VIII Encontro Brasileiro de Administração Pública
ISSN: 2594-5688
Sociedade Brasileira de Administração Pública

ARTIGO

FEDERAL POLICY DESIGN MATTERS FOR INTER-MUNICIPAL COOPERATION? AN ANALYSIS OF BRAZILIAN CASE

EDUARDO JOSÉ GRIN, GUSTAVO ANDREY LOPES FERNANDES

Sociedade Brasileira de Administração Pública (SBAP)
Instituto Brasileiro de Ensino, Desenvolvimento e Pesquisa (IDP)
Brasil

Disponível em: https://sbap.org.br/

Federal policy design matters for inter-municipal cooperation? An analysis of Brazilian case

Abstract
How institutional drivers of public policies in federal countries may influence and incentive local government's decision-making to participate in inter-municipal cooperation (IMC)? Could institutional factors of public policies in federal countries influence local government's decision-making to participate in IMC? Or are broader national rules or even local factors more important in this process? The paper analyzes if the Brazilian federative design in health, education and sanitation public policies influence this process. The hypothesis is: the institutional approach in federative public policies influences on the probability for IMC. The research finds that the federative rules in each of the analyzed area.

Key words: federative; federative; federative; federative; federative

Introduction

How do institutional drivers of national public policies in federal countries affect local government's decision for inter-municipal cooperation? Why do rules of federal policies may affect municipal settlement for that? What types of consequences federal policies have on local options for IMC? Our interest in this subject has arisen on account of two different theoretical approaches. First, most of the literature about Inter-Municipal Cooperation, IMC, has been focused mainly on local factors (Feiock, 2007; Post, 2002; Frug, 1999; Lowery, 2000; Hawkins, 2009; 2010; Carr, Gerber & Lupher, 2007; Bel & Warner, 2016). Second, the understanding that financial incentives and legislation can be effective to overcome barriers for IMC when accrued from national strategies (Hulst & Monfort, 2011) or from fundamental rules like the Brazilian Federal Constitution (Meza et. al., 2018).

We are more concerned in analyzing how and why the design of national public policies with their stimuli and norms could also be a driver to induce municipalities towards IMC (Immergut, 1992; Skocpol, 2002). Theoretically, this paper aims to understand the effect of institutional factors in public policies (March & Olsen, 1984; Mahoney & Thelen, 2010; Pierson, 2004; Skocpol, 2002) and how they can induce IMC in federalist countries.

Federative policy design and rules may influence the probability for IMC. In this line, this paper investigates three different public policies in Brazil with respect to their different institutional features which may or not incentive IMC. In the country, decentralization of public policies is the backbone of distribution in political authority, financial resources and administrative implementation in subnational governments since 1988 (Meza *et. al* 2018; Arretche, 1999; Abrucio, 2005; Rodden, 2005). On one hand, each decentralized public policy is organized according to different federal rules regarding fiscal transferences and intergovernmental cooperation. On the other side, municipalities have political, fiscal, and administrative autonomy.

Our main argument is that different federative institutional designs and features in public policies produce distinct effects on how and why municipalities decide to get into IMC. In addition, IMC is affected by other variables already tested through theoretical approaches as Institutional Collective Action Framework (Feiock, 2007; 2013; Tavares & Feiock, 2018). Although Brazil is a federal country, national policy design can unevenly (Skcopol, 2002) affect the likelihood of municipalities to join in IMC. These different results can be explained by the institutional features of each public policy which function like causal mechanism (Hedstrom, 2009).

We analyze health and education institutional policy designs to compare effects of their national rules on the probability for IMC. Health policy is the most structured in terms of constraining rules: it is based on continuous financial transferences from national government and obligatory demands for municipalities that participate in Unified Health System (SUS). Education policy is less stringent because its national rules allow for more local discretion than health even if most of federal money is redistributed through a mandatory scheme. These two different national policies have different schemes of federative induction to the same set of municipalities. Thus, we test to what extent institutional factors federal public policies may incentive municipal decision-making to participate in IMC. Our findings show that federal rules matter, however, not in a straightforward way.

The paper is organized as follows. Firstly, the literature review on IMC focusing on the dimensions supporting the hypothesis: the institutional design of federative public policies influences IMC because their rules and incentive produce different effects in each local and sectoral arena. Secondly, we describe characteristics of IMC in the health and education policies. Mainly how is organized the federal money transferences to cities and the enforcement of national rules as for the implementation of financial and participatory bodies in the municipalities. Thirdly, the research design and the main adopted steps to build the data set, and the Probit econometric model used to test our hypothesis in the three national policy arenas. Next, the sections related to the discussion and results.

1. Institutional public policy design and inter-municipal cooperation

The literature is focused on a set of well-defined hypotheses and empirical evidence on factors affecting local decision-making for IMC (Feiock & Scholtz, 2009; Feiock, 2013, 2007; Hawkins 2009; 2010; Ostrom 2010; Andrew, 2009). These approaches can be organized in four strands. Firstly, external factors as economic and socio-demographic characteristics of the municipalities (Feiock and Scholtz, 2009; Bae & Feiock, 2012). Secondly, internal drivers from governments' institutional capacities (Wolman, 2008; Andrew 2009; Bel and Warner, 2016). These issues have been the main ground of Institutional Collective Action Framework (ICA)) framework (Feiock 2007, 2013). Thirdly, the role of political institutions (Feiock 2007; Brown & Potoski 2003; Hefetz, Warner & Vigoda-Gadot, 2012;

Hawkins, 2017). Fourthly, national public policy design (Feiock, 2013; Bel & Warner, 2014), used in this paper as the main theoretical dimension to analyze its effect on IMC. The other three ones are useful to control the effect of the federative rules in health and educations sectors.

National governments and their administrative system and constitutional-legal usually have different tools of persuasion, financial incentives and legislation with compulsory elements as tools seeking to induce IMC (Hulst & Monfort, 2007; 2011; Tavares & Feiock, 2018). Thus, the matter of IMC's inducements may vary depending on local demands and size of population as well as from national statutory framework for cooperation (Feiock & Carr, 2001; Feiock, 2007; 2008; 2009; Swianiecz, 2002). Existing rules constrain and provide meaning for local actors' behaviors and preferences when demarcating boundaries as for their roles and obligations (Hulst, Montfort, Haveri, Airaksinen & Kelly, 2009). For instance, normative and financial inducements from regional governments in Emilia-Romagna (Italia) conform a sort of "constrained track" for local policy actions (Bolgherini, 2011, 42).

But more than only considers broader national legal and constitutional rules also variation in higher-level government norms in public policy sectors is a promising way to investigate subnational governance (Feiock, 2013). The institutional framework in national public policies can also be a relevant explanatory driver to understand how and why municipalities opt to get into IMC (Hulst *et. al*, 2009; Scott, 1991; Bel & Warner, 2014; Feiock, 2013). National norms and the in each policy arena can function as incentives and constraining on IMC local decisions (Feiock and Scholtz, 2009; Steinacker, 2004). Taking into account policy sectors and their different legacies lead to a better empirical analysis because they are the institutional framework where general concepts acquire effective application (Skocpol, 2002; Immergut, 1992; Mahoney and Thelen, 2010).

The path and rules from public policies assume an explicative role towards local behaviors favorable for IMC (Hulst, Montfort, Haveri, Airaksinen & Kelly, 2009; Parrado Díez, 2006; Osterrieder *et al*, 2006). This approach is more fine-tuned to understand how and why some public policies are more successful than other to stimulate IMC. Institutions provide incentives for the political actors' behaviors so that is important to understand how they function in different policy arenas (Immergut, 1992; Weir, 1992; Mahoney and Thelen, 2010). Institutional theory claims that policies of territorial arrangements are shaped by two main factors: preferences of their members and rules that aggregate penchants into outcomes (Gerber & Gibson, 2009; Hulst & Monfort, 2011). Being "local government" a territory is possible to analyze how and why different national policy arenas may sway the probability for IMC.

This issue is relevant in federalist countries where municipalities have local autonomy, and public policies use to be structured by the "picket fence" model (Wright, 1988) and "policies communities" rallying national and local governments. In federations, national law enforcement is less stringent, and

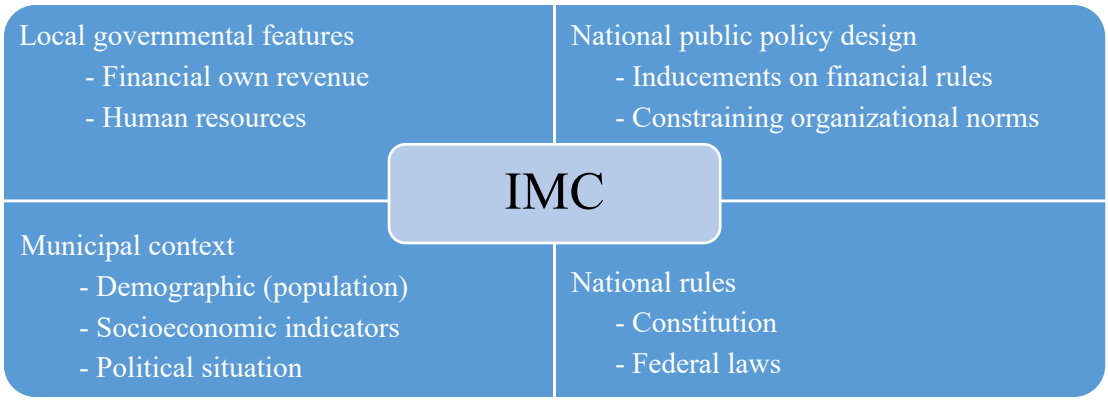
municipalities have larger own sources revenue (Wolman, 2012). Thus, not just jurisdictional factors matter, but also federative institutions in policy issues (Feiock, 2013; Agranoff, 2001; Miller & Lee, 2011; Swianieweicz, 2002) need to be considered for implementing public policies based on IMC.

Intergovernmental programs as a channel within which cooperation between municipalities could be settled through institutionalized rules (Agranoff & McGuire, 2004; Agranoff, 2001). Analyzing the England case, Kelly (2007, 199-202) highlights a similar subject: since 1992 national government has raised financial incentives for IMC by designating mandatory blocks of competence and obligations in specific fields of municipal action. These types of instruments are quite common to promote IMC (Hulst & Monfort, 2007) even if they might produce different effects in each public policy.

For Osterrieder *et al* (2006, 32; Scott, 1991), incentives are based on: allocation of funds/tax benefits to facilitate the creation of IMC; conditionality in funds' allocations dependent on existing IMC, and legal incentives. These mechanisms come from historical path and institutional framework built in each policy sector. In effect, rules in national public policy arenas establish the context within which horizontal management networks could be built (Agranoff, 2001). In this vein, there are many instruments such as: a) economic (grants and subsidies); b) legal (intergovernmental regulation, mutual helping or cooperation agreements); c) administrative practices (regulations of negotiated performance); d) governmental bodies (intergovernmental networks and councils on public policies) (Agranoff, 2007),

Each one of these channels is an opportunity to induce arenas of decentralized arrangements and closer intergovernmental relations (Agranoff, 2007). Encouraging IMC through public policies which provide legal and financial incentives can support *enabling* framework for cooperation (Swianiewicz & Herbst, 2002). This is still more important in policy domains where the institutional context is regulated by national rules (Lubell *et al*, 2002). Considering the theoretical approaches, our analytical model has four dimensions (figure 1).

Figure 1 – Analytical model



Source: elaborated by the authors.

In the next section, we describe the institutional and financial features of each analyzed public policy in order to compare how the same set of variables is structured in different ways.

2. The institutional and financial rules in health and education

Brazilian federation has 27 states and 5570 municipalities which are constitutionally considered as a full member of the federation. Despite huge socioeconomic variation and regional inequality, Brazilian municipalities are under the same symmetric constitutional framework. The country is also a singular case once is one of the unique middle-income country where a welfare state has been being established since the 1988 Constitution. However, despite the same constitutional blueprint for municipalities, there are different federative rules for each national policy arena. According to institutional approach, national rules may produce different levels of constraining for municipal action, and distinctly to affect probability for IMC. Comparing health and education sectors there are two main empirical dimensions: financial (mechanisms of intergovernmental transferences) and institutional (implementation of Municipal Plan, Fund and Council) (See table 1).

Table 1 – Institutional Dimension: main definitions.

Structure	Definition
Municipal Plan	An organized set of goals which considers national and state definitions, but municipalities have political and administrative autonomy to adjust federal demands according to local particularities.
Municipal Funds	Organizational bodies which have administrative and financial autonomy to manage the budget of a public policy formed by local, state and/or national earmarked transferences. They are nationally regulated in different ways according to each public policy.
Municipal Public Policy Councils	Bodies recognized by federal and/or municipal laws or even by constitutional rules. They are collective bodies formed by governmental and social representatives whose main function is to exert social control over the local government.

Source: elaborated by the authors.

One of the largest health systems in the world, the *Sistema Unico de Saúde*, SUS – Unified Health System, was established in 1990. Voluntary adhesion of municipalities depends on the fulfillment of the three above referred institutional rules, but since 1996 adhesion has reached almost the whole of the municipalities (Arretche, 2003). Without implementing municipal plan, fund, and council neither municipalities can join SUS. These are prerequisites to authorize the continuous intergovernmental transferences from National Health Fund to the municipal treasury based on a per capita value rule, which is the main stable source of financial resources.

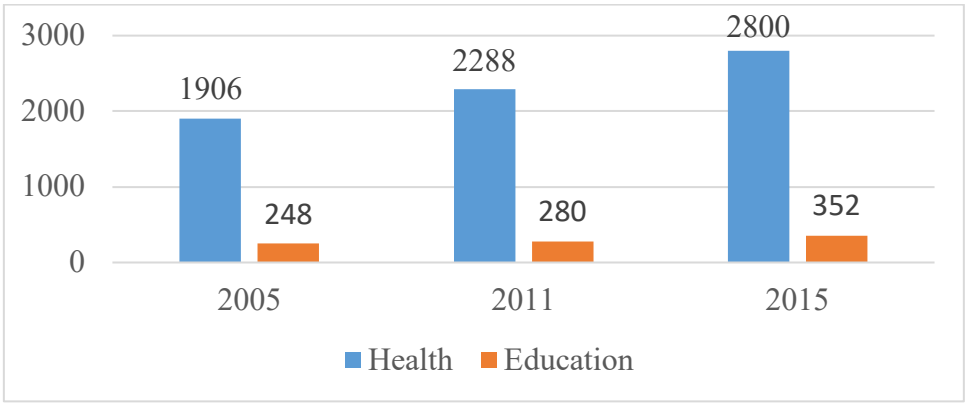
In education policy, there is not a national system like SUS. Brazilian constitution defines the existence of a multi-federative model where each sphere of government (municipal state, and federal) manages its own programs. For instance, municipalities are focused on Basic Education, states supply education in between, and the Federal government superior one. Lacking a national and unified policy organization, the enforcement from upper levels of government over municipalities is weaker than health

policy. Thus, the sweeping of municipal funds and councils is smaller since local discretion to implement them is higher (Abrucio, 2010). As for municipal plan, since 2014 rules of National Education Plan have been changing and enforcing its implementation.

Regarding the financial dimension, in education, federal government monthly transfers money based on continuous instruments. Most of the transferences is received from involuntary federal transfers. In Brazilian Constitution there is a mandatory accounting fund managed in each state (Fund for Maintenance and Development of Basic Education and Valorization of Education Professionals – FUNDEB), which holds municipal values of national and state transferences and redistribute to localities according to the figures of enrolled students in basic education from four to seventeen years old (Arretche, 2004). Considering a national per capita value for each student, and the quantity of enrolled students, after this redistribution, federal government only transfers supplementary money to the cities if they do not reach this minimum spending per student.

The evolution of IMC in health and education shows different paths that produced distinct effects generated by their specific federal rules. The graphic 1 portrays different figures of IMC in each public policy. Health policy is on the top: more than a half of the municipalities participate in IMC, and in ten years this figure increased in more 46,9 percent. The case of education policy is the worst because both in total or relative figures the results of IMC are much smaller than in health. How to understand this situation? We need to delve national design and sectoral rules to identify the effects caused on the option for IMC in order to find some answers.

Graphic 1 – Figures of IMC in education and health



Source: elaborated by the authors based on MUNIC (2005, 2011, 2015).

As for legal norms, since its inception in 1990, the SUS has been incentivizing IMC. The education policy is more fragile because there are no federative incentives for IMC supported by sectorial norms. Transferences from FUNDEB grant local financial resources and can generate few stimuli for IMC since municipalities ensure minimal monetary sources to attend their needs without any type of

cooperative arrangement. In effect, institutional rules and path in each public policy seem to be relevant aspects to induce IMC. From 2005 to 2015 new federal and sectoral laws have been stimulating consortia to provide public services.

Another way to understand the evolution in IMC in broader landscape is related to the National Law of Public Consortia approved in 2005. In ten years after its the approval, on average, grew up in 71 percent the number of municipalities in IMC in ten sectors (health, education, sanitation, housing, environment, social assistance, public transportation, tourism, culture, and urban development) (Grin and Abrucio, 2017).

3. Research design

The concept of IMC is based on Hulst and & Montfort (2011) and relies on three aspects. Firstly, IMC is defined as a voluntary scheme where no supra-local entity formally obliges a municipality to participate, although federative rules can create incentives. This leaves out any formal vertical relation (Miller & Lee, 2011) imposing IMC schemes as defined by Tavares & Feiock (2018). Secondly, cooperation scheme is understood as a deal between municipalities. Thirdly, IMC is premised on some territorial contiguity, proximity, or belongingness to the same geographic region even if different incentives could be derived from each federative national public policy.

Empirically, these assumptions are analyzed regarding the Public Consortia (CP) which is, according to Brazilian federal law, a legal agreement between municipalities aimed at providing public services. The CP needs to be approved in each municipal city council and all participants must define a percentage of their budgets to funding this public body. Thus, the analysis considers the same dichotomous dependent variable.

Based on this definition, how and why do different federal policy design distinctly affects municipal decision-making to participate in IMC? To answer this question, we analyze IMC in Brazilian health and education policies by using a comparable set of variables in a quantitative analytical framework. We expect to find different explanatory power across disparate sectoral incentives for IMC in federal policies. The empirical analyzes comprises data mostly from 2014/2015 to test the dependent variable (probability of municipalities to participate in IMC in health and education).

Cross section data was collected from MUNIC – Research of Municipal Basic Information, a national survey of municipalities carried by the Brazilian Bureau of Statistics (IBGE). Despite being annual, information specific on IMC was collected only in 2011 and in 2015, not allowing us to build panel data models. Socioeconomic and financial variables were obtained from FINBRA - Brazilian Finances - Municipal Accounting Data, a data system managed by the Federal Treasury to supervise

Brazilian public spending. The following section explains the variables. We use a Probit model to discuss the hypothesis (Cameron &Trivedi, 2005).

Dependent variable

The dependent variable is the decision of the municipality to participate in IMC in health and education policy, being this variable dichotomous: 1 = yes and 0 = no. IMC in health is higher than the half of all municipalities, in education the figures are just 6,7 percent of the ones.

Independent variables

Three independent variables are organized in financial and institutional dimensions, and they are the main education and health comparable federal public policy rules (table 2).

Table 2 – Dimensions of independent variables: sectoral federal rules in health and education

Health	Education
Financial dimension	**Financial dimension**
Continuous and earmarked intergovernmental transferences from federal government within the SUS. Voluntary intergovernmental transferences through grants	Earmarked federal transferences redistributed to municipalities in all states where they do not reach minimum per capita value of spending for student defined in FUNDEB. Earmarked federal transferences to scholar feeding and scholar transportation. Voluntary intergovernmental transferences through grants
Dimension of institutional rules	**Dimension of institutional rules**
Legal duty to elaborate a Municipal Plan since 1990.	Legal obligation to elaborate a Municipal Plan since 2014
Legal duty to implement a Municipal Public Policy Council	No legal obligation to implement a Municipal Public Policy Council Legal obligation to implement two Municipal Council: Scholar Feeding and FUNDEB

Source: elaborated by the authors.

Financial dimension is related to the fiscal federalism: rules organizing the distribution of resources among different levels of government, but assuming that upper ones concentrate more money that lower ones. Resources are redistributed to guarantee minimum national standards, especially in welfare policies (Peterson, 1995). Furthermore, where decision-making about aims of a public policy and system of joint funding are shared the federal model can be better preserved.

But "if national government use its superior fiscal capacity to pursue their own political interests at the expense of regional administrations then a form of 'coercive federalism' will result, with far-reaching accountability and governance problems" (Eccleston, Krever, & Smith, 2017, 20). In this line, is relevant to analyze the degree from what federal transferences come with attached strings (Dardanelli et al, 2018), which can change depending on specific rules in each policy sector.

Institutional rules are not a fixed feature in time (Pierson, 2004) since the evolution of a federal public policy may increase the returns of their incentives considering the results obtained by the municipalities. Based on this rationale, in public health we hope to find stronger effects of the rules of

the SUS on the probability for IMC. SUS is intensively collaborative, and organized on continuous transferences, which induce cities to get into the System in order to ensure federal money. In education, currency is involuntary and transferred from different channels. An important share of money is redistributed in an automatic way based on the number of students through FUNDEB. But there is no clear incentive for cooperation like in health. But there are also voluntary funds received from the upper levels of government based on specific agreements like National Fund of Development Education - FNDE[1]). Other grants to education can be given by upper levels of government but in a more erratic way.

Table 3 – Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Number of consortia	5,567	1,566	2,272	0,000	11,000
Participation in consortium	5,570	0,660	0,474	0,000	1,000
Consortia in Education	5,567	0.067	0.250	0	1
Consortia in Health	5,567	0.503	0.500	0	1
Log (Pop)	5,570	8.274	3.326	0	16.292
Log (Total Revenues)	5,570	15.185	5.858	0	24.493
Log (FPM2014)	5,570	14.089	5.465	0	20.329
Log (FHealth2014)[2]	5,570	17.037	9.199	0	38.811
Log (FNHSUS2014)	5,570	12.303	5.308	0	21.216
Log(Health – Otherfunds)	5,570	4.734	6.044	0	17.693
Log(FEducation)[3]	5,570	32.231	14.396	0	57.733
Log (FNDE2014)	5,570	11.476	4.907	0	20.110
Log (FUNDEB2014)	5,570	12.983	5.637	0	21.879
Log(Education – Otherfunds)	5,570	7.771	6.186	0	6.186
Municipal Plan in Education	5,566	0.436	0.496	0	1
Municipal Council in Education	5,566	0.876	0.330	0	1
Municipal Plan in Health	5,566	0.976	0.153	0	1
Municipal Council in Health	5,567	0.998	0.044	0	1
Basic Health	5,567	88.185	19.988	0	100
Child Death	5,567	6.986	37.691	0	1938
IDEB	5,304	5.034	1.068	2.300	8.300
Log (Civil Service Employees)	5,551	6.385	0.945	1.946	12.012
Log (Share of P. Appointed)	5,535	-2.521	0.718	-5.749	-0.266
Political Competition	5,358	1.873	7.358	1	439.200
Mayors_DEM	5,565	0.589	0.922	0	7
Mayors_PDT	5,565	0.175	0.518	0	6
Mayors_PMDB	5,565	0.658	0.970	0	7
Mayors_PPS	5,565	1.431	1.402	0	13
Mayors_PSB	5,565	0.335	0.664	0	6
Mayors_PCdoB	5,565	0.639	0.997	0	8
Mayors_PSOL	5,565	0.945	1.109	0	9
Mayors_PT	5,565	0.009	0.130	0	4
Mayors_PSDB	5,565	0.930	1.109	0	11
Mayors_PTB	5,565	0.643	0.934	0	7
Mayors_PV	5,565	0.284	0.627	0	5

Source: elaborated by the authors.

The interest variables are related to the national institutional design in each public policy. In the case of education: a) FEducation: transfers received by municipalities aggregating all types of sources: FNDE, FUNDEB, and voluntary funds transferred for federal and state levels concerning a wide range

of programs (Education – Otherfunds); b) two institutional rules (the existence of Municipal Plan in 43,6 percent of localities and Municipal Council implemented in 87,6 percent of the municipalities). In health, FHealth2014: a financial variable aggregating money from the intergovernmental transferences from Heath National Fund (FNSUS) and from voluntary funds transferred for federal and state levels outside SUS (Health – Otherfunds), and two institutional ones (the existence of Municipal Plan in 97,6% of localities and Municipal Council implemented in 99,8 percent of t municipalities). Finally, in sanitation we have the money received from the upper levels (National Fund of Basic Sanitation - FSB). As for variables based on institutional rules: existence of Municipal Plan in 25,4 percent of localities and Municipal Council implemented in 13,1 percent of municipalities.

Control variables

Control variables are organized in three dimensions: a) national rules (federal transferences from Municipal Participation Fund (FPM). The FPM is a constitutional scheme of redistributions based on a per capita ratio. Municipalities receive money automatically from the federal government which can be used in any of the studied policies; b) municipal context: demographic (log of municipal population) and socioeconomic characteristics (health: child death and percentage in access to basic health and education: national evaluation measured by the Basic Education Development Index - IDEB.

Variables on organizational local and financial government's drivers. For the managerial configuration the log of municipal public employees and proportion of appointed civil servants. Municipal organization as for technical and financial capacity influences the decision for participating in IMC (Lackey, Freshwater & Rupasingha, 2002). Professional management is an important driver for cooperation (Bel & Warner, 2016; Brown and Potoski, 2003; Hefetz, Warner & Vigoda-Gadot, 2012) as it helps to overcome technical challenges (Hefetz, Warner & Vigoda-Gadot 2012; Nelson & Svara 2012).

As for political municipal setting we used two variables related to the main Brazilian political parties: political competition (difference between the first and the second candidate in last municipal polls in 2016) and mayor ideology. According to Carreirão (2014), Democrats (DEM) and Worker Brazilian Party (PTB) are right-wing parties, Workers' Party, Green Party (PV), Brazilian Socialist Party (PSB), Socialist Popular Party (PPS), Socialism and Liberty Party (PSOL), Brazilian Communist Party (PCdoB) and Worker Democratic Party (PDT) belong to left-wing branch, and Brazilian Social Democrat Party (PSDB), and Brazilian Democratic Movement Party (PMDB) are centrist parties.

4. Results

The following tables present the main results in each public policy, considering the theoretical model. In the case of health, financial transferences are not statistically significant ($p<0.01$), and signals

change depending on the model. Besides that, the institutional rules (PMS e CMS) do not affect the likelihood, although the association is also positive. As for contextual characteristics, child death is relevant ($p<0.1$), despite the coefficient is small and negative, showing that places with weaker social conditions tend to have less likelihood of association. IDEB has a positive correlation and strong association with IMC. Population is not relevant when controls are taken into account. The level of access in basic health by the population is positively associated ($p<0.01$). The transferences from FPM are not correlated with IMC when considering controls. Higher rates of federal involuntary transfers do not influence local option for IMC.

The drivers of the political context show that local competition does not matter for IMC. Both in left-wing parties, as also for right-wing and centrist ones, the association with IMC is negative. The exception is the positive signal for PDT ($p<0.1$) to get into IMC when compared with right-wing parties and centrist ones.

Table 4 – Probability for IMC in health

	1	2	3	4
Log (Pop)	-0.177	0.036	0.064	0.066
	[-6.081]***	[1.048]	[1.297]	[1.326]
Log (Total Revenues)	0.050	-0.079	-0.081	-0.081
	[1.813]	[-2.530]*	[-2.542]*	[-2.502]*
Log (FPM2014)	0.041	0.060	0.046	0.046
	[2.043]*	[2.298]*	[1.835]	[1.809]
Log (FHealth 2014)	0.003	-0.003	-0.003	-0.002
	[0.967]	[-0.962]	[-0.883]	[-0.673]
Municipal Plan (PMS)	0.213	0.040	-0.015	-0.010
	[1.930]	[0.333]	[-0.124]	[-0.083]
Municipal Council (CMS)	0.559	0.398	0.473	0.481
	[1.393]	[1.027]	[1.253]	[1.260]
Basic Health		0.004	0.004	0.004
		[3.632]***	[3.547]***	[3.465]***
Child Death		-0.003	-0.003	-0.002
		[-2.594]**	[-2.098]*	[-1.527]
Ideb		0.527	0.506	0.519
		[27.344]***	[25.321]***	[24.354]***
Log (Civil Service)			-0.091	-0.068
			[-2.347]*	[-1.744]
Share of Political Appointed			-0.229	-0.243
			[-8.115]***	[-8.486]***
Political Competition			0.003	0.003
			[1.442]	[1.204]
Mayors_DEM				0.011
				[0.522]
Mayors_PCdoB				-0.085
				[-2.143]*
Mayors_PDT				0.047
				[2.281]*
Mayors_PMDB				-0.005

				[-0.315]
Mayors_PPS				-0.036
				[-1.231]
Mayors_PSB				-0.069
				[-3.333]***
Mayors_PSDB				-0.069
				[-3.744]***
Mayors_PSOL				-0.013
				[-0.065]
Mayors_PT				0.024
				[1.300]
Mayors_PTB				-0.115
				[-5.392]***
Mayors_PV				-0.099
				[-3.176]**
Constant	-0.682	-3.311	-3.244	-3.349
	[-1.660]	[-7.910]***	[-6.685]***	[-6.860]***
	5563	5297	5088	5088

Source: own elaboration. *** p<0.01, ** p<0.05, * p<0.1

Taking municipal features, total revenues have significance (p<0.10) in three models. Except model 1, in the rest the signal is negative showing that higher level of local revenue reduces interest for IMC. As for civil service, despite the dimension being not relevant, the share of political appointed display a negative association (p<0.1): the weaker is bureaucracy, the lower the good willing for IMC.

Table 5 – Probability for IMC in education

	1	2	3	4
Log (Pop)	0.130	0.088	0.039	0.026
	[3.867]***	[2.298]*	[0.658]	[0.416]
Log (Total Revenues)	-0.032	-0.013	0.011	0.019
	[-1.464]	[-0.555]	[0.337]	[0.542]
Log (FPM2014)	-0.044	-0.049	-0.044	-0.042
	[-2.601]**	[-2.879]**	[-2.424]*	[-2.165]*
Log (FEducation)	0.002	0.006	0.004	0.003
	[0.665]	[1.430]	[1.083]	[0.761]
Education Municipal Plan (PME)	0.038	0.084	0.066	0.068
	[0.719]	[1.536]	[1.176]	[1.197]
Education Municipal Council (CME)	0.012	0.048	0.065	0.052
	[0.153]	[0.571]	[0.749]	[0.597]
Basic Health		-0.003	-0.002	-0.002
		[-1.960]	[-1.689]	[-1.371]
Child Death		0.000	0.000	-0.001
		[0.083]	[0.106]	[-0.908]
Ideb		-0.100	-0.103	-0.112
		[-3.854]***	[-3.773]***	[-3.880]***
Log (Civil Service)			0.027	0.009
			[0.543]	[0.165]
Share of Political Appointed			-0.073	-0.078
			[-1.889]	[-1.939]
Political Competition			-0.000	-0.001
			[-0.073]	[-0.256]
Mayors_DEM				-0.049
				[-1.583]
Mayors_PCdoB				0.058

				[1.202]
Mayors_PDT				0.095
				[3.601]***
Mayors_PMDB				0.042
				[2.069]*
Mayors_PPS				-0.084
				[-1.803]
Mayors_PSB				-0.023
				[-0.739]
Mayors_PSDB				0.004
				[0.164]
Mayors_PSOL				0.143
				[0.653]
Mayors_PT				0.104
				[4.100]***
Mayors_PTB				-0.061
				[-1.806]
Mayors_PV				-0.008
				[-0.180]
Constant	-1.567	-0.887	-1.240	-1.243
	[-16.149]***	[-4.658]***	[-3.168]**	[-3.047]**
N	5563	5297	5088	5088

Source: own elaboration. *** p<0.01, ** p<0.05, * p<0.1

Table 5 depicts results for education. All variables of interest do not show association with the likelihood for IMC. The transferences from upper levels of government are not correlated with IMC as well as the institutional variables (PME e CME), despite both having positive signals. It is important to note that the variable FEducation is strongly influenced by FUNDEB that distributes money based on the number of the per capita students in each municipality.

The same logic applies to the FPM, however it is distributed along a municipal per capita basis. FPM is significant in all models ($p<0.05$ or $p<0.1$)) and also negative. Socioeconomic variables as access to basic health and child death do not show any effect. The most important aspect is the IDEB, the proxy for school quality which is negatively associated ($p<0.01$). The more money there is and better the municipal government performance, the less intense is the motivation for IMC. Population is an important driver for local choices only in the models without variables related to the political context. Local political competition again does not matter as well as civil service characteristics. On the political spectrum, left-wing parties (PT and PDT at the level of $p<0.01$) are more prone to participate in IMC than centrist and right-wing ones. Characteristics of municipalities indicate weaker results in financial aspects because total revenue is not statistically significant ($p<0.1$).

5. Discussion

The theoretical model claims that characteristics of national policy arenas matter for IMC since federative rules that institutionalize the way how a public policy is organized present less stimuli for IMC. It was found that federative financial and organizational rules may or not influence the probability

for IMC depending on specific national policy design. The evidence shows that institutional and financial rules in health, education and sanitation can explain for different outcomes in IMC. Our findings show that looser national policy design may increase the local autonomy and ease the IMC's process.

The theoretical background is formed by four dimensions, being three of them more known in the literature (municipal contextual factors and local governmental features) (Feiock & Scholtz, 2009; Feiock, 2013, 2007; Hawkins 2009; 2010; Andrew, 2009). Also, characteristics of national administrative system matters (Hulst & Monfort, 2007; 2011; Tavares & Feiock, 2018), considering the role of FPM as a predictor for IMC. Our main theoretical approach is related to the national policy rules in specific areas (March & Olsen, 1984; Pierson, 2004; Skocpol, 2002).

In doing so it is possible to observe that, in public health, except transferences of FPM in two models, further variables with statistics significance are backed on contextual and local features. The impact of FHealth p is not statistically significant. The variable aggregates two main sources: voluntary and involuntary ones. In line with Agranoff &McGuire (2004): FNHSUS, the voluntary transfer, works specifically as a funding assistance in which compliance for its rules leads the cities for interlocal agreements, and distributes resources based on the SUS rules. However, when voluntary money is also accounted, the empirical evidence supports the hypothesis that financial national rules have no relevant explanatory power as for building health's consortia. Institutional rules constrain health's IMC (Hulst & Monfort, 2007; 2011) when demarcating boundaries that provide meaning the way local actors define their interests (Hulst *et al*, 2009; Tavares & Feiock, 2018).

Public health is the stronger area as for federative rules because its "picket fence" model (Wright, 1988) determines stringent conditions for municipal application. This inference is still more relevant because policy health is the only of these analyzed sectors that have rules related to municipal cooperation. This policy leads the option for IMC, however attached rules such as financial transferences and institutional norms cannot explain local choices. Socioeconomic factors (child death or IDEB), demographic (size of population), financial (own source revenue) also matter (Feiock &Scholtz 2009; Bae & Feiock 2012; Wolman, 2008; Bel & Warner, 2016; Brown & Potoski 2003; Hawkins, 2017).

In education public policy, the variables behave in a similar way because neither the transferences from FUNDEB/FNDE nor the organizational rules are significant. No specific education allocation fund (Osterrieder *et al*, 2006) induces the creation of IMC, although rules for the distribution of money are mandatory and dependent on the number of students. The provision of legal framework for intergovernmental transference (Agranoff, 2001; 2007) does not also explain the results for IMC. The norms related to organizational aspect are positively associated, but they have low statistical significance just in one model. It is possible to observe that local preferences are influenced not just for jurisdictional

factors, but for the existing federative policy issues (Feiock, 2013; Agranoff, 2001; Miller & Lee, 2011): FPM, one of the largest involuntary transfer funds in the world reduce the likelihood of IMC.

The sanitation policy evidences central differences in comparison both with education and health. This area does not have closer intergovernmental relations (Agranoff, 2007), and the level of federative rules is looser as for demands to the municipalities. In this regard, the concept of institutional opportunities functions since that the policy domains with its institutional context (Lubell *et al*., 2002) are more propitious to stimulate IMC. In sanitation policy we cannot find harder rules, which became this arena a more *enabling* framework for cooperation (Swianiewicz & Herbst, 2002). The institutional opportunities function like an inductor also if the norms for local organization are weaker than other federative policies how are the case, at least, in education and health.

The effect of PMS and CMS are strong and positive correlated in all models. Thus, the more is the local autonomy enjoyed, the higher of local incentives to build IMC arrangements. If is correct that rules in each national public policy arena (Immergut, 1992; Mahoney and Thelen, 2010) may establish the context within which horizontal management networks could be built (Agranoff, 2001), in sanitation policy this is the situation. The evidence show a different reality because there are stronger conditions to confirm the proposed hypothesis, even if values of federal transferences have not statistical significance.

6. Conclusion

This paper focus on how rules within national policy arenas can influence the odds for cooperation among local governments. Our findings allow us to support our main assumption: although not in a simple and unique way, federal policy design does matter. As a result, it is possible to introduce one more theoretical way to understand motivating factors for IMC besides the already analyzed ones through the literature (Feiock 2007; Post 2002; Frug 1999; Lowery 2000; Warner & Hefetz 2002; Lubell *et. al*, 2002; Hawkins 2009, 2010; Carr, Gerber & Lupher 2007; Bel &Warner, 2016).

Theoretically speaking, it is possible to build a broader framework with four dimensions and two directions (national: general and sectoral policy rules and municipal: internal drivers and socioeconomic, demographic, and political context). Basically, our main goal was to investigate how national institutional context structures the set of possibilities for collective action. We sought to understand if sectoral rules in national public policies can explain the motivation for IMC (Hulst *et. al*, 2009; Scott, 1991; Bel & Warner, 2014; Feiock, 2013).

To do that, we delve into three different Brazilian national policy designs (health, education and sanitation) based on the premise that stronger rules from federal government produce negative effects on the probability for IMC. Considering the hypothesis, not surprisingly within SUS with its more stringent rules, the total of money transferred from upper levels according to federal rules does not work as a

stimulus for IMC. Even if SUS system is intensively collaborative in its design, this features not relevant to explain the obtained results in IMC. Money is just received after municipality decides to join SUS which means that the local government had already opted to take part on an IMC framework.

Moreover, we gathered some pieces of evidence showing that the approach of this paper is promising to analyze IMC arrangements, considering the different results for the three areas. The hypothesis has empirical support considering the positive effect of the institutional rules in policy sanitation, and the lack of association for all variables in education and health case in considering financial and organizational dimensions in these three areas. The matter of inducements for IMC may vary not just depending on local factors or national institutional context related to statutory framework for cooperation (Feiock & Carr, 2001; Feiock, 2007; 2008; 2009). The set of possibilities for IMC can also be influenced by sectoral incentives and historical path in national public policies (Feiock, 2013; Agranoff, 2001; Miller & Lee, 2011; Skocpol, 2002; Immergut, 1992; Mahoney & Thelen, 2010).

Further research is needed to understand better on how and why federal policy rules function like causal mechanism (Hedstrom, 2009) towards IMC. This route could contribute to deepen our knowledge about intermunicipal cooperation, especially in federalist countries where municipalities enjoy political, fiscal, and administrative autonomy. Anyway, taking federative rules into account is an undeniably decisive public policy question.

End notes

[1] The FNDE is responsible for the implementation of educational policies of the Ministry of Education and transfers money in three ways: constitutional, automatic and voluntary funds (covenants).
[2] FHealth2014 adds FNSUS2014 and Health – Otherfunds.
[3] FEducation adds FNDE2014, FUNDEB2014 and also Education – Otherfunds.

References

Abrucio, F. L. 2005. A coordenação federativa no Brasil: a experiência do período FHC e os desafios do Governo Lula. *Revista de Sociologia e Política,* 24: 41-67.

Abrucio, F. L. 2010. A dinâmica federativa da educação brasileira: diagnóstico e propostas de aperfeiçoamento. In *Educação e federalismo no Brasil: combater as desigualdades, garantir a diversidade*, ed. R. Oliveira and W. Santana, 39-70. Brasília: Unesco.

Agranoff, R. 2007. Intergovernmental Policy Management: cooperative practices in federal systems. In *The dynamics of federalism in national and supranational political* systems, eds. M. Pagano and R. Leonardi, 248-284. New York: Palgrave Macmillan.

Agranoff, R. 2001. Managing within the Matrix: Do Collaborative Intergovernmental Relations Exist? *Publius – The Journal of Federalism,* 31 (2): 31-56.

Agranoff, R., and McGuire, M. 2004. Another Look at Bargaining and Negotiating in Intergovernmental Management. *Journal of Public Administration Research and Theory*, 14 (4): 495-512.

Andrew, S. A. 2009. Recent Developments in the Study of Interjurisdictional Agreements: An Overview and Assessment. *State and Local Government Review* 41 (2): 133–42.

Arretche, M. T. S. 2003. Financiamento federal e gestão local de políticas sociais: o difícil equilíbrio entre regulação, responsabilidade e autonomia. *Ciências and Saúde Coletiva*, 8 (2): 331 - 345.

Arretche, M. T. S. 1999. Políticas sociais no Brasil: descentralização em um Estado federativo. *Revista Brasileira de Ciências Sociais*, 14 (40): 111-141.

Arretche, M. T.S. 2004. Federalismo e políticas sociais no Brasil: problemas de coordenação e autonomia *São Paulo Perspectiva.* 18 (2): 17-26. 8839.

Bae, J., and Feiock, Robert C. 2012. Managing Multiplexity: Coordinating Multiple Services at a Regional Level. *State and Local Government Review* 44 (2): 162–68.

Bel, G. and Mildred E. Warner. 2016. Factors Explaining Inter-municipal Cooperation in Service Delivery: A Meta-regression Analysis. *Journal of Economic Policy Reform* 19 (2): 91–115.

Bolgherini, S. 2011. *Local Government and Inter-Municipal Cooperation in Italy and Germany.* Occasional papers n. 12/2011. Justus-Liebig-Universität Gießen.

Cameron, A. C. and Trivedi, P. K. 2005. *Microeconometrics: methods and applications*. Cambridge: Cambridge University Press.

Carreirão, Y. S. 2014. The Brazilian Party System: a debate with the recent literature. *Revista Brasileira de Ciência Política* 14: 255–95.

Carr, J. B., Gerber, E. R., and Lupher, Eric W. 2007. Explaining Horizontal and Vertical Cooperation on Public Services in Michigan: The Role of Local Fiscal Capacity. Available at: hgttps://digitalcommons.wayne.edu/cgi/viewcontent.cgi?referer=https://www.google.com.br/andhttpsredir=1andarticle=1034andcontext=interlocal_coop (accessed 10 June 2019).

Dardanelli, P. et al. 2019. Conceptualizing, Measuring, and Therorizing Dynamics De/Centralization in Federations. *Publius – The Journal of Federalism,* 49 (1): 1-29.

Eccleston, R; Krever R. and Smith H (2015) Fiscal federalism in the twenty-first century. In *The future of federalism*, eds. R. Eccleston and R. Krever. Available at: https://www.elgaronline.com/view/edcoll/9781784717773/9781784717773.00008.xml

Feiock, R. C. 2013. The Institutional Collective Action Framework. *Policy Studies Journal* 41 (3): 397–425.

Feiock, R. C. 2007. Rational Choice and Regional Governance. Journal of Urban Affairs, 29 (1): 47–63.

Feiock, R. C. 2009. Metropolitan Governance and Institutional Collective Action. *Urban Affairs Review,* 44 (3): 356–377.

Feiock, R. C., and Scholz J. T. (eds) (2009). *Self-organizing Federalism: Collaborative Mechanisms to Mitigate Institutional Collective Action Dilemmas*. Cambridge: Cambridge University Press.

Frug, G. E. 2001. *City Making: Building Communities Without Building Walls*. Princeton: Princeton University Press.

Gerber, E. R. & Gibson, C. C. 2009. Balancing Regionalism and Localism: How Institutions and Incentives Shape American Transportation Policy. A*merican Journal of Political Science*, 53 (3): 633–648.

Grin, E. J. & Abrucio, F. L. 2017. La cooperación intermunicipal en brasil frente al espejo de la história: antecedentes críticos y la dependencia de la trayectoria de la creación de la ley de los consorcios públicos. *Revista Políticas Públicas*, 10 (2): 1-27.

Hawkins, C. V. 2017. Political Incentives and Transaction Costs of Collaboration Among US Cities for Economic Development. *Local Government Studies,* 43 (5): 752–75.

Hawkins, C. V. 2009/ Prospects for and Barriers to Local Government Joint Ventures. *State and Local Government Review* 41 (2): 108–19.

Hawkins, C. V. 2010. Competition and Cooperation: Local Government Joint Ventures for Economic Development. *Journal of Urban Affairs* 32 (2): 253–75.

Hedstrom, P. 2009. Studying Mechanisms to strengthen causal inferences in qualitative research. In *The Oxford Handbook of Methodology,* eds. J. Box-Steffensmeier, H. E. Brady and D. Collier, 319-335. Oxford: Oxford University Press.

Hefetz, A., Warner, M. E., and Vigoda-Gadot, E. 2012. Privatization and Intermunicipal Contracting: The US Local Government Experience 1992– 2007. *Environment and Planning C: Government and Policy* 30 (4): 675–92.

Hulst, J. R. and Van Montfort, A. J. G. M. 2012. Institutional Features of Cooperation: Cooperative Arrangements and Their National Contexts. *Public Policy and Administration* 27 (2): 121–44.

Hulst, J. R. Van Montfort, A. J. G. M. 2007. *Inter-municipal cooperation in Europe.* AA Dordrecht: Springer.

Hulst, J. R. *et al.* 2009. Institutional Shifts In Inter-Municipal Service Delivery. An analysis of developments in eight Western European countries. *Public Organiz Rev*, 9: 263–285.

Kelly, J. 2007. The missing ingredient: inter-municipal cooperation and central-local relations in the UK. In *Inter-municipal cooperation in Europe,* eds. R. Hulst and A. V. Monfort, AA Dordrecht: Springer.

Lackey, S. B., Freshwater, D., and Rupasingha, A. 2002. Factors Influencing Local Government Cooperation in Rural Areas: Evidence from the Tennessee Valley. *Economic Development Quarterly* 16 (2): 138–54.

Lowery, D. 2000. A Transactions Costs Model of Metropolitan Governance: Allocation Versus Redistribution in Urban America. *Journal of Public Administration Research and Theory* 10 (1): 49–78.

Lubell, M., Schneider, M. and Scholtz, J. T. 2002. Watershed Partnerships and the Emergence of Collective Action Institutions. *American Journal of Political Science* 46: 148-163.

Immergut, E.. 1992. The rules of the game: The logic of health policy-making in France, Switzerland, and Sweden. In *Structuring politics: historical institutionalism in comparative analysis,* eds. S. Steinmo, K. Thelen, K., and F. Longstreth, 57-89. Cambridge: Cambridge University Press.

Mahoney, J. and Thelen, K. (eds). 2010. *Explaining institutional change: agency, ambiguity and power.* Cambridge: Cambridge University Press.

March J. G., and Olsen, J. P. 1984. The New Institutionalism: Organizational Factors in Political Life. *The American Political Science Review*, 78 (3): 34- 749.

Meza, O. D. *et al.* 2018. Intermunicipal Cooperation in Metropolitan Regions in Brazil and Mexico: Does Federalism Matter? *Urban Affair Review,* 55 (3): 887-922.

Miller, . Y., and Lee, Joo H. 2011. Making Sense of Metropolitan Regions: A Dimensional Approach to Regional Governance. *Publius: The Journal of Federalism* 41 (1): 126–45.

Nelson, K. L., and Svara, J. H. 2012. Fostering Innovations in U.S. Municipal Governments. *The American Review of Public Administration* 42(3): 257-281.

Osterrieder, H. *et al.* 2006. *Joining Forces and Resources for Sustainable Development. Cooperation among Municipalities – A Guide for Practitioners.* Bratislava Regional Centre: United Nations Development Programme.

Parrado Díez, S. 2006. *Equal Quality of Public Services across the National Territory.* Paper presented at *Public administration reform and territorial organization: empowering local governments.* Ankara, 28 February–1 March 2006. Retrivied June, 12, 2019, from http://www.oecd.org/dataoecd/43/24/36680357.pdf

Peterson, P. E. 1995. *The price of federalism.* Washington: The Brookings Institute.

Pierson, P. 2004. *Politics in time: history, institutions, and social analysis*. Princeton: Princeton University Press.

Post, S. 2002. Local Government Cooperation: The Relationship Between Metropolitan Area Government Geography and Service Provision. Paper presented at the *2002 Annual Meeting of the American Political Science Association*, Boston, August 29–September 1.

Rodden, J. 2005. Federalismo e descentralização em perspectiva comparada: sobre significados e medidas. *Revista de Sociologia e Política.* 24: 9-27.

Scott, W. R. 1991. Unpacking institutional arguments. In *The new institutionalism in organizational analysis*, eds. W. W. Powel and P. J. DiMaggio, Paul J., 164-182. Chicago: University of Chicago Press.

Skocpol, T. 2002. Bringing the state back in: strategies of analyses in current research. In *Bringing the state back in*, eds. P. B. Evans, D. Rueschmeyer, and T. Skocpol, T., 3-43. Cambridge: Cambridge University Press.

Steinacker, A. 2004. Game theoretic models of metropolitan cooperation. In *Metropolitan governance: Conflict, competition, and cooperation,* ed. R. C. Feiock, 45-66. Washington, DC: Georgetown University Press.

Tavares, A. F., and Feiock, R. C. 2018. Applying an Institutional Collective Action Framework to Investigate Intermunicipal Cooperation in Europe. *Perspectives on Public Management and Governance.* 1(4): 229-316.

Swianieweicz, P. 2002. (ed). *Consolidation or Fragmentation? The Size of Local Governments in Central and Eastern Europe.* Budapest: Open Society Institute.

Swianieweicz, P. and Herbst, M. 2002. Economies and Diseconomies of Scale in Polish Local Governments. In *Consolidation or Fragmentation? The Size of Local Governments in Central and Eastern Europe*, ed. P. Swianieweicz, 219-292. Budapest: Open Society Institute.

Warner, M, and Hefetz, A. 2002. Applying Market Solutions to Public Services: An Assessment of Efficiency, Equity, and Voice. *Urban Affairs Review* 38 (1): 70–89.

Weir, M. 1992. Ideas and politics of bounded innovation. In *Structuring politics: historical institutionalism in comparative analysis*, eds. S. Steinmo, K. Thelen, and F. Longstreth, 217-250. Cambridge: Cambridge University Press.

Wolman, H. *et al.* 2008. Comparing Local government Autonomy Across States. GWIPP Working paper, George Washington Institute of Public Policy.

Reference Database

Instituto Brasileiro de Geografia e Estatística. *Pesquisa de Informação Básica Municipal* [Municipal Basic Information Research. https://ww2.ibge.gov.br/home/estatistica/economia/perfilmunic/defaulttab1_perfil.shtm

Secretaria do Tesouro Nacional. *Finanças do Brasil* [Brazil finances]. https://siconfi.tesouro.gov.br/siconfi/index.jsf;jsessionid=1OGcSxKZ8dMxcJrshXg6yvzu.node1

Tribunal Superior Eleitoral. n.d. http://www.tse.jus.br/eleicoes/estatisticas/eleicoes /eleicoes-anteriores/estatisticas-eleitorais-anos-anteriores

Instituto Nacional de Pesquisas e Estudos Educacionais Anísio Teixeira [National Institute of Educational Research and Studies Anísio Teixeira]. http://ideb.inep.gov.br/resultado/

DATASUS Tecnologia da Informação a Serviço do SUS. [DATASUS Information Technology at the service of SUS]. http://www2.datasus.gov.br/DATASUS/index.php?area=02