professional transcriber transcribed the interviews. We illustrate the entire data analysis process step-by-step in Figure 1. First, we imported the transcripts into Nvivo, Version 10, which we used for our data analysis. The first coding round used the general theme of interorganisational linkages and networks (Babiak, 2007; Gerke et al., 2018) using pre-defined themes (see Table 2) for a deductive coding strategy (Emory & Cooper, 1991). This step reduced the data set to 108 pages of transcripts, which served as the basis for the second coding round. Both researchers analysed the reduced data set with an open coding approach (Strauss & Corbin, 1990), moving between theory and data and, hence, employing an abductive data coding approach looking for clues on social capital and territorial development and links between the two concepts (Dubois & Gadde, 2002). Then, the two researchers discussed their results with regard to the three social capital dimensions: relational, cognitive and structural (Nahapiet & Ghoshal, 1998).

----- Insert Figure 1 -----

----- Insert Table 2 -----

## **RESULTS**

In the following sections, we present data that show first, how different forms of social capital emerge in a territory and second, how social capital impacts territorial development. We present evidence on the three forms of social capital: relational, cognitive and structural.

### **Relational social capital**

#### *How does relational social capital develop in territories?*

First, relational social capital builds up through face-to-face contact. This mode of contact is important because, during personal encounters, actors do not only exchange factual information about issues or business opportunities, but there is also an exchange of relational information through postures,

gestures, language, mood, feelings and other non-verbal information that is lost in technologically supported meetings. One implication of the transmission of non-verbal information in face-to-face meetings for relational social capital building is that the participating actors receive a picture of their counterpart's emotional and social situation, which might lead them to identify with the other person's situation, develop empathy and, ultimately, influence, for example, the prioritisation of tasks or willingness to cooperate. In this context, Interviewee 5 affirms:

*People need to meet each other to identify. If we hadn't met, and you had only written to me, your invitation would have stayed on the 'deal with if I have time' pile. Since we met in person, I see the point in what you are doing. Human relationships are a plus. The physical meeting, in no matter what context, allows social links to be created.*

A second determinant of relational social capital formation is the anchorage of formal and transactional relationships in unofficial, informal and social contexts. Interviewee 6 clarifies: *"In the bigger organisations, there is the official side [like membership], and then there is always the fact that knowing each other personally allows trust to be created, and people will more readily exchange, for example, contact data."* While cognitive social capital is more likely to develop on an interorganisational level, where it is embodied in a set of norms and values, as further explained below, relational social capital develops on an interpersonal level. Interpersonal relationships are the basis for developing trust and can support interorganisational relationships and collaboration. Interviewee 11 affirms: *"You need to know each other to create trust. Human relationships are important in the development of [collaborative] activities."* Interviewee 17 puts it similarly:

*Two human beings that meet each other is not the same as two firms meeting each other. If you meet the R&D department or the marketing department of a firm, it is a different story to meeting as human beings, where you really do have a trust relationship. We won't sign a contract, we will just work together on the basis of trust.*

Another factor of relational social capital development is the brokering function of third parties (i.e., weak ties), who function as gatekeepers between social groups. Hence, there is some level of confidence or trust between the intermediary actor and the other two actors who are introduced to each other by the broker. These brokers can accelerate the creation of a new trustful relationship and

thus contribute to the development of relational social capital within a territory. Interviewee 19 illustrates this as follows:

*It is about your reputation. For example, we use a lot of co-optation. That means if you know somebody who knows somebody who has worked well with somebody and given that it is a friend of a friend of a friend, then people are a bit more reassured and trustful than with some random organisation or individual.*

In the logic of co-optation, the third-party intermediary, who functions as broker, carries responsibility for the success of the newly created relationship, as the other two parties rely on the broker's judgment. In our case, the cluster organisation plays a particularly important broker role, as the following citation testifies:

*I would say that the different events organised by Sporaltec are privileged occasions to make contact with people without too many difficulties. It's a place dedicated to exchange, and the people there are rather open-minded and responsive. Everyone has an attitude of openness toward opportunities via those different exchanges. This has helped us to get to know certain people and sometimes to develop closer relationships. (Interviewee 3)*

### ***How does relational social capital contribute to territorial development?***

First, relational social capital contributes to collaboration and cooperation amongst actors beyond transactional relationships. It is a key factor in the establishment of a positive atmosphere of indulgence and benevolence that facilitates collaboration and synergies.

*[Company A] had a stock shortage in carbon pieces, so they went to see [Company B] to see if they could do the calculations and take over the production. [Company B] worked for [Company A] for some time, and then they told [Company B] that they no longer had the time to help them but that they should contact me. (Interviewee 17)*

The following statement shows the high level of relational social capital within the cluster network which provides members with credibility and trustworthiness and allows them to launch new collaborations more easily.

*With [Company C], we decided to make a product together and try to sell it to larger firms from the Sporaltec group. Between [Company C] and us, for the moment, our relationship is informal, and everything works through trust. We are both small. We will not make contracts through lawyers. We met at the annual general assembly of Sporaltec. (Interviewee 9)*

Another benefit of relational social capital lies in the potential involvement of non-productive actors within the territorial development process. For instance, some firms have developed close and trusting relationships with product users in order to collect their feedback within a co-creation logic:

*We organise two to three round tables per year with athletes from different segments to show them our new projects, tell them about our future developments, ask them for new ideas [...] Then, during the product development, we organise basic field tests: we give an athlete three different types of glasses, and they provide us with feedback. [...] They can originate a product [or] validate good solutions that they have tested in the field. (Interviewee 10).*

## **Cognitive social capital**

### ***How does cognitive social capital develop in territories?***

The first factor leading to cognitive social capital arises from an entrepreneur's feeling of belongingness to a territory, which, in specific cases, is closely connected to nature. This strong shared territorial attachment is deeply rooted in personality and attitudes, often since childhood.

*This is maybe my 'loving my home turf' side. I am from Forez, my whole family is from Forez, and that's the reason the company was founded there. Because it is an area where nature is alive, it is the true countryside. (Interviewee 8)*

The ambiance of a small and intimate circle is key to ensuring actors become involved in a more formalised organisational structure for territorial development (e.g., a cluster label). Interviewee 5 summarises the expectations of territorial actors: "Firms tell me that they love the fact that we are working based on proximity and that they are not far. They look for high responsiveness, and they don't want something too big, too regional."

Shared interests also lead to cognitive social capital, for example a shared passion for sports, which some interviewees consider to be a special feature of the territory.

*There is a love for sports [here], it's more than love, it's a passion. There are "les Verts", a football team that even with bad results fills the stadium [...] I grew up with that as a kid, the epic of "les Verts" in 1975–76. We are sports people at heart, before athletes. (Interviewee 8)*

Spatial proximity and, consequently, face-to-face contact also allow direct and deep human relationships to be developed which make exchanges more fluid. Thus, they facilitate the development of cognitive social capital at a micro, but also at an aggregate, level. For example, an entrepreneur who designs bike extensions to facilitate urban mobility explains the importance of human relationships in the product design process. This design process needs human interaction and exchanges. Dialogue is crucial to understand the clients' needs, as emphasised here by Interviewee 1: *"Relationships are very important to me; I really need to know people [that I work with] well through spending time together. I am trying to create real relationships with all my partners."* Consultants also need to develop a deep understanding of a client's issues to be able to offer an appropriate response. Interviewee 7 thus testifies that spatial proximity and, hence, face-to-face contact are crucial to develop cognitive ties with partners.

*When you are in a relationship with a future client, over the phone it is more difficult to negotiate something interesting. The idea is to convene a face-to-face meeting to be able to explain the idea and the project from all angles.*

Lastly, knowledge sharing is a driver for cognitive social capital, as both productive and other actors, for example universities and research institutes, public actors and associations, are attracted by new knowledge, information and best practices. Therefore, cognitive social capital is created through knowledge-sharing network events and structures which bring together experts from different and complementary fields, but also actors from the same and competing fields. Cognitive social capital develops on an interorganisational level, meaning between organisations that identify through similar values and visions.

*Sporaltec had organised an event about crowdfunding that really fitted my needs and that helped me to meet very interesting people who talked about their experiences with crowdfunding. This is really helpful. The cluster and their events help us to open up and meet new people. The network mainly creates synergies. (Interviewee 2)*

### ***How does cognitive social capital contribute to territorial development?***

A shared passion for sport principally has an influence on people's professional behaviours by making them more responsive to product development objectives than to contractual and financial constraints. It thus contributes to territorial development through the emergence of norms and values favouring the regulation of business relationships.

*Working in the world of sport, there are many people that are passionate, and they do not pay a lot of attention to the financial and contractual side. What will count for [them] is to succeed in making the product work and making the clients happy. [...] This is the way it works, where you can really count on people having a passion and being willing to make sacrifices, maybe more than in other industries. (Interviewee 17)*

One implication of high cognitive social capital in terms of shared visions and ambitions is new forms of business organisation. For example, some designers decided to create a network of freelance designers who, while remaining independent, come together to collectively work on designs for sports projects. They are competitors, but they come together to be able to make more interesting offers to clients by combining their knowledge and skills and making scale efficiencies on common costs (e.g., for software). A collaborative approach with clients in the sense of co-creation rather than pure sales objectives also unites the spirit of territory members and strengthens the territorial tissue. Furthermore, the cluster governing body provides cutting-edge information and knowledge relevant to its members and is able to liaise between buyers and suppliers and complementary organisations. Interviewee 10 explains the expectations: *"It is really like a carousel of information that allows us to meet suppliers and which can help us get advice if we run into problems."*

### **Structural social capital**

#### ***How does structural social capital develop in territories?***

Face-to-face contact is important in the acquisition of new relationships and thus in terms of the number of ties that can potentially be created within a territory. Interviewee 10 explains: *"It is a direct exchange with the members. It is one member that we met on site or whom we met through one of our meetings who, in turn, introduced me to a person from that laboratory in Grenoble."* Local actors

perceive it as beneficial to have direct face-to-face human contact to create many relationships (i.e., structural social capital). This insight reaffirms the importance of spatial proximity for the creation of structural social capital. The higher the degree to which actors are proximate, the more ties can be created and nurtured.

Given its central position in the territory's social structure, the cluster governing body plays a central role in the development of structural social capital. Being a member of the cluster offers opportunities to meet customers, suppliers, business partners, competitors and experts from outside the cluster through participation in the networking events organised by the governing body. *"It's really the network that I am interested in. That is why I joined Sporaltec,"* shares Interviewee 17, while Interviewee 2 says, *"For me, it is really the network that is important and opening up to new things. The cluster is here for that, to let us meet other people."* Besides serendipitous contacts that develop during networking events organised in the cluster, cluster firm entrepreneurs use the cluster to identify relevant contacts for their business. For example, a company that was new to the sports and outdoor sports industry joined the cluster to make contact with people from the sports industry. Interviewee 9 explains:

*We wondered how to approach the market, and then we got to know Sporaltec through some people who knew Sporaltec. We decided to become a member, so that they could introduce us to the right people. We got about 15 to 20 contacts through Sporaltec, mainly in R&D departments.*

This example shows that weak ties occur prior to the development of transactional business relationships through interpersonal human relationships that are initiated through cluster events or staff acting as brokers, as indicated earlier. Furthermore, the cluster governing body organises events that include education, training or consulting programmes which allow cluster members to meet experts, often from other industries, and hence provide more weak ties.

Local actors seek concrete outcomes, such as B2B customer and supplier acquisition, in particular through the network of the cluster. Many are service providers seeking to engage with sports goods manufacturers in their upstream supply chain activities. Examples are various firms that provide support to obtain tax reductions from the government through research and innovation investment,

design services, digital marketing services and development services for electronic solutions and connected objects. Other firms offer solutions to strengthen sports goods with a new raw material (graphene) or production process (3D printing). In all these cases, the entrepreneurs explain that they seek the cluster's support and network to access and open up a new market, namely the sports industry. These firms are not originally from the sports industry, and they join the cluster to create links to more traditional firms within it.

*In the cluster, there are two types of companies. There are the manufacturers of finished products, like Time, Salomon, Guidetti, Petzl – really the manufacturers of the sports world. Then, there is the layer of companies below. They provide services in all kinds of areas, whether mechanical engineering, electronics, related to health, related to sensors, etc. These companies provide services to the first layer of companies. Many of the second-layer companies are members of the cluster to get access to the first-layer companies, the manufacturers. (Interviewee 17)*

On the other hand, manufacturing firms join the cluster because they seek specialist suppliers of goods or services, as indicated here by Interviewee 10:

*When our current suppliers do not have a solution, we turn to the cluster and its network because they know many companies and can direct us to a company that can help us.*

Furthermore, our data reveal numerous technological or commercial collaborations in partnerships or small networks. In some cases, the cluster is crucial for a partnership. In other cases, firms do not rely solely on the sport cluster's support, but choose other support organisations (e.g., incubators, state agencies that support R&D-intensive firms, chambers of commerce, other industry clusters) and thus increase the density of the local network.

Last but not least, structural social capital is mechanically generated over time by occupational mobility within the territory. As many individuals are deeply rooted in the territory, they move from one firm to another within this specific area, which, in turn, helps thicken the local structure of connections through the transformation of strong ties between colleagues into weak ties between individuals belonging to different firms.

*I came back to see some colleagues [at my former workplace] and show them my idea, and they were very interested in the concept. Also, as we have known each other for a long time, they wanted me to become a consultant for them to improve their composite process for their bicycles. (Interviewee 17)*

***How does structural social capital contribute to territorial development?***

One of the implications of high structural social capital is that it enables high exposure to potential customers but also partners for collaborations. For instance, the cluster provides specific contact data of the different cluster member representatives (e.g., contact data of R&D departments). Furthermore, the cluster network events that lead to numerous weak ties are often the starting point for a collaboration between two or more cluster members or organisations that are in proximity to the cluster but not members. The latter may be called satellite members, as they gravitate around the cluster without actually joining. Interviewee 3 shares, *“The big cluster events are useful to make a first contact. Then, you organise a meeting afterwards with the potential partner to discuss things calmly and get into the detail.”* The above statements testify that the networks developed by the governing body are not closed, as non-members and past members can participate in addition to current members.

Given its central position in the local social structure, the cluster governing body can also take a more important role than just broker by leading and coordinating collaborative projects amongst cluster members (e.g., studies of a new gluing technology to replace sewing, compression clothing and the efficacy of bioceramics). Finally, the cluster allows outsiders to identify and address cluster members collectively, whether for research collaborations, partnerships or commercial purposes. Interviewee 13 explains, *“The cluster allows [the members] to be addressed collectively rather than individually.”*

## **DISCUSSION**

### **Factors leading to different forms of social capital**

In our data, we identify various factors leading to different forms of social capital, notably relational, cognitive and structural social capital (Nahapiet & Ghoshal, 1998). We discuss these different factors and focus on the interrelatedness of the development of these three forms of social capital. We contribute to knowledge on territorial development by providing a comprehensive picture of the role of social capital, considering three dimensions of this concept rather than only one (Pérez-Luño et al., 2011) or two (Molina-Morales et al., 2013).

One of the research gaps that we identified concerned the determinants of the development of social capital in a specific territory. Our findings show that face-to-face contact is a key factor for social capital formation and may lead to the three kinds of social capital. It is facilitated through spatial proximity, even though spatial proximity alone does not necessarily lead to the development of social capital (Lissoni, 2001; Torre, 2008) and consequently to knowledge exchange (Molina-Morales & Martínez-Cháfer, 2013). At the same time, not all kinds of social capital depend to the same extent on face-to-face contact encounters. Face-to-face encounters allow the creation of relational social capital through non-verbal communication, cognitive social capital through behavioural norms and innovation-related knowledge exchange, and structural capital, at the territory scale, through the increased frequency and length of possible encounters. While relational social capital can hardly be created through technologically supported encounters, previous research has shown that components of cognitive social capital, such as knowledge transfer, can be easily developed through virtual meetings at long distances or through short and temporary face-to-face meetings (Rychen & Zimmermann, 2008; Torre, 2008). Furthermore, Coleman (1988) argues that direct and deep human relationships allow the creation of interpersonal trust and feelings of belongingness, which might be associated with relational social capital. According to our findings, however, cognitive social capital relates to knowledge and expertise that might require face-to-face contact. Our data indicate that face-to-face contact is preferable for the development of cognitive social capital within R&D or design-related collaborations. They also confirm that structural social capital still benefits from face-to-face

contact, as it allows actors to more easily develop strong and weak ties through a web of overlapping local ties (Molina-Morales & Martínez-Cháfer, 2013).

Further determinants of social capital that we identified were the nature of interorganisational linkages as well as the antecedents and consequences of relationships that go beyond a transactional nature. Our results show that relational social capital emerges in the context of repeated formal and transactional relationships that are embedded in a social context (Granovetter, 1985), confirming previous research on the evolution of formal and informal relationships (Gerke et al., 2018). Relational social capital with local actors can reinforce a feeling of belongingness to a socio-economic group often anchored in a territory for reasons of historical structural social capital, that is, a high density and strength of ties around a specific industry. These findings resonate with previous research on the interrelatedness of relational and structural social capital (Molina-Morales et al., 2013).

Structurally anchored relational social capital nourishes cognitive social capital concerning shared representations of how to do business and professional values (for example, favouring local production and suppliers rather than global value chains). However, cognitive social capital is more likely to develop in interorganisational settings if it is preceded by relational social capital developed in interpersonal settings. Relational social capital is the basis of cognitive social capital, according to our data. Previous research is in line with these findings, arguing that structural social capital provides a favourable context for cognitive and relational social capital (Molina-Morales & Martínez-Cháfer, 2013). We find that the latter two are interdependent. Cognitive social capital depends on relational social capital that takes the form of tight, restricted and often closed subgroups within a network. Relational capital, in turn, depends on subgroups that form due to the ability of their members to provide substantially better solutions for one another (due to high cognitive social capital).

Lastly, a particular characteristic of structural social capital is weak ties linking otherwise unconnected (groups of) actors through brokers (Borgatti & Foster, 2003; Molina-Morales et al., 2016), often through local institutions and supporting organisations. Our data show that relational social capital is the basis for the effectiveness of structural social capital (e.g., through weak ties). More precisely, there needs to be a certain level of trust and confidence between an actor and the broker for the former to be willing to engage in a relationship with the third party. Therefore, the

broker carries responsibility for the success and trustworthiness of the newly established relationship. Furthermore, knowledge sharing and B2B relationships act as catalysts for cognitive and structural social capital, respectively, and function as brokering links between previously unconnected actors. The intermediary in these networking processes is typically the cluster governing body, which has knowledge about the different network members (i.e., cognitive social capital) and usually enjoys the trust of the different actors in the territory (i.e., relational social capital). Furthermore, the formal structure of the cluster network functions as a multiplier for structural social capital. Overall, the cluster governing body, as an administrative and formal institution, leverages all forms of social capital, often overcoming spatial distance by facilitating temporary proximity (Rychen & Zimmermann, 2008; Torre, 2008).

### **The role of different forms of social capital in territorial development**

The three forms of social capital contribute in different and sometimes complementary ways to territorial development, depending on the nature of the benefit individuals can retrieve from them.

Relational social capital influences or even constrains individuals' behaviours. It generates trustworthiness, as it leads individuals to comply with a set of informal rules in order to be integrated in local networks. The high level of confidence arising from such coordination mechanisms may be described by properties that Coleman (1988) labelled obligations and expectations. Territorial development may thus be considered as based on repeated interactions that tend to constrain opportunist behaviours and generate social solidarity (Sandefur & Laumann, 1998).

The influence of cognitive social capital on territorial development mainly relies on shared information and vision. While a significant number of interviewees are attached to the territory and share an interest in sports, which may facilitate coordination between them, cognitive social capital also refers to relationships with actors outside the production system, a unique feature of the territorial development approach (Torre, 2019). For instance, in certain circumstances, sports goods users are considered for the expertise they have developed through practice. Firms intend to involve them in the conception and commercialisation process by collecting their feedback and taking advantage of their image. In that sense, cognitive social capital may be associated with lead user theory (von Hippel,

1978, 2005), which supports co-creation dynamics involving both producers and users (Vargo & Lusch, 2004, 2008). The specific cognitive social capital formed by the cluster governing body has a significant influence in terms of territorial development. First, it provides members with cutting-edge information (e.g., related to innovation) and encourages knowledge sharing (Angeon & Callois, 2006) within the cluster but also with satellite firms. Second, it enhances collective actions (Angeon & Callois, 2006) and projects that have strong societal utility but may not be developed by isolated firms or individuals as they are complex and expensive (e.g., studying the efficacy of bioceramics).

Lastly, structural social capital plays a key role in information collection and diffusion within local networks and increases the probability that a firm will meet customers, suppliers or partners. Considering its central position in the social structure, along with its openness towards past and future potential members, the cluster governing body may influence and control local actors' choices and behaviours, for example through recommendations and reputation effects (Sandefur & Laumann, 1998). It also fosters both cohesion between members ('bonding') and links with external actors ('bridging'). This equilibrium contributes to territorial performance and development (Callois & Aubert, 2007) while it prevents lock-in effects or, at the opposite end of the spectrum, lack of cooperation (Westlund & Larsson, 2016).

## **CONCLUSION**

This article addresses two questions related to social capital and territorial development. It (1) investigates factors that lead to the development of social capital in a specific territory and (2) analyses externalities of social capital with regard to territorial development.

Therefore, we first contribute to the advancement of the territorial development concept by thoroughly examining the antecedents and externalities of three dimensions of social capital. More specifically, we identify face-to-face contact, anchorage of formal relationships in an informal context and proximity through third-party intermediaries as factors leveraging relational social capital. Relational social capital, in turn, contributes to collaboration and cooperation amongst actors that are traditionally linked through production and innovation activities but also to collaboration with non-productive actors such as sport. Cognitive social capital develops in territories through strong territorial

attachment, shared areas of interest, face-to-face contact and knowledge sharing amongst entrepreneurs and other territorial actors. Cognitive social capital, in turn, contributes to territorial development by regulating business relationships and new forms of business organisation. Lastly, structural social capital develops in territories through face-to-face contact, the mediating function of a cluster governing body, B2B customer and supplier acquisition and occupational mobility. In return, structural social capital contributes to territorial development mainly through higher exposure of territorial actors to potential customers, hence increasing their potential for business opportunities.

This research provides numerous insights for a variety of territorial actors on how to engage and benefit from the creation of social capital. Developing and understanding the mechanics and dynamics of relational, cognitive and structural social capital allows businesses, but also public organisations and associations, to create more value for each other. For example, policy makers could introduce specific programmes and measures aiming at the development of diverse sets of social capital. Benefits arising from such public initiatives may be spectacular: in the studied case, they contributed by encompassing formerly competing cities (Lyon and Saint Etienne) within a more unified territory which displayed a new economic specialisation in sports innovation. Furthermore, our research shows that measures such as ‘clusters’ aimed at developing a local industry can be *a means rather than an end*, as, in our case, this measure allowed the creation of social capital and then fostered territorial development without developing into a durable cluster organisation. In conclusion, this research shows that a local cluster policy that is implemented top-down may have positive effects on the territory and its development without achieving the full potential of a cluster. Instead of considering the cluster policy initiative as a failure, we encourage policy makers to see cluster policies as a tool to achieve the higher goal of territorial development, that is, a bottom-up, socially constructed economic network in which different kinds of social capital develop and economic development flourishes alongside social, cultural and environmental development.

Consequently, our second significant contribution is to take territorial development to the next level of theoretical development by showing that its overarching nature encompasses previously existing theories and models to explain the micro-economics of local and regional development. Rather than only considering actors in the productive and innovation system, as existing explanations

of local and regional economic growth and dynamics typically do, the territorial development perspective takes a holistic approach, encompassing all possible actors of the territory and thus extending the potential for value creation.

There are various limitations of this study. First, it does not allow a more specific and in-depth analysis of specific dyadic or networked relationships and exchanges, which would require specific and reciprocal network data. Future research should collect data from dyads or even triads within territories to understand even better the reciprocity of their relationships and how social capital is created therein. Furthermore, from a theoretical perspective, we suggest more research in this area should investigate the logics of value creation between the diversity of actors in a territory and explore potential parallels and differences with other value creation logics (Vargo & Lusch, 2004, 2008).

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## Tables

*Table 1: List of interviews*

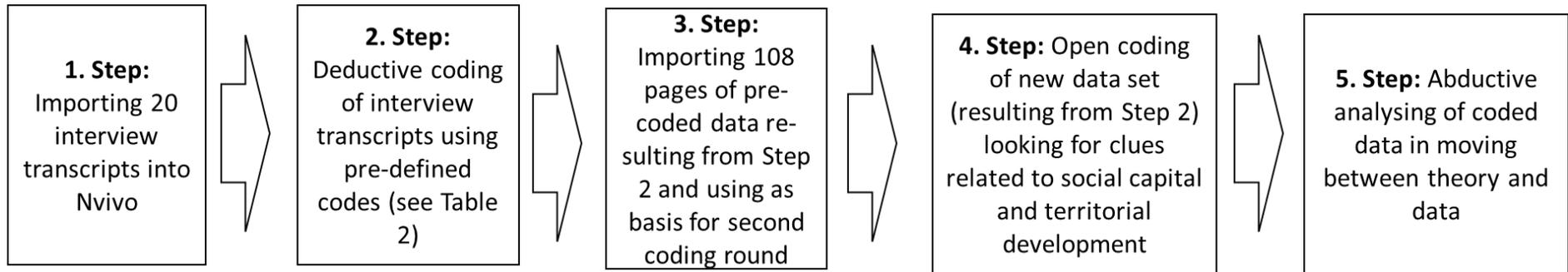
N°	Sector	Product Segment	Number of employees 2014 (FTE)	Year	Type of organisation	Cluster member	Location	Position of interviewee	Transcription Pages
1	service/ consulting firm	not specified	1	2012	start-up	No	Saint Etienne	Director	12
2	equipment specialist designer	urban cycling	1,5	2015	start-up	Yes	Lyon	CEO	11
3	service/ consulting firm	not specified	2	2015	start-up	Yes	Lyon	Associate Director	28
4	governing body	not specified	24	1991	non-profit association	No	Lyon	Engineer	24
5	service/ consulting firm	mountain and winter sport	180	2001	state agency	No	Grenoble	Director for Tourism and Economic Development	30
6	service/ consulting firm	not specified	4500	2013	state agency	Yes	Grenoble	Business Developer	31
7	service/ consulting firm	ski station	1	2008	SME	No	Chamrousse (Grenoble)	Sales Director	33
8	equipment specialist	swimming	1,5	2008	start-up	No	Saint Etienne	Director	12
9	engineering firm	not specified	2	2015	start-up	Yes	Grenoble	Director	51
10	equipment specialist	mountain and winter sport	200	1888	SME	No		Product Manager	13
11	service/ consulting firm	not specified	5	2013	SME	Yes	Annecy	CEO	31

12	core equipment manufacturer	not specified	8	2015	SME	No	Grenoble	Project Manager	48
13	service/ consulting firm	not specified	3	2014	start-up	Yes	Chambery	CEO	13
14	cluster governing body		4	2005	cluster governing body	---	Saint Etienne/ Annecy	Innovation Manager	2
15	service/ consulting firm	urban cycling	2	2015	start-up	Yes	Lyon	Director	27
16	education/research institute	not specified	100	1971	public institution	Yes	Lyon	Sport Engineer	23
17	engineering firm	not specified		2013	SME	Yes	Meaudre, Vercors	Director	28
18	service/ consulting firm	not specified	4	2014	SME	No	Grenoble	Associate Consultant	16
19	core equipment manufacturer	climbing	75	1996	SME	Yes	Lyon	President	32
20	core equipment manufacturer	mountain and winter sport	1,5	2015	start-up	No	Chambery	CEO	14

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Table 2: Coding scheme for first coding round

<b>Interorganisational links (IOL)</b>			
<b>IOR</b>	interorganisational relationship	any form of link between two different cluster organisations	Babiak, 2007; Gerke, 2018
<b>fIOR</b>	formalised interorganisational relationship	links between two different cluster organisations with a legal or formal status that gives the relationships a definite structure or shape	Babiak, 2007; Gerke, 2018
<b>iIOR</b>	informal interorganisational relationship	links between two cluster organisations that have a voluntary, loose, relaxed, friendly, unofficial nature and that aim at serving mutually beneficial purposes in a problem domain	Babiak, 2007; Gerke, 2018



*Figure 1: Data analysis process step-by-step*