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Local development, social capital and social network analysis: Evidence from Uruguay

Desarrollo local, capital social y análisis de redes sociales: Un estudio de caso para Uruguay*

Pablo Galaso

Adrián Rodríguez Miranda

Sebastián Goinheix

Instituto de Economía, Facultad de Ciencias Económicas y de Administración, Universidad de la República (Uruguay)

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ABSTRACT

This article proposes an analytical framework to study local development as a socio-territorial project based on local social capital. Grounded on local endogenous development literature, social capital theories and social network analysis methodologies, the article proposes three hypotheses describing inter-organisational network properties required for the construction of a socio-territorial development project: basic pre-conditions for local development must exist, in terms of agglomeration economies and density of interactions (H1), local organisations must display central positions in territorial networks (H2), and relations between organisations must be the result of territorial, rather than sectoral, motivations (H3). Using data from a field work carried out in 2014, these requirements are analysed for the case of Punta del Este-Maldonado-San Carlos, an urban region in South-East

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Uruguay. The results show that the case studied presents favourable conditions for the existence of a socio-territorial development project. Yet, there has been found some weaknesses regarding the scarce integration of social organisations into networks. Based on these results, the article suggests policy recommendations aiming to promote a socio-territorial project for local development.

RESUMEN

A partir de las teorías del desarrollo endógeno, la literatura sobre capital social y la metodología de análisis de redes sociales, este artículo propone tres requisitos -en forma de hipótesis- para la construcción de un proyecto socio-territorial de desarrollo local. Estas hipótesis son contrastadas a través del análisis de la red inter-organizacional de Punta del Este-Maldonado-San Carlos, un núcleo urbano en el sur-este de Uruguay. Los resultados prueban que el caso estudiado cumple con los requisitos para la existencia de un proyecto socio-territorial, aunque se evidencian algunas debilidades del territorio. Finalmente, se ofrecen algunas recomendaciones de política al respecto.

1. INTRODUCTION

Territorial development (that of cities and regions) refers to an endogenous process of capital accumulation and structural change that is explained from a territorial and non-functional perspective (Vázquez Barquero, 1988, 2002). This is a distinctive feature of endogenous local development approach, which conceives the territory as a space for interaction between actors, institutions, skills, traditions and knowledge (Rodríguez Miranda, 2015). In this line, different streams of research in regional studies highlighted the leading role of social capital and social relations as well as institutional and cultural aspects in local development processes (Becattini, 1979; Maillat, 1995; Saxenian, 1994; Cooke et al., 2005). According to this literature, social relations should not be considered a secondary element to understand territorial development. Rather, they constitute central elements in such process, because they can enable –or restrict– the collective construction of an economic, social and political project for the territory, involving its people, organisations and institutions. A socio-territorial project that can lead to territorial development.

Although many of these ideas are present in the literature, advances in their measurement and formalisation are still very scarce (Galaso, 2018). Thus, a generally accepted analytical framework that adequately incorporates these issues in the study of local development is still missing. Aiming to address this problem, the present article proposes an analytical framework to study how social capital can contribute to the implementation of a socio-territorial project leading to local development. Such proposal integrates the conceptual background of endogenous territorial development literature, with social capital theories, and the analytical tools of social network analysis. Therefore, the article contributes to the literature emphasising several synergies among these three academic fields. As a result, we summarise

desirable conditions for the construction of a socio-territorial project based on local social capital in the fulfilment of three hypotheses: (i) basic pre-conditions for local development must exist, in terms of agglomeration economies and density of interactions; (ii) local organisations must display central positions in territorial networks; and (iii) relations between organisations must be the result of territorial, and not just sectoral, motivations.

The article tests these hypotheses studying the urban agglomeration of Punta del Este-Maldonado-San Carlos, located in the east of Uruguay. This region experienced a significant growth in the last decades reaching to greater development levels than the rest of the country. Such evolution makes it an interesting case of successful local development process in Latin America. Results reveal that the territory meets the three requirements, concluding that the region under study presents a socio-territorial project for local development. This project is led by local business and educational organisations and, in a very relevant way, by the local and regional government. Yet, some negative aspects of social capital in the region are identified: the marginal role played by locally-based social organisations in the networks may restrict the success of the socio-territorial development project.

The rest of the paper is structured as follows: the next section presents the theoretical framework. Section three details the arguments supporting the hypotheses on territorial social capital favourable to local development. Section four presents the methodological approach we follow to test the hypotheses. Results are detailed in section five. Finally, section six presents conclusions, policy implications and final remarks.

2. THEORETICAL FRAMEWORK: LOCAL DEVELOPMENT, SOCIAL CAPITAL AND NETWORKS

Local development is determined “by social and political action which, in turn, will be determined by the values and principles which attend such action” (Pike et al. 2011: 624-625). This vision of local development emphasises the relevance of citizen participation and democracy. In fact, different streams of research in regional studies highlighted the importance of relationships between local actors and organisations. For example, the *innovative milieu* approach (Aydalot, 1986; Maillat, 1995) analysed the conditions for territorial development, resulting from the capacity for innovation, and focused on the social, economic and cultural environment (i.e. the milieu), which depends on the set of local actors, organisations and institutions. Furthermore, based on Marshall’s (1890) approach, literature on industrial districts (Becattini, 1979, 2001, 2004; Vázquez Barquero, 1988, 2006; Garofoli, 1994) accentuates the relevance of a socio-institutional and cultural environment based on

cooperation and collective learning for the success of the so-called industrial districts. Also, the Californian school authors (Storper, 1988, Scott, 1988, 1996; Scott and Storper, 2007; Saxenian, 1994) argue that the relational assets (i.e. social capital) are fundamental to explain the competitive advantages of regions.

Underlying these approaches remains the concept of institutions. Understood as the “rules of the game” as proposed by North (1987), institutions play a key role in development processes by reducing the uncertainty of human interactions and transaction costs. In accordance with the above, Vázquez Barquero (2002, 2010) argues that local development is the result of territorial synergies between diverse factors such as production organisation, innovation diffusion or urban infrastructures. These synergies can only result within an institutional framework that fosters social and economic interactions (Vázquez Barquero and Rodríguez-Cohard, 2016).

Camagni (2009) states that regional development is based on what he calls “territorial capital”, which is made of technology, natural resources, human capital and social capital. Nijkamp (2016) proposes to analyse territorial development strategies using the concept of “resourceful regions”, which assumes that each region has a portfolio of development possibilities and capabilities that can be combined and optimised in order to ensure the best economic and social performance. According to this author, certain institutional conditions must be met: (i) consensus among actors and institutions, (ii) networks for the dissemination and creation of knowledge, (iii) appropriate channels for knowledge transformation and technology, and (iv) administration and development of human capital. In Latin America, the RIMISP network states that, although geography matters, social structures, institutions and social actors are more important for territorial development (Bebbington et al, 2016).

Therefore, local development is the result of synergies among multiple territorial components. These synergies depend on the interaction between key actors that can influence the relevant economic, social and political decisions. Indeed, to explain local development synergies, most of the authors and approaches mentioned above refer –explicitly or implicitly– to the notion of interaction between actors, placing social capital in a key position to explain local development processes.

In this regard, several studies have empirically tested the influence of social capital on different social and economic aspects of cities and regions (e.g. Iyer et al., 2005; Putnam, 1993; Boschma, 2005; Cooke et al., 2005). Some of these studies used social capital indicators (e.g. surveys or secondary data measuring population civic attitudes) that do not adequately represent its key components, creating considerable confusion between social capital itself and its outcomes (Durlauf, 2002; Fine, 2001; Sabatini, 2009). Other studies suggest focusing on networks to measure social capital (e.g. Burt, 2000; Lin, 2005).

The network approach emphasises the relational character of social capital as a set of resources embedded in social relations (Burt, 2000). Literature on social network analysis offers a wide variety of theories and methodologies to study social relations (e.g. Easley and Kleinberg, 2010; Jackson, 2008). To do so, it considers nodes as social actors (e.g. individuals, organisations or firms) and links as relations connecting them (e.g. friendship, cooperation or economic interactions). Subsequently, this literature grounds on graph theory elements, to deeply study networks, analysing, among other aspects, their structural properties, main actors, their determinants and/or main consequences.

Based on social network analysis, previous empirical research studied the influence of networks on the performance of cities and regions (see e.g., Galaso 2018, for a recent review). Some of these studies explored the relationship between social capital, inter-organisational networks and local development (Crowe, 2007; Etxabe and Valdaliso, 2016; Makarem, 2016; Feldman and Zoller, 2012). Based on this empirical evidence, local social capital can be identified with certain network properties that may generate externalities in the territory and, therefore, influence local development processes (Galaso, 2018). In this article we aim to contribute to this literature by developing both an analytical approach and an empirical study in Uruguay.

3. THREE HYPOTHESES ON THE STRUCTURE OF INTER-ORGANISATIONAL NETWORKS

According to Albuquerque (2015), “local development is not a sectoral but a territorial approach, promoting the social construction of the territory, that is, the creation of networks, institutions and social capital supporting the local strategy” (Albuquerque, 2015, pp. 43). In line with the above, we argue that it is crucial to study key organisations (i.e. leading actors in the territory) and to understand how they interact with each other. As stated by Pike et al. (2011), local development implies a process of concerted strategy, planning and actions implementation.

The study of inter-organisational networks from a local development approach has been carried out in recent works. For example, Ha et al. (2015) focused on the participation of local governments in networks to promote local development initiatives in the US. Esparcia et al. (2015) and Nardone et al. (2010) analysed the role of local actors in promoting social and economic territorial development processes in Spain and Italy, respectively. Also, Bellandi and Caloffi (2010) studied how innovation policies in Italy implemented in different territories can lead to different network structures with different outcomes for regional development. In Latin America, Cruz and Pulido-Fernández (2012) analysed inter-organisational networks in two Argentine coastal cities focusing on public-private relationships.

There is not a single recipe for local development. As stated by Vázquez Barquero (2011), local development strategies differ from case to case because each territory has different needs and capacities. In this line, rather than elaborating an exhaustive list of all possible development models, Garofoli (2002) proposes that researchers shall allow a plurality of models to reveal the potential bifurcations of local development processes. Therefore, it is unlikely that we will ever find an optimal structure of an inter-organisational local network applicable to all cities and regions (Galaso, 2018).

Nevertheless, and grounded on local development theories, we propose three structural properties of inter-organisational networks that may indicate the existence of a socio-territorial project based on local social capital. Such properties are presented as the following three hypotheses.

Hypothesis 1: The territory must have basic conditions to be able to undergo an endogenous development process. This requires economic preconditions, a minimum number of actors and certain level of interaction among them.

The economic preconditions refer to the existence of local businesses, human capital, infrastructures and a certain level of productive activity that imply territorial “know-how”. Several authors consider them basic preconditions for certain local development models, such as innovative *milieus* (Maillat, 1995; Aydalot, 1986) or local productive systems (Becattini, 2004; Vázquez Barquero, 2002, 2010; Garofoli, 2002).

This hypothesis is also based on the so-called urban agglomeration economies, i.e. the benefits that firms and local actors obtain by locating near each other (Marshall, 1890; Jacobs, 1961). In this line, the scaling literature states that local socio-economic indicators are scaling functions of city size (Bettencourt et al., 2007). As Quintero Marin (2004) points out, the territory must have a critical mass of key actors enough to drive social change. In turn, Arocena (2002) emphasises the importance of a local system of actors. At the same time, a dense network of relations must connect such actors, enabling them to share knowledge, norms and values. Dense networks of both formal and informal interactions among local actors are key elements in certain models of local development such as that of industrial districts (Dei Ottati, 1994; Becattini, 1979).

Such system is also crucial to face external challenges. As stated by Vázquez Barquero (2005), European and Latin American regions, in order to face the challenges of globalization, must restructure their productive systems, improving their companies and territories competitiveness. Only local actors can channel these transformations -given the inadequacies of state policies-, enhancing job creation and local populations welfare. Thus, such transformations are more likely to happen in territories with a critical mass of consolidated local actors.

Hypothesis 2: Local organisations must play a leading role in territorial networks. In particular they must maintain a high number of links, acting as connectors and, therefore, occupying central positions.

The important role of local governments is highlighted in several studies. For example, literature on industrial districts has emphasised the central role of municipalities as coordinators of local actions (Trigilia, 2001; Dei Ottati, 1994). More recently, Ha et al. (2015) analysed how local governments in the US are key actors in networks of organisations promoting local development processes. In Latin America, ECLAC highlighted the relevance of leadership from the subnational level of government, coordinated with other local actors and national policy actors (Aghón, 2001). Also, Rodríguez-Pose and Palavicini-Corona (2013) studied Mexican municipalities and reported that human development improved when local authorities defined a development plan, built institutional capacities and developed links with other public institutions and policy agents.

Regarding local development policies, local actors must play an active role designing and controlling such policies (Vázquez Barquero, 2011). As stated by Garofoli (2002), every territory requires a supporting role of certain public and private local organisations (such as local governments or development agencies) in order to achieve local development process.

Yet, local development requires, by definition, a participatory and inclusive strategy. Therefore, if defined unilaterally, either by local or external agents, results of local development policies can be negatively affected (Vázquez Barquero, 2011). Thus, beyond the local government's leadership, there must be other local actors -such as private firms, research institutions or social organisations- playing a leading role in the territorial networks.

Hypothesis 3: There must be a high level of interaction between organisations engaged in different types of activity. In particular, between public and private organisations, and between economic, social and educational organisations.

This hypothesis requires local networks to be structured according to a territorial and non-sectoral logic, as in the cases analysed by Esparcia et al. (2015) or Nardone et al. (2010). In this line, several studies emphasise the relevance of public-private cooperation to support the socio-territorial development project (Garofoli, 2002; Pinto and Cruz, 2012; Cruz and Pulido-Fernández, 2012). More generally, local development implies, by definition, a systemic approach, and therefore requires "an important inter-institutional coordination effort between the different levels (...) of public administrations (...) as well as a cooperation between public and private actors" (Albuquerque, 2015: 31).

Although state alone cannot address the challenge of economic development, this process is not viable without a relevant role of the state (World Bank, 1997). Such dilemma requires a new relationship between society and state. The literature on governance has emphasized the relevance of networks to face this new role of the state. In particular, Rhodes (1997) defines governance as a network of interdependencies between public actors and civil society. A network with common objectives and negotiated rules, where resources are exchanged in a framework of trust. A network with certain autonomy from the state, but where the state can adopt a leading role.

At the same time, local development requires both an economic and a social project. Therefore, the interaction between economic and social organisations is crucial to allow business projects located in the territory to dialogue and be part of the socio-territorial project. Based on the ideas of the *marshallian* industrial district (Becattini, 1979), in local development processes, the territory is a space of life and work, thus, social and economic organisations should interact. Although this is present in local development literature from a theoretical perspective, empirical studies are usually confined to the analysis of relations between –exclusively– economic agents. For example, Huggins and Thompson (2015) confirm the relevance of interactions among local firms and the resulting network structures to explain the economic growth of different regions in the UK. However, the authors conclude that the analysis should be expanded with contextual/territorial factors different that the networks of firms.

Finally, universities and research centers are also key actors in local development processes (Goddard and Vallance, 2011). However, their influence is not due to their academic excellence in research or training, but to their ability to support the processes of territorial competitiveness (Power and Malmberg, 2008). The interaction of education/research actors with other organisations in local networks is crucial for this support. In this regard, Kratke and Brandt (2009) analysed the relevance of networks connecting knowledge-generating organisations with economic actors for regional development in Germany. Also, as revealed by Bonander et al. (2016), the links between educational and economic organisations in some regions of Sweden facilitate that research and human capital will fit territorial specific needs.

4. METHODOLOGY: NETWORKS CONSTRUCTION AND HYPOTHESES TESTING

To test these hypotheses, we study the urban agglomeration of Punta del Este-Maldonado-San Carlos, located in the eastern region of Uruguay. In section 5 we present detailed information on this region. But first, some information about Uruguay is needed.

The country is located in South America, between Argentina and Brazil, with 3.4 million inhabitants, of which 1.3 million live in the national capital city Montevideo (according 2011 population census). It has a total surface area of 176,215 square kilometres and is divided into 19 regions (*departamentos*). According to the World Bank, Uruguay is a high-income country (i.e., with a per capita gross national income greater than US\$ 12,616). It is also a highly centralised country (Arocena, 2012): the national government holds the competences in security, education, health and social and productive policies. The competences of regional governments are mainly related to rural and urban infrastructure, urban services and equipment, sanitary controls and territorial planning. However, in recent decades regional governments have created economic and social development agencies and started generating their own policies (Rodríguez Miranda, 2014). To carry out these policies, regional governments receive unconditional transfers from the central government, in addition to own resources obtained by taxes (i.e. property taxes, vehicle circulation licences and fees for services). On the other hand, the national ministries hold most of public resources and can implement their policies without the need to agree with regional governments (CEDES, 2010). In fact, national ministries have their own bureaucratic structures in the regions.

The data were obtained from a survey conducted in 2014 under an agreement between the Universidad de la República and the Ministry of Social Development of Uruguay (Galaso et al., 2015). We conducted face-to-face interviews to the managers of relevant organisations for local development in the region. In these interviews, we applied a questionnaire including relational questions aiming to determine how the interviewed organisation interacts with other territorial actors.

In order to define the population of organisations to be analysed, experts from the Maldonado Local Development Council and the Ministry of Social Development were consulted. After the selection process, 101 organisations were selected to be part of the network¹. These 101 organisations should not be taken as a sample, but as the universe of organisations with relevant influence on local development in Punta del Este-Maldonado-San Carlos.

Subsequently, all organisations were classified according to two criteria. First, depending on their geographical scope, we identified three types: (a) local or regional organisations, (b) national organisations based in the region (they either have an office or a local representative) and (c) national organisations with no physical presence

1 We interviewed 49 organisations and 279 non-interviewed organisations were mentioned in the survey. Those non-interviewed organisations that were mentioned at least twice and had a scope of action wider than the neighbourhood (local or regional scale) were included in the networks. Finally, 52 out of the 279 met these two criteria, and the remaining 227 were discarded.

in the region. The second criterion classifies organisations according to their nature and activities developed. In this case they are divided into four groups: (a) social, (b) economic, (c) public (including government agencies or public services, excluding educational services) and (d) educational (both public and private). To classify each organisation according to the above criteria, the activities carried out, the degree of autonomy and the geographical ascription were analysed in detail².

Links connecting organisations were traced based on information obtained in the interviews regarding inter-organisations interactions. Specifically, we asked for three types of interactions: (i) joint actions or projects collaboration, (ii) information exchange and (iii) infrastructure sharing. This allows us to trace three types of links, obtaining three different inter-organisational networks.

After constructing the networks, we test the three hypotheses as follows. First, to test H1 (*the territory must have basic conditions to be able to undergo an endogenous development process*), we analyse population, human capital, income and wealth indicators, and the diversity of organisations in the networks. We also study networks density by calculating the average degree (i.e. the average number of links per node). In order for this hypothesis to be verified, the region must occupy a good relative position in the national context. Also, its population size and the number of organisations must allow diversity. Finally, the networks must be dense, with an average node degree greater than one.

Subsequently, we test H2 (*local organisations must play a leading role in territorial networks*) by analysing the relative position of territorial organisations in the networks based on three indicators. First, we calculate the node degree centrality (i.e. number of links connecting each organisation). Second, we apply the Borgatti and Everett (2000) core-periphery model. This model allows to classify nodes in two groups: the core (with organisations which are highly connected among them) and the periphery (with those that are only tenuously linked among them). By calculating the percentage of local and national nodes in the core we can measure the relative presence of each type of organisation in the group of actors leading the networks. Finally, we determine which organisations are cut-points, i.e. those that in case of being removed from the network, other nodes would be disconnected. Cut-points can be considered as intermediary nodes in networks and, therefore, this indicator will allow us to study the extent to which local organisations play such type of role. We propose that H2 will be verified if local organisations report high centrality scores,

2 For example, public education organisations have extensive autonomy of the National Executive. Therefore, they are not classified within the public category but in the educational category (which involves both public and private organisations). For more detail on the definition and classification of nodes, see IECON (2015).

are present in the core of networks at least in similar proportion as external ones, and occupy cut-point positions in at least a similar proportion as the external nodes.

Finally, we test H3: *there must be a high level of interaction between organisations engaged in different types of activity*. With this aim, we study network homophily, a property that describes the degree of interaction between nodes of similar (or different) nature (McPherson et al., 2001). To measure it, we use the so-called E-I Index (Borgatti et al. 2013). This exercise will allow us to determine the levels of public/private and economic/social/educational cooperation, detailing the degree of involvement of each type of actor in such collaboration. To verify this hypothesis, E-I index must confirm that networks do not show homophily. Such result will imply that organisations interact with counterparts of different nature and scope of activity, reflecting a territorial and non-sectoral logic in the interactions among organisations.

5. RESULTS

Results presented in this section are organised into three different subsections testing the three research hypotheses.

H1: Basic conditions for endogenous local development

The urban agglomeration under study has approximately 130,000 inhabitants and is located in the eastern region of the country (114 kilometers from Montevideo). Its center is Maldonado city (65,000 inhabitants), the neighborhoods surrounding this city (15,000), coastal resorts from Punta Ballena to La Barra through Punta del Este (23,000), the neighborhoods between San Carlos and Maldonado (14,000) along with the city of San Carlos (27,000). Figure 1, represents the geographical location of the region.

Maldonado province register the third highest absolute GDP and per capita GDP among the 19 Uruguayan provinces (OPP, 2014; 2008 data). This economic performance allows the regional government to maintain a high level of independence, as its own revenues represented, during 1990-2010 period, 86% of total government revenues (Muinelo-Gallo and Rodríguez Miranda, 2014). Regarding social indicators, Maldonado is also among the best performing provinces in Uruguay (Veiga, 2015), registering very high levels in primary, secondary, technical and tertiary education (Rodríguez Miranda, 2014), as well as in human development index (UNDP, 2008). In a recent study, Maldonado is considered the second most developed province in the country, based on per capita GDP, firms' agglomeration and social cohesion indicators (Rodríguez Miranda et al., 2017).

FIGURE 1
GEOGRAPHICAL LOCATION OF THE URBAN AGGLOMERATION 'PUNTA DEL ESTE-MALDONADO-SAN CARLOS'



Source: own elaboration

Regarding the number of active organisations, the 101 relevant actors constitute a high number, given the region size. There is nearly one organisation per 1000 inhabitants (0.78), and almost one local organisation every 2000 inhabitants. As per the diversity of organisations, Figure 2 reveals a very well-balanced distribution, with a significant presence of local organisations, but also an important presence of external actors. Organisations nature and activities are also diverse: even if there is a slightly higher presence of economic organisations, both public and private, social and educational actors are represented as well.

Finally, to analyse the level of interaction among organisations, we calculate the average degree (i.e. the average number of links per node) in the three networks: projects collaboration, information exchange and infrastructures sharing. Results reveal a high level of interaction, with average degrees greater than one in projects (1.89) and information (1.46) networks. Meanwhile, infrastructures network

FIGURE 2
**NUMBER OF ORGANISATIONS UNDER STUDY ACCORDING TO
 CLASSIFICATION TYPOLOGIES (IN NUMBER)**



Source: IECON (2015)

presents a lower level of interaction (0.62), reflecting that these types of contacts are less frequent. However, we can conclude that average degree is enough to keep inter-organisational networks well connected. (See also Annex 1 for graphical representation of the networks.)

The fieldwork allowed us to identify an interesting (and recent) example of territorial interaction: the Local Development Council of Maldonado. Such council constitutes a local and informal initiative, led by the regional government in agreement with a business incubator (IDEAR), the business chamber of Maldonado and the locally-based university. It is also supported by the Ministry of Industry (i.e. a national organization). Therefore, this council reveals how local organisations highly interact among them, while integrating national-level actors as well.

In summary, hypothesis 1 is verified because the region presents the basic conditions to promote endogenous development processes. This potential is based on its population, economic activity, social indicators, number and diversity of organisations, and inter-organisational network density.

Our findings regarding this hypothesis are in line with previous studies on inter-organizational networks that analysed the relevance of network size, diversity and connectivity on territorial performance. Some of them found that the number of nodes and the presence of key actors can positively influence cities and regions (Casper, 2013; Coffano et al., 2017), others reported a positive association between network density (Fritsch and Kauffeld-Monz, 2010) and connectivity (Fleming et al., 2007) on territorial performance.

H2: Local organisations play a leading role in networks

We first analyse the role played by different types of organisations calculating the average degree centrality (i.e. the average number of links per each type of organisation). Table 1 shows that local organisations and national actors based in the region are the most central nodes in the networks. In particular, local organisations are especially active in infrastructure and projects networks. Locally-based national actors are central nodes in the projects and the information networks, which may reflect that they are key decision-making and resource management organisations. On the other hand, national organisations without local presence are not active at all in infrastructures and present fewer links in projects. However, such actors are well connected to the information network.

TABLE 1
AVERAGE DEGREE CENTRALITY OF DIFFERENT TYPES OF ORGANISATIONS

	Projects	Infrastructures	Information
Local/regional	1.64	0.96	1.08
National in the territory	2.69	0.43	2.09
National	0.94	0.00	1.25

Source: own elaboration based on Galaso et al. (2015)

The list of nodes with high degree centrality (see Annex 2) confirms that the most central actors are locally-based national public policy organisations and regional government actors. In the latter case, the regional government office (IDM) stands out, as well as some of its divisions, such as social policies and social integration agencies. In fact, IDM is, by far, the most central node in the three networks. Among national organisations, Ministry of Social Development (MIDES) stands out, together with social policies, social benefits and health and education national agencies. The infrastructure network presents the most balanced distribution of central actors according to their nature and activity: in addition to local and regional government and locally-based national organisations, several central educational organisations and local economic and social organisations appear as central nodes in this network.

Furthermore, some local educational, economic and social organisations are relevant actors in the networks. For example, one business incubator (IDEAR) is highly central in the project network. In the information network, the Business Chamber of Maldonado and the Calima cooperative are influential actors as well. In the infras-

structure network, the Conrad Hotel³, the Union of Merchants, the Society for Rural and Industrial Development and the Business Chamber of Maldonado appear among the 20 most central nodes. Educational organisations with regional headquarters are relevant especially in the projects network. Some of them are also central in the information network and in infrastructure network. Finally, there is no social organisation among the 20 most central nodes in projects and information networks, confirming their irrelevant role in these types of interactions. Only in the infrastructure network, we find some social organisations among the most central nodes.

We complete the above analysis by studying the role of local actors as core and intermediary nodes in the networks. The percentage of core nodes according to Borgatti and Everett (2000) model and the percentage of cut-points (intermediaries) for each type of organisations are summarised in Table 2.

TABLE 2
PRESENCE OF CORE NODES AND CUT-POINTS ACCORDING TO THE CLASSIFICATIONS OF NODES

	% of total nodes	Projects		Infrastructures		Information	
		% in the core	% of cutpoints	% in the core	% of cutpoints	% in the core	% of cutpoints
Local/regional	49.5	18.2	52.6	50.0	65.0	30.0	68.8
National in the territory	34.7	81.8	42.1	50.0	35.0	70.0	31.3
National	15.8	0.0	5.3	0.0	0.0	0.0	0.0

Source: own elaboration based on Galaso et al. (2015)

Results confirm that the core is mainly made of local organisations and locally-based national actors. In both the projects and information networks, most of core nodes are national organisations with regional presence while local actors represent a smaller proportion in the core. Territory-based national organisations are well represented in the core of the information network. In the infrastructures network core nodes are divided evenly between local organisations and national actors that are locally-based. No single national organisation without presence in the region is in the core of any network.

3 All the actors interviewed are organisations, there are no companies, the exception is the Hotel Conrad, which was included because of its importance as an actor in the territory. In fact, it is identified by the organisations of the territory as an actor at the same level as the existing local business organisations.

The role of local organisations is especially relevant as intermediaries, as they occupy cut-point positions more frequently than the rest of actors in all the three networks. Locally-based national organisations also occupy several cut-point positions. Furthermore, this indicator reveals that national organisations without presence in the region rarely play intermediary roles in the networks.

In summary, results confirm that local organisations, especially the regional government offices and municipalities play a leading role in the networks. This result does not prevent locally-based national organisations being central actors as well, but it means that they find a very important counterbalance in local organisations. In addition, local economic and educational organisations also achieve central representation in networks. Many of these organisations are also cut-points in all networks. Our results are in line with previous studies describing the key role of local governments in local and regional networks. For example, Etxabe and Valdaliso (2016) reported a prominent position of government departments and agencies in the cluster policy network of the Basque Country.

These results allow us to conclude that local actors can assert their own agenda in dialogue with national organisations, which, in a centralised country like Uruguay, should be considered for development policies. In short, inter-organisational networks seem to reflect a socio-territorial project integrating national resources with local development objectives. However, the high centrality of some economic and educational organisations, contrasts with the peripheral position occupied by social organisations in all networks. This result may reveal a weakness for local development process in Punta del Este-Maldonado-San Carlos, as such process not only depends on the integration between the national and the local vision, but also between the economic and the social dimensions of development.

H3: High level of interaction between organisations engaged in different types of activity

To test the last hypothesis, we calculate the E-I Index in all networks. Such index allows to determine whether organisations interact with others of the same (or different) geographical scope and activity. Thus, this indicator reveals the level of interaction among local and national, public and private, economic and social or economic and educational organisations⁴. Results presented in Table 3 reveal that

4 The index takes values between -1 and 1. When the result is negative, it indicates that the organisations are linked with similar ones and the network is said to present homophily. On the other hand, when the indicator takes positive values, the result reflects that the organisations are linked to others that are different from them and, therefore, that the network as a whole present heterophily. See Borgatti et al. (2013) for a formal definition on the index.

organisations interact more with different alters than with others belonging to the same type. In other words, there is no homophily in networks.

TABLE 3
GLOBAL E-I INDEX ACCORDING TO THE TWO CRITERIA
CLASSIFICATION OF NODES

	Classification criteria	
	Geographic	Activity/nature
Projects network	0.168	0.329
Infrastructure network	0.016	0.429
Information network	0.286	0.314

Source: own elaboration based on Galaso et al. (2015)

TABLE 4
GROUP E-I INDEX ACCORDING TO THE TWO CRITERIA CLASSIFICATION
OF NODES

	Projects	Infrastructures	Information
Geographic criterion			
Local/regional	-0.05	-0.11	0.03
National in the territory	0.87	1.00	0.86
National	0.30	0.06	0.48
Activity/nature criterion			
Economic	0.54	0.67	1.00
Educational	0.58	0.37	0.50
Public	0.01	0.22	-0.04
Social	0.89	1.00	0.68

Source: own elaboration based on Galaso et al. (2015)

Table 4 shows homophily levels by type of organisation. To do so, the E-I index is calculated grouped according to the two basic criteria for classification: geographical scope and activity. According to geographical criteria, national organisations and locally-based national actors present heterophily (i.e., they interact with different alters), while local actors register index values close to zero (i.e., they present no clear bias to interact with organisations either in the same or in different geographical level).

Analysing E-I indexes based on the nature/activity of organisations, we find that organisations tend to relate more to others performing different activities, confirming the existence of heterophily in local networks. In fact, only public entities present certain homophily in information networks, but without a clear bias as the E-I index is very close to zero. Other important aspect is that social organisations are strongly linked with other than social to develop projects, while economic organisations relate to other than economic actors in order to obtain information.

These results contribute to the (scarce) evidence on homophily in local and regional networks. In this line, Makarem (2016) studied networks in two US urban areas and analyzed how firms in different industries connect to each other. Casper (2013) focused on patent co-authorship networks in two US regions and measured the extent to which academic inventors interact with industry inventors. According to these studies, higher levels of heterophily in social networks are positively associated with better economic performance in cities and regions.

To sum up, E-I index results allows to verify hypothesis 3, proving that organisations tend to relate more with others of different sector and nature, indicating that territorial and non-sectorial interactions prevail in the networks. Also, E-I indexes for local and regional government organisations prove that such actors play an important role, contributing to provide an integral view of relevant problems and issues of the region. Locally-based national organisations (which hold the greatest economic resources) are mainly related to local actors, and not to national organisations. This result is supported by previous studies that pointed out how national policies are driven by sector-segmented dynamics, with little inter-institutional coordination (CEDES, 2010; Rodríguez Miranda, 2014). Under these circumstances, local organisations in Punta del Este-Maldonado-San Carlos connect different national policies and services implemented in the region by national actors with diverse sectoral perspectives, integrating and channelling them towards local development.

6. DISCUSSION AND CONCLUSION

In this article we have proposed an analytical framework to analyse local development as a socio-territorial project based on local social capital. This framework is based on the fulfilment of three hypotheses that can be tested using social network analysis techniques. We have studied the case of Punta del Este-Maldonado-San Carlos, verifying the three hypotheses and, therefore, proving the existence of a socio-territorial project. In particular, it is found that the region presents basic conditions to undergo an endogenous local development process (H1), local and territory-based organisations play a central role in territorial networks (H2) and these networks are structured according to a territorial rather than a sectoral logic (H3).

This study has some limitations. First, the data does not allow to measure how efficiently organisations are performing according to their objectives and, thus, we do not know their performance and individual contribution to the achievement of those objectives in the region. Despite the challenges of measuring organisational performance, further research might delve into the interactions between inter-organisational networks and territorial performance. Second, the article performs a static analysis, without describing how inter-organisational networks emerged and evolved. Furthermore, by focusing on the case of Punta del Este-Maldonado-San Carlos, the study does not allow to compare networks in different regions. Future research might collect network data in later years and thus allow a dynamic analysis. Likewise, the application of a similar questionnaire in other regions would lead to observe territorial differences regarding inter-organisational networks.

Yet, the study makes important contributions. In the case of Punta del Este-Maldonado-San Carlos, the proposed methodology shows that the tendency of local actors to connect with national and local organisations, as well as their intermediary role, allows them to enhance the dialogue among different policies and interventions designed by the national government. Such role would be particularly relevant in the case of local and regional governments (IDM, its agencies and the municipalities). The analysis carried out proved that these actors are highly central in networks. Simultaneously, some economic and educational organisations also occupy central positions, allowing them to combine both national and local visions towards a local development project.

As explained in Section 4, rather than a decentralisation process, Uruguay has experienced a “deconcentration process” (Oszlak, 2014). This implies that territorial implementation of national sectoral policies does not formally require agreements with local governments. Thus, our findings regarding the central role of Maldonado local government reveal both their ability and their commitment -beyond formal restrictions- towards a socio-territorial project in Punta del Este-Maldonado-San Carlos.

In sum, the verification of the three hypotheses allows us to conclude that local social capital, as reflected in inter-organisational networks, presents favourable conditions for local development. However, the results lead us to nuance the above statement. The nuance refers to the role played by local social organisations in networks. Compared with other types of actors, social organisations are located in peripheral positions, reflecting their secondary role in local networks. This result reveals an important weakness for local development.

On the one hand, national public actors are central nodes in the networks, highly interacting with local and regional government organisations, in particular with the regional government. These latter are also positioned as central nodes and, in addition, play intermediary roles in all networks. It could be argued that

local government, or even territory-based national organisations, pursue a local social agenda. But this is not necessarily so. The local government and its dependencies have their own interests and visions about territorial development. Visions and interests that partly reflect the different demands of local social organisations and partly mediate between them. The same could be said about national policies. However, such policies will hardly put aside their government-representative role. On the other hand, local economic organisations are very central in networks so they could influence government policies, but their agenda not necessary matches with social concerns. Taking into account problems of inter-institutional coordination among national sectoral policies and the local-national tensions, it seems difficult to assume that local social agenda can be considered if local social organisations are not actively involved in networks.

In turn, local economic and educational organisations are central nodes in the networks, which allows them to promote their agendas and interests at the local level. Punta del Este-Maldonado-San Carlos constitute an urban agglomeration with a great tourist -and even industrial- activity, services and trade development, a technical education offer that meets the demands of the productive system, and with several public and private initiatives to promote the region as a university hub. The central position of local economic and educational organisations in the networks allows them to set the agenda in their topics of interest and to dialogue with local government and national agencies that can bring projects and resources to the region.

The social agenda promoted by local social organisations is concerned, among other issues, with the vulnerable populations and the migratory impacts from neighbouring regions. These problems are hardly solved from the economic agenda, which prioritises regional productive activities, especially tourism services and construction. Such activities can even generate social instabilities and pro-cyclical dynamics (Brida et al., 2017), reinforcing local vulnerabilities at the social level. Of course, there is the concern (and some action) of national government and national social organisations. But the peripheral position of local social actors in the networks may reveal a weak interaction with national social actors, implying that most decisions will be taken without a local perspective of social issues.

The article has also important research implications. By combining social capital and local development theories with social network analysis methods, the study emphasizes the synergies among these three academic fields. Furthermore, the proposed analytical framework can contribute to understanding the -complex- role of social capital in local development processes.

Finally, and beyond the specific implications detailed above for the case of Punta del Este-Maldonado-San Carlos, the article has important policy implications. Based on our results, policy-makers aiming to promote territorial development might take into account how organisations interact among them. Following the proposed analysis, it

will be possible to determine, for example, if the development process is led by national actors, while local organisations are only in charge of policy execution; if there is a strong local leadership; or even a non-subordinated interaction between local and national agents. It will also be possible to identify whether there is a bias towards the economic aspects of development or rather towards social issues. With this analysis, policy-makers can obtain information on the balances or imbalances that are being generated in a region in order to understand if there is (or not) a comprehensive development process (i.e. a process with both social and economic perspectives and a territorial, non-sectoral, approach). Endogenous development paths, those led and controlled by local actors, must allow for the *endogenisation* of factors and resources within the framework of the country's development policy. For that to happen, local social capital and its inter-organisational network structure are fundamental.

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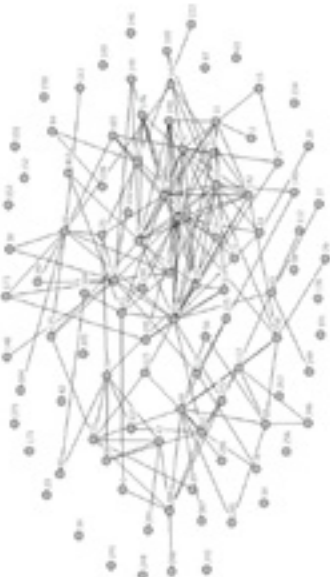
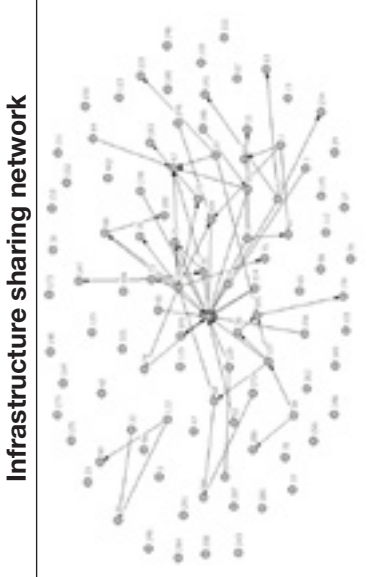
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ANNEX 1. NETWORK GRAPHS

<p>COMPLETE INTER-ORGANISATIONAL NETWORK (ALL LINKS: PROJECTS, INFORMATION AND INFRASTRUCTURES)</p>	
<p>Projects network</p>	
<p>Information sharing network</p>	<p>Infrastructure sharing network</p> 

ANNEX 2. MOST CENTRAL ACTORS (ACCORDING TO IN-DEGREE CENTRALITY)

Projects network		Information network		Infrastructures network	
Organisation	In-degree	Organisation	In-degree	Organisation	In-degree
IDM	21	IDM	20	IDM	18
MIDES	14	MIDES	11	IDM-Deportes	5
ASSE	8	MEC	5	Municipio San Carlos	3
INAU	8	Ministerio de Turismo	5	MIDES	3
IDM-Políticas Sociales e Integración Social	8	INAU	5	IDM-Desarrollo Económico Productivo	2
MEC	6	ASSE	5	Hotel Conrad	2
BPS Maldonado	6	UDELAR	4	Hospital de Maldonado	2
IDEAR Incubadora de empresas	6	BPS Maldonado	4	INAU	2
UTU-CETP	5	MSP	4	Unión de Comerciantes	2
Primaria	5	Primaria	4	Sociedad de Fomento Rural e Ind. (San Carlos)	1
Punta del Este Ciudad Universitaria	5	IDM-Políticas Sociales e Integración Social	3	Teatro Unión	1
MSP	4	MTOP	3	MEC	1
Secundaria Montevideo	4	Ministerio de Industria	3	IDM-Políticas de Juventud	1
Programa Uruguay Crece Contigo-OPP	3	Cámara Empresarial de Maldonado	3	MSP	1
Junta Nacional de Drogas	3	Ministerio de Vivienda	2	IDM-Dirección de Cultura	1
IDM-Políticas de Juventud	3	Municipio de Punta Del Este	2	IDM-Políticas Sociales e Integración Social	1
Ministerio de Vivienda	3	Municipio San Carlos	2	ASSE	1
UTE	3	Calima - Cooperativa Agraria Ltda	2	Cámara Empresarial de Maldonado	1
UDELAR	3	PIT CNT	2	Escuela Agraria de San Carlos-UTU	1
IDM-Turismo	3	Agencia Nacional de Vivienda	1	Hospital Alvariza de San Carlos	1

