Is there an Anti-Metropolitan Federalism?

Inter-municipal Associations in Metropolitan Regions of Mexico and Brazil

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Abstract

Latin America is undergoing a process of metropolization. It characterizes most major cities in the region. Although metropolization poses its own challenges, there are factors that can be identified as general inhibitors, such as a federal systems of government. We explore the case of Mexico and Brazil, that shares this system of government with other countries in America. Mexico has 59 metropolitan regions with emerging political institutions, which make it difficult to address public issues in metropolises in a sustainable manner. Brazil on the other hand has 74 metropolitan regions defined by state laws. Metropolitan development processes are not new unlike the proposals to institutionalize metropolitan policies. To explain this, we use the Institutional Collective Action framework. From this, we draw a set of hypotheses to identify the factors that inhibit or promote inter-municipal association in metropolitan regions. The results provide information on the institutional and systemic obstacles that prevent metropolitan regions from having low transaction costs to establish collaborative frameworks for addressing policy problems. This study is part of a broader research agenda that seeks to explore for Latin America an argument that has been widely discussed in other regions of the world that have undergone similar situations involving the backwardness of metropolitan institutions.

Key words: metropolization; institutional collective action; public policies; public services; local governments; Mexico; Brazil; Latin America

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Introduction

What factors encourage the municipalities of a metropolitan region to collaborate? What prevents them from collaborating in providing public service or address common issues? To explore some answers, we firstly accept the premise that in metropolitan areas, collaboration is necessary to tackle specific types of problems. Collaboration schemes may take several forms, any of them reflecting a change in the governance mode of metropolises which are frequently characterized by jurisdictional fragmentation. To observe collaboration in metropolitan areas we investigate further inter-municipal associations or municipal consortia-schemes.[6] We define inter-municipal associations as type of collaboration between two or more municipalities that take actions in a joint manner to address a public problem or to coordinate efforts and resources in providing public services.

Our main argument is that in federalist countries the process of inter-municipal association-making is affected by factors such as municipal characteristics, institutional features of policy-making and other factors that alter the transactional cost levels of the association process, but which are in turn shaped by the specificities of the federal arrangements framing horizontal and vertical inter-governmental relations. We compare two federal countries on the bases of the working hypotheses derived from the theoretical standpoint provided by the Institutional Collective Action (ICA) framework. This framework has been widely used in the US, and our work intents to contribute in collecting evidence to test this framework in Latin American metropolitan areas with federal systems. We group the factors into four different sets, namely: i) Local and supra-local relations, ii) Socio-economic features of metropolitan areas, iii) Institutional frame of policy-making; iv) Institutional capacity.

We take advantage of the cases of Mexico and Brazil. These two case, despite of sharing a federal system, have two different metropolitan stories. Mexico has 59 metropolitan areas encompassing around 350 municipalities. Brazil accounts for 74 metropolitan areas with 1144 municipalities. Both have undergone through processes of increasing metropolitan relations, although at different times and rates. Brazil began this process during the military regime in 1973, with the Federal Law 14. After 1988, the new Federal Constitution defined this privilege just for states through approval of complementary laws. Mexico on the other side is currently restructuring its legal framework, altering its foundations that encourage metropolitan relations, despite the fact that federal metropolitan initiatives have been around with few or non appreciable results.

The comparison between the Mexican and the Brazilian case yields interesting remarks suggesting the existence of federal environments affecting metropolitan relations differently. The evidence partially supports the ICA framework as a whole. Socio-economic characteristics, party alternation, size of municipalities and its number within metropolitan regions as well as local government´s institutional capacity are associated to the probability of engaging in metropolitan inter-municipal associations. But more interesting is to note how federalist arrangements affect further the transactional costs thus shaping the overall process of municipal interrelations, and therefore the chances of achieving a more collaborative mode of metropolitan governance.

With this in mind, the paper is organized as follows. The first section discusses the issue of associations and explains how this can be used to understand more complex metropolitan governance processes. In section two, we use Institutional Collective Action as a framework for organizing the explanatory principles behind inter-jurisdictional associations. We identify 14 hypotheses relevant to

[6] For the purpose of parsimony, in this paper we use the concepts of consortium and inter-municipal association interchangeably.

compare the Mexican and Brazilian cases. In the third section, we describe the metropolitan in both countries, providing an overview of the situation. In fourth section we compare the political and institutional design of federalism in Brazil and México. We then explain the research design used to test the fourteen hypotheses, using a logit regression model, since the dependent variable is zero or one. In section six are presented the results, which are discussed in the light of the ICA framework. The last section, conclusion, will evaluate the overall findings by comparing the Mexican and the Brazilian federal arrangements.

1. Metropolization and inter-municipal associations

In a more globalized world, regions are obliged to think coordinately for alternatives to increase their economic competitiveness and manage the positive and negative externalities of the human and other fluxes that cross from one municipality to another. That is in essence what the literature around metropolization refers to, however two approaches were identified. First, that metropolization is a process of conurbation where demographic sprawl and socioeconomic influence transcend the lines of a single jurisdiction, yet the metropolis is bounded around a diffuse limited region (Brenner 2003; Spink, Ward & Wilson 2012). Such territorial approach (Brenner 2003; Iracheta 2009; Pacheco-Vega 2014b) provides a nice picture however to account the political difficulties that arise with such territorial process, the definition needs to consider the challenge of governance that it implies. Therefore, metropolization refers to the change in the governance of an inter-municipal region, also within a fairly diffuse set of limits, now characterized of providing public services and addressing problems in a more collaborative manner (Ramírez de la Cruz 2012; Pacheco-Vega, 2014b). From this other perspective, the configuration of a metropolis may be seen as a horizontal relationship between two or more municipalities or one including vertical relationships that involve supra-local entities (Miller & Lee 2012) within the governance system.

The virtues of this definition is one that provides a clearer link between metropolization and a change of governance seen through one of many forms of collaboration such as inter-municipal associations. This types of associations are regarded as a tool that improves metropolitan dynamics (Cravacuore & Clemente, 2006). And for the purposes of this paper, the metropolitan process can be seen in the phenomenon of inter-municipal associativity. The case of Aguascalientes, documented by Pacheco-Vega (2014a), is a clear example of how urban expansion has prompted the search for new alternatives for water governance. Engaging in inter-municipal associations is a type of collaboration between public institutions to address common problems and therefore, the degree of association and the factors behind it can tell something about how to create a more collaborative governance processes within metropolitan municipalities. The next section discusses some of the theories proposed in the literature that explain the formation of inter-municipal associations as means of achieving a collaborative metropolitan governance.

2. What explains the formation of associations in metropolitan regions?

Engaging in inter-municipal associations constitute the municipality's decision to partner with another municipality in providing a public service or address a matter of public interest in a coordinated or collaborative manner. This agreement is made between two or more municipal governments, and may be accompanied by supralocal governmental levels, such as states or provinces, and/or federal or central levels of government. Although any municipality can engange in inter-municipal associations, we are here interested in how inter-municipal associations modify the governance within metropolitan

municipalities. These are generally characterized by their geographic proximity, demographic conurbation and economic and/or social interrelations.

A large volume of research explores the issue of associations and metropolization. This research continues such legacy with the systematic generation of evidence to increase our knowledge and make a modest contribution around the Institutional Collective Action framework (ICA). The ICA framework is a broad theoretical proposal that leads to various hypotheses on the experience of entities with fairly independent dynamics, such as municipalities, in making collaborative decisions in public affairs (Feiock 2009). The ICA framework is an extension of the principles postulated by Ostrom (1972) for collective action, although with institutional actors (Feiock 2009; Carr et al. 2009), whether formal or informal and have their own dynamics of governance, yet whose decisions are motivated by a wider game and sometimes several games at once (Lubell et al. 2010).

From ICA perspective, is possible to draw two approaches to distinguish the factors that do or do not enable the process of forming associations in metropolises. The first lies in the nature of the problem while the second involves the context surrounding the decision-makers. Both explore the difficulties in terms of transaction costs, which basically include management, planning and evaluation costs (Carr et al. 2009). The authors cite the ideas that Williamson (1981) uses to explain firms' decisions to internalize the production of a complementary good. In this paper we explore the second approach.[7]

Besides the nature of the problem, there are other factors that significantly influence the decision to collaborate (Leroux & Carr 2007), and also require expanding the empirical exploration of ICA (Andrew 2009). These are contexts surrounding factors that metropolitan actors consider in their decision to collaborate with another entity. The literature identifies four basic set of factors:

a) The relationship between the local level and higher or supralocal levels of government, such as the state or province (Feiock 2009; Miller & Lee 2011), and the interest invested from other supra-local entities such as the federation or central government (Rodriquez-Oreggia & Tuiran 2006, Kübler & Pagano 2012).
b) The characteristics of the communities or the region (Gerber & Gibson 2006; Leroux & Carr 2007; Feiock 2009; Bae & Feiock 2012).
c) The political institutions that safeguard the policy decision-making processes (Tsebelis 2002; Bicker & Stein 2004; Gerber & Gibson 2006; Feiock 2009).
d) The institutional capacities of the governments involved in metropolises (Cravacuore & Clemente, 2006; Rodriguez-Oreggia & Tuiran 2006).

a) Local-supra-local relationship

The relationship between the municipality and other supra-local levels of government is a factor that inhibits or promotes metropolitan associations. Intermediate levels of government such as states and provinces, for example, are strong influencers of local work in public policy (Agranoff & Radin 2014; Miller & Lee, 2011; Meza, 2015 & 2016) but, together with federal or central governments, they influence the extent to which associations are formed between local governments (Kubler & Pagano 2012). The latter exert pressure in at least two ways. On the one hand, through economic resources

[7] For the sake of space, the discussion of the "nature of the problem" is excluded, but the two main keys are the monitoring capacity and asset specificity of public goods. For further reference see Potosky & Brown 2003; Feiock 2008, 2009; Carr et al. 2009; Andrew 2009; Leroux & Carr 2007.

such as the financial transfers granted to local governments. The way they do so affects municipalities' decision to provide services on their own, which under other circumstances, they might do in cooperation with their neighbors.

For example, transfers earmarked for infrastructure could make municipalities that previously shared a slaughterhouse, and previously leveraged the benefits of economies of scale, stop cooperating and decide to purchase their own slaughterhouse. In terms of a public good, a slaughterhouse is a rival good; administering the use of this good involves transaction costs that municipalities choose to avoid when the budget allows for it. Thus one can presume that *(H1) an increase in resources assigned for municipal governments, encouraged through supralocal transfers, would negatively affect the likelihood of forming an association*.

The legal framework is a second means identified as a factor behind the decisions to engage in metropolitan associations (Rodriguez-Oreggia & Tuiran 2006; Feiock 2009). Although this aspect is widely recognized in the literature, there is little empirical information on the effect any regulatory framework could have on the proclivity of municipalities to form associations. In the Mexican context, Rodríguez-Oreggia & Tuiran (2006) identify a positive correlation between an appropriate legal framework and the degree of association of municipalities.

However, their research does not state how appropriateness of the law was determined. There is a general impression that supra-local governments have no incentive to promote metropolitan cooperation or coordination (Cravacuore & Clemente, 2006; Brenner 2008; Kübler & Pagano 2012). Evidence from cases in Federalist America -Mexico, Argentina, Venezuela, Brazil, the United States and Canada- indicates that insofar as constitutional powers seen as fiscal powers, political and administrative authority are removed from local governments, in other words, that there are weak governments, there is less ability to initiate and sustain processes of metropolitan collaboration (Spinker et al. 2012: 256). Since the latter are more dependent on the political and financial resources provided by supra-local entities *(H2) greater dependency on the part of local governments means that they have less ability to associate with each other.*

b) Characteristics of the metropolitan region

The level of transaction costs involved in forming associations is determined by the characteristics of metropolitan regions, particularly demographic differences. LeRoux & Carr (2007) find that in the American context, localities with a larger senior citizen population -over 65- and a larger non-white population are more inclined to maintain the *status quo* –direct provision of services by local governments-, rather than accepting intergovernmental agreements or even service provision by public-private entities. Their results partially support this proposal, which provides scope for speculation about other demographic characteristics.

Although inherent characteristics of municipalities may explain the reluctance to form associations, social homogeneity serve as an alternative way to identify the demographic effect. Homogeneity suggests that absence of significant asymmetries of power or resources between parties, and therefore reduce parties' inequality during negotiations (Feiock 2009; Bae & Feiock 2012). An increase in inequality between parties adversely affects the possibility of association, since metropolitan association ultimately involves ceding rights and entailing costs. Entities that perceive themselves as weaker also express greater uncertainty about what might result regarding both the

negotiation process and the outcome benefits, hence *(H3) more marginalized municipalities are less inclined to establish partnership with others.*

In the Mexican context, Rodriguez-Oreggia & Tuiran (2006:401) find that municipalities with high marginalization are less likely to form inter-municipal associations. For the Brazilian case Grin & Abrucio (2016) find similar results. However, Andrew (2009) notes that the relationship between a population's income and the proclivity to form an association may be a non-linear one. While *(H4) high levels of marginalization negatively affect municipal's capacity to form associations, the relationship changes as marginalization decreases, seen a positive effect in inter-municipal association, and finally a new reverse to a negative association once again with very low levels of marginalization* (137).

The argument exists that in some cases, great heterogeneity may entail benefits (Cravacuore & Clemente 2006:7), especially when the party with the greater advantage envisages future benefits and assigns a relatively low rate of discount in the payment of the latter, and therefore decides to finance for itself the collaborative process. According to the classic theory of collective action (Olson 1965), groups emerge from the status of latency when a member decides to assume the cost involved in providing a public good regardless of the fact that others may decide to act as free-riders, at least initially.

There are documented cases of asymmetric cooperation, for example, between capital and peripheral municipalities in the sector of technical training for human resources (as in the case of Puebla) and in the provision of public services such as garbage collection (Edgar Ramirez mimeo). If this is a robust mechanism, we should see that *(H5) the size of the municipality or its status as state capital is related to greater likelihood of association.* It should be noted that not all capitals are the most populated municipalities, therefore important to make the distinction.

On the other hand, the capacity for association is affected by the heterogeneity that exists not only between metropolitan areas but also within the municipality. Inter-municipal associations involves making long-term agreements and high levels of internal heterogeneity produce conflicting or controversial policies that threaten the stability of these agreements (Gerber & Gibson 2006). The moment the authorities negotiate resources to achieve cooperation agreements, they are deciding to take funds from other policy areas and internal heterogeneity imposes high transaction costs in achieving intergovernmental agreements (Feiock 2009), therefore *(H6) insofar as inequality increase within a municipality, the likelihood of establishing partnerships with other municipalities decreases.*

Lastly, another way to understand the effect of these characteristics is through the influence economic elites exert on promoting metropolitan integration as a strategy for attracting capital or marketing visibility (Brenner 2003:397). Local government, embracing these elites' interests, whether industrial or commercial, would be interested in metropolization since the benefits are in line with their economic interests. This makes us think that *(H7) the power of economic elites may be linked to the proclivity to establish inter-municipal associations*. However, the government they would attempt to persuade to engage in this strategy would face greater disagreement insofar as the population of the municipality maintains high levels of marginalization and inequality, therefore, *(H8) the power of economic elites to engage in associations with other municipalities declines insofar as there is greater inequality in the municipality.*

c) Local policy making institutions

From the institutionalist perspective, there is an extensive literature that explains how the results of the interaction between players is determined by the type of institutions involved. In this section, suffice is to note the key institutions that could change the behavior of municipalities as regards whether or not they promote intergovernmental cooperation. At the level of the political system and in the American context, the records show how a government regime affected the inter-municipal associations. The Wilsonian separation between technical and political functions is viewed as a promoter of cooperation (Feiock 2009:369). But the impression that technical figures would tend to seek association more than political figures is somewhat misleading, especially when the political profile, such as an ambitious mayor, has aspirations to continue with his political career towards higher levels of government such as governorships. In this case, the search for associations would serve as a sign of their interest and ability to handle a larger jurisdiction or to obtain the benefits of their decisions in jurisdictions outside their own (Clingermayer & Feiock 1997; Feiock 2009).

Institutions also provide meaning; catalyzing the dissemination of policy practices. Carr, LeRoux & Shrestha (2009) note that clubs such as the International City County Management Association (ICCMA) are catalysts for association processes within their membership. Communities of professionals have a similar effect within public service. The authors call this epistemic communities, which promote association when members of this community hold key decision making positions (Carr et al. 2009: 406). Membership is an institution that positively affects the likelihood of association, key mechanisms here being mutual trust and reputation within policy networks (Feiock 2009: 367; Carr et al. 2009). In this regard, political parties may also exert influence like memberships. The party network to which municipalities in the same region belong would affect region's ability to achieve cooperation agreements. This type of fragmentation, horizontal fragmentation, occurs at a certain point in time along a set of neighbor municipalities. It is possible, however, to understand political fragmentation as something in time, which is better known as the power alternation. Since reputation and trust are essential elements in municipal association processes, (H9) *frequent changes of parties in power, alternation in power, may undermine these relations and thus possibly reduce the proclivity for association.*

Institutions that limit the number of decision-makers, in this case, the number of members in a metropolis affect association capacity. Two theories suggest different results regarding how the number of members in a region affects governance in more or less cooperative terms. The veto player theory (Tsebelis 2002) and collective action (Olson 1965) both suggest that agreements are more difficult to achieve with larger memberships, especially when agreements are made under the form of consensus, therefore *(H10) the number of municipalities in a metropolitan region negatively affects the possibility of forming associations.* There is evidence that in certain types of services, such as road maintenance and construction, intergovernmental association decreases with the presence of more adjacent municipalities (LeRoux & Carr 2007: 353).

Counter-argument theoretical positions state an increase of incentives to cooperate with larger memberships when the association does not need all members to get involve. If so, the increase in the number of members also increases the range of possible players, suppliers or partners for negotiating and setting common objectives that make it possible to achieve partnership agreements within a metropolis (Bickers & Stein 2004). This positive correlation, however, is affected by size. *(H11) If the municipality is small, a larger number of possible counterparts positively affects the possibility of*

association, but as the municipality grows, in terms of its population, incentives to cooperate diminish, since it leverages its size -in economies of scale- and avoids the transaction costs entailed by associating with smaller municipalities (Potosky & Brown 2003:462)

d) Institutional capacities of municipal governments

Associativity to enable the parties to leverage the relationship regardless of the complexity or nature of the public good involved, requires financial and technical resources t. In the Argentine context, Cravacuore & Clement (2006:7) note that lack of experience, resources and technical management have been identified by civil servants as the main problems in association processes. A lack of technical management is solved through the consultancy services provided by supra-local governments as in the Mexican case where Rodriguez-Oreggina & Tuiran (2006) note that municipalities that enjoy this type of support are the most likely to form associations. For the Brazilian case Grin & Abrucio (2016) find similar results. Among various alternatives, the measurement of institutional capacities in local governments run through the inputs or through the outputs. The first is verified by observing the level of resources that local governments themselves collect. If this is acceptable, we would expect *(H12) higher own source revenue to be reflected in a higher likelihood of forming intergovernmental associations*.

On the outputs, institutional capacity could be measured through the public service coverage a local government has assured in its territory, therefore, *(H13) the greater the service coverage, the higher the proclivity to associate.* Although it should be pointed out that the relationship could be reversed. If we recall the essence of the argument behind H1, municipalities with more resources and therefore more self-sufficiency would avoid the transaction costs involved in association and prefer to provide the public service on their own.

Evidence from metropolitan areas in federalist countries accounts for less metropolitan cooperation along with greater local weakness. The latter is seen in terms of political, administrative or financial authority. There is a certain amount of controversy, particularly in fiscal terms, because on the one hand, metropolitan cooperation requires high financial capacity on the part of municipalities and cooperation involves costs, yet on the other, there is the argument that fiscal stress could drive association in services to make more efficient use of resources (Andrew 2009). For the Brazilian case Grin & Abrucio (2016) find that this a relevant variable. If this is an important aspect in municipal decisions to form associations, we would have to ascertain whether *(H14) with higher levels of public debt, municipalities are more likely to form associations.*

3. The Metropolitan context in Mexico and Brazil

Mexico has 59 metropolitan areas according to the administrative records of the National Population Council (CONAPO). From over 2,400 municipalities in Mexico, only 367 are among the metropolitan areas; this is 15% of the total. Despite the number, these localities account for the 57% of the Mexican population, 70% of the country's wealth and 69% of the country's economic units are established in metropolitan zones.

Mexican Metropolitan Zones (MZ) are diverse and heterogeneous. Most of them are concentrated in a single state, six were established across state lines such as the MZ of Laguna and Valle de Mexico, while others such as Tijuana-San Diego, Mexicali-Calexico and Ciudad Juarez-El Paso are cross-border metropolises with the United States: California and Texas. The average number of municipalities comprising a MZ is 35.6 although there are some with as many as 76 municipalities,

as in the case of the Metropolitan Area of the Valley of Mexico, which includes what were once the 16 boroughs of the Federal District, now Mexico City municipalities. This reveals the scope of the challenge as regards metropolitan governance, and the differences between metropolitan zones.

Brazil has 74 metropolitan areas and three Economics Development Regions (RIDES) - Teresina-Timon, Distrito Federal ads Petrolina-Juazeiro[8](1) - encompassing 1144 municipalities (almost 20% of the 5570 existing in the country). These arrangements are very distinct according to the consistent criteria about population, urbanization level and regional centrality by which should characterize these regional unities. The majority of metropolitan regions aren't characterized for great urban conurbation because the norms related to their creation depend on each state.

The creation of the first nine metropolitan regions in Brazil, with Federal Complementary Law no. 14, of 1973, were: São Paulo, Belo Horizonte, Porto Alegre, Recife, Salvador, Curitiba, Belém and Fortaleza; And the following year, with the union the states of Rio de Janeiro and Guanabara, was created the Metropolitan Region of Rio de Janeiro. After the 1988 Constitution, the Union delegated to the states the task of creating and regulating them. Since 1995 have been occurring a real proliferation of Metropolitan regions without any technical criteria from host cities because many of them that did not present conurbation or economic scenario identifying one like a regional metropolis. The creation of metropolitan regions by the states generated situations such as the state of Paraná, which has 86% of municipalities in some RM and the state of Rio Grande do Sul with 52% of municipalities within a metropolitan region. Paraíba is a state that draws special attention for its great amount of RMs reaching almost 90% of cities in a metropolitan region. Santa Catarina has 100% of its municipalities officially belonging to one of its 11 Metropolitan Regions.

4. The political design of the Brazilian and Mexican federalism: similarities and differences

Brazil and Mexico have both federal systems. They both experienced, in the 80s, decentralization processes under the assumption that it would enhance, not only local autonomy, but it would increase local democracy and governmental capacity. However, the literature has not empirically conceded enough evidence to fully back this claim. Therefore we can safely say that decentralization in Brazil and Mexico has done some improvements but more importantly has unveiled a new set of challenges derived from other accompanying institutions. We argue that the same is found to be true about metropolization and inter-municipal arrangements. Decentralization processes seeking to enhance local autonomy and capacity produced different outcomes in the process of metropolization and inter-municipal associations. To understand the story behind the numbers in intergovernmental collaboration, further attention is needed in the accompanying institutions that characterize and distinguish each type of federalism.

We here briefly elaborate on five key distinctions between the Brazilian and the Mexican case. The purpose of this section is to characterize each type of federalism in ways that help us make sense of the findings of the econometric analysis.

[8] In this paper we present an accounting of the existing RMs according to information obtained from 27 State Legislative Assemblies and the Federal District. This was done because in Brazil the data on the total of existing Metropolitan Regions is very imprecise. The only existing study that accounts for this is IBGE's Network of Influence of Cities (REGIC) carried out in 2008, and therefore outdated.

A first key distinction is the level of political and administrative autonomy. Any reform aiming to change the metropolitan governance would necessarily pass through the capacity of local governments to act accordingly and independently. Brazilian federalism guarantees political and administrative autonomy to all governmental levels. Brazil is a three layers federalism, and differently to other federalist countries (two layers federalisms like Mexico), the municipalities in Brazil have full political, legal, administrative and budgetary autonomy. The state level does not have authority over the municipalities like, for example, in the case of Mexico where municipalities are unable to issue laws by themselves. State level legislative issues the laws every municipality require, including the yearly income appropriations which in the Mexican case have a legal status of law. States approves them.

A second key distinction is the possibility of mayoral reelection. According to the ICA, diminishing levels of uncertainty and increasing levels of trust are necessary conditions to collaborate. Mayoral reelection aid in diminishing transactional costs if continuing collaboration is more or less granted by mayors with good chances of being reelected. In Brazil, reelection was available for mayors since the year 2000. They can uphold the power for one or more terms of four years each. In Mexico, on the other hand, a mayor can only uphold the power for a three years period. A recent reform allow mayors to be reelected but this a new legal reform that will start to have effects until the year 2018. Until then, municipalities were not able to reelect their mayors for an additional continuous term.

A third distinction is public policy decentralization. The municipalities' scope of their policy agenda could drive the amount of consortia or inter-municipal agreements precisely because they own a specific policy agenda. In Brazil, a local governmental agenda-setting process was one of the main issues granted by the Constitution in 1988. The normative assumption guiding the members of the constitutional convention was that if the implementation of a policy were closer to the citizen, the greater would be the accountability of governments. However, the literature has shown mix evidence (Arretche, 1996; Abrucio & Soares, 2001). What is true is that the new charter established common competences for central government, states and municipalities in health, social assistance, education, culture, housing and sanitation, the environment, protection for the country's heritage, combatting poverty, the social integration of underprivileged sectors and traffic education (Federal Constitution, Article 23). Under this definition, many public policies were decentralized to municipalities, which constituted the real basis to develop a legal support, some years ahead, to the consortia as a way to organize intergovernmental relations. The Mexican case shares some similarities. The local policy agenda was set at the constitutional level in the article 115 in the year 1981, but local governments had enlarged this scope in the last 30 years. Different to the Brazilian case, the enlargements of the policy agenda in Mexico has ran through the lines of informal or indirect drivers such as federal financial transfers, party interests or state legislative legal reforms (Meza 2016). Municipalities in Mexico had enlarged their policy scope with vague or insufficiently clear legal basis, perhaps, increasing the transaction costs of making inter-municipal collaborations.

A fourth key distinction between the two federalist countries is one regarding the available legal basis to establish inter-municipal arrangements. The importance of this legal framework is self-explanatory. In the case of Brazil, the establishment of inter-municipal consortia is one of the arrangements granted by the Federal Constitution. The article 241 issues the responsibility to the Union, states and municipalities to define by means of law the public consortia, authorizing associated management of public services. The Public Consortia Law was approved in 2005 defining these bodies as public association, or ones regulated by the private law and composed by municipalities and other levels of governments. Such kind of association has grown a lot in Brazil even tough these structures

have lesser autonomy in comparison with the state and municipal levels. However, the federal constitution rules out the creation of metropolitan governments. This last item works similarly in the case of Mexico. There shall not be any intermediate governmental level in-between states and municipalities. The main difference, in the Mexican case, is there is no federal legal basis to regulate the creation of inter-municipal associations. The Mexican federal constitution states in its article 115 that municipalities sharing urban centers could develop appropriate schemes to collaborate, however there is a lack of a federal legislation ruling the institution of inter-municipal associations.

Finally, a fifth distinction is related to the legal framework to create Metropolitan Regions (RMs). In Brazil, just the states have constitutional mandates to implement them, which contributed to increase a lot the number of these arrangements. The decentralization of this assignment to the states was a response seeking to diminish the concentrated power in the federal level as a characteristic related to the previous military regime. Thus, many RMs were created mainly in 90s and 2000s, despite some of them are more a kind of regional association than a way to deal with the metropolization itself. Even if RMs can't be federative entities they may implement cooperation instruments, mainly inter-municipal because, as mentioned before, municipalities have guaranteed constitutional right to free association among them. In Mexico, a number of state laws exist to regulate metropolitan regions, however many metropolitan areas crosses state borders or even national borders with the United States.

5. Research design

The central question posed by the research is: what factors lie behind municipalities' decision to engage in associations for service provision or addressing public problems? Although services are not the same as policies, the answer to this question indicates what lies behind promoting a more cooperative environment and involves greater intergovernmental coordination. Since the question is asked within a context of metropolitan municipalities, we only observe associativity within metropolitan areas as a transition towards a change of metropolitan governance. [9]

The empirical strategy

The theoretical framework based on the literature of Institutional Collective Action (ICA) provides a general repository of hypotheses to test empirically. Due to the characteristics of the dependent variable, a multivariate logistic econometric statistical model (Logit) is used. We will do so with the help of the data found in various databases in Mexico and Brazil. For each country and each hypothesis, we have designed and defined the closest possible variable proxy. Such variable will enable a comparison between the two cases, Mexico and Brazil, although the econometric analysis was done separately.

Independent and dependent variable (inter-municipal associations)

The dependent variable is the decision of the metropolitan municipality to form an association with one or more municipalities (s). We have recorded whether the municipality provides services in association with other municipalities. This variable is dichotomous, where 1 = yes, it does have an association with one or more municipalities and 0 = no. In Mexico only 46 municipalities have engage in inter-municipal associations, while in Brazil 684 municipalities have participated in this kind of collective arrangement. Regarding to the Brazilian case, one additional observation: being metropolitan regions are created by State Law is more common that municipalities join in specific public policies

[9] Since 2016, Mexico City boroughs have evolved into municipalities. It will be interesting to include these entities in future research on the subject. For now these were eliminated.

through consortia because, in this case, prevails their constitutional political autonomy. Are scarcer metropolitan associations where municipalities engage like "whole government" because already participate of this manner in metropolitan regions. Thus, we decide to select the health public policy where the number of municipalities is highest in terms of voluntary association in metropolitan regions. Without this empirical choice would be impossible to test the theoretical model in Brazil, and in comparative way with Mexico, because in this research we try to know what are the factors affecting the option for inter-municipal association in metropolitan regions. Independent variables were organized to test the fourteen hypotheses in four categories in the order previously developed (Table 12. Working hypothesis - ICA) indicates the hypothesis along the proxy and the expected direction.

Local-supra-local relationship

A first set of hypotheses (H1-H2) indicates that supra-local entities affect metropolitan governance. From a comparative perspective, we choose to focus on the financial variables viewed in supra-local transfers to municipalities. We use conditional (earmarked) and unconditional (non-earmarked) transfers. The conditional transfers are distributed to municipalities with specific rules on how to spend it, while unconditional as the name suggests, don't have constraints on their spending. Regardless of the label on the type of expenditure, according to tax theory, both types of transfers modify the budget in general, while municipalities modify spending depending on the hierarchy of their preferences.

Conditional and unconditional transferences are variables expressed in per capita terms for the purpose of standardization and in natural logarithms to facilitate interpretation. In an additional test, we use the financial dependence variable; which is the sum of supra-local transfers as a percentage of the total income for each municipality.

Characteristics of the metropolitan region

The second group of hypotheses (H3-H8) uses indicators on the socio-economic characteristics of the municipality as variables. The following five variables were observed: municipal Human Development Index (HDI), economic inequality (Gini coefficient), income measured by the total gross product of a municipality, municipality population and whether the municipality is the state capital. The HD index for 2010 calculated is used to measure levels of poverty or marginalization. To measure economic inequality, the Gini index for 2010 was used. The greater the size of the index, the lower (greater) the degree of poverty (inequality). The city's population and capital status are used to test hypothesis 5. To test the involvement of economic elites suggested by hypotheses 7 and 8, the total gross product generated at the municipal level was used assuming that the higher the economic income generated, the greater the power of economic elites in public affairs.

Local policy making institutions

The third group of hypotheses (H9-H11) suggests that the institutions framing policy processes also affect the municipal incidence of forming local associations with each other. Here we use two specifications, one political and the other numerical. The first is alternation in power, which allows us to test hypothesis 10. It assumes that power-alternation have a similar effect to one seen with political fragmentation, yet time wise instead of geographic. The variable is called historic alternation of power and measures the number of times (frequency) in which a given municipality has experienced party alternations in power; the change in party from one period to the next. The second variable is the number of municipalities comprising the metropolis. Hypothesis 10 states that number of players, from the perspective of *veto-player theory* is a key aspect in policy making-decision, but this involvement

can be qualified depending on the size of the municipality. Therefore, in order to test hypothesis 11, the variables of population and number of municipalities interact in a metropolis.

Institutional capacities of municipal governments

Lastly, the fourth group of hypotheses (H12-H14) uses three variables. All three proxy for institutional capacity, two in fiscal terms and one in terms of service coverage in the municipality. Own source revenue is the first one. It is the average per capita of income source revenue to its logarithm. There was no compatible proxy between Brazil and Mexico on the output side. Mexican analysis used the average percentage of coverage in all the services local government manages to provide for the municipality, while Brazil employed the proxy number of public employees in municipal governments. For the hypothesis 14, the per capita municipal debt in natural logarithms was used.

6. Results

Which factors inhibit or promote inter-municipal association. The ICA framework is used for theoretical inputs to systematize the hypotheses to be discarded by the data collected for the metropolitan cases of Mexico and Brazil. We use this section to describe the results, followed by a discussion in a next section where we evaluate the results in light with the theoretical premises.

We start presenting the results of the supra-local dimension (tables 1 –Brazil- and 2 –Mexico-). Each column was design to test a specific hypothesis although a simple robustness check of the coefficients is available by looking at their stability along the various columns.

Table 1. Results for supra-local relationships in Brazilian case

VARIABLES	(1)	(2)	(3)	(4)
Financial Dependency (%)				-0.000246
				(0.0110)
Conditional transfers earmarked	0.0382	0.0234		
	(0.392)	(0.390)		
Unconditional transferences	1.75e-08		1.75e-08	
	(1.32e-08)		(1.32e-08)	
IDHM	7.726***	7.648***	7.689***	7.626***
	(1.672)	(1.672)	(1.629)	(1.630)
Municipal Population	-1.12e-06	-9.53e-07	-1.10e-06	-9.35e-07
	(8.26e-07)	(8.08e-07)	(7.67e-07)	(7.47e-07)
Gross Municipal Product	2.00e-08	1.57e-08	1.93e-08	1.53e-08
	(1.76e-08)	(1.56e-08)	(1.57e-08)	(1.37e-08)
Political Alternation	0.0224	0.00853	0.0231	0.00870
	(0.146)	(0.145)	(0.146)	(0.146)
Number of municipalities in MR	0.0582***	0.0590***	0.0582***	0.0589***
	(0.00920)	(0.00918)	(0.00920)	(0.00918)
Own Income Revenue (In)	-0.520***	-0.520***	-0.522***	-0.525**
	(0.148)	(0.148)	(0.146)	(0.217)
Number of Public Employees	-3.60e-05	-1.97e-05	-3.52e-05	-1.92e-05
	(4.60e-05)	(4.25e-05)	(4.53e-05)	(4.19e-05)
Current Spending (In)	0.471	0.497	0.502**	0.519*
	(0.377)	(0.375)	(0.211)	(0.269)
Constant	-6.691**	-6.806**	-6.531***	-6.715***
	(2.856)	(2.870)	(2.332)	(2.368)
Observations	968	968	968	968

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

In both countries, we observe that coefficients of earmarked and non earmarked transfers do not behave as expected, nor they have statistical significance at any conventional level. Financial dependency in the case of Brazil has the expected sign but lacks of any statistical significance. In the case of Mexico, Financial dependency has neither the expected sign nor the statistical power.

Table 2. Results for supra-local relationships in Mexican case

VARIABLES	(1)	(2)	(3)	(4)
Financial dependency from Federation(%)				0.0102
				(0.00885)
Unconditional transfers - non earmarked(ln)	0.0799	0.166		
	(0.314)	(0.174)		
Conditional transfers – earmarked (ln)	0.0941		0.153	
	(0.283)		(0.164)	
Human Development Index	8.405*	8.039*	8.551*	8.838*
	(4.547)	(4.396)	(4.514)	(4.575)
Population	-5.13e-07	-4.97e-07	-5.17e-07	-5.06e-07
	(8.03e-07)	(7.87e-07)	(8.03e-07)	(7.97e-07)
Gross Local Production (ln)	0.114	0.115	0.108	0.119
	(0.106)	(0.106)	(0.105)	(0.106)
Historical Political Alternation	-0.497***	-0.501***	-0.491***	-0.501***
	(0.138)	(0.136)	(0.132)	(0.133)
Number of municipalities in Metropolitan zone	0.00905	0.00929	0.00888	0.00944
	(0.00607)	(0.00602)	(0.00605)	(0.00599)
Own source revenue(ln)	-0.343	-0.337	-0.319	-0.265
	(0.232)	(0.229)	(0.218)	(0.166)
Coverage public service	-0.0222***	-0.0223***	-0.0221***	-0.0217**
	(0.00842)	(0.00842)	(0.00837)	(0.00850)
Debt(ln)	-0.147*	-0.145	-0.148*	-0.142
	(0.0885)	(0.0894)	(0.0884)	(0.0901)
Constant	-5.376*	-5.118*	-5.398*	-5.830*
	(2.961)	(2.794)	(2.957)	(3.059)
Observations	284	284	284	284

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Regarding the dimension of regional characteristics (tables 3 and 4), we tested hypotheses of marginalization using the Human Development Index (IDH). We found, in both cases, the sign of the coefficient to be in accordance to the prediction; a strong statistical association for Brazil, at 1% confidence, and a lesser one for Mexico, with 10% confidence. When testing for a non-linear relationship we see the case of Mexico's coefficients asserting the expected behavior but lacking statistical explanatory power. While in the case of Brazil, the results partially behave as predicted due to the fact only that the squared specification of IDH has explanatory power while the non-squared has non. The size of municipality was theoretically relevant to the case of inter-municipal associations. There is no association observed when using the proxy of capital city, and same results when using population of a municipality as proxy for size.

Table 3. Results for characteristics of regions in Brazilian case

VARIABLES	(1)	(2)	(3)	(4)	(5)
Financial dependency (%)	-0.000246	-0.00521	0.000184	0.00346	0.00371
	(0.0110)	(0.0113)	(0.0110)	(0.0111)	(0.0112)
IDHM	7.626***	-25.17	7.731***	6.362***	6.374***
	(1.630)	(19.45)	(1.635)	(1.673)	(1.674)
IDHM2		24.70*			
		(14.62)			
Municipal Population	-9.35e-07	-8.06e-07		-7.11e-07	-7.53e-07
	(7.47e-07)	(7.45e-07)		(7.52e-07)	(7.91e-07)
Gross Municipal Product	1.53e-08	1.22e-08	9.24e-10	1.01e-08	-8.52e-09
	(1.37e-08)	(1.42e-08)	(1.04e-08)	(1.38e-08)	(1.05e-07)
Political Alternation	0.00870	0.00847	0.0157	0.0337	0.0339
	(0.146)	(0.146)	(0.146)	(0.147)	(0.147)
Number of cities in MR	0.0589***	0.0588***	0.0585***	0.0568***	0.0569***
	(0.00918)	(0.00921)	(0.00917)	(0.00908)	(0.00914)
Own income revenue (In)	-0.525**	-0.558**	-0.515**	-0.487**	-0.487**
	(0.217)	(0.218)	(0.216)	(0.219)	(0.219)
Number Public Employees	-1.92e-05	-1.82e-05	-2.62e-05	-1.05e-05	-8.30e-06
	(4.19e-05)	(4.22e-05)	(4.29e-05)	(4.21e-05)	(4.38e-05)
Current Spending (In)	0.519*	0.510*	0.487*	0.533**	0.541**
	(0.269)	(0.269)	(0.267)	(0.272)	(0.276)
Capital City			-0.432		
			(0.581)		
Gini Index				-4.385***	-4.454***
				(1.432)	(1.486)
GiniIndex* GrossMunProd					3.04e-08
					(1.71e-07)
Constant	-6.715***	4.748	-6.387***	-4.613*	-4.737*
	(2.368)	(7.157)	(2.344)	(2.469)	(2.566)
Observations	968	968	968	968	968

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The associated effect of inequality was tested using a Gini index. The cases present stark different results. Brazil's coefficients behave as expected with a strong statistical significance, at a 1% of confidence level. Mexico's coefficients behave contrary to the predicted sign, and they lack of statistical power.

The power of elites is theoretically said to positively affect inter-municipal associations. We use the proxy of gross local/municipal production but results came out negative; there is no statistical significance although with the expected sign in both cases. To test the mitigating effect of inequality over elite's power we interacted gross local production with the Gini index. Coefficients for both cases came out lacking statistical power. Mexico's coefficient behaves in accordance to the prediction, different to what Brazil presented.

Table 4. Results for characteristics of regions in Mexican case

VARIABLES	(1)	(2)	(3)	(4)	(5)
Financial dependency from Federation(%)	0.0102	0.00952	0.00910	0.00997	0.00957
	(0.00885)	(0.00907)	(0.00875)	(0.00890)	(0.00902)
Human Development Index	8.838*	74.52	7.163	8.268*	8.195*
	(4.575)	(62.64)	(4.437)	(4.703)	(4.745)
HDI Squared		-44.91			
		(43.60)			
Population	-5.06e-07	-4.12e-07		-5.04e-07	-4.61e-07
	(7.97e-07)	(7.80e-07)		(7.96e-07)	(7.79e-07)
Gini Index				2.686	11.27
				(4.263)	(25.37)
Gross Local Production (ln)	0.119	0.115	0.0678	0.120	0.359
	(0.106)	(0.104)	(0.0965)	(0.106)	(0.697)
Historical Political Alternation	-0.501***	-0.512***	-0.506***	-0.497***	-0.498***
	(0.133)	(0.132)	(0.137)	(0.133)	(0.133)
Number of municipalities in Metropolitan Zone	0.00944	0.00884	0.00990	0.0101*	0.00995
	(0.00599)	(0.00592)	(0.00605)	(0.00605)	(0.00606)
Capital City			0.752		
			(0.701)		
Own source revenue(ln)	-0.265	-0.269*	-0.244	-0.273*	-0.273*
	(0.166)	(0.162)	(0.170)	(0.164)	(0.162)
Coverage public service	-0.0217**	-0.0220***	-0.0222***	-0.0216**	-0.0218***
	(0.00850)	(0.00847)	(0.00846)	(0.00847)	(0.00845)
Debt(ln)	-0.142	-0.140	-0.149*	-0.137	-0.137
	(0.0901)	(0.0900)	(0.0891)	(0.0911)	(0.0907)
Gini*Gross Local Production (ln)					-0.594
					(1.707)
Constant	-5.830*	-29.56	-3.991	-6.522**	-9.866
	(3.059)	(22.43)	(2.805)	(3.125)	(9.851)
Observations	284	284	284	284	284

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Tables 5 (Brazil) and 6 (Mexico) present the results for the last two set of hypotheses. Local policy making dimension tests the effect of party alternation, the number of municipalities within the metropolitan region/zone, and the interaction of size and number of municipalities. The institutional capacity set of hypotheses test the associate effect of many capacity proxies; own source revenue, service coverage (Mexico)/number of employees (Brazil), and debt (Mexico)/Current spending (Brazil).

About the local policy making dimension, party alternation has an important and strong associated effect for Mexico only. The effect is below a 1% confidence level and the sign is negative as predicted. Brazil's results do not support this theoretical premise. The number of municipalities within the metropolitan region (or zone) was predicted to be negatively associated, but in Brazil the coefficient behaves contrary to the expected result, and the statistical strength is not negligible, is below 1% interval of confidence. Similarly, Mexico presents a positive coefficient but its statistical significance is only available under certain model specifications.

Table 5. Results for political institutions and institutional capacities in Brazilian case

VARIABLES	(1)	(2)	(3)
Financial Dependency (%)	-0.000246	-0.000251	0.000549
	(0.0110)	(0.0111)	(0.0111)
IDHM	7.626***	7.625***	7.791***
	(1.630)	(1.638)	(1.647)
Municipal Population	-9.35e-07	-9.32e-07	-1.56e-06
	(7.47e-07)	(8.53e-07)	(1.13e-06)
Gross Municipal Product	1.53e-08	1.54e-08	9.08e-09
	(1.37e-08)	(2.04e-08)	(1.72e-08)
Political Alternation	0.00870	0.00873	0.00687
	(0.146)	(0.146)	(0.146)
Number of municipalities in MR	0.0589***	0.0589***	0.0595***
	(0.00918)	(0.00940)	(0.00925)
Own income revenue (in)	-0.525**	-0.525**	-0.530**
	(0.217)	(0.217)	(0.217)
Number of public employees	-1.92e-05	-1.94e-05	-7.63e-06
	(4.19e-05)	(4.64e-05)	(4.50e-05)
Current spending (In)	0.519*	0.519*	0.564**
	(0.269)	(0.270)	(0.275)
Capital city			-0.460
			(0.809)
Capital city (=1)*Population			8.46e-07
			(9.63e-07)
No. Municipalities MR*Pop.		-2.08e-10	
		(2.84e-08)	
Constant	-6.715***	-6.715***	-7.513***
	(2.368)	(2.368)	(2.550)
Observations	968	968	968

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

When testing size of municipality and the number of municipalities, the predicted effect is that a greater number of possible associating partners would increase the likelihood of association but only when the partners are small. Bigger localities would take advantage of their own economies of scale while reducing the transaction costs of associations. Brazil shows mixed results (see column 2) the number of parties increase the likelihood of association, according to the coefficient, but the interaction has no statistical significance. Mexico on the other hand does behave according to Potosky and Brown (2003), and both simple and interacted coefficient have the correct sign and statistical significance.

Finally, we present the results for the institutional capacity dimension. The variable own source revenue, the input capacity proxy, behaves contrary to the theoretical premise in both cases. The signs are negative and for Brazil, the coefficients are significant with 5% confidence. For the variable service coverage (Mexico) or number of employees (Brazil), the output proxy of capacity, the results are not converging between cases, and in the case of Mexico they are contrary to the predicted sign. In this sense, in Mexico, greater capacity is negatively associated with inter-municipal association and in this case the coefficient has statistical power. About the capacity measured in terms of debt (Mexico) or current spending (Brazil), the results are not converging between cases. In the case of Mexico, coefficients behave against the prediction and with not statistical power, while Brazil behaves in accordance to the theoretical premise and with statistical significant coefficients.

Table 6. Results for political institutions and institutional capacities in Mexican case

VARIABLES	(1)	(2)	(3)
Financial dependency from Federation(%)	0.0102	0.0112	0.00895
	(0.00885)	(0.00917)	(0.00870)
Human Development Index	8.838*	9.096*	6.361
	(4.575)	(4.678)	(4.261)
Population	-5.06e-07	4.56e-07	-4.07e-07
	(7.97e-07)	(8.21e-07)	(1.03e-06)
Gross Local Production (ln)	0.119	0.168	0.117
	(0.106)	(0.111)	(0.111)
Historical Political Alternation	-0.501***	-0.493***	-0.507***
	(0.133)	(0.135)	(0.141)
Number of municipalities in Metropolitan zone	0.00944	0.0210***	0.0110*
	(0.00599)	(0.00783)	(0.00626)
Own source revenue(ln)	-0.265	-0.288*	-0.245
	(0.166)	(0.170)	(0.167)
Coverage public service	-0.0217**	-0.0203**	-0.0218**
	(0.00850)	(0.00852)	(0.00859)
Debt(ln)	-0.142	-0.125	-0.140
	(0.0901)	(0.0896)	(0.0926)
Capital city = 1			2.443**
			(1.115)
Capital City*Population			-2.65e-06
			(1.87e-06)
Municipalities ZM*Population		-8.62e-08***	
		(3.16e-08)	
Constant	-5.830*	-7.079**	-4.140
	(3.059)	(3.213)	(2.711)
Observations	284	284	284

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7. Discussion

To what extent did we found empirical support to the ICA framework in the process of metropolization of Mexico and Brazil? We found partial support, but further explanation could be hiding within the federalists' characteristics of each country. We briefly discuss the findings in the light of the ICA framework here, and in the last section we provide some plausible explanations that accounts for the features of the Brazilian and Mexican federalism.

The theoretical model formulated fourteen hypotheses, from which only three of them found empirical support in the case of Mexico, and three hypotheses in the case of Brazil. Table 7 presents these results and also present those contradictory but sound empirical findings arised. The main points are the followings:

1. The model employed made no underpinnings on the supra-local influence. We did not found evidence in this dimension associated to the metropolitan process in both for Brazil and Mexico. Although the model employed fail to test other relevant institutions such as legal frameworks, vertical party influence or other set of institutions that could be missing in regional metropolizations. For example, Brazil's and Mexico's federal structure assigns an important role to states (second tier of government) in the policy-making process (even being lesser in Brazilian case). Further research awaits to test how these other actors affect the metropolitan process.

Table 7. Evaluation of the ICA framework

Hypotheses	Proxy	Mexico	Brazil
Characteristics of the metropolitan region			
(H3) more marginalized municipalities are less inclined to establish partnership with others.	IDH	Supported	Supported
(H6) insofar as inequality increase within a municipality, the likelihood of establishing partnerships with other municipalities decreases.	GINI	Not supported	Supported
Local policy making institutions			
(H9) *frequent changes of parties in power, alternation in power, may undermine these relations and thus possibly reduce the proclivity for association.*	Historical political alternation	Supported	Not supported
(H10) the number of municipalities in a metropolitan region negatively affects the possibility of forming associations	Number of Municipalities	Not supported (Associated effect is robust and contrary to expected)	Not supported (Associated effect is robust and contrary to expected)
(H11) If the municipality is small, a larger number of possible counterparts positively affects the possibility of association, but as the municipality grows, in terms of its population, incentives to cooperate diminish, since it leverages its size -in economies of scale- and avoids the transaction costs entailed by associating with smaller municipalities.	Number of Municipalities *Population	Supported	Not supported
Institutional capacity			
(H12) higher own source revenue to be reflected in a higher likelihood of forming intergovernmental associations.	Own source revenue	Not supported (Associated effect is robust and contrary to expected)	Not supported (Associated effect is robust and contrary to expected)
(H13) the greater the service coverage, the higher the proclivity to associate.	Service coverage (MX) / Number of employees (BR)	Not supported (Associated effect is robust and contrary to expected)	Not supported
(H14) with higher levels of public debt, municipalities are more likely to form associations.	Debt/Current Spending	Not supported	Supported

2. Theoretical convergence was found for H3. The level of marginalization and poverty affects the possibilities of inter-municipal association. A process of interrelation brings new possible benefits, costs and thus associated risk. Localities immerse in high levels of poverty enjoy smaller budgets to tackle with greater uncertainty. Policies designed to push regions out of poverty through inter-municipal association have a low probability of success, unless risk is buy-in by upper tier governments.
3. Enough literature claims about the inherent obstacles to inter-municipal associations brought by inequality (See Gerber & Gibson 2006; Feiock, 2009; Bae & Feiock 2012). However, the H3 found support only in the case of Brazil. There is no other clear reason of why inequality does not affect the process of association in Mexico but perhaps the level

autonomy and therefore sensitivity of local policy-making to local socio-economic features. We will discuss this further.

4. There is partial convergence for H9. Reputation and trust is a crucial element for inter-municipal associations (Feiock 2009: 367; Carr et al. 2009). Thus party alternation (H9) inhibit decidedly the decisions of metropolization in Mexico but not in Brazil. The explanation alternatively, is found in the fine-grained rules of local politics and policy-making we discuss in the next section.
5. There is partial convergence for H11. The net benefit of inter-municipal associations factors two elements; the number of possible partners and their own advantages in terms of economies of scale. If a municipality grows to achieve higher economies of scale advantages, less likely is to incur in the costs of consortia with other entities (Potosky & Brown 2003). This notion found empirical support in Mexico but not in Brazil. Noteworthy, we shall discuss how the federalist arrangement in Brazil helps to reduce this kinds of transaction cost.
6. There is partial converge in H14. A recurrent argument is made for heavily indebted municipalities in favor to incur in inter-municipal processes as means to reduce the cost of service provision, but such cost-reduction feature is a promise not empirically maintained (Bel, Fageda & Mur 2014). High indebted municipalities in Mexico are less likely to establish inter-municipal associations. A different proxy of capacity (current spending) was used for Brazil. The association is positive and significant. An alternative explanation is that municipalities need to spend more in current spending when a consortium is in place.
7. There is no convergence in H10. The Tsebelis (2002) veto player argument was not supported in Mexico and Brazil for consortia-making processes. On the contrary, evidence seems to suggest that an alternative proposition is taking place, previously stated by Bickers & Stein (2004), where an increase in the number of members also increases the range of possible players, suppliers or partners for negotiating and setting common objectives that makes possible to achieve partnership agreements within a metropolis.
8. There is no convergence in H12 and H13. Institutional capacity was mentioned as an important precondition for municipalities to collaborate (Cravacuore & Clement 2006; Rodriguez-Oreggina & Tuiran 2006). Perhaps some kind of capacity is needed, bit still is necessary to understand better this mechanism because both in Brazil and Mexico, municipalities' level of capacity plays against the establishment of consortia or inter-municipal associations.

Conclusions

This research dealt with the question on the factors that inhibit or promote inter-municipal cooperation in metropolitan regions. Inter-municipal associations (Mexico) or Consortia schemes (Brazil) serve as the main indicator of the governance change within municipalities in a metropolitan region. We built fourteen hypothesis based on the ICA framework to evaluate the empirical results and further to compare the Mexican and Brazilian processes of metropolization. To test our theoretical framework, we used data gathered from several official databases from Mexico and Brazil, at the municipal level and only for metropolitan regions, and analyze it using a multivariate logistic econometric statistical model.

In general and due to the number of inter-municipal associations, the overall data suggests Mexican municipalities with respect to Brazilians, encounter structural impediments preventing the formation of inter-municipal associations; it severely restricts the possibility of having more cooperative and a collaborative metropolitan governance processes. The discussion section thoroughly

revised the hypotheses with empirical support for both cases. The results partially support the ICA framework but we believe the differences observed between Mexico and Brazil could be explained along the federalist arrangement that distinguish each country. Thus, the question is: can we assert that these divergent results can be attributed to local features or the political and institutional design of the federalism? In a couple of sections before we presented five main issues that differentiate Mexico to the Brazilian federalism. To conclude we bring back these notions and derive some plausible explanations:

1. Local autonomy explains key differences between the Mexican and Brazilian case with respect to the ICA framework. The local inequality hypothesis found empirical support only for the Brazilian case as an inhibitor of consortia-making. Arguably if a real local autonomy exists, the weight of socio-economic conditions in a municipality should matter prominently in the local governments' decisions-making. The situation is clearly related to the literature of *Political Localism* (see Page & Goldsmith 1987). As mentioned earlier, Mexican municipalities enjoy a limited version of autonomy; they are heavily dependent on state legislatures and federal fiscal arrangements mitigating the plausible effect of local socio-economic conditions.
2. The possibility of reelection might explain why party alternations in Brazil weight little to non in the consortia-making process. It seems logical that if one incumbent is unable to run for reelection, the hazards associated to discontinuities increase. This is the case of Mexico. On the contrary, if one mayor can remain for more than one period of four years (eight years in two terms, like in Brazil), the negative effect provoked over the probability of inter-municipal associations would diminish.
3. A clear policy decentralization, or a formal vertical coordination arrangement, provides basic conditions to enable further inter-municipal association. In Brazil, local autonomy matches financial resource and municipal assignments. Legal security, stable intergovernmental relations, expansion of liabilities and a predictable flow of financial resource at least create some minimal bridges to reinforce local governments, diminishing transactional costs faced by local partners in any collaboration scheme. A similar design in Mexico should work only if it follows a formal and well-defined rules of policy assignments or coordination, but so far the enlargements of the local policy agenda has run in the lines of informal or indirect drivers such as federal financial transfers, party interests or state legal reforms (Meza 2016). This is clearly a vague and insufficient legal basis that increases transaction costs of making inter-municipal collaborations. The higher the levels of formalization in intergovernmental framework related to municipalities, the higher the security for these ones to get in these kind of arrangements.
4. Another distinction between Mexico and Brazil, is the existence of a federal or national legal framework that provides juridical security for municipalities when associating with one another. This would probably explain why divergence was found in the hypotheses of institutional capacity. We have learned from the institutionalist literature that rules of the game matter when we analyze situations involving collective actions, but not only in terms of incentives, also over the signs of appropriateness (March & Olsen 2009) for what an entity is called to do. Greater local capacity would be insufficient to explain collaboration schemes without the signs and the perception of municipalities on what they are normatively correct. Thus federal laws provide legal security in any kind of metropolitan consortia, it reduces the fear of any loss, and also establish a clear normative basis for municipalities' behavior. This contextual setting does not invalidate the theoretical ICA framework used, but adds elements to the assumptions made in a comparative manner for federalist countries.
5. Finally in Brazil, states hold constitutional power to create metropolitans regions whereas in Mexico this attribution is relatively unclear. Both Mexican and Brazilian Federal Constitution forbids the creation of intermediate levels of government in-between municipalities and states.

The contextual conditions however, induces varying models of metropolitan associations; in Mexico, for example, metropolitanization frequently involves the participation of the whole municipal government while in Brazil the association is clearly ascribe to clear-cut policy silos.

Thus, taking in account the main theoretical question of this paper, related to our object of analysis, it is possible to say that the effort to compare broader assumptions can also expand when confronted with the singularities of different institutional and political settings. Is not too much to remember this known caution when newer subjects are submitted to comparative investigation.

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