


Budget distribution of Brazilian state governments based on citizen perception: an analysis in light of the Punctuated Equilibrium Theory


Distribuição orçamentária de governos estaduais no Brasil com base na percepção do cidadão: uma Análise a luz da Teoria do Equilíbrio Pontuado

Distribución presupuestaria de los gobiernos estatales en Brasil con base en la percepción del ciudadano: un análisis bajo la óptica de la Teoría del Equilibrio Puntuado


Hugo Marco Consciência Silvestre*

Doutor em Ciências da Administração com especialização em Gestão Pública na Universidade do Minho, Portugal
Professor Associado, Núcleo de Políticas e Administração Pública - NPAP (UNILAB), Redenção/CE, Brasil
hmcsilvestre@unilab.edu.br
<https://orcid.org/0000-0001-7654-6577> 

Ginésio Justino Gomes de Sá

Doutorando em Políticas Públicas (UFRGS)
Pesquisador no Instituto de Filosofia e Ciências Humanas – IFCH
Campus do Vale (UFRGS), Porto Alegre/RS, Brasil
ginesiogomes10@gmail.com
<https://orcid.org/0000-0002-5215-1340> 

Magnus Luiz Emmendoerfer

Doutor em Ciências Humanas, Sociologia e Políticas (UFMG)
Professor Associado do Programa de Pós-graduação em Administração Pública (UFV), Viçosa/MG, Brasil
magnus@ufv.br
<https://orcid.org/0000-0002-4264-8644> 

Primary contact address for correspondence*

Campus da Liberdade, Avenida da Abolição, 3 – Centro, CEP: 62.790-000, Redenção/CE, Brasil

Abstract

Punctuated Equilibrium Theory supports that budgets are mechanisms attached to complex political processes due to Citizen's perception regarding public policies effectiveness, which may lead to the redefinition of political priorities. Based on this assumption, in this study we aim to analyze the relationship between citizen's priorities (independent variable) in budgetary distribution of public security, health, education and sanitation services (dependent variables). Brazilian state governments and the Federal District ($n = 27$) were elected as units of analysis and covering the period between 2013 to 2018. We found that, public security, health and education budgets are highly stable, although being guided by moments of changes, contrary to sanitation services that are characterized by instability; that the perception of citizen's has an effect on state political priorities for public security, health and education services. Theoretical and practical implications are discussed throughout the text. On a theoretical basis, it has been proved that citizen's perception has an effect on budget distribution. In practice, we recommend politicians to attend to citizens' needs so that the budget distribution privileges their interests and expectations.

Keywords: Punctuated equilibrium theory; Budget allocation; Citizens' perception; State governments; Brazil

Resumo

A Teoria do Equilíbrio Pontuado considera que os orçamentos são mecanismos que resultam de processos políticos complexos, que tem origem, de entre outras, na percepção do cidadão sobre a coisa pública e que poderá levar a uma redefinição das prioridades políticas pela distribuição orçamentária. Neste pressuposto, este estudo apresenta como objetivo central a relação entre as prioridades do cidadão (variáveis independentes) na distribuição orçamentária dos serviços de segurança pública, saúde, educação e saneamento (as variáveis dependentes). Elegeram-se os governos estaduais e Distrito Federal ($n=27$), enquanto unidades de análise e compreendendo o período entre 2013 a 2018. Como resultados, as políticas estaduais de segurança pública, saúde e educação apresentam grande estabilidade embora sendo pautadas

por momentos de variação, contrariamente aos serviços de saneamento que se caracterizam pela instabilidade; e, que as prioridades do cidadão têm efeitos na distribuição orçamentária das políticas estaduais para os serviços de segurança pública, saúde e educação. Implicações teóricas e práticas são discutidas ao longo do texto. Teoricamente se comprova os efeitos da percepção do cidadão para a distribuição orçamentária. De caráter prático, os políticos deverão atender às necessidades dos cidadãos de modo a que a distribuição orçamentária privilegie os seus interesses e expectativas.

Palavras-chave: Teoria do equilíbrio pontuado; Distribuição orçamentária; Percepção do cidadão; Governos estaduais; Brasil

Resumen

La Teoría del Equilibrio Puntuado considera que los presupuestos son mecanismos que resultan de procesos políticos complejos, que se originan, entre otros, en la percepción ciudadana de los asuntos públicos y que pueden llevar a una redefinición de las prioridades políticas por distribución presupuestaria. A partir de este supuesto, este estudio tiene como objetivo central la relación entre las prioridades del ciudadano (variables independientes) en la distribución presupuestaria de los servicios de seguridad pública, salud, educación y saneamiento (las variables dependientes). Los gobiernos estatales y el Distrito Federal (n = 27) fueron elegidos unidades de análisis y abarcan el período entre 2013 y 2018. Como resultado, las políticas estatales en materia de seguridad pública, salud y educación son altamente estables, aunque están guiadas por momentos de variación, a diferencia de los servicios de saneamiento que se caracterizan por la inestabilidad; y que las prioridades ciudadanas inciden en la distribución presupuestaria de las políticas estatales de seguridad pública, salud y servicios educativos. Las implicaciones teóricas y prácticas se discuten a lo largo del texto. Teóricamente, los efectos de la percepción ciudadana sobre la distribución presupuestaria están comprobados. De carácter práctico, los políticos deben atender las necesidades de los ciudadanos para que la distribución presupuestaria privilegie sus intereses y expectativas.

Palabras clave: Teoría del equilibrio puntuado; Distribución presupuestaria; Percepción del ciudadano; Gobiernos de los estados; Brasil

1 Introduction

The Punctuated Equilibrium Theory (PET), also known as the Interrupted Equilibrium Theory, was originally proposed and developed by Baumgartner and Jones (1991, 2009) and Jones, True and Baumgartner (1997) with the aim of better understanding the decision making of the budgetary distribution of public entities. The theory recognizes that the distribution of financial resources for the implementation of public policies is stable. For this reason, it is assumed that previous decisions were correct and incremental over long periods, for which these budget distribution variations are significant. It is incremental because budget distribution occurs based on small variations from one year to the next. If there are modest variations in resource distribution between years, there is, *a priori*, a certain stability in the implementation and execution of public policies (Jones & Baumgartner, 2005).

Nevertheless, the authors of this theory advance the argument that budget distribution is occasionally marked by profound changes related to the preferences and political motivations of decision makers (Jones et al., 1997, 1998). It is understood that budgets are mechanisms that result from complex political processes, which cover the nature of decision-making institutions; the preferences of decision makers; and the informational signs of a changing environment through which public priorities are defined (Jones et al., 2009). In the end, the scores of budget distribution show changes in government priorities (Jordan, 2003; Sousa, 2008).

Kuhlmann and van der Heijden (2018) report the existence of a set of studies of an international scope based on this theory (Jones et al., 1997; Jordan, 2003; Mortensen, 2009, among others). Most of these studies chose the North American reality for analysis. According to the authors, this research should extend to different contexts so that the theory can be properly validated. With the same purpose, but covering studies published in national journals, Lamba, Silvestre and Correia (2019) find that PET has been modestly used to understand the budget distribution in Brazil regardless of the government level: federal, state, or municipal. Therefore, it is necessary to understand the effects of the information by which public priorities are defined in the budget distribution process in the national context.

Among these priorities, the perception of the service beneficiaries and their effects on the budget distribution of public policies stand out. In fact, citizen participation assumes that the involvement of these actors in the design of public policies is paramount (Osborne, 2010). Through citizen involvement, inputs are introduced in the formulation and decision-making processes, aiming at greater efficiency and effectiveness of public policies (Silvestre, 2019). Based on theoretical conceptions as well as the work of Cairney and Heikkila, (2014), this study seeks to answer the following question: *What is the relationship between citizen perception and the budgetary distribution of Brazilian state governments?*

Established on this question, this study's central objective is the relationship between the priorities of the citizen (independent variables) in the budgetary distribution of public security, health, education, and

sanitation services (dependent variables). State governments and the Federal District ($n = 27$) were elected as analysis units, covering the period between 2013 and 2018. For data treatment, the *Complex Sample General Linear Model – CSGLM* was employed.

There are several reasons and motivations for the selection of Brazilian state governments as an analysis unit. First, it appears that most of the studies carried out through PET focus on the reality of Western countries. Kuhlmann and van der Heijden (2018) identify a greater predominance of these studies in the United States. They conclude that there is a need to broaden the understanding of the budget distribution dynamics in other countries, whose political, economic, and social reality differ or as stated by Jones and Baumgartner (2012, p. 11), “There is nothing uniquely American about the limited attention and subsystems policy”. The budgetary distribution of state governments in their relationship, with citizen perception, proves to be an innovation of this study as well as the non-identification of similar works.

Thus, by expanding the PET application in other countries, an enhanced understanding of the useful theoretical assumptions is possible, as described in this article. According to Sabatier (2007), the search for superior theories is due to the need to better understand the decision making regarding the selection of public policies, and concomitantly, what conditions influence this decision making. Li and Feiock (2019) further state that the decision-making conditions need increased understanding as they are still obscure. In this sense, it is necessary to test the theory in vogue by refuting or accepting valid and measurable propositions. Kuhlmann and van der Heijden (2018) report that only 25% of the conducted studies aim to test the theory. In this study, research hypotheses are formulated to analyze the degree of explanation of PET in Brazil. For the described reasons, the PET application is relevant (Almeida & Gomes, 2019).

In addition, the action of state governments is elected, as a locus of study that is also relevant in federal countries. As a result of the 1988 Constitution, decentralization in decision-making on the adoption and implementation of public policies has brought greater responsibilities to state and municipal governments, as well as the opportunity to receive transfers from the Union (Ribeiro et al., 2019). Since, then assumed as parental federative entities, these two government entities are responsible for the regional and local execution of these policies, respectively. According to Silvestre et al. (2019), state governments are key actors in the implementation of public policies. There is, however, little discussion on the topic of budget distribution, neither in Afonso's consideration (2006). Hence, some studies of the first PET phase are identified in the national literature (Carvalho, 2018, Silvestre & Araújo, 2015). Although, those looking for reasons for budget distribution, they have not been identified in the second phase. The results of this research will help call attention to the importance of citizen perception when distributing the budget.

After this introduction, the article is structured as follows: in the second section, the explanatory models of decision making (model of rational choice and limited rationality), the incremental method for the implementation of public policies and the PET principles. In the third section, the methodological procedures used for this study are described, followed by the empirical results in the fourth section. In the fifth and last sections, the study's conclusions are presented.

2 Resource allocation for the provision of public services

2.1 Budget distribution and public budgets: a framework

As a process, budget distribution seeks to allocate public financial resources with a view of developing goods and services that may be useful for the well-being of the community. In this sense, the public budget is classified as “one of the pillars of democracy” (Afonso, 2006, p. 10). The decision for a given policy depends, however, on the preferences of decision makers for the realization of public spending within the identified community needs (Abreu & Gomes, 2013).

As a continuous act of their preferences, these decisions on the public resource allocation have been disqualified by citizens, in general. For this reason, political systems are not positively evaluated by public opinion and based on the lack of action to solve perceived social problems (Sousa, 2003).

In the national case, Sousa (2003) mentions that the 1988 Constitution made great progress with political and administrative decentralization. Through decentralization, there is a transfer of political along with administrative decision-making between entities with different structures and designs (Silvestre, 2019). In addition to decentralization, legal diplomas were introduced to make the use of financial resources more efficient, effective, and transparent. Examples are the Pluriannual Plan (PP), Budget Guidelines (BG) and Annual Budget Law (ABL), in addition to the Fiscal Responsibility Law (Complementary Law No. 101), published on May 4, 2000 (Abreu & Gomes, 2013).

Despite the introduction of various legal instruments, this decentralization also requires financing for the provision of public services. For this reason, Sousa (2003) reports the constant pressure between the state and municipal governments to provide them with more financial resources from the federal government. It also adds the resource allocation that the agencies are obliged to comply with. By law, the definition of the percentage of expenditures for each sector of activity, according to the author, inhibits the definition of the resource allocation strategy of the federal entities.

Afonso (2006) further advances that budgets should be more participatory considering the effects they may have on the lives of citizens. However, such participation is ineffective and based on the complexity of the entire process. The author states that such complexity that has a conceptual and calculation origin, among others, leads the citizen to be disinterested in participating in the process and helping decision makers.

There are, however, several emancipatory characteristics in the national budget distribution. Abreu and Gomes (2013) argue for the need for more effective communication between public agencies and the population, notably for the existence of clear and concise reports on the possible effects of budget distribution. According to the results of the study carried out by the authors, the most concise communication will raise higher levels of social participation. For this reason, the budget distribution process should be broader at the level of citizen inclusion for participation in the priorities that the allocation of financial resources must fulfill (Afonso, 2006). Such participation may have lesser or greater effects on budget distribution (Li & Feiock, 2019).

2.2 The incremental method

The theory and / or rational choice model proposed by the classics (Lindblom, 1959; Wildavsky, 1964) maintains that decision makers are endowed with information that allows them to know a finite set of alternatives for budget or resource allocation. In this sense, decision makers are characterized by perfect rationality, identifying the totality of alternatives or existing courses of action. The identification of these alternatives is made possible by access to information that would be potentially scarce. The selection of the course of action would be facilitated by the existence of a small number of alternatives, which would make it possible to maximize the interests of decision-makers. Thus, the classics defend that decision-making is optimal, presenting it as a characteristic of the *economic man* (Denhardt & Catlaw, 2017; Etzioni, 1967; Riker, 1990).

The classic principles of rational choice were widely disseminated at the time; however, it was found that the assumptions of this explanatory model were related to a particular period, not being able to accurately capture the social reality in the last century (Etzioni, 1967). This stimulated our views and scientific advances, emerging the model of limited rationality (Simon, 1957, 1982).

Under this model, the subjects do not have all the information necessary for decision making. This fact is due to its rationality, as human beings do not have the cognitive capacity to be aware of all the information available in the environment where their organization operates (Simon, 1982). Therefore, without all the information, the decision to allocate resources cannot be maximized because it is impossible to identify all feasible courses of action to be selected. Instead, only a few alternatives will be identified and choosing one of these alternatives will generate only satisfactory or sufficiently advantageous decision making. Accordingly, it was proposed to adopt the notion of the *administrative man*, one who is aware of his/her own limitations in decision making (Simon, 1957) in organizations.

According to the limited rationality proposed by Simon (1982), it denotes the limits of rational adaptation. Hence, it is important to emphasize that information is the basic element that supports the models of choice. Moreover, the information is not pre-defined and often ambiguous due to the different sources that originate it (Jones et al., 2003). Regarding this, policy makers and / or decision makers receive various information from different sources. This information differs from each other as to its reliability, which will imply the prioritization of political action in favor of some and disadvantaging others (Jones & Baumgartner, 2012).

Although it has been contested, the rational choice model has supported the development of several other models and / or analytical theories, such as the incremental method for resource allocation, which will be described below.

Initially proposed by Lindblom (1959) at the end of the 1950s, the incremental method became the basis for analyzing and explaining changes in the budget distribution of public policies. This author assumed that public policies remain stable over time due to the reduced variation of budget distribution, that is, the decisions of the past influence the decisions to be adopted in the present (Lindblom, 1959; 1979). The central argument of this method was highly successful, particularly when it was necessary to analyze the distribution of public budgets. Wildavsky (1964) reported in his studies that annual budgets served as a basis for budget decisions for the following year, corroborating the assumptions presented by Lindblom (1959).

The use of incrementalism, which is based on the paradigm of limited rationality (Jones & Baumgartner, 2005), stood out in studies on public budgets (Padgett, 1980). Consequently, it was dominant for more than two decades (Tuker, 1982). However, at the end of the 1980s and early 1990s, this method was challenged. Such contestation was directed to its theoretical, methodological, and empirical basis (Jones & Baumgartner, 2005). Berry (1990), for example, argued that incrementalism has lost its analytical utility because of its various meanings. On the other hand, True, Jones and Baumgartner (2007) stated that due to the problems associated with the empirical tests carried out, the method proved to be incomplete in terms of explaining the political process and since few of its hypotheses are possible to falsify.

On account of the weaknesses identified, the use of this method to analyze budget distribution lost ground in research on public policies during the 1990s (Robinson, 2006). As incrementalism was emphatically understood as a characteristic of changes in policy results, it was possible to verify, through historical analysis,

that policies go through a long period of stability, however interrupted by periods of great changes (Baumgartner & Jones, 1991, 2009). Therefore, PET appears as an explanatory model of budget distribution.

2.3 Punctuated equilibrium theory: characterization and research hypotheses

In contrast to the criticisms directed at the incremental method, the Punctuated Equilibrium Theory (PET) emerged in the 1990s and was proposed and developed by Baumgartner and Jones (1991) and Jones et al. (1997). In its direction, the theory is supported by the model of limited rationality proposed by Simon (1957, 1982).

The difference of PET in relation to the incremental method lies in its explanatory characteristics: (a) it is assumed that public policies are marked either by long periods of stability or incremental changes; as well as (b) sporadic periods of great change (Baumgartner & Jones, 2009; Capella, 2007; Flink, 2017; Robinson, 2006). As a result, this theory is commonly seen as a complement to the incremental method (Flink, 2017; Robinson, 2006; Silvestre & Araújo, 2015).

It is assumed here that the budget changes, and consequently, public policies, are not exclusively incremental (Jones et al., 1998). From an empirical budget distribution analysis, Jones and Baumgartner (2005) concluded that the typical pattern of budget distribution is leptokurtic. Leptokurtic distribution is based on the great centrality of decision making, that is, most of these decisions follow a pattern where few changes in budget distribution are made from one year to the next. However, at certain times, this distribution undergoes wide variations, which is why there is an accumulation of extreme variations that the authors classify as fat tails (Jones & Baumgartner, 2005).

As Breunig and Koski (2012) argue, studies on budget distribution have attracted the interest of PET scholars since the 1990s. In the first phase of PET studies, researchers sought to attest to the existence of scores on budget distribution (Park & Sapotichne, 2019).

John and Margetts (2003) analyzed budget data from the central government of the United Kingdom between the years 1951 to 1996 including sectors of policy, such as agriculture, social security, education, health, housing, law and order and transport. They concluded that budget changes have a leptokurtic distribution.

Jordan (2003) sought to extend the budget score debate to the level of local governments in the United States and by which he selected allocation functions (public parks, recreation and public buildings and highways) and development functions (police, fireman) and sanitation). The author's findings reveal that some functions and types of policies tend to have a higher number of scores, which denotes that some services have a fewer stable agenda.

Montersen (2005) adopted, as a unit of analysis, 273 Danish municipalities over a period of 13 years and compared stability and scores in four areas, namely: libraries, roads, childcare and schools. The results of this study show that the budget changes of these local governments are characterized by a certain pattern of stability, but where there are scores as well. The results also demonstrated systematic differences in scores depending on policy sectors, that is, some sectors exhibited changes in budget distribution more frequently.

Within this first phase of studies, as well as the Brazilian case, Carvalho (2018) carried out an analysis of the Union's budgetary execution for the period of 1980 to 2014. He concluded that the budgetary execution by function was marked by periods of stability plus small changes. Silvestre and Araújo (2015) conducted a budget variation analysis of 184 local governments in the state of Ceará. The authors sought to describe which revenues best related to budget distribution. They concluded that the budget changes of local governments in Ceará had, for the most part, periods of stability, however, with varying changes occurring at certain times. They also found that the revenues from constitutional transfers are those that best relate to changes in budget distribution.

Based on the results of the studies presented, the following research hypotheses arise:

H_0 : Budget distribution follows periods of great stability, most of which are incremental.

H_1 : Budget distribution presents periods of great variation between years; these variations are occasional.

According to Flink (2017), information asymmetry and institutional conflict are two factors identified in the literature as explanatory variables for the existence of incremental changes and scores. Li and Feiock (2019) find, however, that these scores occur without any cognitive or institutional friction. According to these authors, such changes are due to the coverage provided by the media or public opinion. Jones and Baumgartner (2012) elaborate that the resource distribution agenda can be changed without the influence of public opinion. For example, the definition of the problem to be addressed may occur from access to new information that requires the attention of decision makers. Aside from the example, the authors argue that public opinion has a great effect on decision-making.

In this sense and through these factors, Baumgartner and Jones (1991, 2009) explain periods of stability and periods of great changes, through the policy image. The notion of a policy's image is based on the understanding assumed by a given policy and / or course of action, that is, being composed of a mixture

of empirical information along with emotional resources. Thus, an image associated with an accepted policy thrives (True et al., 2007). It is prosperity that stems from incentives for politicians themselves and from budgetary decision making. Li and Feiock (2019) report that the political class has at least two main incentives. The first refers to the understanding of the problems to be solved, so that they follow the expectations of the social actors, among which the citizens stand out. Acknowledging the problems indicates what measures will be adopted, quickly ensuring the political survival of the decision makers. Consequently, it is imperative to avoid political errors of perception and judgment. Committing such errors entails a penalty in terms of political survival. Hence, the incentives perceived by politicians influence changes in budget distribution, especially those of a non-incremental type.

The identification of explanatory reasons for budget distribution leads to the emergence of the second phase of PET studies (Park & Sapotichne, 2019). In this second phase, Mortensen (2009) analyzed budgetary variations in the United States for the sectors of crime prevention or security, health, education, and the environment. She concluded that community spending preferences raise the attention of decision makers, and consequently, the increase in budget spending for these sectors. From the results verified, the author attests that public opinion is a crucial factor in budget distribution.

Flink (2017), in turn, chose *policy feedback* or organizational performance and internal changes in the organization, as measured by employee *turnover*, as predictors of budget changes. By choosing schools in the state of Texas, the author finds that when the performance of these units is high, the changes made are small. Conversely, when performance is reduced, these changes are immeasurably greater.

In a study carried out on budget distribution in North American state governments, Li and Feiock (2019) found that the existence of scores is largely due to citizens' preference. By analyzing data covering the period of 1988 to 2008, legislative competition, centralization, government size, political party, among others, do not have greater effects on budget distribution and when compared to the citizens' preference.

Accordingly, the population's perception of a given public policy can affect budget distribution (Mortensen, 2009). For these reasons, the following research hypothesis is proposed:

H₂: The population's perception of public policies influences the decision on budget distribution.

Concerning the prioritization of governmental needs and / or its agencies, the budgetary decision process, in general and above all, has been analyzed by the academic community based on PET as its theoretical foundation. In innovation, this theory develops the incremental method, which becomes an integral part of the explanation of budget distribution (Breunig & Koski, 2012). The aforementioned studies allow the accumulation of empirical evidence which proves that budget distribution exhibits non-linear distribution patterns. However, there is a lack of better knowledge of the budget distribution of Brazilian subnational public entities, which is the proposed analysis in this study.

3 Research design and analysis unit

To answer the research questions, and consequently, fulfill the objectives defined for this study, the panel-type research design was selected. By including several units of analysis and several moments of data collection (2013–2018), it is feasible to obtain greater robustness of the results (Blaikie & De Priest, 2019).

Reinforcing that the state and Federal District governments in Brazil ($n = 27$) were selected as the unit of analysis. It should be noted that the Brazilian federative design has been based, since the 1988 Constitution - CF88, on the recognition of the Union, state, and municipal governments as federative entities. CF88 also promoted the decentralization of the implementation of public policies for state and municipal governments (Silvestre, 2019). For this reason and regarding state governments, there was greater involvement in the sectors of public security, health, education, and sanitation, among others (Silvestre et al., 2020). These sectors stand out because they are considered as popular or priority issues for citizens (Mortensen, 2009). In addition, data is available so that the objective of this study can be fulfilled, and at the same time, test the research hypotheses.

The statistical model was built on the collection of data carried out on budget expenditure and citizen perception of the sectors of public security, health, education, and sanitation, see Table 1. From the perspective of budget expenditure, the Finance of Brazil (FINBRA) was consulted, which is available in the Brazilian Public Sector Accounting and Tax Information System - SICONFI, an open database of the National Treasury Secretariat and resulting from Complementary Law 101/2000 known as the Fiscal Responsibility Law (STN, 2019). From the viewpoint of the perception of services, the information contained in the *Portraits of the Brazilian Society - Main Problems and Priorities*, whose publication is the responsibility of the National Confederation of Industries (CNI, 2014, 2015, 2016, 2017, 2018) was collected. As we will allude to later, control variables for cross-checking data are included. These control variables include the economic and demographic situation of each state and were collected by the Brazilian Institute of Geography and Statistics (2019). By cross-checking and verifying information availability, the period mentioned above was analyzed.

3.1 Data Collection

PET assumptions are used in this study through budget distribution, with the theme being the second most researched among the studies that rely on PET (Kuhlmann & Van Der Heijden, 2018). As previously mentioned, the data were collected in the FINBRA / SICONFI database (STN, 2019). They are *social artifacts* (Blaikie & De Priest, 2019), through which it is possible to collect secondary data, which are available in the publications of public agencies. Data on budgets / expenditure on public security, health, education, and sanitation are presented per capita and to mitigate size differences between states, as shown in Tables 1 and 2.

Based on CF88 in article 23, generally, and article 144, for the particular case of public security, Lima, Bueno and Mingardi (2016) indicate that there is a certain ambiguity in the action attributions among the federal entities. For this study, it is important to note that it is up to the state government to promote public security, notably through state, civil or military police. According to the Constitution, public health policies were also decentralized from 1988 onwards, becoming a responsibility of the federal entities (Andrade, Rosa & Pinto, 2018).

According to Sagastume et al. (2017), state governments are an integral part in the promotion of public health policies for populations, both in terms of conception and management. In the sanitation sector, Correia (2008) argues for the joint attributions between the federal entities, with different strategies between state and municipal governments for the provision of these services. For the former, state governments, through the formation of state companies, covering a range of services such as the water distribution to the population, wastewater collection and treatment, along with solid waste collection and disposal and urban drainage (Emmendoerfer & Silva, 2010). For the education sector, it will be the state governments' responsibility to take primary action regarding primary and secondary education (Melo & Passos, 2018), which is why this sector was selected for this study.

As independent variables, the Brazilian society's perception of the public security, health, education, and sanitation sectors were chosen - see Tables 1 and 2. Published by CNI, the section, *Portraits of the Brazilian Society*, presents the main problems and priorities according to citizen perception for various sectors. The CNI survey is conducted nationally and is even presented at the state level. On this basis and to fulfill the objectives of the study, it becomes possible to analyze the list of priorities presented by the citizens and the budget distribution process (Jones et al., 2009) at the state government level.

In view of the sociodemographic, and consequently, economic differences, the area (measured in km²) as well as the urban and rural populations were added as control variables (Epp & Baumgartner, 2017). According to Bel and Warner (2015), the area, measured in km², may influence the implementation of public policies. The effect is analyzed in light of the service provision costs that may influence citizen perception of these policies. In addition, the population is considered because it will have implications for service expenses (Klok et al., 2018), especially in relation to residence, whether urban or rural, as it implies different operating costs (Blaeschke & Haug, 2018). Again, such costs may have implications for citizen perception of service functioning, which is why these variables were included in the statistical model.

Finally, the economic situation and the effects that it may have on budget distribution, and consequently, on citizen perception of services, were added. Recalling that the Gross Domestic Product - GDP, at market values, were retracted at the end of 2014. Between 2015 and 2018 this same GDP grew, but without reaching the levels prior to the crisis of 2015. Thus, the statistical model includes the scale variable comprising the periods of 2013-2014 before the crisis and the period between 2015-2018 to signal the phase of economic and financial decline. Like Silvestre et al. (2019), it is possible to analyze the effects of the economic situation on the financing of public policies in this study.

3.2 Statistical techniques and tools utilized

To achieve this study's objectives, the percentage variations were first calculated for the total expenditures committed to functions for the period considered during the second half of 2019. In this context, an attempt was made to describe the trend in budget expenditures committed by state governments, that is, whether incremental or leptokurtic. For this purpose, we used the methodology and / or principle adopted by Jordan (2003), for whom all changes in the budget that decrease equal to or greater than 25% are considered as negative scores. In contrast, any changes in the budget that increase equal to or greater than 35% is classified as a positive score. The others are assumed to be incremental.

Therefore, aiming to analyze the effects of the population's perception (independent variables) on budget distribution of the state governments (dependent variables), the Complex Samples Plan for the General Linear Model (CSGLM) was employed. This plan was selected since the study includes discrepant vectors (Best & Wolf, 2014), that is, even in the case of complementary public services, these are characterized by related, although specific, *subsystems* (True, Jones & Baumgartner, 1999). Additionally, as already aligned, it is feasible that differences between the units under analysis exist at the vector level, such as demographic conditions that imply variations in budget distribution between states. Due to the existence of demographic differences between the states, effects on citizen perception of services may exist. However, by using CSGLM,

it is possible to mitigate this difference and make the comparison viable. In this sense, *standard errors* were grouped by the total population considering state governments, the study’s analysis unit (*Robust Standard Errors*). By using robust standard errors, it is feasible to validate the results from the statistical cross-checks (McCullagh, 2018).

Due to internal validation, the *F-Wald* test is used, which aims to compare maximum likelihood, both for parameter estimates, as well as robust standard errors. If found that $p \leq 0.05$, it is possible to conclude that the parameters are significant for the statistical model. Being significant, the null hypothesis is rejected, and a normal waste distribution is assumed. Still within the statistical strategy, random effects are used as a counterpoint to fixed effects. This strategy, that of the use of random effects, aims to capture variations within and among analysis units and that are impossible to implement by using fixed effects (Geys & Sorensen, 2016).

Thus, by the composition of the model, we first tried to verify whether the population's perception of services influences budget distribution. Then, we sought, by estimating parameters, to determine the effects of each of the predictors on the dependent variables. Finally, statistical cross-checks were carried out using the statistical program for the social sciences (*Statistical Packaged for the Social Science - SPSS*, licensed version 25).

4 Results and discussion

Tables 1 and 2 show the description and descriptive statistics of the dependent, independent and control variables.

Table 1:
Description of dependent, independent and control variables

Variable	Description	Data Source	Theoretical Justification
Dependent Variables			
Public security Expenditure	Total public security expenditure <i>per capita</i> , in R\$	FINBRA/SIC OFIN	Andrade et al. (2018); Lima, Bueno and Mingardi (2016) Sagastume et al. (2017) Melo and Passos, 2018
Health Expenditure	Total pension expenditure <i>per capita</i> , in R\$		
Education Expenditure	Total health expenditure <i>per capita</i> , in R\$		
Independent Variables			
PP Public security	Priority of the Brazilian population in relation to public security, in %	CNI	Jones and Baumgartner (2012), Li and Feiock (2019), Mortensen (2009)
PP Health	Priority of the Brazilian population in relation to health, in %		
PP Education	Priority of the Brazilian population in relation to education, in %		
PP Sanitation	Priority of the Brazilian population in relation to sanitation, in %		
Demographic Control Variables			
Area	Geographic extent measured in km2	IBGE	Bel and Warner (2015); Blaeschke & Haug (2017); Epp and Baumgartner (2017); Klok et al. (2018)
Rural Pop.	Total residents in rural areas		
Urban Pop.	Total residents in urban areas		
Conjecture			
Economics	Scale variable, being 0 before the crisis, and 1 after the crisis		Silvestre et al. (2019)

Source: Authors' elaboration.

Table 2:
Descriptive statistics of dependent, independent and control variables

	N	Mean	Deviation Error	Minimum	Maximum
Dependent Variables					
Public Security Expenditure	160	336.5538	195.26844	.00	861.50
Health Expenditure	160	550.2138	329.10151	243.14	2587.63
Education Expenditure	160	616.5541	380.73327	27.86	2634.83
Independent Variables					
PP Security	160	42.3875	14.62658	19.00	64.00
PP Health	160	48.3813	8.80671	32.00	58.00
PP Education	160	24.7500	11.17556	6.00	35.00
PP Sanitation	160	10.2813	11.84500	1.00	28.00

	<i>N</i>	<i>Mean</i>	<i>Deviation Error</i>	<i>Minimum</i>	<i>Maximum</i>
Demographic Control					
Variables					
Area	160	318766.3587	370174	5785.80	1559162.40
Rural Pop.	160	1117285.2875	947929.67750	68490.00	3914430.00
Urban Pop.	160	6003627.6250	7866399.36309	344859.00	39585251.00
Conjecture					
Economics	160	.68	.470	0	1

Source: Authors' elaboration.

To fulfill the first objective of the study, that of describing the budget distribution variations, the results of the calculations for the state budget variations during the period considered are presented in Table 3.

It can be seen in Table 3 that budget distribution primarily follows the incremental type of distribution. The education sector is the most stable with 78% of the normal budget distribution, followed by the health sector (75%) and public security (69%). It is also noted that positive scores are more frequent in the health and education sectors when compared to negative scores. For the public security sector, the positive and negative scores are equivalent for the period considered. Exceptionally, the sanitation sector is the one with the least stability, with only 36% of the incremental budget distribution. Comparatively, negative scores (with 34%) have a similar frequency.

Table 3:
Budget distribution variations of Brazilian state governments for the period of 2013-2018.

Distribution	Policy Sectors			
	Public Security	Health	Education	Sanitation
Normal	110	120	124	57
Negative Scores	26	25	22	54
Positive Scores	24	15	14	49
<i>N</i>	160	160	160	160

Source: Authors' elaboration from STN (2019).

From this presentation, it is possible to affirm that the budgetary distribution in the Brazilian state governments: follows periods of great stability, being most of them incremental (*H0*); and that budget distribution presents periods of great variation or punctuated between years (*H1*). Therefore, the assumptions advanced by Baumgartner and Jones (1991; 2009; 2012) and Jones, True and Baumgartner (1997) are confirmed. In this sense, the result verified in Brazil corroborates the conclusions of the European study by John and Margetts (2003) and Jordan (2003), and the national study by Carvalho (2018) and Silvestre and Araújo (2015).

For the second objective of the study, that of analyzing whether citizen perception (independent variables) is related to expenditure on public security, health, education, and sanitation (dependent variables), the Complex Samples Plan was used for the general linear model, the results of which are shown in Table 4.

Table 4:
Complex Sample Plan for the General Linear Model to analyze the effects of the national citizens' main concerns with service expenses

Parameter	Dependent variable		
	Public Security Expenditure	Health Expenditure	Education Expenditure
Intercept	.000* (91.854)	.000* (19.147)	.000* (30.736)
Independent			
PP Security	.004* (9.768)	.065 (3.721)	.034* (4.992)
PP Health	.004* (9.909)	.138 (2.338)	.056 (4.006)
PP Education	.073 (3.499)	.118 (2.614)	.096 (2.991)
PP Sanitation	.012* (7.322)	.001* (13.644)	.011* (7.538)
Demographic Control			
Area	.493 (.484)	.757 (.098)	.161 (2.078)
Rural Pop.	.269 (1.277)	.080 (3.314)	.005* (9.275)
Urban Pop.	.987 (.000)	.205 (1.692)	.000* (23.732)
Conjecture			
Economics	.050* (4.245)	.001* (13.293)	.576 (.321)
<i>N</i> . Observations	160	160	160
R Square	.298	.141	.291
Degrees of freedom	26	26	26
<i>F-Wald</i>	13.491*	21.977*	36.272*

**p* < 0.05. The *F-Wald* statistic is in parentheses. Standard errors are grouped by the total population at the analysis unit level (*N* = 160).

Source: Authors' elaboration

Firstly, by analyzing Table 4, the explanatory capacity of the models is greater when considering expenditure on public security and education as dependent variables. Among the models tested, the one that included sanitation expenses per capita, as a dependent variable, was not significant ($p = 157$). For this reason, this model was not included in the table. Interestingly, compared to Table 3, it is the sanitation sector that is the most volatile in terms of budget distribution variations. Considering the first model, the one where public security expenditure per capita is a dependent variable, conclude that the citizens' perception of problems with public security, health, and sanitation influence the budget distribution for this sector (Table 4).

Furthermore, in this model, only the economic situation is statistically related to the control variables. By examining Table 5 as based on the first model, it is expected that as the citizens' priority over the security service increases, so will its expenses. However, on the contrary, an increase in citizens' priorities in relation to health and sanitation services, public security expenses will decrease. Therefore, there is a *trade-off* due to scarce financial resources. Given the scarcity, it is probable that citizen perception influences budget distribution. It is observed that the economic situation is a relevant aspect in explaining the model for budget distribution at the level of public security policies.

These results are explained by the responsibility of state governments in public security, in comparison with the other federal entities. If we look at the map of violence published by the Institute for Applied Economic Research - IPEA and the Brazilian Public Security Forum - FBSP, it appears that the number of homicides increased by 15% in the national territory between 2013 (with 57,396 homicides) and 2017 (with 65,602 homicides). Despite the fact, at the end of 2014, 64% of the population pointed to violence as one of the main problems (IPEA; FBSP, 2019). This percentage decreased in 2016 (with 16%), stabilizing at 38% in 2017 and 2018. Apparently, due to the existence of an unfavorable economic and financial environment, the citizens' concerns tend to focus on other sectors, which explains the percentage figures for the past two years.

According to the second model, where the health expenditure, *per capita*, is inserted as a dependent variable, only the citizen perception of sanitation is shown as an explanatory variable (Table 4). The variable of the economic situation is added again. As a trend, it is expected that an increase in the citizens' priority, in relation to sanitation, may indicate a reduction in public health policy investments.

According to the National Sanitation Information System - SNIS (BRASIL, 2017), 84% of the Brazilian population has access to the water supply service while 52% of the population has access to the wastewater collection and treatment service. Sanitation, which also includes the collection and treatment of solid waste, appears to be neglected by state governments. This negligence is most likely due to the large investments required for the total coverage of the service in the national territory.

In view of this, Hochman (2012) reinforces the importance and relationship between the expansion of sanitation services in Brazil and the improvement of public health. If it is one of the priority tasks of the state governments, there must be an alignment between sanitation and health policies. In the hypothesis, such an alignment requires that a greater concern for sanitation allows a reduction in health expenditure. Interestingly, the citizens' concern with sanitation has reached its lowest expression since 2016, that is, after the economic crisis, the concern with sanitation has decreased considerably. Health expenses, *per capita*, have been gradually increasing in the period. On the other hand, with the imminence of an epidemiological crises, such as that experienced on a global scale with the COVID-19 pandemic, concerns and expenses with sanitation and health will tend to increase in the coming years.

For the latter model, it appears that concerns about safety and sanitation are parameters that influence education expenditure (see Table 4). In addition, the urban and rural population are predictors of education expenditure. Although not very significant, the increase in the population leads to an increased education expenditure (see Table 5). Escalated concerns about sanitation, decreases the education expenditure. Again, due to scarcity and state government priorities, the option to improve one sector, due to citizen perception, is accomplished by reducing the investment in another sector. Such sectors may, however, be correlated to the extent that the citizens' heightened concern for public security leads to an upsurge in the education expenditure.

Table 5:
Estimation of parameters

Parameter	Dependent variable								
	Public Security Expenditure			Health Expenditure			Education Expenditure		
	Estimate	Robust Standard Error	95% Confidence Interval	Estimate	Robust Standard Error	95% Confidence Interval	Estimate	Robust Standard Error	95% Confidence Interval
Intercept	630.747*	65.812	[495.469, 766.026]	550.803*	125.878	[292.057, 809.548]	660.011*	119.050	[415.300, 904.723]
Independent									
PP Security	15.459*	4.946	[5.292, 25.626]	5.253	2.723	[-.344, 10.851]	7.006*	3.136	[.561, 13.452]
PP Health	-17.791*	5.652	[-29.408, -6.174]	-5.042	3.298	[-11.821, 1.737]	-7.393	3.694	[-14.986, .200]
PP Education	.811	.433	[-.080, 1.702]	1.137	.703	[-.309, 2.583]	.968	.560	[-.183, 2.119]
PP Sanitation	-11.039*	4.080	[-19.426, -2.653]	-6.363*	1.723	[-9.904, -2,822]	-7.638*	2.782	[-13.357, -1.920]
Demographic Control									
Area	.000048	.000068	[-.000093, .000]	.000024	.000078	[.000, .000]	.000	.000074	[-.000045, .000]
Rural Pop.	-.000037	.000033	[.000, .000031]	-.000057	.000031	[.000, .000007]	.000*	.000034	[.000, -.000034]
Urban Pop.	2..8031E-8	.000002	[-.000004, .000004]	.000002	.000001	[-9.0537E-7, 4.026E-6]	.000008*	.000002	[.000005, .000011]
Conjecture									
Economics	59.313309*	28.788	[.138; 118.489]	52.382*	14.367	[22.850, 81.914]	21.424	37.834	[-56.346, 99.193]

*p < 0.05

Standard errors are grouped by the total population at the analysis unit level (N = 160).

Source: Authors' elaboration from CNI (2014; 2015; 2016; 2017; 2018) and STN (2019).

Based on the three models and considering that the policy image can cause changes in public policies (Baumgartner & Jones, 1991), it is possible to corroborate the hypothesis that the population's perception of public policies adopted by Brazilian state governments, influences the budget distribution decision (*H2*). The study by Mortensen (2009) corroborates with the conclusions of this study, where it includes budget distribution for the public security, health, and education sectors. It also concludes that citizens' preferences are considered when deciding budget distribution. Hence, public opinion is, in fact, an irrefutable element for this decision making. Li and Feiock (2019) later confirm this provision when analyzing the budget distribution of North American state governments.

5 Conclusions

In this study, we first endeavored to describe the budget distribution in public policies on public security, health, education, and sanitation for Brazilian state governments. According to the Punctuated Equilibrium Theory (PET), there is the proposition that budget distribution is stable and incremental over time, with moments that punctuate this distribution (Baumgartner & Jones, 1991, 1993, 2012; Jones, True & Baumgartner, 1997), that is, the budget distribution trend is abruptly interrupted, which can be positive or negative. From the description of the results, it is possible to affirm that the budgetary distribution in the state public policies is incremental, although producing occasional variations. It is the security, health and education sectors that present greater stability in budget distribution.

Subsequently, an attempt was made to relate the citizens' concerns and their effects on the state government budgetary distribution. It was found that public security and education are the sectors in which this effect is greatest. In view of the second research question, it can be said that the effects of citizen perception on budget distribution are considerable. Thus, the perception of the population is an integral part of the information, which makes up the policy image and guides political decision-making within Brazilian state governments.

Considering the control variables, it appears that the economic situation for public security and health services, and the rural and urban population for education services, influence budget distribution. In the end, the working hypotheses that had been set forth were corroborated.

This study, however, presents itself as an initial provocation for discussions, with theoretical and empirical implications surrounding the budgetary distribution decision of the Brazilian federal entities. Even though the main contribution is the confirmed effects of the population's perception of the state governments' budgetary distribution, it presents some limitations. Firstly, the number of years considered, that is, the sample should be extended to a longer period if there is data that can be collected. For this reason, new studies must be developed to ascertain the facts that raise the explanation level of this proposed model. As a suggestion, the same exercise could be applied to other federal entities, namely the Union and municipalities. The extension to other explanatory vectors of budget distribution should be considered, as Flink (2017) and Li and Feiock (2019) propose.

From another perspective, it is necessary to understand the budget distribution preference based on explanations established by other theories within the political process, as well as in situations of conjunctural crises, besides the economic one, such as environmental and health crises. As Sabatier (2007) points out, these theories complement each other and ought to be used to understand the social phenomenon under analysis from various perspectives. Only then can it be explained in depth and advance the expansion of knowledge to deal with demands, complexities, and uncertainties increasingly present in Public Administration and Finance today.

References

- Abreu, W. M. D., & Gomes, R. C. (2013). O orçamento público brasileiro e a perspectiva emancipatória: existem evidências empíricas que sustentam esta aproximação? *Revista de Administração Pública*, 47(2), 515-540. <https://doi.org/10.1590/S0034-76122013000200011>
- Afonso, J. R. (2016). Orçamento público no Brasil: história e premência de reforma. *Espaço Jurídico: Journal of Law*, 17(1), 9-28. <https://doi.org/10.18593/ejil.v17i1.9555>
- Almeida, L. A., & Gomes, R. C. (2019). Perspectivas teóricas para a análise de políticas públicas: como lidam com a complexidade? *Administração Pública e Gestão Social*, 11(1), 16-27. <http://dx.doi.org/10.21118/apgs.v11i1.1558>
- Andrade, M. D., Rosa, B. C., & Pinto, E. R. G. C. (2018). O accountability do serviço público de saúde e a atuação institucional no estado do Ceará. *Revista Brasileira de Políticas Públicas*, 8(3), 125-144. <http://dx.doi.org/10.5102/rbpp.v8i3.5633>

- Baumgartner, F. R., & Jones, B. D. (1991). Agenda dynamics and policy subsystems. *The Journal of Politics*, 53(4), 1044-1074. <https://doi.org/10.2307/2131866>
- Baumgartner, F. R., & Jones, B. D. (2009). *Agendas and instability in American politics*. University of Chicago Press.
- Baumgartner, F. R., & Jones, B. D. (2012). *Agendas and instability in American politics*. University of Chicago Press.
- Bel, G., & Warner, M. E. (2015). Inter-municipal cooperation and costs: Expectations and evidence. *Public Administration*, 93(1), 52-67. <https://doi.org/10.1111/padm.12104>
- Berry, W. D. (1990). The confusing case of budgetary incrementalism: Too many meanings for a single concept. *The Journal of Politics*, 52(1), 167-196. <https://doi.org/10.2307/2131424>
- Best, H., & Wolf, C. (Eds.). (2014). *The SAGE handbook of regression analysis and causal inference*. Sage.
- Blaeschke, F., & Haug, P. (2018). Does intermunicipal cooperation increase efficiency? A conditional metafrontier approach for the Hessian wastewater sector. *Local Government Studies*, 44(1), 151-171. <https://doi.org/10.1080/03003930.2017.1395741>
- Blaikie, N., & Priest, J. (2019). *Designing social research: The logic of anticipation*. John Wiley & Sons.
- BRASIL. *Sistema Nacional de Informações de Saneamento*. Recuperado em 10 de dezembro, 2017, de <http://www.snis.gov.br/>
- Breunig, C., & Koski, C. (2012). The tortoise or the hare? Incrementalism, punctuations, and their consequences. *Policy Studies Journal*, 40(1), 45-68. <https://doi.org/10.1111/j.1541-0072.2011.00433.x>
- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Cairney, P., & Heikkila, T. (2014). A comparison of theories of the policy process. In: P.A. Sabatier & C. M. Weible (Eds.), *Theories of the policy process*, (pp. 301-327). Westview Press.
- Carvalho, D. I. (2018). Teoria do Equilíbrio Pontuado: uma análise da execução orçamentária no Brasil no período de 1980-2014. *Revista do Serviço Público*, 69(1), 85-110. <https://doi.org/10.21874/rsp.v69i1.1639>
- Capella, A. C. N. (2007). Perspectivas teóricas sobre o processo de formulação de políticas públicas. *Políticas públicas no Brasil*. Rio de Janeiro: Fiocruz, (1), 87-124.
- CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2014: fevereiro 2014/Confederação Nacional da Indústria*. Brasília: CNI, 2014. p.44. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>
- CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2015: janeiro 2015/Confederação Nacional da Indústria*. Brasília: CNI, 2015. p.5. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>
- CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2016: janeiro 2016/Confederação Nacional da Indústria*. Brasília: CNI, 2016. p.6. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>
- CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2017: janeiro 2017/Confederação Nacional da Indústria*. Brasília: CNI, 2017. p.8. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>
- CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2018: janeiro 2018/Confederação Nacional da Indústria*. Brasília: CNI, 2018. p.14. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>

CNI. Pesquisa, CNI-IBOPE. *Retratos da sociedade brasileira: problemas e prioridades do Brasil para 2018*: dezembro 2018/Confederação Nacional da Indústria. Brasília: CNI, 2018. p.17. Recuperado em 10 de maio, 2019, de <http://www.portaldaindustria.com.br/cni/estatisticas/retratos-da-sociedade-brasileira/>

Correia, M. B. C. (2008). A regulação no setor de saneamento: comparação entre França, Inglaterra e Brasil. *Revista do Serviço Público*, 59(3), 353-373. <https://doi.org/10.21874/rsp.v59i3.618>

Denhardt, R. B., & Catlaw, T. J. (2017). *Teorias de administração pública*. Cengage Learning.

Emmendoerfer, M. L., & Silva, L. C. A. (2010). Terceirização e parcerização de serviços em saneamento em Minas Gerais: um estudo teórico-empírico. *Revista Brasileira de Gestão e Desenvolvimento Regional*, 5(2), 139-162.

Epp, D. A., & Baumgartner, F. R. (2017). Complexity, capacity, and budget punctuations. *Policy Studies Journal*, 45(2), 247-264. <https://doi.org/10.1111/psj.12148>

Etzioni, A. (1967). Mixed-scanning: A "third" approach to decision-making. *Public administration review*, 385-392. <https://doi.org/10.2307/973394>

Flink, C. M. (2017). Rethinking punctuated equilibrium theory: A public administration approach to budgetary changes. *Policy Studies Journal*, 45(1), 101-120. <https://doi.org/10.1111/psj.12114>

Geys, B., & Sørensen, R. J. (2016). Revenue scarcity and government outsourcing: Empirical evidence from Norwegian local governments. *Public Administration*, 94(3), 769-788. <https://doi.org/10.1111/padm.12262>

Hochman, G. (2012). *A era do saneamento: as bases da política de saúde pública no Brasil*. Huciteg.

IBGE. *Perfil dos Municípios Brasileiros*. Recuperado em 11 de maio, 2019, de <https://ww2.ibge.gov.br/home/estatistica/economia/perfilmunic/2015/default.shtm>.

IPEA; FBSP. *Atlas da violência*. Brasília: Rio de Janeiro: São Paulo: IPEA, 2019. Recuperado em 20 de junho, 2019, de http://www.ipea.gov.br/portal/images/stories/PDFs/relatorio_institucional/190605_atlas_da_violencia_2019.pdf

John, P., & Margetts, H. (2003). Policy punctuations in the UK: Fluctuations and equilibria in central government expenditure since 1951. *Public Administration*, 81(3), 411-432. <https://doi.org/10.1111/1467-9299.00354>

Jones, B. D. (2003). Bounded rationality and political science: Lessons from public administration and public policy. *Journal of Public Administration Research and Theory*, 13(4), 395-412. <https://doi.org/10.1093/jopart/mug028>

Jones, B. D., & Baumgartner, F. R. (2005). A model of choice for public policy. *Journal of Public Administration Research and Theory*, 15(3), 325-351. <https://doi.org/10.1093/jopart/mui018>

Jones, B. D., & Baumgartner, F. R. (2012). From there to here: Punctuated equilibrium to the general punctuation thesis to a theory of government information processing. *Policy Studies Journal*, 40(1), 1-20. <https://doi.org/10.1111/j.1541-0072.2011.00431.x>

Jones, B. D., Baumgartner, F. R., & True, J. L. (1998). Policy punctuations: US budget authority, 1947-1995. *The Journal of Politics*, 60(1), 1-33. <https://doi.org/10.2307/2647999>

Jones, B. D., Baumgartner, F. R., Breunig, C., Wlezien, C., Soroka, S., Foucault, M., & Mortensen, P. B. (2009). A general empirical law of public budgets: A comparative analysis. *American Journal of Political Science*, 53(4), 855-873. <https://doi.org/10.1111/j.1540-5907.2009.00405.x>

Jones, B. D., Sulkin, T., & Larsen, H. A. (2003). Policy punctuations in American political institutions. *American Political Science Review*, 97(1), 151-169. <https://doi.org/10.1017/S0003055403000583>

Jones, B. D., True, J. L., & Baumgartner, F. R. (1997). Does incrementalism stem from political consensus or from institutional gridlock? *American Journal of Political Science*, 1319-1339. <https://doi.org/10.2307/2960491>

- Jordan, M. M. (2003). Punctuations and agendas: A new look at local government budget expenditures. *Journal of Policy Analysis and Management*, 22(3), 345-360. <https://doi.org/10.1002/pam.10136>
- Klok, P. J., Denters, B., Boogers, M., & Sanders, M. (2018). Intermunicipal cooperation in the Netherlands: The costs and the effectiveness of polycentric regional governance. *Public Administration Review*, 78(4), 527-536. <https://doi.org/10.1111/puar.12931>
- Kuhlmann, J., & van der Heijden, J. (2018). What Is Known about Punctuated Equilibrium Theory? And What Does That Tell Us about the Construction, Validation, and Replication of Knowledge in the Policy Sciences? *Review of Policy Research*, 35(2), 326-347. <https://doi.org/10.1111/ropr.12283>
- Lamba, J. R., Silvestre, H. C., & Correa, A.M. (2019) As teorias do processo político na avaliação das políticas públicas brasileiras: aplicações e agenda de pesquisa. *Revista Brasileira de Informação Bibliográfica em Ciências Sociais (BIB)*, 88(1), 1-46. <https://doi.org/10.17666/bib8804/2019>
- Li, T., & Feiock, R. C. (2019). Explaining State Budget Punctuations: Policy Transparency, Political Institutions, and Electoral Incentives. *Policy Studies Journal*, 48(4), 926-952. <https://doi.org/10.1111/psj.12344>
- Lima, R. S. D., Bueno, S., & Mingardi, G. (2016). Estado, polícias e segurança pública no Brasil. *Revista Direito GV*, 12(1), 49-85. <http://dx.doi.org/10.1590/2317-6172201603>
- Lindblom, C. E. (1959). The science of "muddling through". *Public Administration Review*, 79-88. <http://dx.doi.org/10.2307/973677>
- Lindblom, C. E. (1979). Still muddling, not yet through. *Public Administration Review*, 39(6), 517-526. <http://dx.doi.org/10.2307/976178>
- McCullagh, P. (2018). *Generalized linear models*. Routledge.
- Melo, G. L. S., & Passos, G. O. (2018). Auditoria operacional do TCU no ensino médio: federalismo de cooperação? *Revista do Serviço Público*, 69(3), 559-584. <https://doi.org/10.21874/rsp.v69i3.2738>
- Mortensen, P. B. (2005). Policy punctuations in Danish local budgeting. *Public Administration*, 83(4), 931-950. <https://doi.org/10.1111/j.0033-3298.2005.00484.x>
- Mortensen, P. B. (2009). Political attention and public spending in the United States. *Policy Studies Journal*, 37(3), 435-455. <https://doi.org/10.1111/j.1541-0072.2009.00322.x>
- Osborne, S. P. (2010). *The new public governance: emerging perspective on theory and practice of public governance*. Routledge.
- Padgett, J. F. (1980). Bounded rationality in budgetary research. *American Political Science Review*, 74(2), 354-372. <https://doi.org/10.2307/1960632>
- Park, A. Y., & Sapotichne, J. (2019). Punctuated Equilibrium and Bureaucratic Autonomy in American City Governments. *Policy Studies Journal*. <https://doi.org/10.1111/psj.12333>
- Ribeiro, C. P., Mendes, W. A., Emmendoerfer, M. L., & Abrantes, L. A. (2019). Transferências constitucionais no Brasil: um estudo bibliográfico sobre o FPM-fundo de participação dos municípios. *Revista Contemporânea de Contabilidade*, 16(39), 44-65. <https://doi.org/10.5007/2175-8069.2019v16n39p44>
- Riker, W. H. (1990). *Political Science and rational choice: perspectives on positive political economy*. Cambridge University Press.
- Robinson, S. (2006). Punctuated equilibrium models in organizational decision making. In: G. Morcol, (Eds.), *Handbook of decision making* (pp. 133-149). Westview Press.
- Sabatier, P. A. (2007). The need for better theories. In: P. A. Sabatier (Ed.), *Theory of the policy process* (pp. 3-17). Westview Press.
- Sagastume, M. H. C. G., de Brito, R. L., Delgado, R. M. L., & de Moraes, B. P. (2017). Orçamento impositivo: a experiência da saúde. *Cadernos Gestão Pública e Cidadania*, 22(72), 254-277. <http://dx.doi.org/10.12660/cgpc.v22n72.64009>

Silvestre, H. C., & Araújo, J. F. F. E. D. (2015). Teoria do equilíbrio pontuado nas políticas públicas Brasileiras: o caso do Ceara. *Revista de Administração Contemporânea*, 19(6), 696-711. <http://dx.doi.org/10.1590/1982-7849rac20151721>

Silvestre, H. C., Marques, R. C., Dollery, B., & Correia, A. M. (2020). Is cooperation cost reducing? An analysis of public–public partnerships and inter-municipal cooperation in Brazilian local government. *Local Government Studies*, 46(1), 68-90. <https://doi.org/10.1080/03003930.2019.1615462>.

Silvestre, H. C., Marques, R., C., Dollery, B., & Moraes, A. C. (2019). Shared services in Brazilian local government: Urban development in small counties. *Public Administration*, 97(3), 686-702. <https://doi.org/10.1111/padm.12593>

Simon, H. A. (1957). *Models of man: social and rational; mathematical essays on rational human behavior in society setting*. Wiley.

Simon, H. A. (1982). *Model of bounded rationality*. MIT Press.

Sousa, F. H. (2008). Os efeitos da (des) vinculação dos recursos da União e a flexibilidade orçamentária. *Revista Contemporânea de Contabilidade*, 5(9), 29-48. <https://doi.org/10.5007/2175-8069.2008v5n9p29>

Souza, C. (2003). Federalismo e conflitos distributivos: disputa dos estados por recursos orçamentários federais. *Dados*, 46(2), 345-384. <http://dx.doi.org/10.1590/S0011-52582003000200006>

STN. *Finanças do Brasil. Sistema de Informações Contábeis e Fiscais do Setor Público Brasileiro [2013-2018]*. Recuperado em 20 de abril, 2019, de https://siconfi.tesouro.gov.br/siconfi/pages/public/consulta_finbra/finbra_list.jsf.

Tucker, H. J. (1982). Incremental budgeting: Myth or model? *Western Political Quarterly*, 35(3), 327-338. <https://doi.org/10.2307/447549>

Wildavsky, A. B. (1964). *Politics of the budgetary process*. Little brown.

NOTES

ACKNOWLEDGMENT

The authors thank the National Council for Scientific and Technological Development of Brazil (CNPq), the Research Support Foundation of the State of Minas Gerais (FAPEMIG), the Cearense Foundation for Support for Scientific and Technological Development (FUNCAP), and the Coordination for the Improvement of Higher Education Personnel (CAPES), Ministry of Education, Brazil.

AUTHORITY CONTRIBUTION

Conception and elaboration of the manuscript: H.M.C. Silvestre, G. J. G. Sá, M. L. Emmendoerfer

Data collection: H.M.C. Silvestre, G. J. G. Sá

Data analysis: H.M.C. Silvestre, G. J. G. Sá, M. L. Emmendoerfer

Discussion of results: H.M.C. Silvestre, G. J. G. Sá, M. L. Emmendoerfer

Review and approval: H.M.C. , M. L. Emmendoerfer

SEARCH DATA SET

The entire data set that supports the results of this study was published in the article itself.

FINANCING

This work was carried out with support Coordination for the Improvement of Higher Education Personnel - Brazil (CAPES) - Financing Code 001.

CONSENT TO USE IMAGE

Not applicable.

APPROVAL OF THE RESEARCH ETHICS COMMITTEE

Not applicable.

CONFLICT OF INTERESTS

Not applicable.

USE LICENSE

Copyrights for articles published in this journal are the author's, with first publication rights for the journal. Due to appearing in this Public Access Magazine, the articles are free to use, with their own attributions, in educational, professional and public management applications. The magazine adopted the [Creative Commons Attribution 4.0 International license - CC BY NC ND](#). This license allows accessing, downloading (downloading), copying, printing, sharing, reusing and distributing the articles provided that the source is acknowledged, attributing the due authorship credits. In such cases, no permission is required from the authors or editors. Authors are authorized to assume additional contracts separately, for non-exclusive distribution of the version of the work published in this journal (eg, publishing in institutional repository or a book chapter).

PUBLISHER

Federal University of Santa Catarina. Accounting Sciences Course and Postgraduate Program in Accounting. Publication on the [UFSC Journal Portal](#). The ideas expressed in this article are the responsibility of their authors, and do not necessarily represent the opinion of the editors or the university.

EDITORS

Carlos Eduardo Facin Lavarda and Suliani Rover

HISTORIC

Received on: 11/05/2020 - Peer reviewed on: 29/09/2020 - Reformulated on: 30/10/2020 - Recommended for publication on: 21/01/2021 - Published on: 22/03/2021.

This page intentionally left blank

