

# Budgetary, political and socioeconomic determinants of political-party succession: evidence of electoral behavior in Brazilian municipalities

Tiago Carneiro da Rocha<sup>1</sup> , Juliana Maria de Araújo<sup>2</sup> , Antônio Carlos Brunozi Júnior<sup>3</sup> 

Universidade Federal de Viçosa, Viçosa-MG, Brazil.



<sup>1</sup>tiago.c.rocha@ufv.br

<sup>2</sup>juliana.m.araujo@ufv.br

<sup>3</sup>acbrunozi@yahoo.com.br

## Edited by:

Orleans Silva Martins  
Paulo Roberto da Cunha

## Abstract

**Purpose:** despite actions to intensify governance, transparency and accountability, there are still tendencies for government officials to management fiscal and budget results and/or use political and socioeconomic information and direct their actions to achieve their own benefit, especially aiming for political-party succession. Thus, the aim of this paper was to evaluate the influence of budgetary, political and socioeconomic aspects in the re-election of managers and in the reappointment of parties in Brazilian municipalities.

**Method:** data were collected from Brazilian municipalities with a population above 100,000 inhabitants for the electoral cycles of 2004, 2008, 2012 and 2016. Data were submitted to Logistic Regression with panel data.

**Results:** the probability of political-party succession is influenced by factors related to voters that reward those mayors who make more municipal investments, improving the quality of life of the population, which enable the minimization of inequalities through the transfer of direct income and that have greater chances of establishing cooperation between the other spheres of government through party alignment.

**Contribution:** the theoretical contribution is that informational asymmetry, public choices that involve the influence of human and institutional elements, and the voters' perception of social justice, are factors together that explain the political-party succession. As a practical contribution, it is argued that public administrators can use the state apparatus for their own benefits — leading to influence of the voter's — which does not exercise social participation and/or does not use public and available information for adequate knowledge of the municipal management and governance.

**Keywords:** Re-election of mayors. Reappointment of political parties. Electoral determinants. eleitorais.

## How to cite:

Rocha, T. C. da, Araújo, J. M. de, & Brunozi Júnior, A. C. . (2021). BUDGETARY, POLITICAL AND SOCIOECONOMIC DETERMINANTS OF POLITICAL-PARTY SUCCESSION: EVIDENCE OF ELECTORAL BEHAVIOR IN BRAZILIAN MUNICIPALITIES. *Advances in Scientific and Applied Accounting*, 14(3). Retrieved from <https://asaa.anpcont.org.br/index.php/asaa/article/view/803>

Received: May 09, 2020

Submitted to new wheel on: October 07, 2021

Accepted: November 19, 2021

## Introduction

In the late 1980s and early 1990s, there were several cultural changes in public sector entities. In one of them, the State's inefficiency, excessive bureaucracy, inefficient accountability, added to its inability to provide goods and services to the population, gave rise to a new reform in Public Administration (Islam, 2015; Kalimullah et al., 2012). This reform, called New Public Management (NPM), innovated with the recommendation of an administration that considers citizens as customers, improving the provision of public services and promoting social well-being (Islam, 2015).

Under the NPM paradigm, there is a tendency for the public sector to incorporate private sector management practices, reflecting on the reformulation and non-improvement of the financial reports and accounting information reported. Furthermore, private sector approaches involve "in particular decentralization, focus on results and the persistence of financial performance". NPM is also related to the concepts of performance, economy, efficiency and effectiveness" (Cunha, et al., 2018, p. 407, our translation).

Public entities, in general, have as their main objective the provision of services to society, unlike the private sector, which aims to obtain profits and financial return to its investors (Conselho Federal de Contabilidade [CFC], 2016). In this sense, the changes caused by the NPM in public sector accounting increased the demand for quality information for the decision-making process, more transparency and accountability in public management (Cunha et al., 2018). Furthermore, accounting information has become an important source of content about how public services are provided and about available resources, helping taxpayers, donors and other entities in decision-making (CFC, 2016). Thus, it is expected that accounting information will allow voters to have a better idea of how public resources are being applied by public managers, being crucial in their election and re-election processes.

In this regard, it should be mentioned that, in Brazil, reelection is provided for by Constitutional Amendment (EC) n° 16/1997, which amended §5 of art. 14 of the Federal Constitution (CF) of 1988, publishing the following wording: "The President of the Republic, the State and Federal District Governors, the Mayors and whoever succeeded or replaced them in the course of their terms of office may be re-elected for a single subsequent period" (Brasil, 1997).

Despite all the advances provided by the NPM, especially

in terms of transparency and accountability, the literature discussed the possibilities for government officials to management results and/or information and direct their actions to achieve their own benefit and/or that of other institutional actors of influences or lobbies. Among them, the use of opportunistic behavior by government officials with the purpose of re-electing themselves stands out, as discussed by Balaguer-Coll, Brun-Martos (2013); Liendo (2014) and Cavalcante (2016). The aforementioned authors stated that government officials use opportunistic strategies and manipulations that may lead to their reappointment, and that they can use different methods to do so.

The manipulation carried out by the manager would have the objective of increasing the government's popularity with his voters or support groups, following favorable policies that represented their interests (Alesina & Roubini, 1992; Alesina, 1988). Shortly before the elections, politicians, taking advantage of the existing information asymmetry, would tend to management fiscal and economic conditions to increase their probability of re-election, behaving in a more opportunistic manner as their margin for victory it is smaller (Rogoff & Sibert, 1988; Aidt, Veiga, & Veiga, 2011; Akhmedov & Zhuravskaya, 2004). As an example, Sakurai and Menezes-Filho (2011) find that in the electoral years there was a significant increase in spending in more than 2,500 Brazilian municipalities in the period 1989 to 2005, suggesting the occurrence of opportunistic cycles in these locations.

Voters, concerned with their well-being, indirectly assessed the manager's competence, rewarding him through the reelection or reappointment of his party (Nordhaus, 1975; Drazen & Eslava, 2010). Nevertheless, certain actions could be understood by voters as being opportunistic, causing the manager to be penalized (Brender & Drazen, 2008). For this, voters could compare the manager's behavior with what is usually done, evaluating the actions taken based on past behavior and building an evaluative basis for decision-making about their vote (Nordhaus, 1975).

Meneguín et al. (2005) presented the attempt to perpetuate the governors in office from manipulations in monetary and fiscal policies, in addition to verifying the existence of a cycle, in which governors, when realizing the influence of the economy on the vote, use monetary policy to increase employment and thus improve the economy. However, there are obstacles that prevent the full use of these mechanisms by government officials, such as limiting the number of mandates; legislation that restricts

government actions in the election year and the way in which expenses are incurred, and the consequences of information gathered by opinion polls in the pre-election period (Meneguín et al., 2005).

Furthermore, several studies sought to identify the determining factors in the re-election of public managers, noting the influence of various budgetary, institutional, political and socioeconomic factors. Among the budgetary aspects, the public spending found in studies by Brender (2003), Balaguer-Coll and Brun-Martos (2013), Silva and Braga (2013), Balaguer-Coll et al. (2014), Chortareas et al. (2016) and Cavalcante (2016). Research was also identified with the object of analyzing the income earned, such as Meneguín and Bugarin (2001), Sakurai and Menezes-Filho (2007), Silva and Braga (2013), Balaguer-Coll et al. (2014) and Dias et al. (2018); as well as government transfers, as found in Balaguer-Coll and Brun-Martos (2013), Balaguer-Coll et al., (2014) and Chortareas et al. (2016).

Political aspects, on the other hand, are represented by ideology variables, such as the work of Balaguer-Coll and Brun-Martos (2013) and Balaguer-Coll et al. (2014); in addition to the party alignment, according to Sakurai and Menezes-Filho (2007), Silva and Braga (2013) and Cavalcante (2016). The socioeconomic aspects were characterized by the unemployment rate, found in Balaguer-Coll and Brun-Martos (2013) and Balaguer-Coll et al. (2014); and by the Gross Domestic Product (GDP), according to Silva and Braga (2013); by the infant mortality rate and illiteracy rate, found in Shikida et al. (2009) and by the Human Development Index (HDI), as in Dias et al. (2018). Finally, institutional aspects were also portrayed, represented by federal intervention and level of electoral competitiveness, such as Liendo (2014).

With this, the importance of understanding the determinants that can interfere in the re-election of a public manager or in the reappointment of his party is perceived, motivating the opportunistic behavior on their part in order to remain in office. For Aidt et al. (2011), the economic, fiscal and political intervening reasons or factors are the main reasons for politicians to systematically manipulate the conditions of a place and increase its chances of re-election. According to Cunha et al. (2018), in a public environment with conflicts between the agent (mayors) and the principal (electors), mayors seek to act in their own interest, maximizing their personal benefit and causing agency problems, incurring costs for voters.

This opportunistic behavior is also addressed by Public Choice Theory, which comprises the choices made as the

result of agents' preferences in a society composed of selfish (or preferential) individuals, who may prefer their own benefit over the collective (Pereira, 1997), but in this theory the "public choice" is influenced by the entire political process, involving elections, voters, legislation, decision-making, etc. However, it can still be mentioned that the voter can perceive the manager's actions from the perspective of the Justice Theory, that resources and income transfers are actions considered fair and necessary for voters.

Thus, this research has the following question:

To what extent are budgetary, political and socioeconomic factors determining the reelection of mayors or the reappointment of their party in Brazilian municipalities? Objectively, the influence of budgetary, political and socioeconomic aspects in the reelection of managers and in the reappointment of parties in Brazilian municipalities was evaluated.

Unlike pre-existing research's, most of which focus on investigating states or a group of specific municipalities (Barreto, 2009; Cervi, 2002; Dias et al., 2018; Silva & Braga, 2013; Veiga, Santos, & Neves, 2011), this paper, based on the assumption of informational asymmetry of the Agency Theory, as well as the Public Choice and Justice Theories, identified the determinants capable of interfering in the reelection of mayors or reappointment of parties in Brazilian municipalities, comprising, in a broad way, those with more than 100,000 inhabitants.

The choice of municipalities with a population above 100,000 inhabitants was initially due to the fact that they represent approximately 56% of the Brazilian population and the greater availability of information from larger municipalities, due to the institutional capacity to generate them. In this research, a developing Code-Law country was considered, with a peculiar political system and a wide territorial dimension, unlike the investigations by Aidt et al. (2011) in Portugal, Drazen and Eslava (2010) in Colombia, Akhmedov and Zhuravskaya (2004) in Russia, and Brender and Drazer (2008) in developed nations.

As a differential of this study, a broader period of time (four electoral cycles) was considered, making it possible to evidence the reappointment of parties to the position of head of the municipal executive even in the face of the impossibility of new reelections, demonstrating the perpetuation of political parties in power. Previous surveys were restricted to two or three electoral cycles, such as Mendes and Rocha (2004b), Pereira and Renno

(2007) and Cavalcante (2015). In addition, this study innovates by considering a variety of budgetary, political, and socioeconomic indicators, including the effects of accounting information as well. When we emphasize the inclusion of Accounting, it took place with data considering the accrual basis, a fact brought about by the adoption of the International Public Standards Accounting Sector (IPSAS) in the country, which replaced the cash basis. It is noteworthy that the information referring to the Bolsa Família Program had not been used until then in models for predicting municipal elections, it being prudent to adopt them with a view to the shared management of this social program.

As a contribution, this study pointed out which dimensions could be the target of opportunistic behavior on the part of the public manager, considering that they could influence the manager's popularity and, consequently, the probability of his re-election or reappointment of his party to the position. The possibility of a situationist behavior regarding political-party alignments with governors and the president was evidenced, in addition to taking advantage of the shared management of the Bolsa Família program and the application of public resources in capital expenditures to promote reelection or reappointment.

The relevance lies in the importance of election, re-election or reappointment for the definition of mayors, responsible for the management of local public entities, and consequently, for the achievement or not of their objectives, which are to offer public services to society. Although the phenomenon of reelection is no longer current, the understanding of the aspects that can influence the probability of reelection of managers or the reappointment of the party is still incipient, mainly due to the motivation that the manager may have for an opportunistic behavior aimed at such goals.

## 2 Theoretical Framework

### 2.1 Determinants of the re-election of public managers

In a democracy, accountability is extremely important, allowing citizens to be assured that public agents can be held accountable for their actions (Mulgan, 2003). In this way, accountability becomes essential for establishing dialogues and deliberations between government officials and citizens. In addition, Bovens et al. (2008) argue that accountability is presented in terms of a principal-agent model, as citizens transfer their sovereignty to their popular representatives. Jensen and Meckling (1976) state that the agency relationship can be understood as a contract

between one or more people (called principals), who employ another person (called agent) to perform something on their behalf, giving them the power of decision.

Since local administration is characterized by the existence of opportunistic conflicts of interest, the Agency Theory is relevant for understanding the relationship between the principal and the agent in the public sphere, enabling an understanding of the transfer of sovereignty from citizens to their political representatives in electoral processes. In addition, the existence of information asymmetry between the principal and the agent motivates the manager to behave in his own interest, especially with regard to reelection (Cavalcante, 2016).

This behavior is justified by the fact that public managers have better information about their own competence, while voters do not have direct means to measure it and use other methods to assess management, such as the analysis of expenditures performed (Drazen & Eslava, 2010).

In the period close to the elections, managers, taking advantage of informational asymmetry, tried to appear as competent as possible to their voters, but their rationality could limit this opportunism (Alesina & Roubini, 1992). Certain events, such as high economic growth close to the election period, could trigger a feeling of distrust on the part of the electorate, negatively affecting managers (Brender & Drazen, 2008). Thus, there is the observation that there is, in fact, a response from voters, sometimes rewarding governments through voting, sometimes punishing them (Balaguer-Coll & Brun-Martos, 2013). And, for that, it is assumed that re-election can be influenced by many factors.

The search for the self-interest of rulers at the expense of social well-being is also highlighted in the Public Choice Theory, which discusses the influence of different agents on the decision of rulers and on the implementation of public policies (Pereira, 1997; Santos et al. al., 2021). From this perspective, the collective choice would be the result of the preferences of agents endowed with personal interests that motivate their conduct (Pereira, 1997). Also included are non-human factors such as legislation, election, and government structure.

The Public Choice Theory can be applied in the analysis of government expenditures, and one of the most relevant decisions taken is about how expenditures will be carried out (Santos et al., 2021). As a way to minimize opportunistic behavior in these situations, control and accountability mechanisms were instituted for public

management, such as the Fiscal Responsibility Law, which, among other aspects, sets limits (here is the legislation as limiting and influencing public choice) for personnel expenses (Medeiros et al., 2017). However, there is still potential to increase spending opportunistically in areas of more complex management and with a greater presence of informational asymmetry, such as in the case of health, education and social assistance (Santos et al., 2021).

Also, with regard to the pursuit of general well-being, which may be related to political-party succession, there is the Justice Theory, according to which the principles of justice would be the basis of the agreement between free and rational citizens who seek their own interest (Rawls 1971). Social programs, such as Bolsa Família, which aim to improve the living conditions of the less favored population, would then be accepted for providing a better-ordered society based on social justice (Calgaro, 2016).

The Justice Theory could also be applied to the public budget, comprising government financial transfers of income as an action aimed at distributive justice, becoming an instrument for sharing national wealth and equalizing existing economic imbalances (Portella & Teixeira, 2016), favoring his re-election politicians who “effort” to maintain these benefits

### 2.1.1 Budgetary Aspects

In relation to budgetary aspects, it was found that expenditures, both total and current and capital, can influence the reelection of managers. Literature shows that government officials tend to increase public spending before elections, especially those related to investments, in an attempt to re-elect or reappoint their party (Drazen & Eslava, 2010). As an example, when analyzing data from 85 countries over a 21-year period, Shi and Svensson (2006) found that the government fiscal deficit increased, on average, by 1% of the Gross Domestic Product (GPD) in elections. This increase in expenses would cause a greater difference in votes between the government and its opponents, suggesting that opportunistic behavior can be favorable to the manager (Aidt et al., 2011).

In relation to total expenditure, some authors found that the increase in spending can increase the probability of reelection (Balaguer-Coll et al., 2014; Balaguer-Coll & Brun-Martos, 2013; Chortareas et al., 2016). On the other hand, Silva and Braga (2013) concluded that governors who increase their expenses in election years reduce the probability of being reelected. Specifically, with regard to current expenditures, authors Brender (2003)

and Balaguer-Coll et al. (2014) found results similar to those of Silva and Braga (2013), indicating that there is a punishment by voters to managers who increase their spending in the last year of their term.

However, in a complementary way, regarding capital expenditures, Balaguer-Coll and Brun-Martos (2013) and Balaguer-Coll et al. (2014) found a positive relationship with the probability of reelection, as voters tend to positively evaluate politicians who spend money that have more visibility to voters (Balaguer-Coll et al., 2014). This result was also found in the study by Cavalcante (2016) when analyzing the representation of capital expenditures on the total revenue of municipalities, concluding that efforts in the construction of works — schools, hospitals, paving and sanitation — are rewarded by voters. Therefore, before the elections, managers would have incentives to increase the supply of public goods, in the hope that this will be understood by voters as a sign of their competence (Shi & Svensson, 2006).

Regarding the level of indebtedness of federative entities, Balaguer-Coll et al. (2014) and Meneguim and Bugarin (2001) presented in their results a concern of government officials in contracting loans, as there is a tendency to be cautious in the first terms of office of public managers. This is due to the capacity of contracted debts to have future impacts, causing a commitment to public revenues, in which, the greater the chances of re-election, the greater will be the care taken with indebtedness (Meneguim & Bugarin, 2001).

In terms of revenues, the influence of total, tax and transfer revenues stands out. In relation to total income, Meneguim and Bugarin (2001) and Silva and Braga (2013) found a positive relationship in relation to the probability of reelection. With regard to tax revenues, the results are divergent. A portion of the authors found that tax revenues positively influence managers' chances of reelection (Balaguer-Coll et al., 2014; Sakurai & Menezes-Filho, 2008; Sakurai & Menezes-Filho, 2007). This relationship would denote a preference by voters for the increase in the availability of resources for possible future government expenditures, despite this resulting in greater tax collection from citizens (Balaguer-Coll et al., 2014). In addition, “local tax revenues are also a proxy for the municipality's economic performance” (Sakurai & Menezes-Filho, 2008, p. 305, our translation).

There was also a negative influence between tax revenue and reelection, meaning that voters apply sanctions to the managers who collect the most taxes (Cavalcante,

2016; Silva & Braga, 2013). Furthermore, although other levels of government influence tax collection, the effort to collect them is at the local level, and a weak collection effort (which often occurs) means that the tax burden is not distributed equally among all, leading to citizen discontent (Brender, 2003).

Intergovernmental transfers were portrayed in the work of Sakurai and Menezes-Filho (2007, 2008), in which the authors state that transfer revenues positively control the ratio of total revenues over the probability of reelection, given that more spending will necessarily need more revenue. Furthermore, Balaguer-Cool and Brun-Martos (2013) state that the greater the transfer revenue received by the municipalities, the greater the probability of the local government remaining in power. Thus, as discussed, the following research hypotheses are:

**H<sub>1</sub>:** Budgetary aspects influence the reelection of mayors or the reappointment of parties in municipalities with more than 100,000 inhabitants in Brazil.

**H<sub>1a</sub>:** High personnel expenses have a negative influence on re-election and/or reappointment.

**H<sub>1b</sub>:** High capital expenditures have a positive influence on re-election and/or reappointment.

**H<sub>1c</sub>:** High revenue collections have a negative influence on reelection and/or reappointment.

**H<sub>1d</sub>:** High share of transfer revenue has a positive influence on re-election and/or reappointment.

It should be mentioned that the non-discretionary portions of the resources are explained by the Public Choice Theory, in which the manager is less susceptible to opportunistic manipulation, as it serves more actors (and limiting factors) involved in the political process (Pereira, 1997; Santos et al., 2021). While the discretionary amount is more susceptible to opportunism, with evidence of agency conflicts and informational asymmetry (Mulgan, 2003).

### 2.1.2 Political aspects

In relation to political aspects, the analyses on political ideology, percentage of valid votes and party alignment stand out. Regarding political ideology, it was found that rulers belonging to right-wing parties are more successful in their re-election attempts, probably due to their more conservative behavior, with more traditional decisions (Balaguer-Coll et al., 2014; Balaguer-Coll & Brun-Martos, 2013). Furthermore, with regard to valid votes, Mendes and Rocha (2004a, 2004b) found a positive correlation between the percentage of valid votes obtained by municipal managers in the first election and their

probability of reelection for the second term. This concept is related to the perspective of the political process and the election itself as intervening in public choice. According to Brambor and Ceneviva (2012), there are gaps in the political process for the creation of influences and lobbies that are capable of influencing government managers in their choices, making them lean towards the public choices of stakeholders who support them, that is, the voters.

Regarding party alignment, two specific analyzes were found: the first, with respect to the alignment of the mayor's party to the president's party, while the second is related to the alignment of the mayor's party with that of the governor of his state, being that the first has a negative or null influence, while the second was positive (Cavalcante, 2016; Sakurai & Menezes-Filho, 2008; Sakurai & Menezes-Filho, 2007; Silva & Braga, 2013). Cavalcante (2016) states, in this regard, that there seems to be a dynamic of its own in the relations between state and municipal policy, while alignment with the federal government does not seem to be relevant. Thus, the hypotheses of this study are:

**H<sub>2</sub>:** Political aspects influence the reelection of mayors or the reappointment of parties in municipalities with more than 100,000 inhabitants in Brazil.

**H<sub>2a</sub>:** The percentage of valid votes obtained by the current mayor in the previous election has a positive influence on reelection and/or reappointment.

**H<sub>2b</sub>:** Party alignment with the state governor has a positive influence on reelection and/or reappointment.

**H<sub>2c</sub>:** The party's alignment with the Republic President has a negative influence on the re-election and/or reappointment.

### 2.1.3 Socio-economic aspects

In the context of socioeconomic aspects, the studies identified mainly assess the influence of demographic density, income and inequality, as well as human development on the chances of re-election of governors. The macroeconomic structure directly affects the well-being of individuals, who can assess whether or not economic conditions have deteriorated to decide about voting (Aidt et al., 2011; Nordhaus, 1975), as well as whether or not these discretionary economic conditions were manipulated by managers, avoiding fluctuations (Alesina, 1987).

Regarding demographic density, Shikida et al. (2009) and Balaguer-Coll and Brun-Martos (2013) verified a positive influence in relation to the chances of reelection. Regarding income, Shikida et al. (2009) found a positive relationship

between the Gini Index (an indicator of inequality ranging from 0 to 1) and the manager's probability of reelection. The authors also found a positive relationship between the number of families benefiting from Bolsa Família and the chances of re-election, despite having shown to be a result of low affectation.

The Bolsa Família program is an important public policy created in 2003 and that performs direct transfer of income to families in poverty and extreme poverty, guaranteeing the right to food and greater access to health and education, covering the entire population living in situation of social vulnerability (Ministry of Citizenship, 2020). Its performance is based on three pillars: greater access to rights, income supplementation and encouragement to the development of families. Thus, its main objective is to fight poverty and inequality, and its management is shared between the Union, states and municipalities (Ministério da Cidadania, 2020).

On the other hand, better socioeconomic conditions, measured by the Municipal Human Development Index (MHDI) and the Gross Domestic Product, showed a negative influence in relation to re-election (Dias et al., 2018; Meneguín et al., 2005; Silva & Braga, 2013). Thus, the chances of reelection seem to be lower in municipalities that already have good socioeconomic indicators, which may be a reflection of fiercer electoral competition in these locations (Meneguín et al., 2005) or a lesser need to invest in services with the in order to benefit the population's living conditions. Thus, the following hypotheses are:

**H<sub>3</sub>:** Socioeconomic aspects influence the reelection of mayors or the reappointment of parties in municipalities with more than 100,000 inhabitants in Brazil.

**H<sub>3a</sub>:** The Bolsa Família amounts received by the municipalities positively influence reelection and/or reappointment.

**H<sub>3b</sub>:** GDP per capita negatively influences reelection and/or reappointment.

### 3 Methodological Design

#### 3.1 Sample Characterization and Data Source

To meet the objective proposed by the research, the sample consisted of municipalities with a population of more than 100,000 inhabitants across the country, out of a population of 5,568 municipal units. The data covered the years 2004 to 2016, allowing to analyze the re-election (or new elected) of managers in four municipal elections: 2004, 2008, 2012 and 2016, which are determined by the availability of information during this study. The number of municipalities

analyzed in each election year corresponded to 252 in the period between 2004-2007, 265 between 2008-2011, 287 between 2012-2015 and 308 in 2016 (unbalanced panel). Thus, a total of 3,524 observations were analyzed.

The accounting, political, and socioeconomic information was of a secondary order, extracted from the following official sources: Atlas of Human Development in Brazil (Atlas Brasil), Public Finance of Brazil (Finbra) available on the website of the National Treasury Secretariat (STN), Brazilian Institute of Geography and Statistics (IBGE), Ministry of Citizenship (MC) and Superior Electoral Court (TSE). The monetary values of the variables were adjusted by the General Price Index (IGP-DI), from the Getúlio Vargas Foundation (FGV), to the current value of the last year included in the analysis. In relation to monetary values, it was decided to calculate the logarithm of per capita values, in view of the high values presented by them. Regarding the outliers, it was decided not to exclude them, considering that there would be a significant loss in the number of observations. Data variation did not compromise the results found in the regressions.

#### 3.2. Methods and Variables

To achieve the objective of verifying the influence of socioeconomic, political and budgetary constraints on the reelection of municipal managers (or the reappointment of the party), the Binomial Logistic Regression panel procedure was used, which allows predicting and explaining the behavior of a variable dependent on the categorical type from a series of metric variables (Hair Jr et al., 2009). The variables used were described in Table 1, as well as their expected relationship, conceptual basis and source.

**Table 1:** Variables, theoretical expectations and sources

Dependent variable				
Dependent variable	Variable description	Source		
<i>ReelPrefeito</i>	Dummy variable, which indicates whether the mayor was reelected or whether the party was reappointed to office. A value of 1 will be assigned in case of re-election or reappointment, and 0 otherwise.	TSE		
Explanatory variables				
Explanatory variable	Variables description	Expected relation	Conceptual basis	Source
<i>VolVal</i>	Percentage of valid votes obtained by the current mayor in the previous election.	Positive	Mendes and Rocha (2004a, 2004b)	TSE
<i>LogDespPessoal</i>	Log of personnel expenses and social charges per capita	Negative	Meneguín et al. (2005)	FINBRA
<i>LogDespCap</i>	Log of the sum of settled capital expenditures per capita	Positive	Meneguín et al. (2005), Balaguer-Coll e Brun-Martos (2013), Balaguer-Coll et al. (2014), Cavalcante (2016)	FINBRA
<i>LogRecPropria</i>	Log of the sum of local revenue collected per capita	Negative	Brender (2003), Silva and Braga (2013), Cavalcante (2016)	FINBRA

LogRecTransf	Log of the sum of income from intergovernmental transfers collected per capita	Positive	Sakurai e Menezes-Filho (2008) e Balaguer-Cool e Brun-Martos (2013)	FINBRA
AlinGov	dummy variable (1 for the governor's party equal to the mayor's and 0 for different parties)	Positive	Sakurai e Menezes-Filho (2007, 2008), Silva and Braga (2013), Cavalcante (2016)	TSE
AlinPres	dummy variable (1 for the president's party equal to the mayor's and 0 for different parties)	Negative	Sakurai and Menezes-Filho (2007, 2008)	
Silva and Braga (2013), Cavalcante (2016)	TSE			
BFa	Amounts spent with Bolsa Família, per capita	Positive	Shikida et al. (2009)	Ministry of Citizenship
LogPIB	Logarithm of Gross Domestic Product per capita	Negative	Meneguim et al. (2005), Silva and Braga (2013)	IBGE

Source: Prepared by the authors.

The choices of each dimension as a determinant, considered related to the assumption of informational asymmetry of the Agency Theory, as well as the Public Choice Theories and Justice Theory, can be explained by the following logics and according to the chosen metrics:

- Budgetary aspects: the literature shows that revenues and expenses can influence the probability of reelection, indicating that such elements would be analyzed by voters, influencing the probability of punishment or reward for the manager. Higher capital expenditures would increase the likelihood of re-election, resulting from their visibility to voters (Balaguer-Coll et al., 2014). The increase in current expenditures, on the other hand, as they represent the cost of the public machine, reduces the chances of re-election, indicating a punishment by voters (Balaguer-Coll et al., 2014; Brender, 2003). With regard to revenues, there is no consensus on the influence of own revenues, but some authors show that voters would not approve of higher tax collection, resulting in a lower probability of reelection (Cavalcante, 2016; Silva & Braga, 2013). On the contrary, revenue from resource transfers positively influenced re-election, indicating a possibility of making expenditures without a direct counterpart by voters (Balaguer-Coll & Brun-Martos, 2013). Applicable theories: Agency and Public Choice.

- Political aspects: several issues of a political nature can also influence the probability of re-election of public managers, showing that voters would be aware of the current political dynamics. In these terms, party alignment with the governor would imply a positive influence, while alignment with the Republic President negatively influences reelection, indicating a specific dynamic in the relations between the three entities (Cavalcante, 2016). It is worth highlighting the issue of valid votes obtained in the previous election, which would mean a "stock" of votes, implying that there is a positive influence

on the probability of reelection of the manager in subsequent contests (Mendes; Rocha, 2004a, 2004b). Theories considered: Agency and Public Choice.

- Socioeconomic aspects: The municipal situation also influences the re-election of managers, as it allows for a direct assessment of the manager's action by the voter, evaluating the aspects that brought advances in their quality of life. Locations with better socioeconomic indicators, where the need for investment in social programs would be smaller, reduce the manager's chances of re-election (Meneguim et al., 2005). In this sense, spending on Bolsa Família would positively affect the probability of re-election, while better socioeconomic conditions negatively influence re-election (Meneguim et al., 2005; Shikida et al., 2009). Applied Theories: Agency and Justice.

Given the above, the modeling of this research was:

$$P(Y=1)=1/1+e^{-g(x)} \quad (1)$$

$$g(x)=\beta_0 + \beta_1 \text{VotVal}_i + \beta_2 \text{DespCapital}_i + \beta_3 \text{DespPessoal}_i + \beta_4 \text{RecPropria}_i + \beta_5 \text{RecTransf}_i + \beta_6 \text{AlinGov}_i + \beta_7 \text{AlinPres}_i + \beta_8 \text{BF}_i + \beta_9 \text{PIBpc}_i + \epsilon_i \quad (2)$$

Being that:

P (Y = 1): is the probability that the dependent variable has a value of 1, that is, that the phenomenon of reelection and/or reappointment occurs;

$\beta_0$ : is the intercept;

i: indicates the municipalities;

t: years;

$\epsilon$ : error term.

In this study, the dependent variable is represented by the reelection of the municipal manager or the reappointment of the party, with the others being considered as independent variables. The option for re-election and/or reappointment as a dependent variable was due to the occurrence of numerous cases in which the manager could no longer be re-elected for exceeding the number of consecutive terms possible, but that his elected successor was from the same party. In these cases, it was considered that the option for reappointing the party to the position was based on the satisfaction of citizens with the performance of the administration, rewarding the party with the vote in the impossibility of directly rewarding the candidate himself.

As a supplement to the initial model of this research, a robustness test was applied as a potential solution to the reverse causality of the variables. To do so, following the

directions of Lin and Wooldridge (2015); Pickup and Evans (2013), and Lewbel et al. (2012), the lag (or lags) of the independent variables for periods prior to the election year was considered, that is, from 2005 to 2007 for the 2008 election; from 2009 to 2011 for the 2012 election, and from 2013 to 2015 for the 2016 election, for the explanation of the political-party succession, depending exclusively on the election year (variables in the years 2008, 2012 and 2016).

## 4 Results and Discussions

### 4.1 Descriptive Statistics and Correlation

Table 2 shows the mean, standard deviation, minimum and maximum values, asymmetry and kurtosis of the independent and dependent variables of this study.

**Table 2:** Descriptive Statistics

Variable	Mean	Standard deviation	Minimum	Maximum	Asymmetry	Kurtosis
ReelPrefeito (categorical)	0,40	0,49	0	1	0,36	1,13
VotVal (percentage)	0,53	0,12	0,25	1	0,77	4,17
DespPessoal (in reais, per capita)	811,50	527,78	3,64	6.975,58	2,35	15,5
DespCap (in reais, per capita)	187,47	166,24	0,28	2.492,47	4,25	35,65
RecPropria (in reais, per capita)	315,01	336,51	0,51	3.776,58	3,36	18,12
RecTransf (in reais, per capita)	1.165,53	681,40	25,63	10.406,84	2,53	15,59
AlinGov (categorical)	0,21	0,41	0	1	1,39	2,93
AlinPres (categorical)	0,18	0,38	0	1	1,64	3,71
BF (in reais, per capita)	52,67	52,20	0	379,26	1,92	7,56
GDP (in reais, per capita)	22.762,44	18.645,09	1.706,33	314.637,69	3,52	27,95

Source: Research results.

Regarding the dependent variable, which represents the probability of reelection of the municipal manager or reappointment of the party to office, there was an average of 0.40, with a standard deviation of 0.49, indicating that around 40% of the managers of the municipalities under analysis were re-elected, or the party was reappointed. This value is consistent with that found by Mendes and Rocha (2004b), who found an average reelection rate of 40.4% when analyzing a total of 5,206 Brazilian municipalities.

In addition, it was found that in five municipalities there was a reelection of the manager or reappointment of the party in all electoral cycles analyzed, namely: Feira de Santana-BA, Indaiatuba-SP, Praia Grande-SP, Presidente Prudente-SP and Teresina-PI. With the exception of the municipality of Indaiatuba, the others have always reelected or reappointed the same party in electoral cycles. The municipality of Indaiatuba, in 2012, reelected the mayor of 2008, even though he was

affiliated with a different party. In 46 municipalities, there was no reelection or reappointment in any of the electoral cycles analyzed.

The percentage of valid votes obtained by the manager in the previous election showed an average of 53%, with a minimum value of 25% and a maximum of 100%. This maximum value was verified in three municipalities, and can be explained by candidates disqualified by the Superior Electoral Court, having their votes annulled or even impossible to receive any vote in the election. This variable represents the equity, or stock of votes, that the candidate obtained in the previous election, that is, it allows the analysis of voter loyalty regardless of the candidate's performance, incurring in lower campaign costs (Mendes; Rocha, 2004b).

Per capita expenses with personnel and social charges averaged R\$811.50, with a standard deviation of R\$527.78. The minimum amount obtained was BRL 3.64, referring to the municipality of Contagem-MG in 2007, while the maximum amount was BRL 6,975.58, relating to Paulínia-SP in 2016.

Per capita capital expenditures, which are related to investments, averaged R\$187.47, with a standard deviation of R\$166.24. The minimum amount obtained was BRL 0.28, referring to the municipality of Conselheiro Lafaiete-MG in 2016, while the maximum was BRL 2,492.47, related to Parauapebas-PA, in 2012. Thus, it appears that the amounts spent on machinery, real estate, construction and other investments showed great variability in municipalities with a population of over 100,000.

In relation to own per capita income, that is, the amounts that the municipality collects directly through fees, taxes, among others, there was an average of R\$315.01 with a standard deviation of R\$336.51. The minimum value obtained was BRL 0.51, referring to Marília-SP, while the maximum value was BRL 3,776.58, associated with the municipality of Barueri-SP in 2016. Analyzing the ten highest values for the aforementioned variable, six of them refer to Barueri-SP, which has high amounts of tax on Services of Any Nature (ISSQN), which demonstrates the great representation of the services sector in the city. Four of the ten highest values refer to Macaé-RJ, which stands out for its representativeness in oil exploration.

As a measure to balance finances, municipalities with low income depend largely on intergovernmental transfers, which explains the high average found for the variable transfer revenue per capita, which was R\$ 1,165.53, with a standard deviation of BRL 681.40. The minimum value obtained for the variable corresponded to BRL 25.63, referring to Contagem

MG, while the maximum value was BRL 10,406.84, corresponding to Paulínia-SP. In relation to the latter, it was found that approximately 85% of current transfers are related to the ICMS quota-share due to oil refinery activities.

Regarding party alignment, it was found that, on average, 21% of municipal managers in the period under analysis were from the same party as the governor and 18% were from the same party as the president of the republic. It is assumed that the existence of party alignment between municipal and state and national managers allows for more chances of remaining in power, as well as greater ease in raising funds, being a factor that can influence the conduct of public policies (Cavalcante, 2016; Sakurai & Menezes-Filho, 2007).

The Bolsa Família Program variable represents the level of social vulnerability of the municipality, considering that municipalities with a predominance of needy families will have higher values for the variable. It was noticed that the average per capita found was R\$ 52.67, with a standard deviation of R\$ 52.20. The maximum amount of R\$379.26 was for Abaetetuba-PA, which stands out for its high unemployment rates, which can lead to an increase in the amount of Bolsa Família spent. However, an investigation by the Federal Police was initiated in 2017 to find alleged embezzlement of money from that program (Federal Police, 2017).

As an economic indicator, the GDP per capita was used. The average found was BRL 22,762,44.62, with a standard deviation of BRL 18,645.09, where BRL 1,706.33 corresponded to the minimum value (referring to Cametá-PA) and BRL 314,637.69 was the maximum value found (for Paulínia-SP), denoting a great variability in the flow of goods and services produced by municipal entities.

Regarding the correlation between the variables, not tabulated, it was found that the highest significant coefficients are between transfer revenue and GDP, in addition to personnel expenses and transfer revenue. Even so, there is no evidence that the variables are highly correlated with each other, as well as, theoretically, these variables are necessary for modeling. To prove the non-existence of multicollinearity between the variables, the VIF test was performed, obtaining a maximum value of 8.61, lower than the limit of 10 recommended by Hair Jr et al. (2009).

#### 4.2 Determinants of Reelection (or reappointment of parties) in Brazilian municipalities

To analyze the budgetary, political and socioeconomic determinants of reelection and/or reappointment, it was necessary to define the binomial logistic regression model with

the most appropriate panel data.

Thus, the fixed effects model was statistically proven to be the most satisfactory for the study. In turn, the Wooldridge test was applied to detect the absence of autocorrelation between the residues. However, the test result rejected the null hypothesis of non-autocorrelation at a confidence level of 95%, requiring corrections in the model and opting for an estimation of the fixed effects model by bootstrap, increasing the robustness of the model. and also correcting heteroscedasticity (Table 3).

**Table 3:** List of determining variables and reelection, reappointment, from 2004 to 2016

Variable	Coefficient	Standard error	P> z
VotVal	-0.9980	1.0746	0.353
LogDespPessoalPC	<b>-1.7136</b>	<b>0.9459</b>	<b>0.070 *</b>
LogDespCapPC	<b>1.6492</b>	<b>0.2485</b>	<b>0.000 ***</b>
LogRecPropriaPC	-0.6787	0.7687	0.377
LogRecTransfPC	1.3984	1.3316	0.294
AlinGov	<b>0.3271</b>	<b>0.1701</b>	<b>0.055 *</b>
AlinPres	<b>0.7260</b>	<b>0.2175</b>	<b>0.001 ***</b>
BFPC	<b>0.0055</b>	<b>0.0029</b>	<b>0.062 *</b>
LogPIBpibPC	-1.1240	0.7879	0.154
Notes	Chow	Hausman	Wooldridge
3.012	124.26	31.70	62.21784
	0.0000	0.0002	0.0000
Log-likelihood	*	**	***
-1,400.5415	p<0.10	p<0.05	p<0.01

Source: Research results

In view of the results presented on the budgetary, political and socioeconomic aspects, it is evident that the re-election and/or reappointment is positively influenced by the party alignment of mayors with the governors and president, by the direct transfer of income from the Bolsa Família Program and by capital expenditures. On the contrary, personnel expenses showed a negative relationship with re-election and/or reappointment.

Regarding political aspects, party alignments, with the state and federal government, showed a positive influence with the probability of re-election and/or reappointment of the party, the significance of such variables corroborated with the literature. However, with respect to theoretical expectation, a divergent association was found. This can be explained by the fact that most of the existing works explore a large number of Brazilian municipalities or specific states. Thus, as it was decided to analyze municipalities with more than 100 thousand inhabitants, the number of analysis units was restricted, as well as enabling the achievement of municipalities with the largest population in all states in the country and with

different characteristics between them.

Thus, the results of alignment with the federal government are in line with the conclusions of Cavalcante (2016), indicating that the relationships established between municipalities and macro levels of government interfere in the probability of reelection and/or reappointment of the position and corroborate the results by Sakurai and Menezes-Filho (2007). This suggests that, given the cooperative relationship in the federalist system between the three levels of government, party alignment narrows the relationship between its representatives, culminating in a greater chance of raising funds and applying them, which can influence the probabilities of re-election or reappointment of the party to office (Sakurai & Menezes-Filho, 2007). Furthermore, alignment is also a mention of timely relationship, asymmetric information and additional benefits compared to other managers who are not of the same party grouping. If aligned, mayors are better able to attract resources via conditional transfers, tax amendments or even populist visits that are “well regarded” by the population (Brambor & Ceneviva, 2012).

Regarding socioeconomic aspects, the amounts transferred as direct income transfer from the Bolsa Família Program, which is a proxy for the municipality's social vulnerability, showed that increases in that variable lead to increases in the probability of reelection or reappointment of the party to the position in the municipalities. above 100,000 inhabitants. This result is consistent with the precepts of the Theory of Justice, revealing a preference for managers who seek equity and minimization of social vulnerability. For voters, when receiving cash transfers, the feeling is one of equal rights and collective solidarity.

This finding confirms Shikida et al. (2009), when analyzing factors that interfered in the reelection of former president Luís Inácio Lula da Silva. Their results confirmed the population's interest in managers who somehow manage to bring more benefits to citizens who are in a situation of social vulnerability. This also occurs in the municipalities, so that although the program is at the federal level, the existence of shared management between the Union, states and municipalities allows the latter to be the protagonist by having direct contact with the population when performing the records.

In relation to budgetary aspects, personnel expenses showed a negative relationship, indicating that increases in expenses of this nature reduce the probability of reelection of the mayor or reappointment of the party. Although these values are not so discretionary (because they are obligations of governments),

they are included in the public choices of managers — to maintain the limitation on personnel expenses by the Fiscal Responsibility Law (legislation) and to serve other groups involved in the political process, not with public servants as a priority. This result was expected by theoretical expectations and is similar to those of other authors, such as Meneguín et al. (2005), confirming the negative relationship between reelection and personnel expenses.

As for capital expenditures, it was found that their increase increases the probability of re-election and/or reappointment, corroborating the theoretical expectation adopted. Cavalcante (2016) found that among several factors that influence the probability of reelection of mayors, the most significant was the level of investment made, culminating in a probability of 75.5% more chances. Also, according to the author, the greater the effort of managers to invest in the construction of works and in offering public services of social interest, the greater their chances of being reelected.

This implies that voters tend to reward government officials they judge to be the best performers, re-electing them and encouraging them to make decisions in the public interest (Cavalcante, 2016). Indeed, Balaguer-Coll et al. (2014) and Balaguer-Coll and Brun-Martos, (2013), found that voters prefer capital expenditures over current expenses, which include personnel expenses, which denotes their greater interest in the expenses they can afford. revert to the well-being of the citizen. This behavior even encourages public managers to increase spending on investments in periods close to the elections to gain greater popularity among voters, giving preference to works that directly and immediately impact the well-being of citizens (Dias et al., 2018).

These findings are in line with the discussion carried out by Drazen and Eslava (2010), who stated that, despite not having knowledge about all government expenditures, voters observe certain types of expenditures carried out before the election to infer about the quality of management. However, even according to the authors, when a large portion of the electorate is undecided, the direction of spending is more easily understood as politically motivated, limiting its effects to the benefit of the manager. Table 4 shows the results regarding the hypotheses adopted in the research, indicating which ones were rejected after performing the logistic regression with panel data. It can be seen then that the factors influencing the probability of reelection are related to expenses, party alignment and the level of social vulnerability of the municipality (measured by the resources spent with Bolsa Família).

**Tabela 4:** Final situation of the hypotheses adopted in the study

Hypothesis	Situation
H <sub>1a</sub> : High personnel expenses have a negative influence on re-election and/or reappointment.	Not rejected.
H <sub>1b</sub> : High capital expenditures have a positive influence on re-election and/or reappointment.	Not rejected.
H <sub>1c</sub> : High revenue collections have a negative influence on re-election and/or reappointment.	Rejected.
H <sub>1d</sub> : High share of transfer revenue has a positive influence on re-election and/or reappointment.	Rejected.
H <sub>2a</sub> : The percentage of valid votes obtained by the current mayor in the previous election has a positive influence on re-election and/or reappointment.	Rejected.
H <sub>2b</sub> : Party alignment with the state governor has a positive influence on re-election and/or reappointment.	Not rejected.
H <sub>2c</sub> : The party's alignment with the President of the Republic has a negative influence on the re-election and/or reappointment.	Rejected.*
H <sub>3a</sub> : The Bolsa Familia amounts received by the municipalities positively influence re-election and/or reappointment.	Not rejected.
H <sub>3b</sub> : GDP per capita negatively influences re-election and/or reappointment.	Rejected.

\* The variable is statistically significant, but its influence is contrary to expectations.

Source: Research results.

As approached by the Agency Theory, there may be conflicts of interest between the figure of the agent and the principals, which would motivate an opportunistic behavior on the part of the agent in an attempt to maximize their own well-being. In this perspective, the study pointed out, in a context of the public sector, dimensions capable of being handled by agents with the intention of influencing the probability of re-election or reappointment of the party to office. Corroborating the assumption of informational asymmetry of the Agency Theory and the possibility of the existence of opportunistic behavior on the part of managers.

Specifically, it appears that accounting information can also serve as an instrument to the advantage of public managers, due to the inequality of information between agent and principal. The results found confirm the possibility of asymmetry, considering that the personnel and capital expenditure variables were significant and influenced the reelection or reappointment. Therefore, the disclosure of works and other aspects that indicate the improvement of infrastructure through capital expenditures are widely publicized, while current expenditures that include the cost of the public machinery have little prominence in the daily lives of citizens.

Regarding budgetary aspects, it can be mentioned that despite the predominant individualistic character of the manager in their choices, the mayor, the focus of this research, is also susceptible to the entire plurality of actors, institutions and processes involved in the elections, which can direct the choice. public in a more collective and less discretionary way, as discussed in Public Choice Theory. This theory allows us

to understand interest groups and their influence on public policies. According to Salm (2009), government programs typically provide “almost broad” public goods, services that benefit some groups in society more than others. In this scenario, individuals interested in specific benefits organize to demand government actions, but in the end, the benefits can be shared by all taxpayers or voters.

Therefore, based on the findings obtained, it was noted that voters tend to reward managers who bring more benefits to citizens in general, that is, those whose objective is to promote collective well-being. This is verified as personnel expenses have a negative effect, while capital expenditures, align with other spheres of government and invest in reducing social vulnerability (such as income transfers and their distributions as precepts of justice and recognition of collective equality) have a positive effect on the likelihood of re-election. It is worth noting that, in a scenario where the manager's reelection is impossible, voters tend to reward the governing parties themselves, in an attempt to continue the benefits acquired.

According to Pickup and Evans (2013), studies that use political, economic, social, financial (budgetary) variables are subject to criticism regarding endogeneity in the models. In this research, endogeneity could be mainly linked to reverse causality between the dependent and independent variables. Wlezien et al. (1997) explain that this causality is due to the fact that changes in policy choices influence changes in perceptions about the economy over time (and vice versa), that is, changes in perceptions about the economy can also be structured or driven by changes in policy choices.

Given this scenario, the recommendations of Lin and Wooldridge (2015) were applied as a potential solution for the possible endogeneity existing in the modeling; Pickup and Evans (2013), and Lewbel et al. (2012), from the consideration in the model of retrospectives (or temporally lagged or variable lags) of economic, social, financial (budgetary) conditions to explain the political dependent variable to happen. It was considered that the economic, social, financial (budgetary) variables already took place before the political choice of re-election or reappointment of subnational managers — softening the possibility of reverse causality, as the capture is of events that have already occurred in the independent variables to influence something to happen in the dependent variable.

Thus, considering the electoral cycles of this research, the robust tests were as follows:

- Reelection or reappointment of the party (dependent): variables considered only for electoral years: 2008, 2012

and 2016;

- Independent Variables (economic, political, budgetary): the means of the variables for the three years prior to the election were used to predict the result of the election. Therefore, for the 2008 election year, the independent variables were considered by means of the years 2007, 2006 and 2005; for 2012, the averages were for the periods 2011, 2010 and 2009, and for 2016, the years considered were 2015, 2014 and 2013.

The use of average and lags was to eliminate the “calendar effect”, in which mayors tend to be more austere in non-electoral years and spend more in election years (Pickup & Evans, 2013). In this sense, the results found are in Table 5.

**Tabela 5:** Robustness Model, in the relation of determining variables and reelection, reappointment, from 2004 to 2016

Variable	Coefficient	Standard error	P> z
VotVal	-1.4368	0.7995	0.072 *
LogDespPessoalPC	<b>-2.8539</b>	<b>1.5044</b>	<b>0.058 *</b>
LogDespCapPC	<b>1.7290</b>	<b>0.3166</b>	<b>0.000 ***</b>
LogRecPropriaPC	-0.2181	0.9269	0.814
LogRecTransfPC	2.3006	1.9039	0.227
AlinGov	<b>0.3713</b>	<b>0.1747</b>	<b>0.034 **</b>
AlinPres	<b>0.6909</b>	<b>0.2280</b>	<b>0.002 ***</b>
BFPC	<b>0.0031</b>	<b>0.0030</b>	<b>0.300</b>
LogPIBpibPC	-1.0289	0.9188	0.263
Notes	Chow	Hausman	Wooldridge
1,431	82.76	34.95	5.28
	0.0000	0.0001	0.0000
Log-likelihood	*	**	***
-572.1077	p<0.10	p<0.05	p<0.01

Source: Research results. Observations: For the validation, from the perspective of effects, of the model in a logistic regression panel, the Chow and Hausman tests were applied, with the fixed effects model being the most appropriate. In addition, the Wooldridge test was also performed to verify the presence of autocorrelation, the results rejected the null hypothesis of absence of autocorrelation, making corrections to the model necessary, and an estimation of the fixed effects model by bootstrap was chosen. Both the initial model, Table 3, and the robustness model were equally estimated based on the tests performed, both models are fixed-effects bootstrap. In the case of the dummy variables of political-party alignment with the governor and with the president, the value 1 was used if there was alignment in at least one of the three years prior to the election year, and 0 was used if there was no alignment in the year some.

With the application of lags or instrumental lags of the independent variables, the results found are considerably similar for the initial research model, from the findings in Table 3 to those in Table 5. The independent variables, LogDespPessoalPC, LogDespCapPC, AlinGov and AlinPres, maintained the significance and the signs found (the non-

significant ones remained almost the same). There was only one modification, the *VotVal* variable — the explanation for the sign found is that managers do not enjoy the electoral advantage in the previous election, as their image is worn, more prepared by the opposition and contrary actions against the political perpetuation of power (Brambor & Ceneviva, 2012) — became significant at the expense of the *BFPC* variable. However, this modification does not invalidate the findings and demonstrates that the potential for correcting endogeneity is favorable to confirm the discussions held in the hypotheses of this study.

## 5 Final Considerations

The study had as expected three general hypotheses: budget (H1), political (H2) and socioeconomic (H3) aspects influence the reelection of mayors or the reappointment of parties in municipalities with more than 100,000 inhabitants in Brazil. Based on the results obtained, none of the hypotheses were rejected, proving that the three dimensions are related to the probability of reelection and/or reappointment. Specifically, some sub-hypotheses about budgetary, political and socioeconomic aspects were rejected, namely: own revenues (H1c), transfer revenues (H1d), percentage of valid votes (H2a) and GDP (H3b). The rejection of these infers that none of them is related to the probability of re-election and/or reappointment.

The findings of this study indicated that voters tend to reward managers who are more concerned with the common good and the search for social well-being, electing those who are more committed to carrying out works and other investments in the municipality, in an attempt to ensure a better quality of life for residents. Conversely, managers who tend to spend a lot on payroll, which could make the public administration a mere employer, are penalized by voters, having a lower probability of reelection and also harming the chances of their own reappointment. party to office.

Additionally, for capital expenditures, more discretionary expenditure resources, its incentives for re-election lie in the policy adopted by the manager, in pleasing his voters, as well as their potential, with visible actions — such as construction of buildings, buildings or squares — which lead to a voluntary and beneficial exchange that generates the well-being of the parties involved.

It is interesting to emphasize that the results indicate the concern of voters with the actions of municipal managers, revealing that they tend to penalize behaviors that are expressed by budgetary, political and socioeconomic aspects, such as behaviors that can prioritize the interests of public

managers. Thus, it is justified to reward managers or parties with the re-election or reappointment of those who prioritize the needs of citizens. In view of the use of a panel data analysis, considering the four electoral cycles, it is clear that this analysis of the conduct of managers seems to be something perennial in time, not having been found in just one election.

It was possible to conclude, through the assumptions of informational asymmetry (Agency Theory), of opportunistic behavior aiming at the collective and relational own well-being (Public Choice Theory), as well as the search for social justice (Justice Theory), dimensions that can be explored by the agent in the public sector. The use of these in their favor demonstrates that there may be an opportunistic behavior, and the re-election or reappointment for their own benefit, that they aim to achieve. This possibility of behavior was mainly evidenced by the establishment of political-partisan alignments, influence on a shared management of the Bolsa Família Program and a wide dissemination of capital expenditures.

This finding goes against the question of raising popularity with voters, that is, the chance to build the image of an agent that seeks to achieve the goals set by society, and not its own goals. Also, noteworthy is the result obtained for expenditures with the Bolsa Família Program, which were positively related to the probability of reelection or reappointment. This indicates that the municipality could take advantage of the role of registering citizens in a program that has a federal nature, benefiting without having real financial expenses, since the federal government is responsible for income transfers.

The theoretical contribution of this study is that re-election is subject to the influences and use of the budget, political relations and social factors in public governance, to use these elements to maintain or attract new voters, party politicians and other groups, maintaining a voluntary exchange relationship between the candidate and those interested. Furthermore, a point of discussion comes from the perspective of accountability and transparency, of mechanisms to be applied to avoid using the election or years of mandates to manipulate the voter, with the use of modified information or in smoothing situations (ie, avoid the normal fluctuation of the results obtained in the municipality).

In practical aspects, this study demonstrates the importance for voters to make transparency active and with their social participation. Information demanded is that which can be used and all considered here (budgetary, political and socioeconomic) and significant in the model are public and accessible, allowing the collection of voters for their voter choices. In addition, there were indications in the work, from situations recurrently portrayed in the media, of the

opportunistic issue of how public administrators can use the state apparatus to promote their re-election or that of their successor.

As a limitation of this study, there is the difficulty in obtaining more variables that were available during the entire period analyzed, which prevented conclusions about more elements and more electoral cycles and their influence on the probability of reelection and/or reappointment. Additionally, we suggest studies with variables collected primarily from voters for perceptions not captured in "ready" data. International comparison is also desirable research in this area.

Despite the existence of legality of reelections and reappointments, the study demonstrated that there are ways for public managers to influence through their attributions so that they happen. Thus, it is suggested, for future studies, to investigate the possibility of re-election and reappointment being satisfactory for citizens or if only what was shown in this study occurs: a possible use of informational asymmetry to achieve its own benefits instead of, in fact, the agents act according to the interests of the principal. It is suggested that this analysis be expanded to all Brazilian municipalities, considerably enhancing the predictive capacity of the analyses.

## References

- Aidt, T. S., Veiga, F. J., & Veiga, L. G. (2011). Election results and opportunistic policies: A new test of the rational political business cycle model. *Public choice*, 148(1), 21-44. 10.1007/s11127-010-9644-3
- Alesina, A. (1987). Macroeconomic Policy in a Two-Party System as a Repeated Game. *The Quarterly Journal of Economics*, 102(3), 651-678. <https://doi.org/10.2307/1884222>
- Alesina, A. (1988). Credibility and policy convergence in a two-Party system with rational voters. *American Economic Review*, 78, 796-806.
- Alesina, A., & Roubini, N. (1992). Political cycles in OECD economies. *The Review of Economic Studies*, 59(4), 663-688. 0034-6527/92/00350663\$02.00
- Akhmedov, A., & Zhuravskaya, E. (2004). Opportunistic political cycles: test in a young democracy setting. *The quarterly journal of economics*, 119(4), 1301-1338.
- Balaguer-Coll, M. T., & Brun-Martos, M. I. (2013). El efecto del gasto público sobre las posibilidades de reelección de

- los gobiernos locales. *Revista de Contabilidad*, 16(1), 74–80. [https://doi.org/10.1016/S1138-4891\(13\)70008-6](https://doi.org/10.1016/S1138-4891(13)70008-6)
- Balaguer-Coll, M. T., Brun-Martos, M. I., Forte, A., & Tortosa-Ausina, E. (2014). Determinants of local governments' reelection: New evidence based on a Bayesian approach. *Economics Department, Universitat Jaume I*, 1–31.
- Barreto, A. A. de B. (2009). Reeleição para o executivo municipal no Brasil (2000-2008). *Revista Debates*, 3(2), 97–115.
- Bovens, M., Schillemans, T., & Hart, P. T. (2008). Does public accountability work? An assessment tool. *Public Administration*, 86(1), 225–242. <https://doi.org/10.1111/j.1467-9299.2008.00716.x>
- Brambor, T., & Ceneviva, R. (2012). Reeleição e continuidade nos municípios brasileiros. *Novos Estudos CEBRAP*, 93, 9-21. <https://doi.org/10.1590/S0101-33002012000200002>
- Brasil. (1997). Emenda Constitucional no 16, de 04 de junho de 1997. Dá Nova Redação ao § 5o do Art. 14, ao Caput do Art. 28, ao Inciso II Do Art. 29, ao Caput do Art. 77 e Ao Art. 82 da Constituição Federal. Recuperado de [http://www.planalto.gov.br/ccivil\\_03/constituicao/emendas/emc/emc16.htm](http://www.planalto.gov.br/ccivil_03/constituicao/emendas/emc/emc16.htm)
- Brender, A. (2003). The effect of fiscal performance on local government election results in Israel: 1989-1998. *Journal of Public Economics*, 87(9–10), 2187–2205. [https://doi.org/10.1016/S0047-2727\(02\)00045-2](https://doi.org/10.1016/S0047-2727(02)00045-2)
- Brender, A., & Drazen, A. (2008). How do budget deficits and economic growth affect reelection prospects? Evidence from a large panel of countries. *American Economic Review*, 98(5), 2203-20.
- Calgaro, C. (2016). O programa bolsa família e a teoria da justiça de John Rawls: a emancipação e a autonomia dos beneficiários. *Revista Electrónica Direito e Sociedade-REDES*, 4(2), 91-103.
- Cavalcante, P. (2015). Vale a pena ser um bom prefeito? Comportamento eleitoral e reeleição no Brasil. *Opinio Publica*, 21(1), 87–104. <https://doi.org/10.1590/1807-019121187>
- Cavalcante, P. (2016). Desempenho fiscal e eleições no Brasil: uma análise comparada. *Revista de Administração Pública*, 50(2), 307–330.
- Cervi, E. U. (2002). Comportamento eleitoral volátil e reeleição: as vitórias de Jaime Lerner no Paraná. *Revista de Sociologia e Política*, 19, 123–134. <https://doi.org/10.1590/s0104-44782002000200009>
- Conselho Federal de Contabilidade. (2016). NBC TSP estrutura conceitual. Normas Brasileiras de Contabilidade—Transações Do Setor Público—Estrutura Conceitual Para Elaboração e Divulgação de Informação Contábil de Propósito Geral Pelas Entidades Do Setor Público. Recuperado de <https://www1.cfc.org.br/sisweb/SRE/docs/NBCTSPEC.pdf>
- Chortareas, G., Logothetis, V., & Papandreou, A. A. (2016). Political budget cycles and reelection prospects in Greece's municipalities. *European Journal of Political Economy*, 43, 1–13. <https://doi.org/10.1016/j.ejpoleco.2016.02.001>
- Cunha, A. M., Ferreira, A. C. S., & Fernandes, M. J. (2018). Information and Socioeconomic Factors in the Re-Election of Portuguese Mayors. In *Handbook of Research on Modernization and Accountability in Public Sector Management*, Chapter 19. USA: IGI GLOBAL.
- Dias, B. P., Nossa, V., & Monte-Mor, D. S. (2018). O investimento público influencia na reeleição? Um estudo empírico nos municípios do estado do Espírito Santo. *Revista de Administração Pública*, 52(5), 880–898.
- Drazen, A., & Eslava, M. (2010). Electoral manipulation via voter-friendly spending: Theory and evidence. *Journal of development economics*, 92(1), 39-52.
- Hair Jr, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise Multivariada de dados* (6th ed.). Porto Alegre: Bookman.
- Islam, F. (2015). New Public Management (NPM): A dominating paradigm in public sectors. *African Journal of Political Science and International Relations*, 9(4), 141–151. <https://doi.org/10.5897/ajpsir2015.0775>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305–360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Kalimullah, N. A., Alam, K. M. A., & Nour, M. M. A. (2012). New Public Management: Emergence and Principles. *BUP Journal*, 1(1), 1–22.

- Lewbel, A., Dong, Y., & Yang, T. T. (2012). Comparing features of convenient estimators for binary choice models with endogenous regressors. *Canadian Journal of Economics*, 45(3), 809-829. <https://doi.org/10.1111/j.1540-5982.2012.01733.x>
- Liendo, N. A. (2014). Análisis comparado de los factores institucionales que impiden la reelección de los gobernadores argentinos. *Civilizar*, 14(26), 87-113. <https://doi.org/10.22518/16578953.143>
- Lin, W., & Wooldridge, J. M. (2015). On different approaches to obtaining partial effects in binary response models with endogenous regressors. *Economics Letters*, 134, 58-61. [10.1016/j.econlet.2015.05.019](https://doi.org/10.1016/j.econlet.2015.05.019)
- Medeiros, K. R. D., Albuquerque, P. C. D., Tavares, R. A. W., & Souza, W. V. D. (2017). Lei de Responsabilidade Fiscal e as despesas com pessoal da saúde: uma análise da condição dos municípios brasileiros no período de 2004 a 2009. *Ciência & Saúde Coletiva*, 22, 1759-1769. <https://doi.org/10.1590/1413-81232017226.22852016>
- Mendes, M., & Rocha, C. A. A. (2004a). O que Reelege um Prefeito? (pp. 1-55). *Senado Federal, Consultoria Legislativa*. <https://doi.org/10.13140/RG.2.2.27628.82560>
- Mendes, M., & Rocha, C. A. A. (2004b). Reeleição sob Informação Imperfeita: Evidências para os municípios brasileiros. (pp. 1-24). Departamento de Economia, Universidade de Brasília. Texto no 313. Série Textos para discussão. <https://doi.org/10.13140/RG.2.2.32661.99046>
- Meneguín, F. B., & Bugarin, M. S. (2001). Reeleição e Política Fiscal: um estudo dos efeitos da reeleição nos gastos públicos. *Revista Economia Aplicada*, 5(3), 601-622.
- Meneguín, F. B., Bugarin, M. S., & Carvalho, A. X. de. (2005). O que leva um governante à reeleição. IPEA (Instituto de Pesquisa Econômica Aplicada). Texto para Discussão no 1135.
- Ministério da Cidadania. (2020). Bolsa Família. Recuperado de <https://www.gov.br/cidadania/pt-br/acoes-e-programas/bolsa-familia>
- Mulgan, R. (2003). *Holding Power to Account: Accountability in Modern Democracies*. New York: Palgrave Macmillan.
- Nordhaus, W. D. (1975). The political business cycle. *The review of economic studies*, 42(2), 169-190.
- Pereira, P. T. (1997). A teoria da escolha pública (public choice): uma abordagem neoliberal? *Análise Social*, 32(141), 419-442. <http://www.jstor.org/stable/41011271>
- Pereira, C., & Renno, L. (2007). O que é que o reeleito tem? O retorno: o esboço de uma teoria da reeleição no Brasil. *Revista de Economia Política*, 27(4), 664-683.
- Polícia Federal. (2017). PF investiga desvio de recursos do Bolsa Família. Recuperado de <http://www.pf.gov.br/agencia/noticias/2017/05/pf-investiga-desvio-de-recursos-do-bolsa-familia>
- Pickup, M., & Evans, G. (2013). Addressing the Endogeneity of Economic Evaluations in Models of Political Choice. *Public Opinion Quarterly*, 77(3), 735-754. <https://doi.org/10.1093/poq/nft028>
- Portella, A. A., & Teixeira, R. P. (2016). Federalismo fiscal e efetividade da dignidade da pessoa humana: análise da posição do município na estrutura do financiamento público brasileiro e a escassez de recursos para as ações de saúde. *Revista de Direito da Cidade*, 8(2), 631-679. [10.12957/rdc.2016.21506](https://doi.org/10.12957/rdc.2016.21506)
- Rawls, J. (1971). *A theory of justice*. Harvard University press.
- Rogoff, K., & Sibert, A. (1988). Elections and macroeconomic policy cycles. *The review of economic studies*, 55(1), 1-16. [0034-6527/88/00010001\\$02.00](https://doi.org/10.2307/2330001)
- Sakurai, Sergio Naruhiko, & Menezes-Filho, N. A. (2008). Fiscal policy and reelection in Brazilian municipalities. *Public Choice*, 137, 301-314. <https://doi.org/10.1007/s11127-008-9329-3>
- Sakurai, Sérgio Naruhiko, & Menezes-Filho, N. A. (2007). Política fiscal e reeleição nos municípios brasileiros: uma análise via dados em painel para o período 1988-2000. *Encontro Nacional de Economia*, 35, 1-20.
- Sakurai, S. N., & Menezes-Filho, N. (2011). Opportunistic and partisan election cycles in Brazil: new evidence at the municipal level. *Public Choice*, 148(1), 233-247.
- Salm, José Francisco. (2009). Políticas públicas e desenvolvimento: bases epistemológicas e modelos de

análise. Brasília: Ed. Univ. de Brasília.

<https://doi.org/10.1016/j.ijpubeco.2005.09.009>

Santos, D. V., Costa, P. S. & Azevedo, R. R. (2021). Descentralização da execução da despesa orçamentária e seu efeito no gasto municipal. *Advances in Scientific and Applied Accounting*, 14(1), 141-159. <http://dx.doi.org/10.14392/asaa.2021140105>

Silva, F. D. F., & Braga, M. J. (2013). Determinantes da reeleição municipal da Bahia para o período de 2000-2008. *Planejamento e Políticas Públicas*, 40, 257-276.

Shikida, C. D., Monasterio, L. M., Araujo Jr, A. F. de, Carraro, A., & Damé, O. M. (2009). It is the economy, companheiro!": an empirical analysis of Lula's re-election based on municipal data. *Economics Bulletin*, 29(2), 1-14.

Veiga, L. F., Santos, S. A. dos, & Neves, D. S. (2011). Como a avaliação do governo local, a imagem dos candidatos e a configuração da disputa influenciam na reeleição do prefeito: Evidências de oito capitais no Brasil. *World Association for Public Opinion Research*, 1-30.

Shi, M.; Svensson, J. (2006). Political budget cycles: Do they differ across countries and why? *Journal of Public Economics*, 90(8-9), 1367-1389.

Wlezien, C., Franklin, M., & Twiggs, D. (1997). Economic Perceptions and Vote Choice: Disentangling the Endogeneity. *Political Behavior*, 19(1), 7-17. <http://www.jstor.org/stable/586547>