



Modelling local autonomy and dependence through cooperative relations

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Abstract

Purpose: Given the spread of multi-level governance tools, interaction between local and regional governments has become an important mechanism for service delivery and the implementation of public policies. This paper empirically tests a model of cooperative relations affecting local governments and thus having an impact on local autonomy and dependence.

Design: This article takes previous typologies as a starting point to theoretically build and empirically test a model of cooperative relations based on two selected indicators: the degree of autonomy-dependence and the degree of rigidity-flexibility of the cooperative system. In a second step, the authors manipulate the model numerically to match real data coming from southern European local governments in order to assess how the theory performs in a concrete space and time.

Findings: Combining the aforementioned concepts creates a four-option theoretical model that describes four possible situations in which cooperative intergovernmental relations can be empirically located.

Originality: This article highlights the need to conduct empirical studies in order to trace the characteristics and evolution of cooperative relations between local governments and upper tiers. This is particularly relevant when referring to mechanisms that can vary over time. In the current big and open data era, this empirical process will become easier and more affordable. In this context, local government studies benefit from particular features that improve the conduct of this kind of analysis: a large 'N' configuration (a large number of units to be included) and a reasonable equivalence in concepts and bodies that allows comparability.

I. Multi-level governance as a non-static concept

In a multi-level governance scenario, central-local relations are increasingly important and politically relevant. In fact, this field is currently a key element of local development strategy, in part because it deeply affects the whole intergovernmental system. The cooperative and non-conflictual development of instruments between different levels of government offers an excellent departure point for studying the institutional design of legal ties and governance models at the local level. This is especially relevant in systems of the so-called Napoleonic model, where ties are usually legally determined and leave an administrative trace that is easy to reconstruct.

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4 Previous studies in this field have pointed to an important increase in the use of
5 different types of multi-level instrument. In fact, a wide range of policies are supposed
6 to be implemented at two, or even more, overlapping territorial levels. In general,
7 current models assess the situation of local government systems taking into account
8 permanent government tiers only.
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12 One of the most frequently used ways of changing or distributing competencies
13 without reforming the territorial basis of local governments is the establishment of
14 intergovernmental ties. Without affecting local governments' legal and administrative
15 boundaries, central governments sometimes plot the delivery of services according to
16 different territorial and administrative bases. Delivering services in territories that are
17 different from the single municipality implies, in fact, a restructuring of local
18 governments (Wollmann, 2004; Steiner, 2003; Bel *et al.*, 2007). Therefore, the main
19 objective of the paper is twofold: the theoretical design of a model that describes
20 vertical cooperative intergovernmental relations on the one hand, and to test the
21 impact of those vertical cooperative relations in a concrete system of local government
22 on the other. Thus, our model covers the cooperative aspect of all intergovernmental
23 design.
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30 Indeed, building comparative models to analyse the systemic behaviour of different
31 levels of government when interacting and cooperating could be seen as a useful tool.
32 Taking the core concepts of both frameworks as a starting point, the paper builds a
33 simple theoretical model able to compare the cooperative and non-conflictual
34 relationships between levels of government across time and space.
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38 Linkages and ties between different local government organisations may imply a new
39 institutional system with its own logic. This new institutional system has a certain
40 meaning for all its members and a structure that is somehow more than a mere means
41 to achieve goals. The theoretical model can be used to compare different political
42 systems and institutional frameworks by identifying key indicators and assigning them
43 standardised values. This would allow researchers to trace the evolution of those
44 linkages in a temporal or static way. The model is useful not only for analysing their
45 position according to selected variables, but also for identifying their past evolution
46 and how they could (or should) evolve in the future. Moreover, it is possible to analyse
47 a temporal series for a single country and, where data are available, to place concrete
48 political systems in a certain moment in time and compare them.
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54 The paper proceeds as follows. The next section presents different theoretical
55 approaches to intergovernmental relations, together with an introduction to the policy
56 instruments literature—the anchoring concepts for empirically testing cooperative
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relations. The third section presents the data and proposes a theoretically-driven model of vertical cooperative relations. The fourth section manipulates the model numerically to match Spanish data, while the final section is devoted to conclusions.

II. Models of local government and models of relations: the impact of the intergovernmental framework

The search for comparative models for analysing local governments is not new and has evolved over time into an increasingly complex approach. As Stoker highlighted, the literature on comparative local governance began with a descriptive study of formally elected institutions of local government that lacked a certain depth and any capacity to examine more informal, underlying practices (Stoker, 2006). The study of local governments has always tried to classify different systems by their main institutional characteristics. The classical approach of Page and Goldsmith created a typology based on a comparison of functions (competencies) assigned to local governments, their autonomous capacity to take decisions (self-government) and their capacity to access national policy-makers (Page and Goldsmith, 1987). Hesse and Sharpe (1991) added the basic question of local democracy to the former classification, while Heinelt and Hlepas (2006) included the question of vertical and horizontal institutional relationships as characteristics relevant to understanding different models of local government.

Following on from these institutional typologies, other authors promoted classifications based more on the capacities and functions of local governments than on institutional features. In this sense, Lidström (1998) created a model typology based not on institutional features but on the relative position of local governments in the system of intergovernmental relations and its effect on local autonomy. Lidström (1998) created a classification based on the distribution of tasks between levels of government and local government discretion in the allocation of goods and policies. In another relevant study with Sellers, Lidström analysed how infrastructures of local government make much of their differences to establish effective welfare policies in every state. Conducting a systematic classification of welfare infrastructures, the authors revealed a close relationship between decentralisation to local government and the character and resilience of the welfare state (Sellers and Lidström, 2007).

One of the last tentative attempts to identify a useful model of classification was that by Stoker, who tried to improve on previous typologies by classifying local governments in terms of concepts relating to the four core functions of all local government: the creation of local identity, its role in economic development, the welfare model produced at the local level and coordination capacity in the face of complex decision-making settings (Stoker, 2011). In this same vein, Ladner *et al.* (2016)

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3 designed a system that analysed the evolution of self-rule capacity in a large number of
4 different countries. Their Local Autonomy Index comprised a set of variables that
5 included structural and operating components, and offered the possibility of
6 monitoring central-local relations. Even though this is one of the most comprehensive
7 measuring mechanisms to date, it does not explicitly include the impact of multi-level
8 or horizontal cooperative mechanisms.
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12 When focusing solely on classifying local governments through their
13 intergovernmental relations, attention should be directed to the ties, and their basic
14 features, emerging in the multi-level governance environment. Previously these
15 relationships have been considered mainly from two basic perspectives: the design of
16 institutions and central-local relations. Both approaches emphasise different features of
17 the game of intergovernmental relations. Moreover, as theoretical contributions both
18 are perfectly complementary and as such, efforts should be made to operationalise
19 them: the multi-level governance concept can be used both as a framework for analysis
20 and a conceptual approach to the study of decision-making and the design of
21 institutions; the central-local approach can be used as a theoretical tool to identify
22 relevant political features and multi-level ties.
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28 The study of dependency and autonomy is a key focus for all local government
29 analysis: '[...] it is important because autonomy is the heart of the very justification of
30 most systems of elected local government. If local governments lack the ability to
31 determine for themselves the mix of local goods and services, as well as local tax rates,
32 then local governments are no more than an administrative arm of the central state,
33 and the election of local representatives serves little purpose' (Goldsmith, 1995: 229).
34 On the subject of central-local relations specifically, Laffin argues that: 'The
35 proliferation of central-local linkages, characteristic of governance, is relevant to
36 whether central government is emerging as a strong centre or as a weak/hollowed out
37 government. This question relates to the extent of (1) central government's steering
38 capacity over local authorities and the central-local linkages as well as over the
39 national-level policy networks; [...], and (3) locally-based actors' capacity to achieve
40 their own objectives and defend their discretion' (Laffin, 2009: 6). In this framework,
41 the direction and intensity of linkages and cooperative relations have a direct impact
42 on the degree of autonomy or control coming from central governments, since
43 autonomy can be understood as a policy-making capacity and the capacity to
44 politically self-organise.
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52 Hooghe and Marks (2003) cogent conceptualisation of multi-level governance offers a
53 useful approach for exploring the relevant variables in the patterns of relationships
54 between territories and governments. They identified two main types of multi-level
55 governance that respond to very different methods of articulating power over the
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territory and between levels of government. The first type (Type I) is in some ways related to a federal system of government and is characterised by: levels of government that tend to be general purpose; units of government that tend to share responsibilities; having a limited number of government levels; and a tendency to fix stable institutional structures. In contrast, Type II represents the intellectual basis of neoclassical economists and theorists of public choice. Hence, this type is characterised by: specialised levels of government (i.e. as service providers); units of government sharing responsibilities based on the best way to internalise costs and benefits; great diversity in levels of government; and a flexible and malleable, basic institutional design.

These two types of multi-level governance lead to two very different conceptions of governance, in its broadest sense. Depending on which of the two types is in place, one can find patterns of stability in intergovernmental relations (Type I) or patterns of diversity and change (Type II). Both models seek a more efficient distribution and implementation of decision-making, but both also lead to completely different institutional and organisational designs and patterns of relationships between governments. To assess the main variables explaining the existence of Type I or Type II, Hooghe and Marks (2003) highlight up to four key dimensions of institutional design: the opposition of territorial versus field-specific; the dichotomy of general versus specific (transversal or specific capabilities); the dichotomy of centralisation or decentralisation; and the opposition of temporary versus lasting institutions. These four dimensions express, in a nutshell, how flexible the institutional structure is in order for institutions to adapt to social heterogeneity and diversity. As John clearly points out, 'one of the basic elements of governance is the changed character of institutions themselves' (John, 2001: 109). Moreover, the institutional response to complexity is to reform the territorial organisation of decentralised government, which leads us to basic questions of institutional design.

The broadening of the (multi-level) governance concept—suggesting that less formal means of co-ordination and decision-making may drive central-local relations in addition to formal, hierarchical methods of government—brings the study of comparative local governance to a new stage: non-conflictual relations between tiers of government. Denters and Rose, for instance, identified a broad shift towards governance, assuming that bargaining, agreements, contracting, partnerships and networking, most of which are also related to New Public Management techniques, are typical expressions of governance (Denters and Rose, 2005a, 2005b). Accordingly, the existence of linkages and practices should be taken into account, along with the extent of discretion given to local governments in terms of decision-making and access to central government (Chandler, 2005; Stoker, 2006).

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3 While most of the literature on fiscal decentralisation has duly highlighted questions of
4 competition between tiers of government and between units of government, either
5 vertically (Breton, 2006; Dafflon, 2006; Treismann, 2007) or horizontally (Salmon, 2015),
6 less attention has been paid to relations based on cooperation as opposed to conflict.
7 Being aware that existing conflictual relations may reflect only a partial picture of
8 intergovernmental relations, we have concentrated on building a model and measure
9 exclusive to the growing importance of cooperation. Indeed, competition is
10 characterised by the non-formalisation of agreements, so they will not yield in a formal
11 cooperation tool, which is the core of our proposal.
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16 Moreover, the literature on fiscal decentralisation is not clear on the consequences of
17 competition. Breton (2006) argues that without vertical conflict and competition,
18 decentralisation is hard to conceptualise. However, Dafflon (2006) stresses the
19 difficulty of creating a model to assign functions in decentralised governments built
20 exclusively upon conflict: 'The assignment of responsibilities to (de)centralize levels of
21 government can be organized along several criteria (...) No doubt these criteria have
22 opposing forces (...) and no doubt local, regional and central government may have
23 divergent opinions' (p.300), but, as recognised previously, 'the problem of
24 (re)assigning functions (...) are not in the nature of things capable of ultimate, once-
25 and-for-all, general prescriptions' (p. 299). In a similar vein, Treismann (2007) argues
26 that competition to attract resources and capital is a useful mechanism to achieve either
27 decentralisation or its opposite (centralisation), and that the architecture of government
28 will mainly depend on the nature of policy games established among the political
29 actors in the different tiers. All these approaches deal with issues relevant to aiding
30 further understanding of decentralisation. Our interest, however, lies in emphasising a
31 less apparent reality, i.e. the (growing) imperative for public administrations to
32 cooperate in order to achieve common goals and objectives, and the way these
33 relationships reshape the institutional system created.
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42 With such a complex and vast institutionalisation of ties, it seems logical that some
43 systemic patterns of behaviour can be identified. This identification can be achieved
44 naturally by taking into account the nature and effects of policy instruments. Thus,
45 linkages and ties between different local government organisations can imply a new
46 institutional system: the complete picture of these tools may be the result not only of
47 fragmented interests, but of a systemic movement. The result of an increasing number
48 of relations and linkages might be more than a network; it might become a *de facto* new
49 institutional setting.
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54 To trace and account for such variation in institutional ties, our operational analysis is
55 anchored in what the literature identifies as a policy instruments approach. This
56 approach has historically focused on several ways of analysing policy tools: first, by
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3 focusing on interactions between individuals and government (the different forms of
4 organisation available to government); second, by analysing the politics of instrument
5 selection (the interests or ideas that shape the choice of tools); and third, by cataloguing
6 the available toolkit in a generic way (Hood and Margetts, 2007). Finally, Peters
7 developed a useful analytical framework by linking policy instruments and policy
8 management (Peters, 2000). Thus, this paper assumes that tracing and quantifying
9 instrument selection may help to understand how the choice of policy instrument
10 affects central-local relations.
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15 Considering relations between central and local government as instruments legally
16 carrying those linkages provides our analysis with a tool for effective comparison
17 (Hood, 1986). Instruments of public policy are the method by which governments seek
18 to achieve political objectives (Blair, 2002); and so, by searching for a better way of
19 implementing a policy, theoretically the choice of one type of instrument over another
20 has a direct bearing on the best way to improve public service' (Blair, 2002). However,
21 the political decision concerning the choice of instrument is never neutral, and may
22 have hidden intentions and unintended effects (Kassim and Le Galès, 2010; Lascoumes
23 and Le Galès, 2004; Lascoumes and Simard, 2011).
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28 The basic literature on institutional design raises the possibility of exploring the nature
29 of these linkages in a more complex way (Hooghe and Marks, 2003, 2009; Hooghe *et al.*,
30 2008).
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35 **III. Exploring a new proposal and methodological challenges**

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37 As Wolman (2008) points out, there is a lack of common framework for conducting
38 comparative studies of local/urban research, and questions relating to quantification
39 and effective comparability are a relevant part of this dilemma. In this study we want
40 to situate and trace the strategic direction of any cooperative system, so we need a
41 model that is able to analyse reality in a given moment and account for changes over
42 time. To achieve this, the construction of our model follows the approach used for
43 models of strategic orientation (Ramió and Salvador Serna, 1999; Ramió *et al.*, 2007).
44 Thus the authors propose a two-variable axis model in which the object of study can be
45 placed. The model is useful not only for analysing the object's position according to the
46 selected variables, but also for identifying what could (or should) be its future
47 direction. It is true that the model is primarily used for organisational strategic reform,
48 but it could be useful, too, for institutional strategic planning. Consequently, two main
49 axes of analysis emerge: the flexibility or rigidity of the cooperative system on the one
50 hand, and its tendency to align either with local autonomy or a centralised system on
51 the other.
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Figure 1 below shows the structure of analysis and distribution of concepts. On the vertical axis lies the dichotomy of local autonomy and dependency. Our conceptualisation of these terms has been developed taking the work of Entwistle and Laffin (2003), and their approach to central-local as mentioned above, as its starting point. Local autonomy and dependency are considered extremes of a continuum where the hypothetical centre would be a neutral position (obviously, this situation is more a theoretical construct than a feasible possibility in a practical application).

The concepts of 'flexibility' and 'rigidity' make up the second (horizontal) axis, again as opposite positions on the same spectrum: institutional robustness and resilience to change. Hooghe and Marks' (2003) typology is the starting point here, and specifically those elements of their typology that are exclusive and closely related to institutional performance—namely, whether there is a limited number of government levels or it is an open system, and whether the system tends to fix stable institutional structures or builds a flexible and malleable institutional architecture.

The combined effect of both theoretical axes allows us to present our theoretical model. The flexibility-rigidity of the system permits us to take into account partners' capacity to change and make the system evolve over time (this is autonomy, understood as self-organisation).

Figure 1

So, placing any cooperative system at the top of the vertical axis would mean that the system is completely respectful of local autonomy. In contrast, placing a system at the very bottom would mean that municipalities face a strongly centralised system. On the horizontal axis, the flexibility or rigidity of the cooperative system is identifiable by its capacity to change and adapt over time and space. In this case, placing the system on the left of the axis would mean a completely adaptive and changing system of ties and linkages, while the right represents strong cooperative institutions, difficult to adapt and change over time and space because they are stable and static in nature. Our assumption concerning flexibility and rigidity is that, on the one hand, a rigid system—with either higher or lower autonomy granted to local units—hampers future capacity to change and adapt to new realities, thus freezing a given picture. On the other hand, a flexible pattern of relations between levels of government—either highly autonomous or dependent—allows the model to evolve, and therefore respects local (organisational) capacity to change and adapt.

As a two-by-two table emerges, the model proposes four theoretical positions in which a cooperative system can be situated.

1. Agreeing. This option would imply great respect for local autonomy and a high level of flexibility in the use of cooperative instruments. The system allows participating parties to be in a relationship on (almost) equal terms.
2. Partner. This option comes from Entwistle and Laffin's (2003) definition, which sees formal institutions and conventions as instruments for building strong and stable partnerships. The characteristic situation is one in which local governments and centres are confident and build stable and pro-local autonomous instruments of cooperation.
3. Bargaining. This option again follows Entwistle and Laffin's perspective, this time on bargaining among institutions. The scenario implies that there is no equality between parties in relationships, and that local governments try to negotiate in order to achieve better conditions for providing services and policy-making.
4. Strong centre model. This model represents the concept of centralised cooperative systems at its purest, and implies clear central leadership. The main feature here is strong control coming from the centre, since the implemented linkages and ties are stable, difficult to adapt and not inclined towards local autonomy.

Having defined these four theoretical spaces, we will operationalise them using relevant variables to measure them. The basic idea is to find mutually exclusive characteristics that can provide us with valuable information for both axes. All the information should be extracted by analysing every instrument used to engage in cooperative relations.

Therefore, the following elements are included under the concept of flexibility and rigidity.

1. Temporal determination. That is, whether the instrument itself implies a determinate period of time or is a free will option for the parties.
2. Regulation and process. To what extent the processes of creation and dissolution of instruments is easy and reasonably short, or long and arduous (the existence of a strong organisational veto points to effective decisions on the implementation of the tool).
3. New legal personality. Does the creation of the instrument imply the generation of a new legal personality free from the political will of the participants?
4. Level of decision. Is the creation of the instrument just an operative decision, or does it require the agreement of a higher authority in each of the participating institutions?

Under autonomy and dependency, the following considerations are included.

1. Local vs central-regional responsibilities. Is the tool designed to develop local or central-regional responsibilities or competencies?
2. Veto option. Is it possible for local government not to accept a decision once the linkage is established?
3. The source and destination of funding. Are funds specifically assigned to a particular purpose?
4. Capacity to introduce local objectives. Are local authorities able to introduce their own objectives in the day-to-day operation of the cooperative instrument?

So, our theoretical model should take into account the aforementioned features when being built empirically. However, there is still a need to specify how to quantify each feature.

Building the model empirically

In the same way that others have attempted to quantify local autonomy or local decision-making (Fleurke & Willmemse, 2006; Hooghe *et al.*, 2008b; Ladner *et al.*, 2016; Sellers and Lidström, 2007), this paper operationalises the selected variables and for both axes identifies four indicators, each of which is assigned values in order to empirically feed our model.

Flexibility vs rigidity axis

The flexibility-rigidity axis defines the relationship in terms of the level of complexity of change. If patterns of operation were to be modified, would it be easy, or would it meet with strong resistance? The paper identifies four indicators.

FR1. Temporal indicator. Is the linkage or instrument temporally undetermined?

An affirmative response to this question implies that the linkage is supposed to be active with no specific deadline or automatic renewal (codifying an affirmative response as 1). A negative response, in contrast, implies that the relationship or linkage has a limited duration in time (codifying a negative response as 0). The first requires an action to deactivate it, but the latter does not require any agreement or action to make it end. The end of the linkage is programmed from the very beginning. The temporal indicator (henceforth FR1) is defined as a dichotomous indicator.

FR2. Regulation and process. To what extent does the regulation and process of the instrument require a complex procedure?

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3 The model considers degree of regulation and process as an indicator of rigidity. The
4 stricter the procedure and requirements, and the higher the authority who signs the
5 agreement, the more difficult its modification becomes. A scale from 1 to 4 has been
6 designed, where 1 is the lowest degree of regulation and process (henceforth FR2) and
7 4 the highest. In order to assign values, different procedures and regulations were
8 assigned. Being aware of the methodological limitations involved, we transformed the
9 indicator into a rank order (0–1) in a second step.
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13 **FR3. Different institutional body** (hereafter FR3). Does the linkage or instrument
14 create a different institutional body?
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17 The mere existence of a new organisation implies an increase in resistance to change
18 (codifying a positive response as 1). In any bureaucratic environment, the process of
19 creation of an entity is always easier than its extinction (codifying a negative response
20 as 0). That is why this aspect is an indicator of rigidity of the system. FR3 is defined as
21 a dichotomous indicator.
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25 **FR4. Possibility of delegation of the final decision** (henceforth FR4). Must the final
26 decision always be taken by the highest position in the original organisation?
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28 The fact that the final decision on the agreement or linkage must be taken by the
29 highest position in the entity, with no possibility of delegation, is considered an
30 indicator of rigidity (coding a positive response as 1: the final decision must always be
31 taken by the highest position). This could be seen as hinting at political involvement
32 and may imply more complexities in cases of potential willingness to change. The
33 model considers the possibility of transference of the decision to lower levels in the
34 organisation (a 'no' to the previous question) as a sign of flexibility. This option will be
35 codified as 0. FR4 is defined as a dichotomous indicator.
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40 Summing up, the selected variables under the 'rigidity-flexibility' concept lend the
41 model fundamental insights into the architectural design of identified relations. This
42 axis strengthens the theoretical model with the institutional design of ties. The four
43 concepts included on this axis do not relate directly to the 'classical' concept of local
44 autonomy, but when interacting they can strongly modify and affect its nature and
45 extent since they may deeply affect political institutions' self-organisation. Indeed, the
46 concept of flexible design allows margins of manoeuvre—that is to say, potential
47 adaptation to new situations—while a rigid model implies a loss of control—and
48 therefore, of capacity to change or adapt—by the parties involved.
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55 *Autonomy vs dependency axis*
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3 The second variable used to build the model is defined in terms of the autonomy of the
4 local government from the political centre.
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6 **AD1. Formal responsibility for the function; local competence** (henceforth AD1). The
7 centre might create trends of dependency through intervention in local responsibilities.
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10 Consequently, the agreement will be considered as more respectful of local autonomy
11 if its content does not imply any central intervention in local responsibilities. This
12 indicator has been built according to a 1 to 4 scale, where 1 is minimum compulsory
13 local functions and 4 includes those functions that are supposed to be developed by
14 other levels of government.
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17 **AD2. Veto option** (henceforth AD2). This indicator expresses the possibility of the
18 local authority not accepting a decision, even if that implies the use of the exit option in
19 terms of Hirschman's organisational approaches (Hirschman, 1970).
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22 This indicator expresses the capacity of the local authority not to accept a decision
23 (even breaking the agreement or linkage). Conversely, the local authority may have to
24 accept a decision taken by a board or a body according to a majority rule. The AD2
25 indicator is defined as a dichotomous indicator: coding a positive response as 1 and a
26 negative as 0.
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30 **AD3. Earmarked funding** (henceforth AD3). Are the funds specifically assigned to a
31 particular purpose? Is there a margin of discretion regarding the final destination of
32 resources?
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35 This indicator, defined as dichotomous, expresses the capacity to introduce purposes
36 for funds. The ability to decide on the final destination of resources is understood as
37 hinting at autonomy, and the lack of it, in turn, as a sign of dependence: coding a
38 positive response as 1 and a negative as 0.
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42 **AD4. Possibility of introduction of local objectives.** Has the local authority the facility
43 to introduce its own objectives in terms of the instrument? The opposite situation
44 would imply that a pre-set articulation must be accepted.
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48 This indicator, built as dichotomous, expresses whether or not the local authority can
49 introduce its own preferences into the agreement. The operationalisation of this
50 concept is neither easy nor evident, as 0 would imply no possibility at all, while in a
51 real framework a completely closed convention is difficult to conceive. In other words,
52 the very fact of creating a link involves a process of negotiation and consensus-
53 building.
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In order to obtain the position of the system, in a second step all the values were transformed into a 0 to 1 rank. The two variable values assigned to each instrument are the result of applying the following formula, 1 being the lowest figure and 4 the highest:

$$\overline{AD} = \frac{1}{n} \sum_{i=1}^{n=4} AD_i$$

$$\overline{FR} = \frac{1}{n} \sum_{i=1}^{n=4} FR_i$$

The aggregated position of the system in the model will be the result of the mean of each of the variables ^[1]:

$$(\overline{FR}, \overline{AD})$$

where the 1 value is absolute flexibility and 4 absolute rigidity on the FR axis, and 1 is strong dependency, 4 maximum local autonomy on the AD axis.

IV. Testing the model in a concrete reality from southern Europe

To numerically stimulate our model we used data from Spain, and in particular the Catalonia region since it is considered a suitable test-bed for such a theoretical model. Spain has evolved to a multi-level governance model over the last 20 years, mainly due to two intensive processes of dispersion of central government powers: regionalisation and Europeanisation. It is important to note that despite these intensive processes, they have not been followed up by devolution to local governments. The Spanish Constitution establishes up to three main levels of government—central, regional and local—and at the same time establishes political autonomy (or the right to self-government) for all of them; but for local governments, that right is not accompanied by sufficient economic independence to allow political autonomy to be expressed effectively. While regions have become strong centres in terms of political and economic capacity, local governments continue to have much less spending capacity compared with the other two.

Vertical cooperation between local governments and the Catalan government is legally carried out through distinct instruments and channels. All instruments that have left a legal trace of their existence and had a formal impact on the institutional system in 2009 have been included. The model focuses on those legal instruments identified as conducting vertical cooperative and collaborative relations that fulfil at least one of two main conditions:

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4 a. They create an organism with a different legal personality from that of the
5 original institutions, meaning that a new jurisdiction is created, and the new
6 institution formally escapes the direct control and direction of its formative
7 institutions.
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10 b. They structure cooperation in terms of formal equality between parts. That is
11 to say, in legal terms, none of the actors holds a position of leadership or
12 dominance in the configuration of the cooperative relationship. Theoretically,
13 the cooperating institutions share common goals and determine a significant
14 allocation of functions ^[2].
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18 According to our theoretical framework, we selected all instruments where a common
19 agreement between governmental units was compulsory to implement them, since this
20 is the basic requirement of our model. Thus we identified consortia, public mercantile
21 societies, public foundations and agreements, since these were the unique vertical
22 instruments that met our theoretical requirements. The basic political and legal features
23 of these instruments are summarised in Table 1, but all of them express political
24 agreement between levels (which can include private actors), have been created to
25 provide public services or implement public policies and require a formal structure.
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31 **Table 1**
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33 The theoretical institutional design of these instruments implies that none of the actors
34 holds a position of leadership or dominance in the creation of the vertical cooperative
35 relationship: they share common goals once governments establish an agreement to
36 create one of them. There is no clear indicator for measuring the political germ of these
37 agreements; however, our main presumption about systemic leadership is based on a
38 dominant central government. Most of these instruments also imply an economic
39 transfer, generally top-down. However, establishing such cooperative relationships is
40 usually a win-win strategy for local governments because it gives them the
41 opportunity to act and make decisions, even if in most cases this capacity to act is not
42 usually accompanied by a political transfer of competencies with regard to the policy
43 being implemented. So, the system faces a kind of administrative decentralisation
44 without political decentralisation: none of the instruments allows citizen participation
45 in the election of representatives, who are neither responsible nor accountable.
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51 Data used in this article were gathered within the framework of a research project
52 funded by Catalan institutions. Hence, the researchers had the opportunity to access a
53 particularly wide range of original documents that proved especially useful for the
54 objectives of this paper. Naturally, the model could also have been completed using
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3 available public data, but in this case we opted for a more detailed analysis in order to
4 check the validity of the model. A database for extracting information from the original
5 documents for each cooperative linkage was designed. This database included
6 information for every cooperative instrument in force in 2009 and covering the
7 duration of the link, the formal regulations and process for creation of the entity, the
8 existence of a new institutional body, the kind of responsibility (whether or not it was a
9 local undertaking), the possibility of a veto option, earmarked funding and options for
10 introducing local objectives. Once this information was obtained for every instrument,
11 values for the two axes were assigned according to the process specified in the
12 previous section.
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17 The aggregation of data could have a concrete sense, in that it can be seen as
18 constituting strategic direction or leadership in the implementation of the
19 intergovernmental relations. As Table 2 shows, researchers identified an impressive
20 number of institutional links in 2009, even focusing only on instruments that treated all
21 participating levels of government on equal legal terms. This will to cooperate was
22 channelled by an agreement between governments to institutionalise the tie, and often
23 included an economic transfer and a sort of deal related to the delivered service and
24 the tenure of legal powers. Table 3 sets out the basic descriptive variables for each of
25 the four indicators, flexibility and rigidity, autonomy and dependence, before their
26 final transformation into a normalised 0 to 1 rank.
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32 **Table 2**

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35 **Table 3**

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37 The model has been built using data identified in an analysis of the situation in
38 Catalonia. Table 4 shows the final values for both axes considered separately after
39 normalisation of each indicator (0–1). According to the theory outlined above, the
40 system should be placed in the area assigned to the bargaining option in our map
41 (Figure 2). This position implies a medium to low degree of autonomy and a strong
42 tendency towards flexibility. According to the model, local governments are supposed
43 to bargain with central authorities in order to be able to develop their functions. In
44 terms of the flexibility-rigidity axis (FR), the model tends to be flexible. As for
45 autonomy-dependence (AD), the results are less clear, with the numerical designation
46 expressing a position almost in the middle of the axis.
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52 **Table 4**

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55 **Figure 2**

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3 Contrasting these results with both the observed reality in 2009 and other approaches
4 to the subject shows interesting aspects. Firstly, in relation to the flexibility feature, the
5 result is consistent with the use (or even overuse) of agreements as a formal
6 mechanism, since these instruments are the most flexible of all cooperative tools. The
7 position on the autonomy variable is less clear, which the researchers consider to be
8 consistent with the systemic reality at that time. Although local governments have a
9 wide range of diverse activities and functions, the fact is that the intervention and
10 relevance of the central authority is acknowledged in the literature (Martínez-Alonso
11 Camps and Ysa Figueras, 2003; Pano *et al.*, 2009; Ysa Figueras, 2007).
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16 In conclusion, the main characteristics of the Catalan system of central-local relations,
17 having empirically 'fuelled' our theoretical model, are well reflected to coincide with
18 the literature at that moment in time, and can be summarised as follows.
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- 20 - Flexibility in the use of formal mechanisms that allows an easy change
21 in the patterns of the relationship.
- 22 - Certain dependence on the centre, though not within the canons of a
23 pattern of a strong centre, so the systemic leadership is still not clear.
- 24 - A relationship based on a bargaining process between central and local
25 authorities, in order for the latter to be able to fulfil their functions.
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29 **V. Conclusions**

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32 In this paper, a model of cooperative relations within a concrete reality is constructed
33 and tested. The model establishes two main vectors of analysis (autonomy and
34 dependence, flexibility and rigidity) to analyse the impact of non-conflicting,
35 cooperative relationships in a whole system of local governments on their effective
36 autonomy and capacity. These vectors are grounded in a policy instrument approach,
37 multi-level governance theories and intergovernmental relations key features. The
38 analysis of autonomy is one of the traditional fields of study in local government, and
39 including this element in the model was almost unavoidable. It is definitely one of the
40 core characteristics for evaluating an institutional system. The second aspect, flexibility
41 and rigidity, is more debateable, but Hooghe and Marks (2003) identified it as a
42 relevant component of intergovernmental relations in a multi-tiered system that is
43 more closely associated with cooperation than conflict between governmental units.
44 The current evolution of institutional settings implies the need for approaches that can
45 incorporate changing conditions and a dynamic process. Working with the concepts of
46 flexibility and rigidity implies including this feature in the map and making
47 transformations visible.
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55 In this sense, the combined effect of both theoretical axes allows us to present our four-
56 option theoretical model, describing four possible situations in which
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3 intergovernmental relations can be placed depending on the characteristics of their
4 cooperative relationships. Firstly, the 'agreeing' position implies great respect for local
5 autonomy and a high level of flexibility in the use of cooperative instruments.
6 Secondly, the 'partner' model implies the results of a strong and stable partnership.
7 Thirdly, the 'bargaining' typology presumes a bargaining process between institutions
8 negotiating from different positions. Finally, the 'strong centre' model represents the
9 pure idea of centralised cooperative systems and implies clear leadership from the
10 centre. Our approach to local autonomy is not strictly based on a policy-making
11 approach, since local autonomy is simultaneously a matter of efficacy in political terms
12 (that is, policy-making), and an effective capacity to self-organise (this is, the ability to
13 self-determine the local organisation with few constraints). Our model permits us to
14 trace both aspects when combining our theoretical axes.
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20 So, when stimulated numerically our findings are consistent with the theoretical
21 model, since the picture emerging from it intertwines theory and observation at that
22 moment of time well. Hence, this theoretical model allows the monitoring and
23 evaluation of the key elements of effective intergovernmental relations, and their
24 inclusion in the assessment of local autonomy. Ladner *et al.* (2016) also noted the need
25 to incorporate evolution into the analysis; this is particularly relevant when referring to
26 multi-level and intergovernmental mechanisms that can vary over time and are
27 designed to allow flexibility. In this respect, working with time series would make it
28 possible to track the evolution of a system and would, in fact, be one of the effective
29 added values of this model.
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35 With regard to the limitations of our model, as well as the absence of conflict, it
36 captures the observable relations between tiers of government and is able to monitor
37 them in a concrete space and time, but does not take into account the nature of the
38 collaboration or the relative strength of local governments at any time. That is, at this
39 stage of the research our model cannot control for whether the observed collaboration
40 is due to pressure from tiers of government other than local or regional ones, European
41 Union policies or the actual political autonomy granted to local units. It could be
42 argued that there is certain pressure from other tiers, besides local and regional ones, to
43 cooperate, but ultimately this is unlikely to challenge our theoretical and empirical
44 assumptions. Moreover, more refined analyses can be carried out in subsequent studies
45 taking into account the political power of each municipality, since this can affect the
46 way they choose (or are able) to collaborate.
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52 In any case, in the current big and open data era this kind of process will become easier
53 and more affordable. In this context, local government studies benefit from particular
54 features that improve the conduct of this kind of analysis: a large 'N' configuration (a
55 large number of units to be included) and reasonable equivalence in concepts and
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bodies that allows comparability. Therefore, more work should be aimed at building metric models so that institutional studies might profit from these new conditions.

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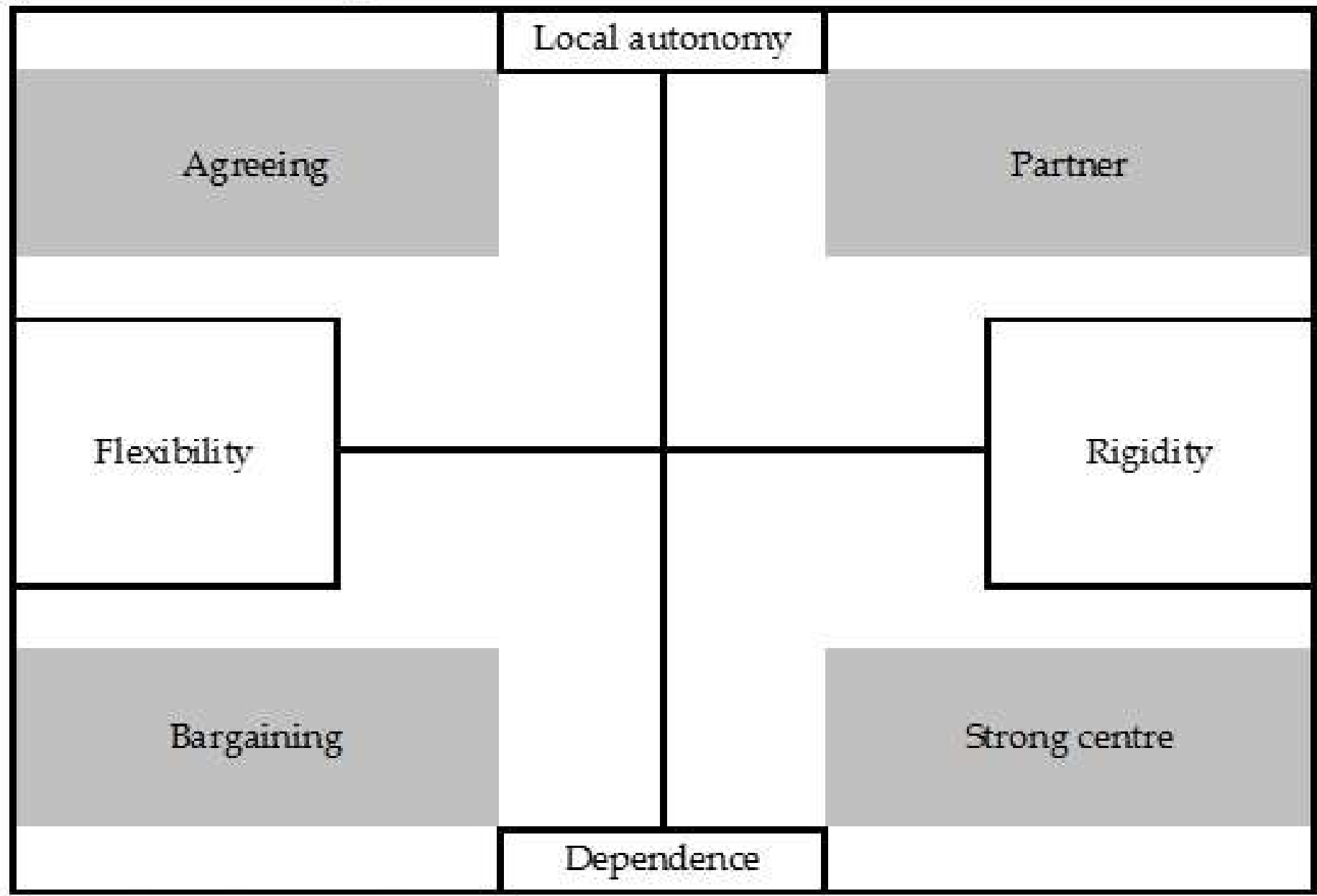
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¹ Although there is associated literature on the problems posed by the measurement and aggregation of indicators (Nardo *et al.*, 2005), particularly at the local level (da Cruz and Marques, 2013; da Cruz *et al.*, 2016), we do not weight our measure since no substantiated theoretical expectations on which to base such a decision are available at this time.

² It could be argued that, given these conditions, it is difficult to expect the system to score low on the autonomy-dependence continuum when cooperative relations are considered. However, the model is designed to analyse the institutional setting developed by the free will of the parties and, consequently, juxtaposed to a specific territorial structure. That is why we have operationalised this concept from the four internal characteristics of the relationship, illustrating the maximum and minimum levels of material dependence in a relationship that has been formally established on an equal footing.

1 **Figure 1. Models of cooperation**
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42 *Source: Own creation*



Table 1. Main features of cooperative instruments

	Consortia	Public mercantile societies	Public foundations	Agreements
Creates new legal personality	Yes	Yes	Yes	No
Economic purpose or business-oriented	Yes	Yes	No	Yes
Includes private actors	Yes (only non-profit)	Yes	Yes (only non-profit purposes)	Yes
Administrative capacities	Yes	Yes	No	No
Governed by public law	Yes	No	No	Yes
Creates a new elected body	Indirect nature	Indirect nature	Indirect nature	No

Source: Own elaboration

Table 2. Cooperative instruments of Catalan Government and municipalities

Policy instrument	Absolute number	Percent
Consortia	111	25,3
Public mercantile societies	12	2,8
Public foundations	6	1,4
Agreements	309	70,5
TOTAL	438	100

Source: Own data (2009)

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3 **Table 3. Descriptive statistics for every indicator for each cooperative instrument**
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	FR1	FR2	FR3	FR4	AD1	AD2	AD3	AD4
N	438	438	438	438	436	438	438	438
Missing	0	0	0	0	2	0	0	0
Mean	.59	1.84	.29	.29	3.02	.71	.23	3.12
Median	1.00	1.00	0.00	0.00	3.00	1.00	0.00	4.00
Mode	1	1	0	0	3	1	0	4
Standard deviation	.493	1.319	.456	.456	.880	.456	.423	1.369
Minimum	0	1	0	0	1	0	0	1
Maximum	1	4	1	1	4	1	1	4

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30 *Source: Own data (2009)*
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Table 4: Means of every indicator

Variable	Mean
FR	1.4623
AD	2.3698

Source: Own data