

Subnational Regionalisation in Argentina: The Effects of Subjective Interdependence and the Relationships between Actors on Intermunicipal Cooperation

VICTOR MAZZALAY

*Consejo Nacional de Investigaciones Científicas y
Técnicas, Argentina*

This article studies the networks of intermunicipal cooperation that occur through a process of subnational regionalization. It analyses data from two Regional Communities in the Province of Córdoba, Argentina. The results show that interlocal subjective interdependence and strong relationships between actors, results in greater inter-municipal cooperation. Furthermore, the results of the analysis suggest that interpersonal trust does not necessarily result in institutional coordination. While the local political parties are not a significant variable in this study, geographic distance does seem to play a role in the larger process of intergovernmental coordination.

Keywords: intergovernmental relations, intermunicipal cooperation, political networks, interdependency, social capital, trust.

The sustainability of decentralisation processes in Latin America is affected by the ability to overcome challenges generated by the limited institutional capacity of many local governments (LGs), as well as by problems in the production of public goods. To solve these problems, it is crucial to achieve successful intergovernmental coordination (Alonzo Gutierrez, 2006; Rodriguez Oreggia and Turian Gutierrez, 2006).

In many Latin American countries there has been a tendency towards the creation of forums and institutions, both interlocal and supralocal, that attempt to facilitate the success of intergovernmental coordination. However, these organisations have not been systematically studied to assess how the processes of intermunicipal coordination deal with the obstacles that impede the consolidation of stable cooperative practices (Parmigiani de Barbará, 2003; Díaz de Landa, 2008). As a result, intergovernmental coordination as an area of interest for students of the policy process remains under-explored.

Previous research on this subject has shown that low institutional capacity, lax supralocal regulations, scarce financial resources and high interjurisdictional fragmentation are often recognised as barriers to cooperation (Parmigiani de Barbará, 2003; Alonzo Gutierrez, 2006; Cingolani, 2006; Rodriguez Oreggia and Turian Gutierrez, 2006; Mazzalay et al., 2006). In general the literature deals with intermunicipal coordination as an attribute of the LGs or of intergovernmental organisations. Network analysis allows for a different approach, though, one which assumes that coordination is a relational and structural phenomenon. Several studies have made important contributions that shed more light on this perspective (Rhodes, 1994, 1996; Provan and Millward, 1995; Agranoff, 2006; Lubell, 2007; Berardo and Scholz, 2010), while studies of intergovernmental relations in Latin America have been conducted as well using network analysis (Mazzalay et al., 2006).

This article seeks to make a contribution along these lines, utilising the results of research conducted in two Regional Communities (RCs) located in the Province of Córdoba, Argentina. Here, coordination can be essential to overcoming common problems that these RCs may share. The data from this study show that the networks of intermunicipal cooperation are both quite dense and also fragmented, and that the process of regionalisation has not had a significant impact on intergovernmental cooperation. Furthermore, the statistical analysis finds that the subjective perceptions of local decision makers regarding interlocal interdependence and their bonding social capital are important in encouraging intermunicipal cooperation.

Intermunicipal Cooperation

Intermunicipal cooperation occurs when two or more municipal governments join forces to solve shared problems or realise common objectives (Agranoff, 2006; Rodriguez Oreggia and Turian Gutierrez, 2006; Díaz de Landa, 2008). Despite this definition's apparent simplicity, intermunicipal coordination is a complex phenomenon.

Intermunicipal cooperation can have different characteristics as well as different levels of complexity. Joint actions required to build large-scale public works or to foster common institutions that promote development usually result in end products of great value, but they also involve difficulties and are inherently complex. Less complex joint actions that offer common benefits also exist, such as when two or more local governments loan each other machinery to maintain local infrastructures, or decide to jointly purchase supplies. In any case, these straightforward relationships of cooperation are ideal for small municipalities and communes with weak institutional capacity, which are usually also those with the greatest social and economic needs.

The joint actions between two or more LGs, regardless of their purpose and degree of complexity, can be accomplished either *within the framework of formal organisations*, or *well outside* these structures (Agranoff, 2006). While the participation in these bodies is usually understood as coordination, in practice it does not necessarily imply an effective cooperative relationship. Frequently, the LGs are members of diverse and formal intermunicipal organisations that overlap, but they seldom result in effective cooperation (Parmigiani de Barbará, 2003; Mazzalay et al., 2006). Several studies on intermunicipal entities in Argentina show that municipalities frequently establish multiple many parallel relationships of coordination. Some of these relationships take place through organisations designed for that specific purpose, while others occur in entities where the coordination of relationships is not the formal goal. Still other

cooperative relationships develop in an entirely informal manner (Cingolani, 2001; Mazzalay et al., 2006). It should be noted that these cooperative relationships evolve over time, and their past trajectory influences how the relationship is shaped in the present. Some cooperative relationships form organically and spontaneously, and after some time they can either deepen or break down and disappear. In this sense, intergovernmental cooperation results from the willingness of governmental actors to generate cooperative relationships and then to either maintain, enhance or diminish their role.

Finally, the literature suggests that inter-municipal coordination is generated in two different ways: it either emerges horizontally due to the efforts of local governments, or it is imposed vertically by higher levels of government (Díaz de Landa, 2008). Empirical studies show that processes of coordination that are initiated locally often *coexist* with other incentives that are initiated at the supralocal level (Díaz de Landa, 2008), which adds to the complexity of the phenomenon.

In summary, the LGs establish cooperative intergovernmental relationships, both formally and informally, for various objectives with varying levels of complexity. This network of co-existing links is a structural representation of intergovernmental relationships that is not limited by the formation of supralocal forums that facilitate the interaction among local governments but includes more ad hoc arrangements too.

In this article I conceptualise a relationship of intermunicipal cooperation as the joint actions of two or more local governments attempting to generate common benefits, regardless of the complexity of the relationship, its duration, and whether or not it takes place within a wider institutional framework. While the study of complex cooperative initiatives is important in order to discover both the potential and limitations of intermunicipal coordination, informal and less complex cooperative relationships provide a better measurement of the attitude towards cooperation in and of itself. In this article I argue that the study of networks that contain many different types of intermunicipal cooperation, regardless of their complexity and formality, can help us to identify some of the conditions that affect the occurrence of cooperation itself.

Case Study: Regional Communities in Córdoba, Argentina

Intermunicipal cooperation in the Province of Córdoba, Argentina, has been a frequent topic of interest for decision makers over the last few decades. Since the 1980s, a wide variety of local initiatives have been introduced in order to create institutions that allow for the promotion of interlocal coordination, yet most of those institutions have not survived (Cingolani, 2006). In parallel to these local initiatives, two large-scale efforts spearheaded by the provincial government have also taken place in the last decade. The first effort was the passing of a provincial law that created 'Entes de Recaudación Fiscal y Gestión', or 'Tax Collection and Management Districts' (Provincial law No 8864/2000). Despite the fact that the law included important incentives for local governments to take an active role in these supralocal bodies, the process was not successful and the districts never became operational.

The second effort, which is currently ongoing, was the passing of the 'Ley Orgánica de Regionalización Provincial', or 'Organic Law of Provincial Regionalisation' (Provincial law No 9206/2005). This law ordered the formation of Comunidades Regionales or Regional Communities (RCs) that would follow the boundaries of departmental districts. The Province of Córdoba is divided into 26 Departamentos (Departments),

that form the electoral districts to elect representatives to the provincial legislature. There is no governmental authority at the Departmental level, and its territories include some areas that are subject to the regulation of the LGs while others are regulated by the provincial government. Law 9206 gives RCs regulatory authority over territories that were formerly under local jurisdiction. Furthermore, it establishes that the main governing bodies of the RCs will be formed by the mayors of the local municipal governments within each particular RC. Currently there is no widespread agreement regarding the legal status of the RCs, as some consider them to be a new type of governmental organisation while others believe that they are merely forums where intermunicipal coordination may take place. Independently of this debate, the RCs seek to consolidate and encourage intermunicipal coordination as this was one of the objectives proposed by the law. In any case, this process of regionalisation presents an excellent opportunity to study the complex structures of intermunicipal cooperation and their determining factors.

Determining Factors of Intermunicipal Cooperation

Interdependence, Common Problems and Complementarity

The literature that examines inter-organisational and intergovernmental relationships notes that the interdependence and convergence of objectives between localities can be key elements in the production of cooperative relationships (O'Toole, 1983; O'Toole, 2003; Ludin, 2007; Thurner and Binder, 2009). O'Toole (1983) shows that the perception of a common interest positively affects the cooperation between local actors in intergovernmental policy implementation in Sweden and Germany. Thurner and Binder (2009) also observe that bilateral economic interdependencies affect the propensity to generate transgovernmental links within the European Community. In addition, an investigation carried out in Córdoba, Argentina demonstrates that the mayors' view of interdependence is significantly related to the degree of coordination their local governments can achieve (Mazzalay et al., 2006).

The interdependence between two actors can be subjective, as well as objective. For example, it is one thing to have a similar problem and another thing altogether to understand how that common problem affects all those involved. So, while two or more actors may be objectively interdependent they could not acknowledge such interdependence. Interdependence as a subjective-perceptive phenomenon exists when the actors assume that the need for cooperation with other actors is necessary in order to solve common problems or generate common goods. The presence of these problems or the need to produce common goods suggests that there exists a great need or motivation for cooperation.

H1. *The likelihood for a cooperative relationship between two municipal governments will grow when decision makers perceive those local governments to be interdependent.*

Interlocal interdependence as a subjective phenomenon is difficult to observe in a direct manner. For this reason two indicators are used. The first is the identification of 'common problems': when an actor determines that a common problem exists with another local community.

Subnational Regionalization in Argentina

H1a. *The perception of the decision makers that a common problem exists between their local area and another area positively affects the probability that a cooperative intermunicipal relationship exists between them.*

The second indicator is the 'socio-economic interdependence'. In many cases two local areas have similar socio-economic profiles but do not coordinate their actions even when it is clear they should do so. There is a gap between the structural similarity of socio-economic profiles and whether or not decision makers perceive them as complementary. For example, given the same set of circumstances one mayor could perceive complementary interdependence, while another could see competition.

The perception of complementary socio-economic profiles provides significant motivation to adopt a decision that generates cooperation or maintains earlier cooperative relationships. Inversely, when a decision maker believes that competition exists with other local governments, it is more likely that they will find reasons not to cooperate.

H1b. *The perception of actors that their local area has a complementary socio-economic profile with another positively affects the probability that a new cooperative intermunicipal relationship will be formed between them.*

Social Capital and Cooperation

Over the last few decades, scholars have emphasised the important role that social capital plays in the resolution of collective action problems (Putnam, 1993, 1995; Coleman, 1994; Ostrom, 1999). Putnam (1993) argues that voluntary cooperation is easier in a community that has a substantial stock of social capital, which is formed by norms of reciprocity and networks.

The importance of social relationships and networks as facilitators of cooperation has been especially emphasised by the structural perspective of social capital (Jackman and Miller, 1998). Coleman (1994) argues that social capital is created when the relationships between individuals change in ways that facilitate joint action. On the other hand, authors with a cultural perspective emphasise the importance of networks for the emergence of values and norms. Ostrom (1999) postulates that sustained interactions over a long period of time can be converted into social capital, which facilitates agreement to solve common problems. To summarise, the literature emphasises the importance of networks and relationships for collective action for a number of reasons. First, because they are channels through which material and symbolic resources flow. Second, because these interactions permit the exchange of valuable resources such as information. Third, because they generate conditions for the emergence of informal norms like trust and reciprocity (Putnam, 1993; Coleman, 1994; Ostrom, 1999; Lin, 2006).

Of course, one type of structural link can be a valuable resource for a particular individual or group, while it may not be a valuable resource for another. Moreover, some links may help to produce one type of capital, while other links favor a different form of capital. One of the most popular distinctions between different types of capital in the literature is that between 'bonding social capital' and 'bridging social capital'. While weak links and bridging social capital are important in order to access resources and innovative information (Granovetter, 1973; Burt, 2007), it is agreed that dense structures and strong relationships, or bonding social capital, result in cohesive groups that tend to reduce conflict and promote coordination in the presence of common problems (Coleman, 1994; Lin, 2006; Burt, 2007).

H2. *The greater the amount of bonding social capital available to decision-makers in two given localities, the greater the likelihood that those two localities will engage in intermunicipal cooperation.*

As with interlocal subjective interdependence, social capital is difficult to measure. There are three different dimensions of a social relationship that the literature suggests can indicate *bonding* social capital: frequent daily relationships, the exchange of information, and trust. While these aspects of interpersonal relationships tend to be correlated, the last two characteristics indicate links that are qualitatively stronger between the actors (Granovetter, 1973).

It is likely that the existence of frequent daily relationships between the decision makers of the LG, as well as the exchange of information, could favor the survival of past cooperative relationships and the development of new ones.

H2a. *The existence of frequent daily relationships between decision making actors of local governments positively affects the probability that a cooperative intermunicipal relationship will be produced in these local areas.*

H2b. *The existence of exchanges of information between decision making actors of local governments positively affects the probability that a cooperative intermunicipal relationship will be produced in these areas.*

The literature has argued that trust is a highly important component of collective action (Coleman, 1994; Scholz and Lubell, 1998; Dolšak and Ostrom, 2003). It is argued that trust reduces the risk of conflict among actors who have opposing views (Sabatier et al., 2005). However, some studies have argued that dyadic trust is not a significant factor in collective action and that its presence may not generate coordination between actors (Ostrom, 1999; Lubell, 2007; Ludin, 2007). In this sense it is possible that the existence of dyadic trust between decision makers does not necessarily generate intergovernmental coordination and that cooperative institutional links could exist without the existence of trust between those actors.

H2c. *The existence of trust between decision making actors within local governments does not necessarily affect the probability that an intermunicipal cooperative relationship will be formed between local areas.*

Research Design and Variables

In order to empirically test the hypotheses presented in this article, I use data from a study of two RGs located in the Province of Córdoba, Argentina. These are the Regional Community of Colón, or *Comunidad Regional Colón*, (CRC) and the Regional Community of Santa María, or *Comunidad Regional Santa María* (CRSM). These case studies were chosen due to their geographic similarity and similar economic profiles, as well as their similar population dynamics and socio-economic characteristics (Table 1).

The selection of these case studies in the Province of Córdoba ensures that they are ruled by the same political-institutional regime, and that they possess equal levels of local autonomy, as well as the same system for the transfer of public funds. The similarity of these institutional characteristics prevents these variables from being associated with the variation of the dependent variable.

Subnational Regionalization in Argentina

Table 1. General Characteristics of the RCs

	CRC	CRSM
Geographic characteristics and land use	Area: 2588 km ² Zones: (a) western sierras zone (foothills of the <i>Sierras Chicas</i>); activities include tourism and livestock, (b) eastern zone, characterized by plains and intensive agricultural use.	Area: 3427 km ² Zones: (a) western sierras zone (eastern region of the <i>Sierras Grandes</i> and the <i>Sierras Chicas</i>); activities include tourism (<i>Valle de Paravachasca</i>), and non-intensive agriculture, (b) eastern zone: plains and the use of intensive agriculture.
Agricultural activity % of the GDP 2003 ^a	20.50	19.70
Industrial % of the GDP 2003 ^a	19.20	12.30
Tourism % of the GDP 2003 ^a	15.60	18.40
Socio-economic indicators		
Population 2001	171,067	86,083
% of people in households without material deprivation (<i>IPMH</i> ^b)	59	55.8
% of people in homes with <i>NBI</i> ^b	16.4	16.1
Institutional characteristics ^c		
Local governments	20 (Municipalities:14; Comunas:6)	24 (Municipalities:7; Comunas:17)
Major regional issues ^d	<ul style="list-style-type: none"> • Urban waste disposal • Availability of potable water during droughts, typical of western sierras zone. • Areas with agricultural fumigations • Infrastructure and services (such as health, transportation, and security) • Promotion of tourism 	<ul style="list-style-type: none"> • Urban waste disposal • Availability of potable water, associated with the concern about contamination in the watershed. • Infrastructure and services (such as transportation, security, and education) • Promotion of tourism. • Limited resources of the <i>comunas</i>. This provokes two demands: the demarcation of municipal lands and the reform of the provincial law for fiscal transfers.

^aGross Domestic Product (GDP) year 2003. Estimation from the *Dirección General de Estadísticas y Censos del Gobierno de la Provincia de Córdoba* (DGEyCPC). For Tourism the following categories were used: hotels, restaurants, and realty offices that manage rental properties.

^bAccording to the *Índice de Privación Material de los Hogares* (IPMH), or Index of Household Material Deprivation, and 'Necesidades Básicas Insatisfechas (NBI)', or Unsatisfied Basic Needs, defined by INDEC. Source: DGEyCPC from data collected by the National Census in 2001 (*Censo Nacional de Población y Vivienda*).

^cThe institutional regime of the Province of Córdoba includes two institutional categories at the local state level: (a) *Municipios*: populated areas with more than 2000 inhabitants that possess an integrated government made up of a Mayor, City Council and Court of Auditors. (b) *Comunas*: populated areas with less than 2000 inhabitants with a government formed by a commission (including a President, Secretary and Treasurer) as well as a Court of Auditors. The Province of Córdoba has 427 local governors: 249 *Municipios* and 178 *Comunas*.

^dAccording to respondents.

The data used in the analysis were collected through interviews conducted with mayors and communal presidents (decision making actors from LGs). A semi-structured survey was used, which collected both qualitative and quantitative data. The survey for CRSM was conducted between May and December of 2007. In CRSM, eighteen actors were interviewed, with seventeen of them providing information on networks. In CRC, the survey was conducted between June, 2008 and May, 2009. In this location seventeen actors were interviewed, with fifteen providing information about networks.

In both RCs, respondents were asked to describe the cooperative relationships that existed between LGs in the area. Answers to these questions were used to create two matrices that represent the structures of the existing intermunicipal relationships, which are used as dependent variables: DV.1 is a square binary matrix that records the cooperative relationships while preserving the directionality of the links, and DV.2 is a symmetrised binary matrix that shows the relations of cooperation without directionality.

The independent variables were measured as follows. *Subjective interlocal interdependence* is measured by asking respondents about common problems that their locality has with other local governments in the RC (IV.1), as well as which of the other localities were considered to be socially and economically *complementary* (IV.2). With this information, square binary matrices were created.

To measure the indicators of *bonding social capital*, respondents were asked to characterise their relationships with other LGs within their RC. To assess the frequency of relationships (IV.3) respondents were asked to answer the following question: 'With what other LGs within your RC do you have relationships resulting from your official responsibilities and with what frequency?' The possible answers to this question were: 5 = weekly, 4 = a few times a month, 3 = once a month, 2 = every two to three months, 1 = rarely, 0 = never/I do not have any contact. With this information a valued square matrix was created. The second indicator, *exchanges of information* (IV.4), was measured with the following question, 'Which other LGs within your RC do you exchange information with?' The third indicator *trust* (IV.5) was measured by asking, 'Which other LGs within your RC do you trust?' These last two questions produced answers that were placed in square binary matrices.

Three control variables were included in the analysis. The first control variable (CV.1) is the *political party in charge of the local government*, as we assume that the LG has an incentive to cooperate more with members of his/her own party. In CRSM five LGs belong to the Partido Unión Cívica Radical (UCR), thirteen belong to the Unión Por Córdoba (UPC) – a coalition of various parties with the principle parties being the Partido Justicialista (PJ) – and six belong to local neighborhood parties or *partidos locales vecinales* (PV). In CRC eleven LGs belong to the UCR party, six to the UPC party, and three to the PV party. A square binary matrix was created in each RC that captures whether LGs share a ruling party or not. The second control variable (CV.2) is the *institutional category* of the LG. Assuming that the different institutional capacities and needs between municipalities and communes could function as either an incentive or an obstacle for cooperation, a square binary matrix was created that demonstrates the similarity of institutional categories. The third control variable (CV.3) represents the *geographic distance* between localities within the RC. While geographic proximity is not required for a coordinative relationship to exist, the distance could impact the way in which the cooperation is structured. A valued square matrix was created for CV.3 in which the distance between localities is indicated in kilometers. Table 2 shows the univariate statistics of the variables.

Table 2. Univariate Statistics

	DV.1 Intermunicipal cooperation directed matrix	DV.2 Intermunicipal cooperation symmetric matrix	Socio-economic complementarity	Common problems	Daily relationships	Exchange of information	Relationships of trust	Geographic distance	Political party	Institutional category
Number of actors	24	24	24	24	24	24	24	24	24	24
Density	0.064	0.086	0.311	0.066	0.519	0.13	0.281	32.9	0.373	0.569
Standard deviation	0.245	0.281	0.463	0.249	1.153	0.337	0.45	18.68	0.484	0.495
Minimum value	0	0	0	0	0	0	0	1	0	0
Maximum value	1	1	1	1	5	1	1	95.7	1	1
Number of observations	391	510	391	391	391	391	391	552	552	552
CRC										
Number of actors	20	20	20	20	20	20	20	20	20	20
Density	0.158	0.217	0.193	0.126	1.867	0.396	0.389	40.73	0.374	0.558
Standard deviation	0.365	0.412	0.395	0.332	1.865	0.489	0.488	20.04	0.484	0.497
Minimum value	0	0	0	0	0	0	0	2	0	0
Maximum value	1	1	1	1	5	1	1	83	1	1
Number of observations	285	360	285	285	285	285	285	380	380	380

In order to empirically test the hypothesis, I perform a statistical analysis of the relationship between these matrices. This analytical strategy implies that the unit of analysis is the dyadic interlocal relationship. As the dependent variable is the relationship of intermunicipal cooperation, regression analysis was utilised to determine the presence/absence of intermunicipal cooperation between any two LGs within the same RC. Within the field of Social Network Analysis (SNA), there are methodological tools that deal with the limitations of the econometric techniques commonly used in social sciences. One of these techniques is the Quadratic Assignment Procedure (QAP), which is used to statistically examine the matrices without resorting to the assumption that the units of observation are independent. This assumption does not hold true in this analysis, as the same actors take part in multiple dyadic relationships. The statistical estimations are performed using procedures available in UCINET 6.189 (Borgatti et al., 2002). Within this program, the Pearson correlations are calculated using the 'QAP Correlation' command and the regression models are created using the 'Multiple regression QAP via double dekker semi-partialling' command.

Results

Networks of Intermunicipal Cooperation

The data show that within the RCs not all of the LGs have relationships of cooperation. At the same time, intermunicipal coordination does exist, for example in the joint purchase of supplies, through the completion of public works and the creation of public services (Table 3).

Furthermore, there are cooperative relationships formed through the decisions of the mayors currently in office as well as previously elected officials. While intermunicipal coordination is the central objective of the law that formed the RCs, its impact on the regional governments in the case studies presented here is not evident. Many of the cooperative relationships that are present in the RCs were there before the law was passed and seem to have developed in an independent manner. For example, in CRSM only two actors indicated that the formation of their RC played a role in their cooperative relationships, while two additional actors attributed only relative importance to their RC. Meanwhile in CRC a single respondent indicated that their RC played an important part in their coordinative actions.

The way in which intermunicipal cooperation is structured within the RCs is complex, and this is the product of the historical institutional relationships that are established and maintained by decision makers in the LGs. Intermunicipal cooperation, as seen from a network perspective, shows the manner in which LGs are structurally linked to each other. These networks include all of the cooperative relationships, regardless of their complexity and the period of time in which they were formed.

Of the 24 LGs that make up CRSM, 8 had not established relationships of cooperation with other LGs in the same RC. In CRC the LGs seemed to have a more cohesive bond as nineteen of the twenty LGs maintained cooperative relationships. Furthermore, the networks of each RC were made up of two components or subgroups, one that linked the majority of the localities and another that linked only a few (three in CRSM and two areas in CRC).

The suggestion that all actors will cooperate because they will obtain better benefits suggests that all of the LGs within the same RC would cooperate with one another.

Subnational Regionalization in Argentina

Table 3. Actions of Intermunicipal Cooperation

CRSM		CRC	
AI1	None	AI1	Agreement for the joint provision of health services.
AI2	Technical assistance and waste collection	AI2	No data
AI3	None	AI3	Joint treatment of waste
AI4	None	AI4	Delimitation of municipal lands
AI5	None	AI5	Delimitation of municipal lands
AI6	Promotion of tourism together with waste disposal	AI6	Joint promotion of tourism; event organization and coordination to fight fires.
AI7	Joint purchases of medicines, construction materials and police vehicles	AI7	Standardization and joint monitoring and enforcement of local legislation
AI8	Promotion of tourism and the collection of waste	AI8	Joint purchase of medicines
AI9	Joint purchases of vehicles for the collection of waste	AI9	Joint purchase of medicines; joint project for a natural gas work; disposal and treatment of waste.
AI10	Collection of waste; purchase and joint use of mobile dental services and police cars. Security and shared judiciary branch.	AI10	Joint project for the disposal of waste.
AI11	Shared judiciary branch and common landfill	AI11	No data
AI12	None	AI12	Promotion of tourism
AI13	None	AI13	Coordination to protect transportation routes.
AI14	None	AI14	Joint project related to the disposal of waste.
AI15	None	AI15	Joint provision of a service to provide potable water.
AI16	Maintenance and repair of roads.	AI16	Completion of a joint provision to provide public works (water, roads, gas, sewers)
AI17	None cooperative action	AI17	Joint provision of a service to provide potable water and the organisation of joint events.
AI18	No data		

AI = Actor interviewed.

While this situation is not very difficult to carry out in straightforward circumstances, it is important to remember that some LGs coordinate with others that are located far away geographically and/or are members of other RCs. Furthermore, the density of the networks clearly shows regional structures of cooperation that are not very cohesive. This low level of cohesion can be seen in Table 2, which shows that in CRSM the network has 6.4 per cent of the possible links in the directed matrix and 8.6 per cent in the symmetric matrix, while in the CRC the percentages are 15.8 and 21.7 per cent respectively.

Note that significant differences exist between the RCs in terms of the levels of structural cohesion, as CRC duplicates the density levels of the CRSM in the two matrices that were analysed. Moreover, both RCs differ significantly from the ideal structure that demonstrates a level of coordination that includes all the LGs (density of 1), which is, after all, the central objective of the process of regionalisation.

However, there are differences between the RCs in terms of the centralisation of the networks of cooperation. CRC has a centralisation level of 41.52 per cent in the symmetric matrix, while CRSM has a value of 24.51 per cent. This could suggest that the greater density in CRC would be the result of a higher level of connection and centrality that some LGs have. Note that Figures 1 and 2 show that in CRC the LG Unquillo is linked to eleven LGs, while Jesús María and Juárez Celman have nine links each. In CRSM, La Bolsa and La Serranita have seven and six connections respectively.

Conditions of Intermunicipal Cooperation: Testing the Hypothesis

The tables below show the values of the quadratic correlations calculated with UCINET between all of the variables.

The values of the Pearson correlation are consistent with the hypothesis (Tables 4 and 5). The two variables that show *subjective interlocal interdependence* (IV.1 and IV.2) are moderately correlated with intermunicipal cooperation (between 0.251 and 0.412) and highly significant ($P < 0.001$) in the two RCs that were studied.

The variables that indicate the presence of *bonding social capital* (IV.3., IV.4. and IV.5.) are shown as being correlated. In CRC these correlations are moderate to highly significant, with a Pearson value of 0.574 between information and trust, which goes against the general pattern. This could suggest that in CRC the exchange of information tends to be restricted to those relationships that contain a higher level of trust. In CRSM the relationship between these variables is weaker. Moderate correlations are observed here between frequent daily relationships and exchanges of information, as well as between exchanges of information and trust. However, there is not a significant correlation between trust and frequent daily relationships. This difference, together with the density values shown in Table 2, indicates a more harmonious and consistent form of *bonding social capital* in the political system of CRC. With regard to the effect on the dependent variables, the variables that indicate *bonding social capital* (IV.3., IV.4. and IV.5.) have the following characteristic: the exchange of information is substantively more important (Pearson values greater than 0.24 and $P < 0.01$), whereas the frequent daily relationships are correlated but less strongly (in CRSM 0.163 with $P < 0.05$ and 0.250 with $P < 0.001$ in VD.2; and in CRC 0.118 with $P < 0.05$ and 0.305 with $P < 0.01$).

The variable *trust* is not seen as being significantly correlated with cooperation in CRC. In CRSM the correlation is more significant when the matrix of cooperative relationships is presented with undirected links (0.185 with a value of $P < 0.01$). This behavior is consistent with the hypothesis and with what is suggested by the literature reviewed in this article. Despite this lack of association between the variables, it is important to note that trust can be a secondary condition associated with other properties of interpersonal relationships. For example, as Ludin (2007) suggests, trust can act as a catalyst to create new cooperative relationships when the goals of the actors are not contradictory.

Moving on to the control variables, the results obtained for the variable geographic distance are notable. In the case of cooperation, a moderate value is observed (between

Subnational Regionalization in Argentina

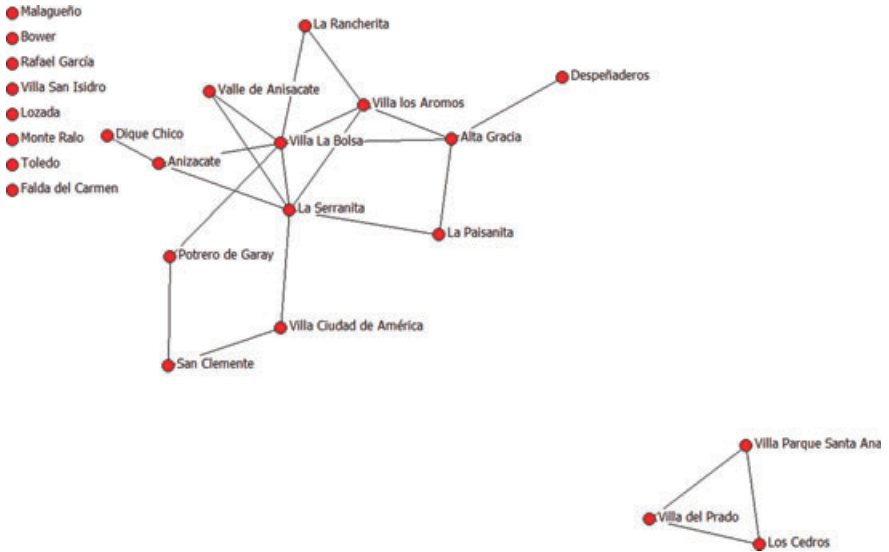


Figure 1. Intermunicipal Cooperation in CRSM

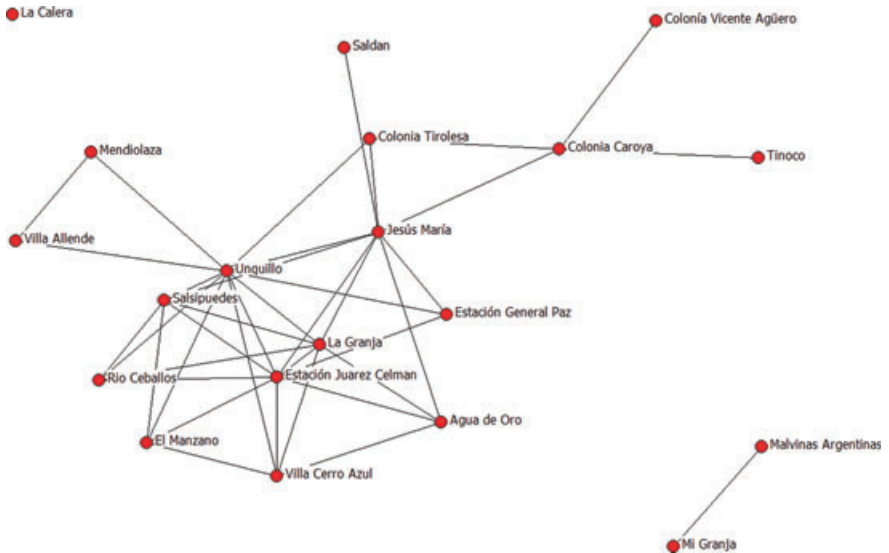


Figure 2. Intermunicipal Cooperation in CRC

–0.322 and –0.375 with $P < 0.001$, the negative sign indicates that with greater geographic distance there is less probability for cooperation). The importance of geographic distance and its impact on the other variables is understandable given that geography plays an important role in the construction of political and social

Table 4. Pearson Correlations for CRSM

	DV.1.	DV.2.	IV.2	IV.1	IV.3	IV.4	IV.5	CV.3	CV.2	CV.1
DV.1. = Intermunicipal cooperation (directed links)	1.000									
DV.2. = Intermunicipal cooperation (symmetric links)	0.834****	1.000								
IV.2 Socio-economic complementarity	0.412****	0.389****	1.000							
IV.1 Common problems	0.386****	0.382****	0.253***	1.000						
IV.3 Daily relationships	0.163**	0.160****	0.172*	0.223**	1.000					
IV.4 Exchanges of information	0.243****	0.250****	0.180*	0.201**	0.432****	1.000				
IV.5 Relationships of trust	0.156*	0.185****	0.271**	0.027	0.147	0.298***	1.000			
CV.3 Geographic distance	-0.322****	-0.362****	-0.310****	-0.293****	-0.081	-0.224**	-0.100	1.000		
CV.2 Institutional category	0.165****	0.181**	0.156	0.104	0.053	0.123**	0.029	-0.398****	1.000	
CV.1 Political party	0.016	0.044	-0.070	0.029	0.014	0.112**	0.049	0.092	0.036	1.000

QAP = Correlations on 5000 permutations.
 Value P. (QAP values) = * < 0.1, ** < 0.05, *** < 0.01, **** ≤ 0.001.

Table 5. Pearson Correlations for CRC

	DV.1.	DV.2.	IV.2	IV.1	IV.3	IV.4	IV.5	CV.3	CV.2	CV.1
DV.1. = Intermunicipal cooperation (directed links)	1000	—	—	—	—	—	—	—	—	—
DV.2. = Intermunicipal cooperation (symmetric links)	0.805****	1000	—	—	—	—	—	—	—	—
IV.2 Socio-economic complementarity	0.300****	0.333****	1000	—	—	—	—	—	—	—
IV.1 Common problems	0.270****	0.251****	0.430****	1000	—	—	—	—	—	—
IV.3 Daily relationships	0.268****	0.305****	0.292****	0.231****	1000	—	—	—	—	—
IV.4 Exchanges of information	0.259****	0.269****	0.276****	0.167****	0.489****	1000	—	—	—	—
IV.5 Relationships of trust	0.049	0.036	0.266****	0.238****	0.401****	0.574****	1000	—	—	—
CV.3 Geographic distance	-0.356****	-0.375****	-0.493****	-0.298****	-0.383****	-0.253****	-0.105*	1000	—	—
CV.2 Institutional category	0.107	0.118	0.073	0.115*	0.146**	0.080	0.096*	-0.157*	1000	—
CV.1 Political party	0.078	0.069	0.080	0.113*	0.214***	0.218***	0.274****	-0.044	0.512****	1000

QAP Correlations on 5000 permutations.
 Value P. (QAP values) = * < 0.1, ** < 0.05, *** < 0.01, **** ≤ 0.001.

Table 6. Intermunicipal Cooperation: Quadratic Regression

Introduced variables	CRSM		CRC	
	Model 1 DV.1 Intermunicipal cooperation (directed links)	Model 2 DV.2. = Intermunicipal cooperation (symmetric links)	Model 1 DV.1 Intermunicipal cooperation (directed links)	Model 2 DV.2. = Intermunicipal cooperation (symmetric links)
Socio-economic complementarity	0.117555****	0.154102****	0.104526**	0.126799**
Common problems	0.278409****	0.310666****	0.156757***	0.111814*
Daily relationships	0.002364	0.003037	0.010009	0.024056
Exchanges of information	0.076638**	0.072437**	0.111043**	0.105251*
Relationships of trust	0.029518	0.051098**	—	—
Geographic distance	-0.001215***	-0.003009****	-0.002741***	-0.005029***
Political party	0.005794	0.030462	-0.009870	-0.015730
Institutional category	0.018841	0.019435	0.025254	0.047675
Intercept	0.018841	0.068820	0.155694	0.273750
Summary of models				
Number of observations	552	552	380	380
Number of permutations	2000	2000	2000	2000
R-square	0.236	0.258	0.174	0.192
Adj R-Sqr	0.226	0.248	0.161	0.179
Probability	0.000	0.000	0.000	0.000

The values correspond to unstandardized coefficients. Statistical significance = * < 0.1, ** < 0.05, *** < 0.01, **** ≤ 0.001.

In the regression simulations for CRC an effect of collinearity was detected between relationships of trust and exchanges of information. This prevents the joint introduction of the models for CRC. The bivariate correlation of 0.574 (Table 5) explains this effect. When the models are estimated with these variables separately, exchange of information is the only variable that retains a significant coefficient. The absence of significance in the bivariate correlation between trust and cooperation explains why trust is not significant when it is introduced without the variable exchanges of information in the models of regression.

relationships. However, the moderate values of the correlations indicate that it is a probable condition but not a determinant condition at the dyadic level. For example, some actors establish subjective interdependence with localities located far away from one another and not with those that are located more closely.

The absence of a significant correlation between cooperation and political party shows that intermunicipal cooperation in the RCs is not influenced by the similarity of the political parties in the LGs. Finally, the variable institutional category seems to play an important role in CRSM (0.165 with $P < 0.01$ for VI.1. and 0.181 with $P < 0.05$ for VI.2.). This suggests that local governments of a lower institutional category tend to cooperate more between themselves.

For the multivariate analysis, quadratic regression models were created with diverse combinations of variables and interactions between them in order to control for the collinearity effects. The models that performed better are shown in Table 6.

In all of the models the variables that indicate *subjective interlocal interdependence* were shown to be significant, which supports the hypotheses. However, not all the variables that indicate *bonding social capital* were significant. Although the bivariate

analysis showed significant relationships between variables, when these are introduced into the multivariate models the variable *frequent daily relationships* loses statistical significance. Furthermore, the exchange of information seems to be an important variable for intermunicipal cooperation. A possible explanation for this is that the levels of frequent daily interactions between the actors are higher due to the creation of the RCs, but this does not seem to apply in intermunicipal cooperation because the resulting links are weak and formal. The data seem to suggest that when an interpersonal relationship is qualitatively stronger, it tends to have an impact within the establishment or helps to maintain cooperative relationships.

The variable *trust* is only significant in CRSM in the symmetric matrix (IV.2), but is substantively weak in its effect. In CRC the bivariate analysis shows that *trust* is not correlated with cooperation, but it is strongly correlated with information, which produces a collinearity effect that requires that it be removed from the multivariate models. This diffuse behavior of dyadic trust is consistent with the hypothesis derived from the reviewed literature.

Finally, the analysis demonstrates the important role played by geographic distance. Although the independent variables include as much complex coordination as they do simple coordination, the relative distance seems to be a factor of great importance in the configuration of intermunicipal cooperation. The institutional category loses significance in the regression models, showing that it is a spurious correlation.

Conclusion

The creation of interlocal and supralocal forums is a generalised phenomenon in Latin America that functions as a response to the difficulties that exist in creating coordinated responses to common problems among local governments.

Intermunicipal cooperation is a complex phenomenon because it involves multiple coexisting relationships. The analysis conducted for this article gives an account of this complexity, and demonstrates that simply creating institutions where actors can meet and interact is not sufficient enough to induce coordination between multiple autonomous governments. Despite the superior performance in CRC, both RCs are far from the ideal in which all the LGs in the area would work together in an integrated and cooperative fashion. It should be noted that the structures of cooperation are fragmented and composed of isolated actors, and that the density levels of the networks that I have analysed are low. One possible explanation for the difference in cohesion between the two RCs that were studied could be the greater centralisation of cooperative links found in CRC. This characteristic suggests the importance of cooperative leadership in the formation of regional forums.

The subjective interlocal interdependence generated by decision makers within the LGs is an important factor in the creation of regional coordination. The two variables that indicate interdependence are highly significant in all of the simulations that were run. These results confirm the important role that interdependence plays in encouraging cooperation between decision makers. Therefore, the processes of interlocal coordination among communities should consider existing interdependencies and stimulate new ones in order to create more cohesive relationships.

Bonding social capital has a moderate impact on the structures of cooperation within the regional communities that were studied, and the variables that indicate its presence perform in different manners in the models. Frequent daily relationships are correlated

to cooperation in the bivariate models but lose significance in the multivariate models. However, the behavior of the variable exchanges of information is consistent in the different models. These results suggest that it is not the frequency of relationships that affects cooperation but rather the quality of links that develop among local governments. The formation of RCs in Córdoba has led to greater interactions between the LGs but this does not seem to impact the occurrence of cooperative practices. Therefore, these results lead one to believe that it is not enough to create forums where decision makers can cooperate; instead it is necessary to make sure that links gain in qualitative strength.

Trust has been identified as a clear indicator of social capital and a key element for cooperation; however over the last few years some studies have suggested that it is not the only important element. The statistical analysis conducted here shows that trust has only a slight impact in one of the RCs examined here. This is consistent with the hypothesis, and suggests that within the structures of intergovernmental relationships, intermunicipal coordination appears to be relatively independent from the trust actors have in one another.

Although the networks studied here include coordination that is characterised by a low level of complexity in which distance is not an insurmountable obstacle, geographic distance does play an important role. This shows that geography has an effect on the actors in regard to their decision whether or not to cooperate, a fact that should be considered for future regionalisation projects. In addition, it is notable that the analysis shows that the similarity of political parties has a rather low impact on cooperation between LGs. This seems to indicate that, in the RCs studied here, political parties do not constitute an article of intermunicipal cooperation and that local intergovernmental cooperation is not biased by partisan electoral interests. To conclude, this study is a contribution to the literature specialising in intergovernmental relationships and intermunicipal cooperation. Furthermore, it attempts to provide further understanding of intermunicipal cooperation in situations where coordinated behavior by a multiplicity of local actors is a necessary but not sufficient condition to solve the common problems that take place in fragmented policy systems.

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References

- Agranoff, R. (2006) 'Inside Collaborative Networks: Ten Lessons for Public Managers'. *Public Administration Review* 66: 56–65.
- Alonzo Gutierrez, R. (2006) 'La cooperación intermunicipal en Guatemala: un perfil de nuevas formas de gestión del desarrollo local'. *Revista Pueblos y Fronteras Digital* 1: 1–16.
- Berardo, R. and Scholz, J. (2010) 'Self-Organizing Policy Networks: Risk, Partner Selection, and Cooperation in Estuaries'. *American Journal of Political Science* 54(3): 632–649.

- Borgatti, S. P., Everett, M. G. and Freeman, L. C. (2002) *Ucinet for Windows: Software for Social Network Analysis*. Analytic Technologies: Lexington.
- Burt, R. (2007) *Brokerage and Closure*. Oxford University Press: New York.
- Cingolani, M. (2001) 'La cooperación intermunicipal después de la descentralización en la Provincia de Córdoba: oportunidades y restricciones' *Coordinación intermunicipal en Argentina*. Instituto Nacional de Administración Pública, Editorial de la Universidad de Buenos Aires: Buenos Aires, 159–180.
- Cingolani, M. (2006) 'Descentralización y relaciones intergubernamentales' in M. Lardone and M. Cingolani (eds.) *Gobiernos bajo presión*. EDUCC: Córdoba, 141–251.
- Coleman, J. (1994) *Foundations of Social Theory*. Harvard University Press: New York.
- Díaz de Landa, M. (2008) 'La cooperación intermunicipal y reconfiguración de las relaciones intergubernamentales: el dilema de la acción colectiva institucionalizada'. *Ponencia presentada en el XIII congreso internacional del CLAD sobre la reforma del estado y de la administración pública*, Buenos Aires.
- Dolšák, N. and Ostrom, E. (2003) 'The Challenges of the Commons' in N. Dolšák and E. Ostrom (eds.) *The Commons in the New Millennium*. The MIT Press: Cambridge, 3–34.
- Granovetter, M. (1973) 'The Strength of Weak Ties'. *American Journal of Sociology* 78(6): 1360–1380.
- Jackman, R. and Miller, R. (1998). 'Social Capital and Politics'. *Annual Review of Political Science* 1: 47–73.
- Lin, N. (2006) 'Building a Network Theory of Social Capital' in N. Lin and K. Cook (eds.) *Social Capital. Theory and Research*. Aldine Transaction: New Jersey, 3–29.
- Lubell, M. (2007) 'Familiarity Breeds Trust: Collective Action in a Policy Domain'. *Journal of Politics* 69(1): 237–250.
- Ludin, M. (2007) 'Explaining Cooperation: How Resource Interdependence, Goal Congruence, and Trust Affect Joint Actions in Policy Implementation'. *Journal of Public Administration Research* 17: 651–672.
- Mazzalay, V., Camps, H. and Sarmiento, G. (2006) 'Relaciones de cooperación intermunicipal en la Región Central de Córdoba. Estructuras perceptivas como condicionante'. *Studia Politicae* 7: 77–114.
- Ostrom, E. (1999) *Governing the Commons*. Cambridge University Press: New York.
- O'Toole, L. (1983) 'Interorganizational Cooperation and the Implementation of Labour Market Training Policies: Sweden and the Federal Republic of Germany'. *Organization Studies* 4: 129–150.
- O'Toole, L. (2003) 'Interorganizational Relations in Implementation' in J. P. Peters (ed.) *Handbook of Public Administration*. Sage: London, 234–244.
- Parmigiani de Barbará, C. (2003) *El reordenamiento territorial de las políticas públicas en la República Argentina: propuestas, concreciones y perspectivas, miradas desde la crisis*. [WWW document]. URL <http://www.iiij.derecho.ucr.ac.cr/archivos/documentacion/inv%20otras%20entidades/CLAD/CLAD%20VIII/documentos/parmigia.pdf> [accessed 10 December 2010].
- Provan, K. and Millward, H. (1995) 'A Preliminary Theory of Interorganizational Network Effectiveness: A Comparative Study of Four Community Mental Health Systems'. *Administrative Science Quarterly* 40: 1–33.
- Putnam, R. (1993) *Making Democracy Work*. Princeton University Press: Princeton.
- Putnam, R. (1995) 'Bowling Alone: America's Declining Social Capital'. *Journal of Democracy* 6(1): 65–78.
- Rhodes, R. (1994) 'The Hollowing Out of the State: The Changing Nature of the Public Service in Britain'. *The Political Quarterly Publishing* 65(2): 138–151.
- Rhodes, R. (1996) 'The New Governance: Governing Without Government'. *Political Studies* 44(4): 652–667.

- Rodriguez Oreggia, E. and Turian Gutierrez, R. (2006) 'La cooperación intermunicipal en México. Barreras e incentivos en la probabilidad de cooperar'. *Gestión y Política Pública* XV(2): 393–409.
- Sabatier, P. A., Leach, W. D., Lubell, M. and Pelkey, N. W. (2005) 'Theoretical Frameworks Explaining Partnership Success' in W. F. Paul and A. Sabatier (eds.) *Swimming Upstream. Collaborative Approaches to Watershed Management*. MIT Press: Cambridge, 173–200.
- Scholz, J. and Lubell, M. (1998) 'Trust and Taxpaying: Testing the Heuristic Approach to Collective Action'. *American Journal of Political Science* 42: 398–417.
- Thurner, P. and Binder, M. (2009) 'European Union Transgovernmental Networks'. *European Journal of Political Research* 48(1): 80–106.