

# Mayors within Electoral or Legislative Coalitions? Pre-Electoral Agreements in Brazilian Municipal Legislatures

Roberto Aragão Neto (USP)

## Abstract

This work examines whether parties politically connected to the elected mayor have a higher probability of securing the local council presidency at the beginning of the legislative cycle. Results underscore that the support of the Executive branch has a significant causal effect on the choice of the local Speaker. Furthermore, the evidence suggests that, in Municipalities, the government based on legislative coalitions observed at the federal level falls behind a mechanism of pre-electoral agreements, especially electoral coalitions. Taking advantage of these agreements, mayors influence the choice of the local council president, which allows the Executive to offset the absence of institutions that are inherent to the legislative coalition government. To investigate this issue, we assembled a novel dataset on the party affiliation of more than 3,600 Brazilian local councils in 2021, which we paired with a Regression Discontinuity Design (RDD) based on the 2020 mayoral elections in Brazil.

## 1 Introduction

In Brazil, the political system is characterized by what became known as Coalition Presidentialism, in which the Executive branch depends on the construction of legislative majorities to make government feasible (ABRANCHES, 2018). In fact, this dependence affects even the composition of the Brazilian cabinet (AMORIM NETO, 2006).

On the other hand, it is wrong to claim that Congress dominates the President. According to Figueiredo and Limongi (2017), while the President needs to assemble a multiparty coalition, he also has control over the federal legislative agenda. However, to advance his projects, the chief of the Executive exerts high bargaining effort, which is considered by some as an institutional restraint against abusive outcomes (PEREIRA; MELO, 2024).

The political science literature widely documented this institutional diagnosis at the federal level (COUTO, SOARES, and LIVRAMENTO, 2021), but an important gap remains at the municipal level.

We admit that some sparse studies about Coalition Government at the subnational level (SAMUELS; ABRUCIO, 2000), as well as the bargaining tools used by mayors (AVRITZER; ANASTASIA, 2006). Nevertheless, to our knowledge, there is no empirical research that employs causal inference methods to examine whether this framework also takes place at the municipal level. As there are significant institutional differences between the local and federal environments, this question is far from trivial.

According to Limongi and Figueiredo (1998), it is wrong to contend that a proportional electoral system and a multiparty Parliament would necessarily lead to a hardly feasible government. Indeed, the relevance of non-electoral institutions must not be discarded, especially those related to legislative procedures and bureaucracies. Once taken into consideration, these institutions change the diagnosis of the presidential system, allowing the chief of the Executive to build a coalitional majority that supports his demands in Congress.

Therefore, two factors are essential to governability in Coalition Presidentialism: the institutional advantages the President holds and party discipline in Parliament.

The institutional advantages stem from the agenda-setting power, bureaucratic positions, and budgetary control exercised by the Executive branch. The agenda-setting power, conferred on the President due to the Executive's exclusive competence to issue bills on specific issues, allows him to bargain for support in the approval of governmental projects in exchange for advancing the interests of the parties. Likewise, the President possesses a myriad of bureaucratic positions to assign to the parties that support him.

Additionally, the Executive's control over legislative amendments to the federal budget bill has increasingly influenced legislative bargaining in Brazil over the years. In fact, members of Congress may support the President in exchange for resources destined to address their constituencies' issues.

Secondly, party discipline involves the party leadership's control over its members' votes. This control primarily stems from the limited individual influence of members of Parliament on the legislative agenda, which, combined with the Executive's agenda-setting power and the privileges conferred to the party leaders by internal congressional rules, culminates in an even lower bargaining power for each member. As a result, legislative bargaining is concentrated among the President, Speakers, and party leaders. If legislators refuse to vote accordingly, they may be punished by having their projects excluded from the agenda, losing bureaucratic positions, and having resources allocated to their constituencies cut.

On the other hand, the institutional environment in which mayors are involved differs significantly from that observed at the federal level. In fact, unlike the President, mayors cannot issue provisional measures. These measures consist of a temporary act that Parliament is constitutionally obliged to vote on at a particular deadline, and constitute the main Executive tool to shape the legislative agenda. Not by coincidence, 880 provisional measures were approved by Congress between 1995 and 2017, representing almost 20% of all bills enacted during this period (CARAZZA, 2018). As a result, mayors hold a substantially weaker agenda-setting power than the President.

Furthermore, the federal Parliament has a much higher number of legislators per party than the local councils. For instance, in the 2018 elections, 30 parties managed to elect at least one of the 513 members of the Chamber of Deputies, which gives an average of more than 17 legislators per party. On the other hand, only a few legislators compose each local council, which may have from 9 to 55 members, depending on the Municipality's population size. Therefore, the influence of local legislators over the legislative agenda is not necessarily as small as that of members of Congress, and thus mayors do not hold the same bargaining advantages as the President when dealing with legislators.

Legislative amendments to the federal budget are another feature inherent to the relationship between the Executive and Legislative branches in Brazil. These amendments constitute essential tools for party discipline, as the cabinet controls when approved expenditures are made. As a consequence, legislators more aligned with the government receive a bigger piece of the budget, while party leaders concentrate negotiations with the Executive (BAIÃO; COUTO; JUCÁ, 2018). It is

also relevant to note that, given the federal legislators’ interests in sustaining their constituencies, municipalities are the main destination of legislative amendments to the federal budget, accounting for 77% of expenditures in 2022 (GREGGIANIN et al, 2023). Moreover, these amendments represent a significant portion of expenditures on public infrastructure projects, primarily in Municipalities with lower revenues from local taxes (TEN CATE, 2023). Therefore, it is not surprising to learn that 69% of the total revenue of Brazilian Municipalities in 2018 came from federal transfers (COSTA et al, 2023). This scenario suggests that the budget controlled by the mayors plays only an ancillary role at the local level, which undermines its potential use as a means of exchange for votes in the local council.

Because of these differences, unlike what Limongi and Figueiredo (1998) find at the federal level, legislative bargaining in Municipalities may be more affected by electoral institutions than legislative institutions. To offset the absence of the institutional advantages typically held by the President and to secure governability, mayors may participate in pre-electoral agreements.

Actually, sealing pre-electoral agreements to form legislative coalitions is far from unusual in Latin America (ALBALA and COUTO, 2023). Indeed, electoral coalitions (“coligações”) in the Brazilian executive elections seem a natural way to reach agreements of this kind. After all, in Brazil, electoral coalitions are publicly declared alliances between candidates and parties, as they need to be officially registered in court before the elections.

Building upon data on Brazilian elections, Colonnelli, Prem, and Teso (2020) found that legislative candidates who belong to the same electoral coalition as the mayor have a 51% higher probability of securing a position in the Municipal bureaucracy. While this phenomenon has occurred even at the federal level (BORGES; PERON, 2024), it may be stronger at the local level due to the institutional differences highlighted above.

To compensate for the weaker control over the legislative agenda and a shorter budget to negotiate with legislators, mayors may make an effort to place an ally in the presidency of the local council, that is, one of the legislators who belongs to their electoral coalition. By doing so, mayors would improve their bargaining leverage through the agenda-setting power of the chief of the Legislative branch.

Hence, this work examines whether the chief of the Executive branch at the Municipal level significantly affects the command of the Legislative branch, and, as a consequence, attains better governance. To test this hypothesis, we investigate whether parties belonging to the mayor’s electoral coalition have higher chances of having one of their members chosen as the local council president in the year after the elections, compared to parties belonging to the electoral coalition of the runner-up.

However, this research required the availability of consolidated data on the names and party affiliations of local council presidents in 2021. That is another contribution of our research, since this database was collected and assembled from official sources, i.e., Courts of Accounts of several Brazilian states and the Supreme Electoral Court (TSE).

To test the robustness of the hypothesis that mayors make pre-electoral agreements to offset the absence of institutional advantages held by the President, we also examine whether the effect of belonging to the mayor’s electoral coalition is stronger in Municipalities with less party discipline and lower revenue.

The results show that, in Municipalities, the legislative coalitions observed at the federal level play a smaller role than electoral coalitions in the choice of the local council president.

The remainder of this paper is organized as follows. In Section 2, we present the empirical strategy adopted, as well as a description of the data used. In Section 3, we examine the effect of mayoral support on the probability that a party secures the presidency of the council. Section 4 conducts tests to reinforce the hypothesis that the mayor enters into pre-electoral agreements to compensate for the absence of factors present in coalition presidentialism. In Section 5, the results are interpreted in light of the coalition presidentialism literature. Finally, Section 6 concludes.

## 2 Research Design

### 2.1 Empirical Strategy

We employ a Regression Discontinuity Design (RDD) strategy focusing on the 2020 mayoral elections in Brazil.

The year 2020 was specifically chosen because, unlike in previous years, electoral coalitions were no longer allowed in city council elections. This makes the analysis cleaner, as it avoids distortions caused by the open-list seat allocation rule. However, electoral coalitions in mayoral elections were still permitted.

In addition, unlike in 2024, in 2020 the formation of party federations was not yet allowed. Under this rule, two or more parties may unite for a minimum period of four years, differing from the merely electoral purpose of coalitions. Although federations are, in theory, expected to function as if they were a single party, it is still unclear whether (and how) this is observed and enforced by the electoral courts.

The unit of observation in this study is the party in a given municipality. That is, Party A in Municipality A and the same Party A in Municipality B are treated as different units of observation. Clustering is performed at the election level (municipality) and the supporting candidate level (coalition–municipality–state), following Colonelli, Prem, and Teso (2020). In the balance tests, it will be shown that this clustering is relevant for the identification of the effect under study.

The running variable  $x_{pit}$  is defined as the difference between the vote share obtained by the candidate from the coalition of party  $i$  and the vote share obtained by the opposing candidate. The cutoff point is therefore 0: the variable takes a positive value if the party belongs to the coalition of the elected mayor and a negative value if it belongs to the coalition of the runner-up. Parties belonging to other coalitions are not included in the sample.

$$x_{pi} = \begin{cases} v_i & \text{if } p \text{ belongs to the electoral coalition of the mayor} \\ -v_i & \text{if } p \text{ belongs to the electoral coalition of the runner-up} \end{cases}$$

Where  $v_i$  is the absolute value of the difference between the vote shares received by the two most voted mayoral candidates in municipality  $i$ .

As a consequence, the treatment is defined as the party having been part of the elected mayor’s coalition, which indicates whether the party’s members are politically connected to the mayor.

In this regard, we follow the strategy of Colonelli, Prem, and Teso (2020), who classified a city council candidate as politically connected to the elected mayor if the candidate ran for a party belonging to the mayor’s coalition. In their study, the authors found empirical evidence that being

politically connected to the mayor has a significant causal effect on the probability of obtaining a job in the municipal public administration.

Finally, the independent variable (*outcome*) is an indicator of the event “The local council president in the year following the mayoral election belongs to the observed party”.

The main equation of the model is presented below:

$$y_{pi} = \theta_0 + \theta_1 \cdot \mathbf{1}\{x_{pi} > 0\} + \theta_2 g(x_{pi}) + \theta_3 g(x_{pi}) \cdot \mathbf{1}\{x_{pi} > 0\} + \theta_4 W_{pi} + \epsilon_{pi} \quad (1)$$

Where  $g$  is a function of the *running variable*, which may be linear, quadratic, cubic, or of a higher order. For the main results, we employ a linear specification, while alternative specifications are used to test the robustness of the evidence.

It is worth noting that the causal effect of being politically connected to the mayor on the *outcome* is identified by the coefficient  $\theta_1$ . The identified causal effect corresponds to the Local Average Treatment Effect (LATE), that is, it is restricted to municipalities in which the mayoral election was closely contested.

The underlying assumption is that, near the cutoff point—that is, when the vote margin between the top two candidates is close to zero—the victory of one candidate over the other can be considered quasi-random, or at least not manipulable by the parties (Lee and Lemieux, 2008). In fact, when a mayoral candidate wins the election by a minimal margin, it is assumed that, by a small detail, the parties in the winner’s coalition become politically connected to the mayor, whereas the parties in the defeated candidate’s coalition narrowly fail to achieve such a connection.

To reinforce the robustness of the identification, a series of procedures will be implemented.

Initially, balance tests of the control variables around the cutoff point will be performed in order to verify whether there are no systematic discontinuities in pre-treatment variables. The variables considered are the following: the proportion of city council seats won by the party relative to the total number of seats in the municipal council (Chairs), the proportion of party candidates elected relative to the total number of candidates from the party (Elected), the number of parties that formed the mayoral candidate’s coalition (ColSize), the proportion of female candidates from the party (Female), the proportion of party candidates who identify themselves as white (White), the proportion of party candidates with only a high school degree (EMC), the proportion of party candidates who were merchants (Merchant), the proportion of party candidates who were municipal public servants (Servant), and party ideology (Ideology).

We also test the balance of the percentage of council seats won by the party, since, according to the legislative bargaining literature (e.g., Baron & Ferejohn, 1989), the greater the number of seats the party holds in the legislature, the greater its bargaining power, and therefore the higher its probability of selecting the president of the council. In this sense, it may be the case that the party with the largest representation in the council attracts the mayor’s support even after the elections.

The proportion of city councilors elected by the party relative to the total number of its candidates is included because, the more candidates a party fields, the greater its expected likelihood of electing councilors and selecting the president of the council. Analogously, we test the balance of the number of parties in the mayoral candidate’s coalition, since the larger the coalition, the lower the probability that any one of its member parties will obtain the presidency of the municipal council.

The balance of candidates' gender, race, and occupation is also tested to verify whether the effect is being biased by personal characteristics of the candidates.

Any covariates that are not balanced will be included as control variables, represented in the regression equation by  $W_{pi}$ .

Next, we apply the density test proposed by McCrary (2008) to assess the potential strategic manipulation of the *running variable* by political parties. In addition, we present discontinuity plots with bin averages to make the visualization of the effect clearer. A placebo test is also reported to validate the empirical strategy.

Finally, we perform variations in the model specification and in the bandwidth applied, in order to evaluate the stability of the results.

## 2.2 Data

The dataset used in this study combines information from several institutional sources.

To obtain the names of the presidents of municipal councils chosen in 2021 (the year following the 2020 elections), requests were made to all 23 State Audit Courts (Tribunais de Contas de Estado, TCEs) in Brazil, as well as to the Audit Courts of Municipalities in Bahia, Pará, and Goiás (these states have a separate court dedicated to auditing municipalities).

Indeed, presidents of municipal councils, as the officials responsible for the accounts of their respective councils, have the constitutional obligation to report to these courts (Article 31 of the 1988 Federal Constitution).

In total, seventeen courts responded: Amazonas, Bahia, Espírito Santo, Goiás, Minas Gerais, Mato Grosso, Mato Grosso do Sul, Pará, Paraíba, Pernambuco, Piauí, Paraná, Rio Grande do Norte, Rondônia, Rio Grande do Sul, Santa Catarina, and Tocantins. As a result, the names of the presidents of more than 3,600 municipal councils were obtained. However, in order to standardize the dataset for municipalities that held only one round of elections, we excluded municipalities with more than 200,000 voters (as these may hold runoff elections) as well as municipalities that held supplementary elections.

From the names obtained, we used the database of the Superior Electoral Court (Tribunal Superior Eleitoral, TSE) to identify the political party under which each president ran in the 2020 elections. This was done through fuzzy matching with a tolerance of up to one character, comparing the name and at least one surname of the municipal council president with the name and at least one surname of city council candidates from the corresponding municipality in 2020.

In addition, we excluded from the sample all parties that failed to elect at least one councilor in the municipality, since it would be impossible for the council president to belong to them.

After excluding municipalities where no match was found and parties without representation in the municipal council, the dataset included 3,161 municipalities and 12,248 observations (party–municipality–state).

Additionally, data from the TSE were used to obtain the vote shares of the top two mayoral candidates, as well as the composition of their coalitions in the executive election.

From the same TSE database, we also extracted the data required for most of the balance tests, except for ideology.

	Total	Supported	Not Supported
MDB (%)	15.03	14.62	16.43
PP (%)	14.49	14.46	14.59
PSD (%)	11.45	11.45	11.47
DEM (%)	7.53	7.74	6.80
PSDB (%)	6.93	7.13	6.23
PL (%)	6.04	6.27	5.24
PSB (%)	5.63	5.74	5.24
PDT (%)	4.75	5.01	3.83
PTB(%)	3.99	3.79	4.67
PT (%)	3.80	3.58	4.53
Average Ideology	0.6101	0.6107	0.6075
Nº Municipalities	3161	2455	706

To measure ideology, we relied on the 2021 ideological index of Brazilian parties developed by Power and Zucco (2023). This index provides a continuous measure of party ideological positioning ranging from  $-1$  to  $1$ , where  $-1$  indicates the extreme left and  $1$  indicates the extreme right.

Since the dependent variable of the model is binary (0 or 1), the ideology index was rescaled to range from 0 to 1, in order to produce more intuitive estimates for the discussion of results.

It is important to note that some parties included in the dataset (Avante, Patriota, PMN, PRTB, and PMB) were not classified by Power and Zucco (2023). To address this, the ideology scores of these parties were computed as follows: first, we calculated the average score of the parties that composed each coalition in which the party participated; second, we calculated the average of these coalition-based scores across all coalitions in which the party was involved.

In what follows, we present some descriptive statistics of the dataset of parties of municipal council presidents in 2021.

It is observed that the vast majority of municipal council presidents are supported by their respective mayors (2,455 out of 3,161), that is, they belong to parties that were part of the mayor's electoral coalition. This statistic reinforces the motivation for the present study.

We also find a prevalence of right-wing parties (ideology  $> 0.5$ ) in the leadership of municipal legislatures, regardless of whether they received mayoral support or not.

On the other hand, the parties that secured the largest number of municipal council presidencies in 2021 were more pragmatic and less ideological parties, such as MDB, PP, and PSD. Unsurprisingly, these parties include legislators with high ideological variability over time (Power & Zucco, 2011), in addition to MDB and PP being historically considered governing parties, regardless of who holds power (Melo & Câmara, 2012).

### 3 Tests and Estimation

#### 3.1 Balance Tests

The results of the covariate balance tests around the cutoff point are presented in the following table:

Variable	I	II	III	IV
Female	-0.001 (0.003)	0.000 (0.004)	-0.001 (0.003)	0.001 (0.005)
White	0.019 (0.016)	0.023 (0.018)	0.016 (0.015)	0.017 (0.025)
EMC	0.011 (0.009)	0.013 (0.010)	0.008 (0.009)	0.008 (0.014)
Servant	-0.008 (0.006)	-0.008 (0.007)	-0.008 (0.006)	-0.010 (0.011)
Merchant	0.000 (0.004)	0.001 (0.005)	-0.001 (0.004)	0.007 (0.007)
Elected	0.002 (0.006)	0.001 (0.007)	0.003 (0.005)	0.004 (0.010)
Ideology	0.026 (0.011)	0.030 (0.013)	0.010 (0.009)	0.037 (0.016)
ColSize	0.073 (0.076)	0.360 (0.115)	0.106 (0.083)	0.332 (0.125)
Chairs	0.002 (0.007)	0.001 (0.008)	0.003 (0.005)	-0.001 (0.011)
<b>Model</b>				
Pol. order	Linear	Quadratic	Linear	Linear
Kernel	Triangular	Triangular	Uniform	Triangular
Bandwidth	Optimal	Optimal	Optimal	5%

To ensure the robustness of the tests, four different models were employed. The first is the main model, with a linear specification, triangular kernel, and optimal bandwidth—calculated at 12% (I). The others consist of variations of the main model described in the last three rows of the table: quadratic specification (II), uniform kernel (III), and fixed bandwidth of 5% (IV).

It is observed that seven of the nine variables tested are not significant in any of the models, with the exceptions being the coalition size variable (ColSize) and ideology.

Accordingly, for these variables the tests were performed again, this time including two clustering groups: by election and by supporter (coalition–municipality–state), as proposed by Colonelli, Prem and Teso (2020).

The results are presented below:

Variável	I	II	III	IV
Ideology	0.0263 (0.013)	0.017 (0.010)	0.021 (0.012)	0.037 (0.018)
ColSize	0.072 (0.142)	0.066 (0.108)	-0.013 (0.132)	0.332 (0.210)
<b>Model</b>				
Pol. Order	Linear	Quadratic	Linear	Linear
Kernel	Triangular	Triangular	Uniform	Triangular
Bandwidth	Optimal	Optimal	Optimal	5%

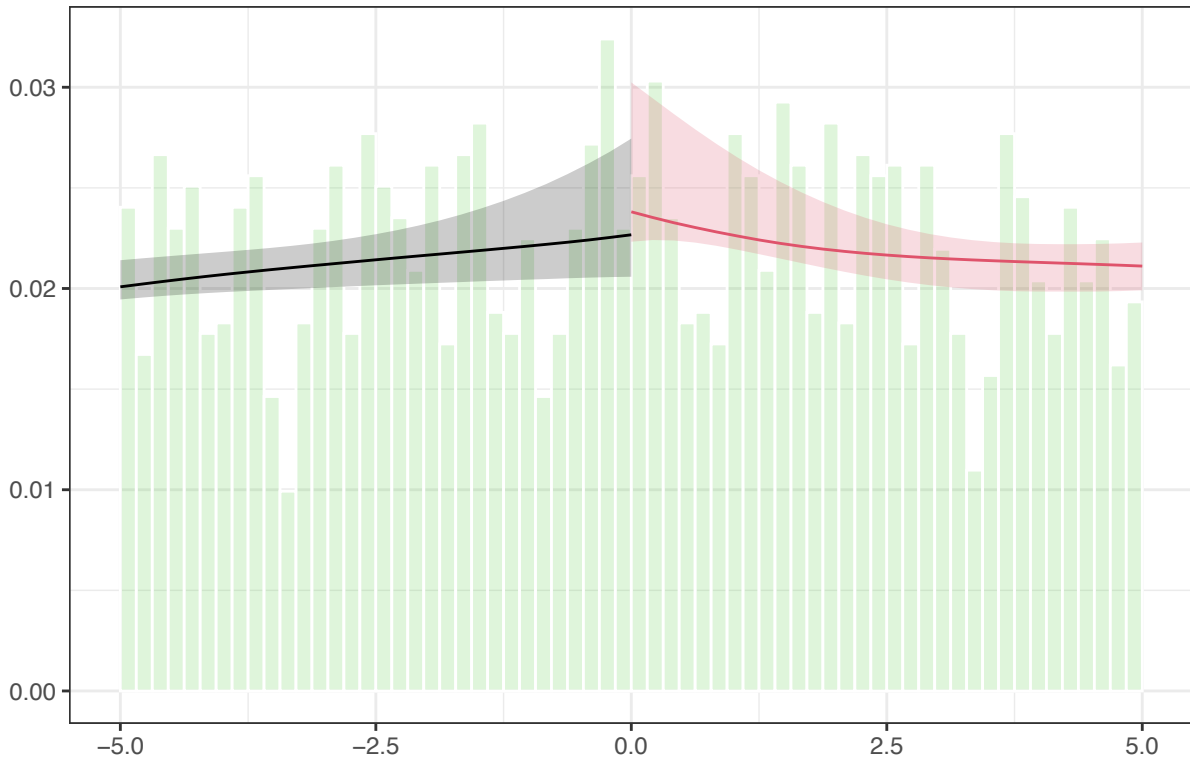
In all four models tested, the variable ColSize was not significant. This confirms the need to cluster the observations of the main regression both at the municipality level and at the supporter level.



With respect to the ideology variable, although the estimates were not very large, we considered important to include it as a control in the main regression that estimates the effect under study, since it remained significant in some specifications even after double clustering was applied.

### 3.2 Density Test

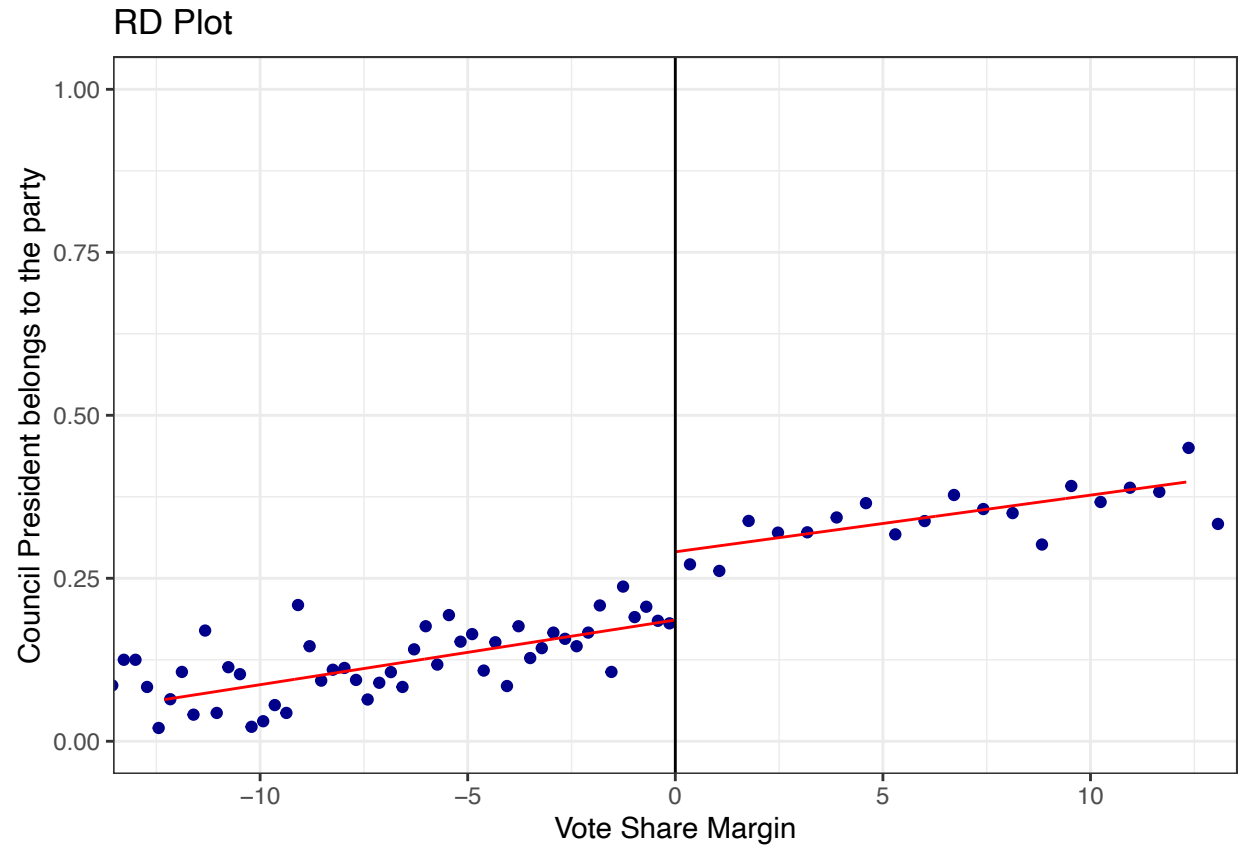
To test the plausibility of the continuity assumption of the running variable, and therefore its non-manipulability by the observed parties, we performed the density test proposed by McCrary (2008). The density plot is presented below:

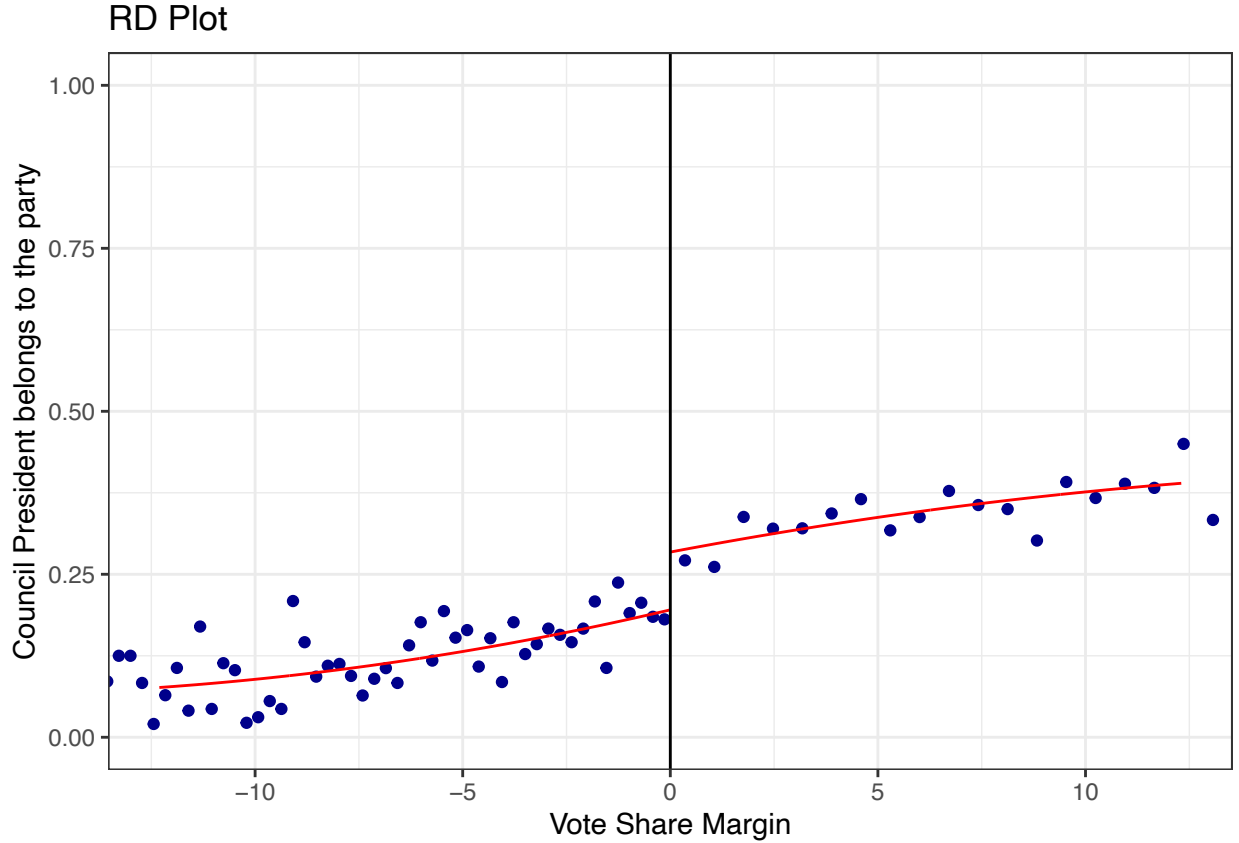


The density test yielded a p-value of 0.307, so the null hypothesis of continuity was not rejected.

### 3.3 RDD Graphics

To illustrate the plausibility of the RDD, the figures below display the regression curves under linear and quadratic specifications, along with bin means (blue dots).





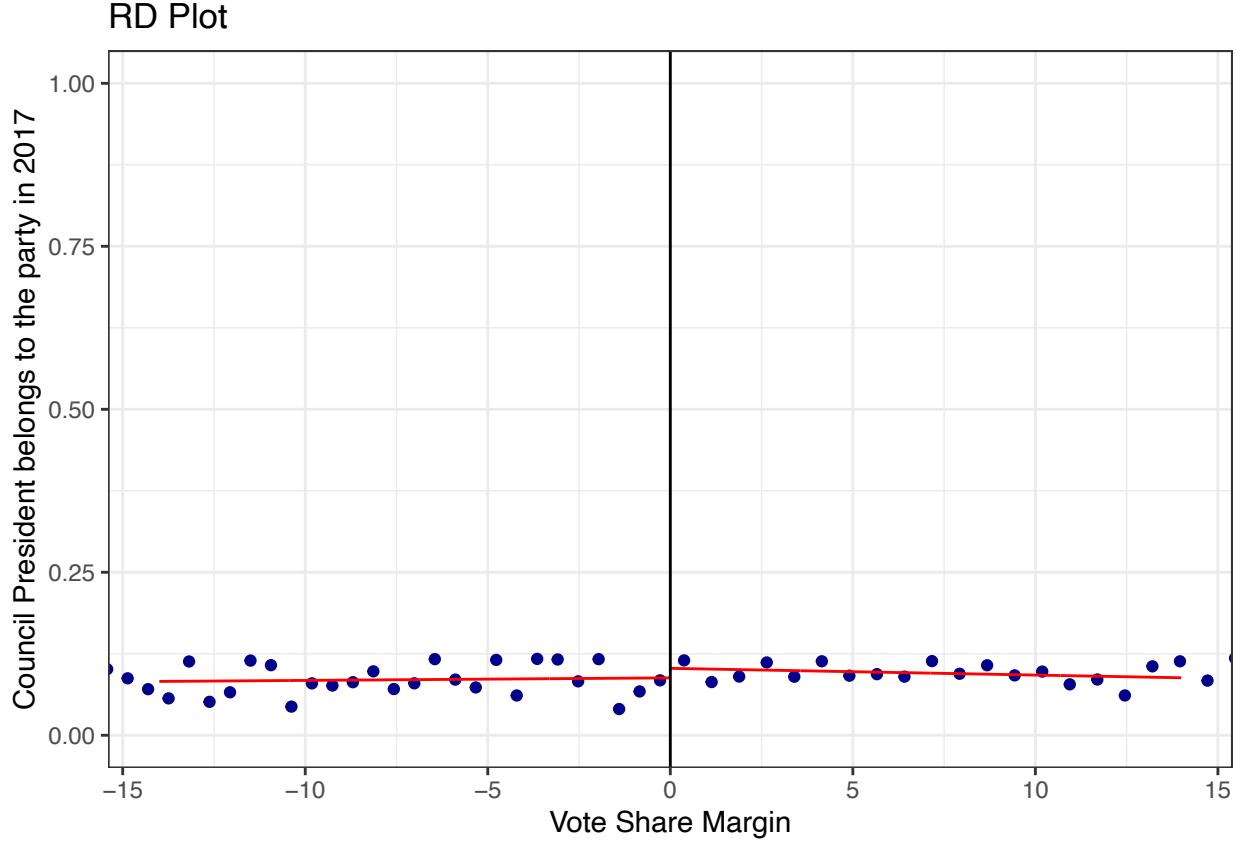
Note that the running variable jumps at the cutoff point in both graphics, which supports the use of an RDD to estimate the effect under study.

### 3.4 Placebo Tests

To confirm the uniqueness of the discontinuity found in the previous subsection, we performed a placebo test with the lagged dependent variable, following Fujiwara and Sanz (2020).

That is, instead of using the data on the presidency of the municipal council in 2021, we use the data referring to the year following the 2016 mayoral election (municipal council presidency in 2017).

Below, we illustrate the RDD graph with this variable, using a linear fit of the bin means, shown as blue dots:



In fact, no discontinuity is identified between the regression curves above and below the cutoff point.

Moreover, the estimated placebo effect was only 0.018, with a standard error of 0.015. Thus, the null hypothesis that this effect is zero cannot be rejected.

The absence of a jump indicates that the parties of the first and second-ranked coalitions in the 2020 mayoral election had the same probability of securing the council presidency in 2017.

This result suggests that the party of the local council president in 2017 was unable to manipulate the 2020 mayoral election, which corroborates the identification assumption of the RDD.

### 3.5 Results

The results of the estimation of the studied effect are presented in the following table.

The regression intercept is denoted as “2nd-mean,” since it represents the average probability of obtaining the council presidency for a party politically connected to the runner-up mayoral candidate.

The effect under study is denoted as “mayor,” indicating the additional probability that a party politically connected to the elected mayor has of securing the presidency of the municipal legislature.

The estimation is clustered at both the election and party supporter levels.

Varriable	I	II	III	IV
2nd-mean	0.190 (0.013)	0.133 (0.021)	0.115 (0.020)	0.127 (0.028)
Mayor	0.098 (0.024)	0.096 (0.024)	0.134 (0.018)	0.069 (0.033)
<b>Model</b>				
Ideology	No	Yes	Yes	Yes
Pol. Order	Linear	Linear	Quadratic	Linear
Kernel	Triangular	Triangular	Triangular	Uniforme
Bandwidth	Optimal	Optimal	Optimal	5%
N <sup>o</sup> observations	6302	6302	6302	2704

Model I presents the results of the main specification, without including ideology as a covariate. We find that a party supported by the elected mayor has approximately a 29% chance of obtaining the council presidency. In contrast, a party supported by the defeated candidate has only a 19% chance of success. This difference represents an advantage of more than 50% provided by being politically connected with the mayor.

Model II includes ideology as a covariate due to the imbalance of this variable around the cutoff point. However, the estimated effect remains virtually unchanged relative to Model I, indicating that it is robust to ideological variation. In fact, the average probability of a party connected to the runner-up candidate obtaining the council presidency decreases, so that, in relative terms, the advantage of being supported by the mayor becomes even greater.

The estimated effect is larger when a quadratic specification of the RDD is applied, as shown in Model III. In this case, the probability of obtaining the council presidency—beyond that of parties in the runner-up coalition—increases to 13.4%. On the other hand, the intercept coefficient decreases, and the relative advantage of being supported by the elected mayor rises to 116%.

Finally, Model IV employs a narrower bandwidth (5%) and a uniform kernel to assess the sensitivity of the results to a sample closer to the cutoff point. The estimated effect is smaller than in the main specification, which may indicate a potential bias in the latter. However, since the estimated probability of parties not supported by the mayor also decreases by a similar proportion, the relative advantage of mayoral support remains above 50%, as in the main specification.

In this sense, the estimated effect in the main specification may be regarded as a lower bound of the advantage of being politically connected to the elected mayor.

## 4 Robustness Tests

### 4.1 Pre-electoral agreements compensate for less party discipline

Unlike what is observed in the National Congress, the smaller size of municipal councils grants councilors greater capacity to influence the legislative agenda. This reduces the bargaining power of the mayor and party leaders, weakening the factors of coalition presidentialism. To compensate for this, we expect the mayor to exert greater effort to influence the selection of the council president.

To measure this implication of our hypothesis, we adopt the metric of councilors per party, calculated by dividing the total number of councilors in each municipal council by the number of parties

represented in the chamber. The intuition is that the larger this metric, the smaller the influence of each legislator on the legislative agenda, which increases the bargaining power of the mayor and reduces his need to influence the choice of the local council president.

To test whether this occurs, we use a sample of all winning and losing (second-place) coalitions from the 2020 municipal elections, dividing them into two groups: one below and the other above the median of the adopted metric. Suppose the hypothesis of this study is correct. In that case, we expect to find a larger effect of mayoral support on the probability of the coalition selecting the council president in the first group.

To obtain the results, we perform a regression discontinuity analysis similar to that in Section 2, using an optimal bandwidth, linear specification, and triangular kernel. This time, the dependent variable is the metric of councilors per party. To control for ideology, we use the arithmetic mean of the ideological scores of the parties composing the observed coalition, as this number is believed to better represent the ideological profile of each municipality.

Observations are clustered at the municipality level.

Variable	Above	Below
2nd-mean	0.461 (0.088)	0.200 (0.070)
Mayor	0.182 (0.080)	0.267 (0.063)
N <sup>o</sup> Observations	1155	1649

Mayor-supported coalitions below the median have a relative advantage of 75% compared to those supported by the runner-up candidate. By contrast, for coalitions above the median, this advantage drops to only 39%.

## 4.2 Pre-electoral agreements substitute for scarce budgetary resources

Municipalities generally have fewer own-source revenues than the federal government. While the President can rely on a substantial share of the federal budget for legislative bargaining, mayors operate with a much smaller volume of resources, which reduces their bargaining power.

To compensate for this, mayors may enter into pre-electoral agreements to influence the choice of the council president. Thus, we expect to find a larger effect of mayoral support in municipalities with lower own-source revenue.

Following Ten Cate (2023), to measure municipalities' own-source revenue we use the amount collected from municipal taxes (IPTU, ISS, and ITBI) divided by total revenue. We then split the sample into groups above and below the median of this metric. By hypothesis, we expect to find a stronger effect in the group below the median.

The regression follows the same framework as in Section 4.1: optimal bandwidth, linear specification, and triangular kernel. In this case, the dependent variable is the own-source revenue metric. Observations are clustered at the municipality level.

Mayor-supported coalitions in municipalities below the median enjoy a relative advantage of 64%, whereas in municipalities above the median the effect falls to 51%, which confirms the compensation hypothesis.

Variable	Above	Below
2nd-mean	0.392 (0.072)	0.281 (0.072)
Mayor	0.200 (0.060)	0.182 (0.070)
N <sup>o</sup> Observations	1832	1564

## 5 Discussion

According to Limongi and Figueiredo (1998), in coalition presidentialism, the individual legislator has relatively little influence over the legislative agenda and therefore needs the support of his or her party in negotiations with the President.

This diagnosis, however, does not apply directly to municipalities. In fact, in municipal councils, councilors have greater bargaining power vis-à-vis the mayor, since there are fewer legislators per party than in the Chamber of Deputies. Indeed, in many cases a councilor is not simply one more party member, but one of the few representatives of that party in the local legislature.

This greater bargaining power of councilors encourages the mayor to exert greater effort to influence the selection of the council president through the construction of pre-electoral agreements. This is corroborated by the results in Section 4.1.

As Moury (2013) and Adrián and Couto (2023) argue, explicit and formal pre-electoral agreements are more binding than informal agreements concluded after elections. In this sense, by publicly allying with parties through electoral coalitions, the mayor can commit to distributing benefits in exchange for the selection of a council president more closely aligned with him. Given that the council president controls the legislative agenda, his alignment with the mayor provides greater protection against individual opportunism by councilors.

Another feature of coalition presidentialism, highlighted by Limongi (2006), but less present at the municipal level, is the availability of offices and resources to distribute to parties in exchange for legislative support. In fact, municipal budgets are considerably smaller than the federal budget, which reduces the mayor’s bargaining power with the council.

The results of Section 4.2 reinforce the hypothesis that this reduced bargaining power also creates stronger incentives for the mayor to influence the choice of council president through pre-electoral agreements. By securing allies in this position, the mayor gains greater control over the municipal legislative agenda, which can then be used to negotiate with councilors. Such a strategy reduces the need to distribute offices and resources.

Overall, the results of the main regression and robustness tests suggest that institutional differences between the municipal and federal levels are crucial to explain the prevalence of a mechanism distinct from coalition presidentialism employed by mayors. Unlike what is observed in the National Congress, where non-electoral institutions shape relations with the executive, electoral institutions play a central role in municipal legislative bargaining.

## 6 Conclusion

This study presents robust evidence that a party belonging to the elected mayor’s coalition is at least 50% more likely than others to preside over the municipal council in the first year of the legislative term, especially in closely contested elections.

Moreover, the results indicate that the mayor's interference in the local legislature stems from a pre-electoral agreement, formed through coalitions, to compensate for the absence at the municipal level of the institutional advantages granted to the President of the Republic under coalition presidentialism.

Given their inability to issue provisional decrees, the smaller volume of budgetary resources under their control, and the weaker party discipline, mayors tend on average to exert greater effort to ensure that the council president is their ally.

This may partly explain why party agreements observed in legislative coalitions at the federal level are reflected in electoral coalitions at the municipal level, rather than solely in post-electoral coalitions (RIBEIRO, 2006).

Nevertheless, the results remain limited, and a broader discussion of external validity is required, since the causal inference carried out is restricted to close elections in municipalities. In addition, this study examined only municipalities with a single round of mayoral voting.

Thus, a potential avenue for future research would be to test whether the effect analyzed here also holds in municipalities with more than 200,000 voters, or even in state legislatures.

Another interesting exercise would be to investigate whether, on average, mayors enjoy greater governability than the President of the Republic, given the institutional differences identified.

## References

- [1] Abranches, S. H. (2018). *Presidencialismo de coalizão: raízes e evolução do modelo político brasileiro*. São Paulo: Companhia das Letras.
- [2] Albala, A.; Couto, L. "Question of Timing: Pre-Electoral Coalitions in Multiparty Presidential Regimes", *Brazilian Political Science Review*, vol. 17, no. 1, e0001, fev. 2023.
- [3] Amorim Neto, O. "The Presidential Calculus: Executive Policy Making and Cabinet Formation in the Americas", *Comparative Political Studies*, Vol. 39, No. 4, May 2006, pp. 415–440.
- [4] Avritzer, L.; Anastasia, F. (2006). "Introdução". In L. Avritzer, F. Anastasia (Orgs.), *Reforma Política no Brasil* (pp. 11–14). Belo Horizonte: Editora UFMG.
- [5] Baião, Alexandre L.; Couto, Cláudio G.; Jucá, Ivan C. "A execução das emendas orçamentárias individuais: papel de ministros, cargos de liderança e normas fiscais", *Brazilian Political Science Review*, nº 25, jan.–abr. 2018.
- [6] Borges, A.; Peron, I. (2024). "Repensando o Presidencialismo de Coalizão: Coligações eleitorais e formação de governos no Brasil em perspectiva comparada". In: A. Borges, I. Peron (Orgs.), *A proibição das coligações proporcionais no Brasil: dinâmicas e efeitos do local ao nacional* (pp. 209–242). Brasília: Fundação Konrad Adenauer.
- [7] Baron, D. P.; Ferejohn, J. A. "Bargaining in Legislatures", *Brazilian Political Science Review*, Vol. 83, No. 4, December 1989, Pages 1181–1206.
- [8] Cattaneo, M. D.; Frandsen, B. R.; Titiunik, R. "Optimal Data-Driven Regression Discontinuity Plots", *Journal of the American Statistical Association*, Vol. 110, No. 512.



- [9] Colonelli, E.; Prem, M.; Teso, E. "Patronage and Selection in Public Sector Organizations", *American Economic Review*, 2020, Volume 110(10), 3071–3099.
- [10] Couto, L.; Soares, A.; Livramento, B. "Presidencialismo de coalizão: conceito e aplicação", *Brazilian Political Science Review*, No. 34, 2021, e241841.
- [11] Figueiredo, A. C.; Limongi, F. "A crise atual e o debate institucional", *Novos Estudos CEBRAP*, Vol. 36, No. 3, 2017, pp. 79–97.
- [12] Fujiwara, T.; Sanz, C. "Rank Effects in Bargaining: Evidence from Government Formation", *Review of Economic Studies*, 2020, Vol. 87, 1261–1295.
- [13] Greggianin, F.; Borba, J.; Rennó, L. R. "Coalizões, alinhamento partidário e políticas públicas: evidências dos municípios brasileiros", *Opinião Pública*, vol. 29, no. 1, p. 1–28, 2023.
- [14] Lee, D.; Lemieux, T. "Regression Discontinuity Designs in Economics", *Journal of Economic Literature*, vol. 48, no. 2, June 2010, 281–355.
- [15] Limongi, F. (2006). "A democracia no Brasil: presidencialismo, coalizão partidária e processo decisório". In: *Novos Estudos – CEBRAP*, n. 76 (pp. 17–41). São Paulo: CEBRAP.
- [16] Limongi, F.; Figueiredo, A. "As bases institucionais do presidencialismo de coalizão". In: Power, Timothy J.; Fleischer, David (orgs.). *O Brasil em tempo de reformas: eleições, instituições e governo*. Brasília: Editora da UnB; São Paulo: Konrad Adenauer Stiftung, 2002. p. 25–50.
- [17] Melo, C. R.; Câmara, R. "Estrutura e dinâmica da competição partidária no Brasil". *Dados*, v. 55, n. 1, p. 7–41, 2012.
- [18] McCrary, J. "Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test", *Journal of Econometrics*, Vol. 142, Issue 2, February 2008, Pages 698–714.
- [19] Moury, C.. *Coalition Government and Party Mandate: How Coalition Agreements Constrain*. London: Routledge, 2013.
- [20] Pereira, C.; Melo, M. A. "Por que a democracia não morreu: política e crise no Brasil", *Companhia das Letras*, 2024.
- [21] Power, T. J.; Zucco, C. "The ideology of Brazilian parties and presidents: a research note on coalitional presidentialism under stress", *Latin American Politics and Society*, vol. 65, n. 2, pp. 105–122, 2023.
- [22] Power, T. J.; Zucco, C. "Estimating Ideology of Brazilian Legislative Parties, 1990–2009: A Research Communication". *Latin American Research Review*, v. 46, n. 1, p. 218–246, 2011.
- [23] Ribeiro, P. F. (2006). "Acordos Partidários Nacionais, Reflexos Locais: o Presidencialismo de Coalizão como Fator Estruturante das Alianças Eleitorais Municipais". In extitEighth Conference of the Brazilian Studies Association (BRASA), Nashville–Tennessee (EUA).
- [24] Samuels, D.; Abrucio, F. L. "Federalism and Democratic Transitions: The New Politics of the Governors in Brazil", *The Journal of Federalism*, Vol. 30, No. 2, Spring 2000, pp. 43–61.
- [25] Ten Cate, L. "Quem recebe e que diferença fazem: emendas orçamentárias nos municípios brasileiros pós EC 86/2015 (2015–2019)", *Opinião Pública*, vol. 29, no. 3, p. 792–826, set.–dez. 2023.