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Explanatory Factors of Earnings Management through Outstanding Payables in Brazilian Municipalities

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Abstract

Objective: To analyze how political, social, fiscal-financial, and economic factors, as well as managerial characteristics, are associated with discretionary budgetary accruals measured through Restos a Pagar (Prior-year Payables) in Brazilian municipalities.

Method: A budget model was used to measure earnings management (EM) via Restos a Pagar (Prior-year Payables), applied to 27,688 observations from Brazilian municipalities (2015–2023), with estimation using a dynamic panel with one- and two-year lags. A recognized limitation is that Restos a Pagar (Prior-year Payables) captures both operational constraints and deliberate discretionary choices without a clear distinction between the two.

Results: The results provided evidence of an association between Restos a Pagar (Prior-year Payables) and EM, with marginal indications of greater discretionary accumulation in election and pre-election years. Health and education expenditures were found to be negatively associated with EM, primarily due to mandatory constitutional requirements (minimum spending thresholds of 15% and 25%) and, to a lesser extent, the political visibility of these expenditures. Personnel expenditures showed a stronger, more robust positive relationship. ICMS transfers and lagged GDP showed a marginal positive association. The presence of female mayors was negatively associated with the EM, an exploratory finding, given that part of the effect may be mediated by municipalities' structural characteristics.

Contributions: This study broadens our understanding of municipal performance management by incorporating political, fiscal, and economic factors, as well as managerial characteristics, thereby contributing to the debate on the quality of government accounting information in Brazil.

Keywords: Performance Management; Restos a Pagar (Prior-year Payables); Municipalities; Budget.

How to Cite:

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Introduction

Accounting is fundamental in both the private and public sectors, where it plays a strategic role in transparency and accountability regarding resource management (Okere et al., 2018). With the adoption of IPSAS, the accrual basis of accounting was adopted, improving the quality and timeliness of accounting information (Christiaens et al., 2015). However, this model also allows for greater discretion, enabling earnings management (EM) (Martinez, 2008).

EM occurs when managers deliberately adjust accounting data to achieve fiscal targets, avoid penalties, or influence public perception, especially in election years (Healy and Wahlen, 1999; Araújo et al., 2023). This practice tends to be more frequent in contexts with weak institutions and a low culture of transparency (Eigenstuhler et al., 2023).

Among the mechanisms of EM in the public sector, outstanding payments stand out. These are expenses committed but not paid by the end of the fiscal year (Law 4.320/1964). Although legally permitted, these amounts can be used to defer expenses and manipulate financial results, thereby projecting a false image of financial balance (Alves & Pederiva, 2016). Thus, outstanding payments constitute a relevant tool for analyzing EM in municipalities.

The literature on EM in the public sector has evolved. Initially, studies focused on the extent of the practice and its impacts on local government (Pinnuck and Potter, 2009). Currently, there is a growing interest in identifying the explanatory factors of EM, considering political, fiscal, and social variables (Ferreira, 2023; Costa, Leão, 2021; Araújo et al., 2023). Among the theories underpinning these analyses, Public Choice Theory stands out, suggesting that managers make decisions aiming at self-benefit (Buchanan, 2003), alongside Political Business Cycle Theory, which indicates that fiscal decisions can be influenced by electoral interests (Downs, 1957).

Brazilian municipalities, the focus of this study, exhibit significant heterogeneity in revenue collection, governance, and administrative capacity, all of which influence EM practices. Municipalities with greater financial autonomy tend to show less dependence on discretionary practices, whereas those heavily reliant on intergovernmental transfers may be more prone to using mechanisms such as outstanding payments to artificially adjust their financial results (Sousa and Simon, 2023). In addition to economic factors and political factors, managers' personal characteristics also influence EM. Electoral behavior can incentivize mayors to adopt accounting practices that artificially improve the perception of their administration (Ferreira, 2023). Likewise, low accounting standardization and the local manager's proximity to voters create incentives to exercise discretion in financial reporting.

The lack of transparency generated by EM can have negative effects, including reduced quality of accounting information, reduced accountability, and damaged fiscal management (Ott et al., 2019). Given this context, the following research problem arises: What factors can explain Earnings Management in Brazilian municipalities? Objectively, this study aims to analyze the relationship between political, social, fiscal-financial, economic, and managers' personal factors and budgetary discretionary accruals through outstanding payments in Brazilian municipal governments. In turn, the specific objectives are formulated through hypotheses.

This study seeks to fill a gap in the literature on earnings management (EM) in the public sector at the municipal level. Previous research has addressed variables related to EM, generally emphasizing political factors (Costa & Leão, 2021; Ferreira, 2023). At the municipal level, the focus has been on the means used by managers to manage results, including debt as a proxy for EM (Ferreira, 2023), the influence of government size on discretionary practices (Prado Neto et al., 2021), and the relationship between EM and electoral cycles (Donatella, 2020; Costa; Leão, 2021; Araújo et al., 2023).

However, it is questioned whether isolated variables, such as the electoral cycle and debt, are sufficient to explain EM. Thus, this study adopts a comprehensive model that considers political, social, fiscal, economic, and financial factors, as well as managerial characteristics, thereby building on Araújo et al. (2023).

The relevance of this study is reinforced by the context of the Brazilian public sector, which is characterized by multi-accounting regimes that favor discretion (Raupp, 2016). The lack of accounting standardization in local governments, combined with municipalities' diverse financial capacities, can create accounting opacity, making a broader, more integrated approach essential for understanding the explanatory factors of EM.

2 Theoretical Framework

In the public sector, earnings management (EM) seeks to enhance the administration's image and reputation to achieve personal gains or benefits for a specific group. Despite legal mechanisms such as the Fiscal Responsibility Law (Supplementary Law 101/2000), the Transparency Law (Supplementary Law 131/2009), and the Access to Information Law (Law 12,527/2011), EM persists in public entities (Araújo et al., 2023).

In practice, management through expenses is the most recurrent mechanism, especially through outstanding payments, which are expenses committed but not paid within the fiscal year. Although the LOA (Annual Budget Law) mandates the annual execution of the budget and Law 4,320/1964 allows for exceptions through this instrument, its recurrent use may indicate flaws in the budgetary environment (Flynn; Pessoa, 2014). Additionally, managers may cancel outstanding payments even when the creditor retains the right to receive payment, thereby reducing liabilities and creating greater budgetary flexibility (Melo et al., 2014). Managers may also anticipate or defer cash flows to temporarily improve financial indicators, though this practice is less common.

2.1 Explanatory Elements of Earnings Management through Budgetary Accruals in the Public Sector

Earnings management in the public sector is a multidimensional phenomenon grounded in three complementary analytical layers. At its foundation, Public Choice Theory (Buchanan and Tullock, 1962) posits that public agents are utility maximizers whose budgetary decisions are not exempt from rational calculation of self-interest. From this perspective, Political Business Cycle Theory (Downs, 1957) operationalizes how this interest manifests over time, concentrating opportunistic behavior within electoral windows. At the individual level, Upper Echelons Theory (Hambrick and Mason, 1984) complements the model by demonstrating that managers' characteristics moderate the intensity of this behavior. Fiscal, economic, and transfer-dependence factors, in turn, represent the institutional conditions that expand or restrict the available discretionary leeway. The following hypotheses are derived from this theoretical architecture.

The proximity between the municipality and society facilitates a direct relationship between citizens and local politicians. According to Ingram and Copeland (1981), citizens evaluate the disclosed information to decide whom to vote for. This factor, combined with the political manager's discretion, can create leeway for earnings management (EM).

The literature indicates that, to increase their chances of being reelected or the ruling party's probability of retaining office, politicians engage in pre-electoral manipulation of economic performance indicators to alter voters' perceptions of their efficiency in municipal administration (Buchanan and Tullock, 1962). Based on Simon's bounded rationality (1957), voters ultimately make their voting decisions using limited information, particularly the most recent data (Shi & Svensson, 2006).

Donatella (2020) investigated whether political competition drives earnings management (EM) in Swedish municipalities. He reported that during electoral periods, accounting reports—especially financial reports—are presented to voters in a more positive light. Costa and Leão (2021), examining Brazilian municipalities from 2013 to 2016, observed the practice of EM by local managers during pre-electoral and electoral periods, when investment spending is intensified for political gain.

These movements in electoral or pre-electoral years can be explained by the Political Business Cycle Theory, which holds that the economic and political decisions of government officials are influenced by their electoral interests (Downs, 1957). Given this context, the following hypotheses are proposed:

H1: Earnings management (EM) through budgetary discretionary accruals is influenced by municipal electoral cycles.

H1a: Earnings management (EM) through budgetary discretionary accruals is positively influenced by municipal pre-electoral years.

H1b: Earnings management (EM) through budgetary discretionary accruals is negatively influenced by the municipal election year.

H1c: Earnings management (EM) through budgetary discretionary accruals is positively influenced during the first electoral term.

In the electoral context, the Superior Electoral Court (TSE) reported that there were 29 political parties in Brazil in 2024. Compared to other countries, such as the United States of America, Brazil has a high number of political parties. This fact also points to ideological heterogeneity, suggesting that public finances and accounting information may be treated differently. Kuhl and Murcia (2017) found that the quality of accounting information varies depending on whether public managers belong to right- or left-wing parties. Given this context, the following hypothesis is proposed:

H2: Earnings management (EM) through budgetary discretionary accruals is influenced by the party ideology of municipal managers.

Beyond the electoral context, Public Choice Theory predicts that managers strategically select the functions in which to exercise discretion, prioritizing areas with lower visibility or control.

For a municipality to achieve sustainable development, its managers must know how to allocate resources efficiently and adopt accountability practices (Baldissera et al., 2020). Becker (1964) highlights that investments in health and education are fundamental to improving public services and strengthening human capital.

However, many local entities, when unable to advance their socioeconomic indicators, resort to discretionary practices to demonstrate compliance with their duties. Studies indicate that administrations with lower information distortion tend to achieve higher development (Silva and Bruni, 2019). Braga and Bezerra Filho (2015), when analyzing municipalities in Pernambuco in 2014, found that the least developed ones exhibited greater fragility in their accounting information.

Mattei et al. (2018) found that states that manage their resources better achieve higher levels of development. Barro (1996) reinforces that investments in education and health promote long-term growth by strengthening human capital and productivity. In contrast, authors such as Shleifer and Vishny (1993) and Laurinho et al. (2017) warn that discretionary practices compromise the efficient allocation of resources and local development.

Lanis and Bueno (2020), analyzing municipalities in Rondônia (2011–2015), observed that greater social development is associated with more balanced budgets. The literature, therefore, highlights that development is linked to managerial accountability, efficient resource allocation, and the presence of qualified professionals. Even so, discretionary practices can influence accounting information to demonstrate effort in promoting development. This research uses expenditures on education and health as indicators of development, given their relationship with these practices (Caldas et al., 2016). Given the above, the following hypotheses are formulated:

H3a: Earnings management (EM) through budgetary discretionary accruals is negatively influenced by expenditures on education in municipalities.

H3b: Earnings management (EM) through budgetary discretionary accruals is negatively influenced by expenditures on health in municipalities.

Within this logic of maximization, personnel expenditures are a privileged instrument of discretion, as they combine high political visibility with low immediate technical scrutiny. The reasoning is that salaries, including the mayor's, vary from municipality to municipality because the Federal Constitution of 1988 allows compensation to be determined by the local City Council.

Although compensation is more frequently studied in the private sector, this study considers this aspect relevant, given that the mayor can increase personnel expenditures—whether through political appointments or permanent civil service positions—to gain more leeway for discretionary actions. Liu and Mikesell (2014) confirmed this notion by demonstrating that expenditures on wages and administrative benefits tend to be higher in governments with greater discretion. Thus, the following hypothesis is proposed:

H4: Earnings management (EM) through budgetary discretionary accruals is positively influenced by personnel expenditures in municipalities.

Economic and fiscal conditions, within the adopted theoretical framework, serve as contextual variables that expand or restrict the available leeway for the opportunistic behavior predicted by Public Choice Theory.

In periods of financial and humanitarian crises, productive capacity tends to be affected, which impacts GDP and, consequently, the public sector, resulting in decreased revenue collection and increased expenditures. These factors, although they do not have an immediate effect, become detrimental in the long run (Silva et al., 2021). Afonso and Jalles (2014) found evidence of a strong long-term causal relationship between GDP and government expenditures. Silva and Scatolin (2012) stated that a drop in revenues drives managers to adopt discretionary practices, such as altering accounting data and anticipating revenues. Lima et al. (2024) highlighted that economic crises increase mistrust, encouraging discretionary practices to maintain credibility. Given the above, the following hypothesis was formulated:

H5: Earnings management (EM) through budgetary discretionary accruals is positively influenced by municipal GDP.

Fiscal responsibility serves as an external control mechanism that, within the logic of Public Choice Theory, either reduces the available leeway or intensifies the motivation to use EM as a strategy to appear compliant. Financing occurs through municipalities' own revenues, and the greater the revenue volume, the greater the autonomy (Afonso; Araújo, 2000). However, not all entities can maintain services without assistance, requiring intergovernmental transfers to correct federative imbalances and disparities among local governments (De Paiva Ribeiro et al., 2019). In this study, transfers from the Municipal Participation Fund (FPM) and the State Goods and Services Tax (ICMS) were analyzed.

However, although transfers fulfill a redistributive function, the literature points out that their abundance can produce the opposite effect of what was intended. Hines and Thaler (1995) noted that local governments treat their own resources differently from those originating from transfers. This phenomenon can generate revenue complacency, with municipalities failing to stimulate their own tax collection (Suzart et al., 2018). This complacency may be related to discretionary practices, as managers may use these transfers to justify further disbursements (Fisman and Gatti, 2002).

Research indicates that municipalities dependent on transfers are more likely to engage in discretionary practices, with managers seeking ways to manipulate information. Campos et al. (2018) observed an increase in these practices in more financially vulnerable municipalities, with impacts on finances and on public managers' behavior.

H6: Earnings management (EM) through budgetary discretionary accruals is positively influenced by dependency on intergovernmental transfers in municipalities.

Transparency in fiscal management and fiscal responsibility in municipalities are directly related to the use of earnings management (EM). As the primary government entity responsible for providing services to society, the municipality must guarantee responsible and transparent fiscal management. The Fiscal Responsibility Law (LRF), enacted in 2000, aimed to balance public finances and promote disciplined fiscal management to prevent excessive indebtedness in local governments (Leite, 2005). However, following the implementation of the LRF, instances of non-compliance with fiscal rules occurred, resulting in low fiscal transparency (Piccoli and Arpini, 2018).

Fiscal transparency is essential for building a solid economic policy and for increasing public trust in government actions (Zuccolotto; Teixeira, 2014). However, many local governments still exhibit low transparency, which can lead to earnings management to demonstrate financial balance and to manipulate information to avoid penalties. Studies such as those by Pinho and Sacramento (2004) and Cruz et al. (2009) indicate that many municipalities present low levels of fiscal transparency.

Furthermore, research by Benito and Bastida (2009) and Ott et al. (2019) has shown that low transparency is associated with fiscal imbalance. Given this context, the relationship between earnings management and fiscal responsibility warrants investigation, as managers may utilize these practices to demonstrate fiscal austerity. Accordingly, the following hypothesis is suggested:

H7: Earnings management (EM) through budgetary discretionary accruals is negatively influenced by fiscal responsibility management in municipalities.

Upper Echelons Theory (Hambrick and Mason, 1984) introduces a third layer to the model: given that the opportunistic behavior predicted by Public Choice Theory is mediated by individuals, characteristics such as the manager's gender, age, and education moderate the intensity with which this behavior manifests.

Public managers are individuals with personal characteristics that influence their decisions in commanding the municipality. Factors such as gender, age, and income can affect earnings management (Anessi-Pessina; Sicilia, 2020), according to Upper Echelons Theory (Hambrick; Mason, 1984). Such effects arise because managers, when faced with complex decisions, tend to simplify tasks in accordance with their values and individual characteristics (Hambrick and Mason, 1984; Plöckinger et al., 2016).

In Brazil, managerial diversity is substantial, as revealed by data from the Superior Electoral Court (TSE) from 2020, which indicates an average age of 49 among mayors. Age is often used as a proxy for experience, and studies indicate that older, more experienced managers tend to make more prudent decisions, including discretionary choices (Hambrick & Mason, 1984). Donatella and Tagesson (2021) confirmed that older managers are more likely to adopt discretionary choices.

Regarding gender, research suggests that women are less inclined toward discretionary practices than men. Studies by Anessi-Pessina and Sicilia (2020) show that managers' individual characteristics influence accounting manipulation, with more conscientious female managers and those with a background in business administration being less prone to revenue distortion. On the other hand, some research, such as that by Balaguer-Coll and Ivanova-Toneva (2019), indicated that women in leadership positions may incur more debt in certain contexts. Accordingly, the following hypotheses are proposed:

H8a: Earnings management (EM) through budgetary discretionary accruals is influenced by the gender of the municipal public manager.

H8b: Earnings management (EM) through budgetary discretionary accruals is influenced by the age of the municipal public manager.

Regarding the characteristics of public managers, another factor that may shed light on earnings management practices is educational level. In the context of education, Tingjin

(2012) showed that in Chinese municipalities, officials with higher human capital advanced more quickly than those without, increasing their chances of becoming local leaders in larger cities. Malheiro (2018) found that local governments with a manager holding a higher education degree were more effective.

Furthermore, Lima et al. (2024) found that managers with a specialization, master's, or doctoral degree are more likely to meet primary balance targets than those without such education.

Thus, the importance of public managers' educational level is underscored. Given this discussion, which remains inconclusive in the literature, the following hypothesis is added:

H9: Earnings management (EM) through budgetary discretionary accruals is influenced by the education level of the municipal public manager.

Given the above, this research seeks to understand EM through three interdependent axes: the political-temporal axis, which encompasses electoral cycles (H1a, H1b, H1c) and party ideology (H2); the institutional-fiscal axis, comprising expenditures on education and health (H3a, H3b), personnel expenditures (H4), municipal GDP (H5), dependency on intergovernmental transfers (H6), and fiscal responsibility (H7); and the individual axis, represented by the manager's gender, age (H8a, H8b), and education level (H9). The subjectivity inherent in budgetary regulations constitutes the space where these dimensions converge and materialize into discretionary practices.

3 Methodological Procedures

3.1 Study Data and Sample

The baseline for this research sample comprised 5,568 Brazilian local governments. It is worth mentioning that Brasília and Fernando de Noronha are not considered municipalities due to their unique administrative structures. Several arguments justified the selection of this sample, namely: i) Brazil possesses a vast number of municipal governments, which can lead to heterogeneity in the behavior of accounting information. ii) Due to the large number of cities, each has a different economic, financial, and social capacity, which may be reflected in the accounting information. iii) Many municipalities face difficulties in standardizing their accounting in accordance with International Public Sector Accounting Standards (IPSAS). This fact may set a precedent for discretionary practices, as in the absence of standardization, accounting subjectivity may emerge.

Regarding the timeframe, this research considered 9 years from 2015 to 2023, although some variables had varying temporal availability. This period is justified because during these years Brazil experienced events that could have affected local governments. For instance, the country faced a political crisis, a truck drivers' strike, major sporting events such as the World Cup and the Olympics, the COVID-19 health crisis, and fluctuations in remittances to municipalities, among others. These events may have led to financial and welfare consequences within local government structures, creating a favorable environment for EM practices.

3.2 Research Operationalization

3.2.1 Variables and modeling

The dependent variable in this research is budgetary discretionary accruals, measured as Restos a Pagar (Prior-year Payables), which serves as a proxy for earnings management. To measure it, the model proposed by Araújo et al. (2023) was used, as it provides an adaptation that better reflects Brazilian reality.

It is recognized that Restos a Pagar (Prior-year Payables) possess a dual nature: they may reflect operational limitations in budget execution (Flynn; Pessoa, 2014) and/or deliberate discretionary choices by managers (Araújo et al., 2023). This ambiguity is inherent to earnings management proxies in the private sector as well, such as the discretionary accruals models of Jones (1991) and Dechow et al. (1995).

The selection of Restos a Pagar (Prior-year Payables) as a proxy is justified by three reasons: (i) they are the primary mechanism through which expenditures are intertemporally shifted within the budgetary regime without impediment (Law 4,320/1964); (ii) previous studies have validated their use as an instrument of discretion within the Brazilian municipal context (Costa; Leão, 2021; Araújo et al., 2023); and (iii) by isolating the discretionary component via the residual of the model in Equation 5, structural factor bias is mitigated, which brings the proxy closer to signaling intentional manipulation.

Nonetheless, it is acknowledged as a limitation of this proxy that Restos a Pagar (Prior-year Payables) do not, in all cases, allow for a clear distinction between the local government's incapacity to execute and the public manager's strategic choice.

The choice of this model is justified because it is a statistical framework used in the Brazilian public sector and also operates with budgetary variables.

For this modeling, it is initially necessary to identify the local entity's budgetary balance. Formally, this balance is determined by offsetting revenues and expenditures. Due to the principle of annuality inherent in public budgeting, revenues and expenditures must be estimated and realized within a single fiscal year. Thus, the local budget can be presented by Equation 1:

$$RO_{i,t}=RA_{i,t}-DE_{i,t} \quad (1)$$

Where: $RO_{i,t}$ represents the budgetary balance of the local entity; $RA_{i,t}$ is the total revenue earned, and $DE_{i,t}$ refers to the committed expenditures.

However, revenues are recognized under a modified accrual basis in the country, where the cash basis remains evident. Consequently, earnings management through revenues is unlikely to occur, given the absence of subjectivity. Therefore, expenditures can become a vehicle for EM. The reason lies in legislation, specifically Law 4,320/1964, which allows committed (recognized) but unexecuted (unpaid) expenditures to be carried over from one year to the next as Restos a Pagar (Prior-year Payables). Such a possibility may generate accruals, since expenditures are recorded without actual payment. Accordingly, Equation 2 presents the local entity's expenditures.

$$DE_{i,t}=DEP_{i,t}- RP_{i,t} \quad (2)$$

Where: $DE_{i,t}$ represents the committed expenditures; $DEP_{i,t}$ represents the paid expenditures, and $RP_{i,t}$ refers to the Restos a Pagar (Prior-year Payables) inscribed for future periods.

The literature indicates that accruals should be divided into non-discretionary accruals (the value inherent to the financial statements) and discretionary accruals (the managed value). To achieve this, the present model separates the accruals in Equation 3:

$$TOA_{i,t}=NOA_{i,t} -DOA_{i,t} \quad (3)$$

Where: $TOA_{i,t}$ corresponds to total budgetary accruals; $NOA_{i,t}$ represents non-discretionary accruals values, and $DOA_{i,t}$ relates to discretionary accruals values.

Expenditures carried over from one year to the next are referred to as Restos a Pagar (Prior-year Payables). Legislation does not prohibit the re-inscription of Restos a Pagar (Prior-year Payables) over the years. This permission can serve as a pathway for local managers to engage in earnings management, thereby deferring expenditures and keeping resources available. Another factor that may contribute to EM practices is that delaying these expenditures can convey a superficial image of efficiency, since resources appear to be "left over." These intertemporal shifts in expenditures from one year to the next can indicate budgetary accruals. Equation 4 presents the estimation of budgetary accruals through Restos a Pagar (Prior-year Payables):

$$TOA_{it} = \left[\frac{RP_{it}^{t+1}-(PagRP_{it}^{t-1}+CanRP_{it}^{t-1})}{DespTot_{it}}\right] \quad (4)$$

Where:

TOA_{it} rrepresents total budgetary accruals; RP_{it}, symbolizes the Restos a Pagar (Prior-year Payables) calculated at the end of period t, which will be inscribed in period t+1; $PagRP_{it}$ corresponds to the payment of Restos a Pagar (Prior-year Payables) made in period t by local government i; $CanRP_{it}$ is the cancellation of Restos a Pagar (Prior-year Payables) executed in period t by local government i, and $DespTot_{it}$ refers to the total forecasted expenditure of local government i in period t.

After calculating the total accruals, it is necessary to operationalize Equation 5 to measure budgetary discretionary accruals through Restos a Pagar (Prior-year Payables):

$$TOA_{i,t}=a+\beta_1\Delta Dcap_{i,t}+\beta_2 RecProp_{i,t}+\beta_3 DAR_{i,t}+\beta_4\Delta RCORR_{i,t}+ \beta_5 TO_{i,t}+\beta_6 RPANT_{i,t}+ \varepsilon_{i,t} \quad (5)$$

Where:

TOAit corresponds to the total budgetary accruals of municipality i in period t, obtained through Equation 4 and weighted by the total budget in period t; ΔDCapit is the change in capital expenditures of municipality i from period t-1 to period t, weighted by the budget size of period t; RecPropit is the revenue collection performance of own resources, obtained by the ratio of collected tax revenue to planned tax revenue of municipality i in period t; DARit, is the total revenue collection performance relative to the planned revenue of municipality i in period t; ΔRCorit is the change in the net current revenue of municipality i from period t-1 to period t, weighted by the budget size of period t; TOit is the budget size, obtained by the natural logarithm of the total committed expenditures of municipality i in period t; and RPANTit is the natural logarithm of the total Restos a Pagar (Prior-year Payables) (both processed and unprocessed accounts payable) originating from period t-1.

The error term of this regression will be considered the proxy for earnings management—specifically, the budgetary discretionary accruals through Restos a Pagar (Prior-year Payables). Values systematically different from zero indicate the presence of budgetary EM. With the variables defined, the model to be operationalized, using dynamic panel data regression via Stata, is the following:

$$GR_{i,t} = a_i+\beta_1\ CE_{i,t} + \beta_2\ APE_{i,t}+\beta_3\ AE_{i,t}+\beta_4\ PM_{i,t}+ \beta_5 ID_{i,t}+\beta_6\ IE_{i,t}+\beta_7\ D_{i,t}+\beta_8\ DS_{i,t}+ \beta_9 DP_{i,t}+ \beta_{10} PIB_{i,t}+ \beta_{11} TFPM_{i,t}+ \beta_{12} TICMS_{i,t}+\beta_{13} IFGF_{i,t}+\beta_{14} GGN+\beta_{15} IGP+\beta_{16} EG_{i,t}+\varepsilon_{i,t} \quad (6)$$

Regarding the operationalization procedures, a few additional considerations must be presented. First, the sample definition is highlighted. The data, as shown in Table 1, were structured into three distinct models: the first included all available observations, regardless of missing information; the second excluded the outliers identified in the database; and the third corresponded to a balanced panel, consisting only of municipalities that presented all required information throughout the analyzed period.

Table 1 – Operationalization of the Models

Variables	Model 1 (Full)		Model 2 (W/o Outliers)		Model 3 (Balanced)	
	Coefficient	P>|t|	Coefficient	P>|t|	Coefficient	P>|t|
Constant	0,55660	0,000 ***	0,36187	0,000 ***	0,55660	0,000 ***
Δ DespCap	- 0,00002	0,567	- 4,63e-06	0,966	0,00002	0,567
RecProp	0,00011	0,735	0,00058	0,739	- 0,00011	0,735
DAR	- 0,00955	0,000 ***	- 0,01980	0,001 ***	- 0,00955	0,000 ***
Δ RecCorr	0,00010	0,000 ***	0,00028	0,000 ***	0,00010	0,000 ***
TO	- 0,03950	0,000 ***	- 0,02490	0,000 ***	- 0,03950	0,000 ***
RPant	0,00980	0,000 ***	0,00516	0,000 ***	0,00980	0,000 ***
Chow Test	2,71	0,000	2,16	0,000	2,71	0,000
Hausman Test	197,85	0,000	74,97	0,000	197,85	0,000
Breusch-Pagan LM Test	4.012,24	0,000	985,05	0,000	4.012,24	0,000
Wooldridge Test	10,49	0,001	18,93	0,000	10,49	0,001
Wald Test	$4,9^{e+08}$	0,000	$8,3^{e+06}$	0,000	$4,9^{e+08}$	0,000

Source: Research results. Variable acronyms: Δ DCap – variation in capital expenditures; RecProp – own revenue; DAR – revenue collection performance; Δ RCor – variation in current revenues; TO – total budget; RPANT – Restos a Pagar (Prior-year Payables). Note: *** indicates statistical significance at the 1% level.

The comparison among the three models revealed minor differences in both the obtained results and the explanatory power of the variables. Consequently, the first model was chosen, as it preserves the sample's extreme observations. This choice is justified because studies in public finance typically use extensive, heterogeneous databases in which outliers are relatively common. Thus, excluding these values could compromise the representation of local entities' reality and lead to biased interpretations (Matias-Pereira, 2017). Furthermore, earnings management frequently manifests in extreme values, potentially taking on both positive and negative signs.

4 Results and Discussion

4.1 Calculation of Budgetary Discretionary Accruals through Restos a Pagar (Prior-year Payables)

4.1.1 Descriptive Analysis

Initially, EM was calculated for the present study, following the model proposed by Araújo et al. (2023). The results are presented in Table 2.

Table 2: Descriptive Statistics of the Variables for Accrual Calculation

Variables	Observations	Mean	Standard Deviation	Minimum	Maximum
TOA	44.332	-0,023	0,0840	-6,186	2,984
ΔDCAP	43.859	0,893	8,707	-431,675	737,517
RECPROP	39.561	1,131	4,151	5,7569	815,908
DAR	43.184	0,667	2,039	1,6566	353,793
ΔRCORR	32.903	14,077	180,251	-18,538,086	20,261,795
TO	49.185	17,572	1,073	8,726	25,244
RPANT	40.139	13,073	2,287	0,01	21,374

Source: Research data. Variable acronyms: TOA – total accruals; Δ DCAP – variation in capital expenditures; RECPROP – own revenue; DAR – revenue collection performance; Δ RCORR – variation in current revenues; TO – total budget; RPANT – Restos a Pagar (Prior-year Payables). The variables RECPROP, DAR, TO, and RPANT were transformed using the natural logarithm. The variables Δ DCAP and Δ RCORR were operationalized as variations, which justify the negative values. Regarding the negative TOA value, this is natural, as it reflects total accruals.

Regarding total budgetary accruals (TOA), the mean is negative. Since the measure reflects the budgetary dimension, the mean indicates values close to zero, a pattern confirmed in the literature (Costa; Leão, 2021; Ferreira, 2023). Such evidence suggests that, at first glance, local governments tend to display budgetary conservatism, underestimating both revenues and expenditures. From the perspective of the municipal revenue structure, such an interpretation is plausible. Another element reinforcing this trend among local governments is the relatively constant standard deviation around the mean, indicating limited variation in budgetary accruals.

As for the maximum and minimum values, a high discrepancy was observed between them. However, given the sample size, values of this magnitude are to be expected, especially when dealing with budget accruals. Starting with the maximum value (2.984), it indicated that there were more positive accounting accruals, such as overestimating revenues, which generated higher collection expectations than were effectively realized. Nevertheless, underestimating expenditures is the most viable approach, as the budgetary aspect of accounts payable supports it. The minimum value (-6.186) follows the same logic but, in this case, reflects overestimating expenditures and underestimating revenues.

During the calculation, alternating positive and negative values in discretionary budgetary accruals were observed over the years, as shown in Table 3. This fact aligns with the understanding of discretionary accruals (Schipper, 1989; Dechow et al., 1995; Healy & Wahlen, 1999).

Table 3 - Behavior of Budgetary Discretionary Accruals through Accounts Payable

Year	Observations	Mean	Standard Deviation	Minimum	Maximum
2015	2.813	0,010305	0,107398	-0,354488	2,870397
2016	2.859	0,102833	0,084474	-0,470860	2,489323
2017	2.957	0,007633	0,082447	-0,250007	0,279376
2018	3.637	-0,005042	0,079994	-0,689036	2,176339
2019	3.497	-0,013059	0,077661	-0,424920	1,954555
2020	2.512	-0,015186	0,067244	-0,710963	0,668136
2021	3.252	0,005451	0,071845	-0,481590	1,815179
2022	3.116	0,006350	0,059540	-0,322382	1,323596
2023	3.045	0,001981	0,063955	-1,355929	0,416081

Source: Research data.

From 2015 to 2017, the mean moved positively; that is, there were more positive discretionary accruals during this period. For instance, local entities may have recognized more unprocessed Restos a Pagar (Prior-year Payables), which directly affects accounting records. This movement can be understood as an effort to maximize the budget. Conversely, in the following three years (2018 to 2020), discretionary accruals reversed, becoming negative. Although this movement is considered natural in the literature, it may indicate that public managers alternate between earnings management values within the budgetary scope.

The reversal of signs in discretionary accruals observed between the periods 2015–2017 (positive) and 2018–2020 (negative) does not necessarily reflect a direct response to exogenous shocks—such as economic crises or changes in the oversight patterns of Courts of Accounts. Instead, it lies in the very nature of accrual accounting.

According to Dechow (1995), accruals possess a temporary, self-reversing character: management's actions in prior periods trigger reversals in subsequent periods, so that positive accumulations tend to be followed by negative accumulations of equivalent magnitude.

This phenomenon, referred to in the literature as accrual reversal, is an inherent feature of the accrual basis of accounting (Allen, Larson, Sloan, 2013). Dechow, Hutton, Kim, and Sloan (2012) reinforce that the reversal of discretionary accruals is predictable and systematic, being expected regardless of the institutional or macroeconomic environment. Thus, the alternation of signs identified in Table 3 is consistent with the expected behavior of discretionary accruals over time, reflecting the natural cycle of accrual creation and reversal, and, based on the available data, does not allow the establishment of a direct causal relationship with external conjectural factors.

4.2 Explanatory Factors and Earnings Management of Budgetary Discretionary Accruals through Accounts Payable

The results of the relationship between the explanatory factors and earnings management are presented in Table 4. The 5% significance level was adopted as the primary criterion for statistical inference. Results with $p < 0.10$ were reported and discussed as marginal evidence, indicative of a trend without implying a robust effect, following the recommendations of Hair et al. (2009) and Wasserstein, Schirm, and Lazar (2019). This distinction is particularly relevant for the variables AE, APE, DS (L1), GDP (L1), TICMS, IFGF, and GGN.

Table 4- Estimating the Relationship Between Explanatory Factors and Earnings Management

Variable	Coefficient	Standard Error	t	P>|z|
Dependent Variable: Budgetary Discretionary Accruals				
L1.	0,1269	0,0407	3,12	0,002***
L2.	-0,0480	0,0313	-1,54	0,125
AE	-0,0323	0,0174	-1,85	0,064*
APE	-0,0426	0,0232	-1,84	0,066*
PM	0,0294	0,0266	1,11	0,268
ID	-0,0042	0,0094	-0,45	0,653
IE	-0,0028	0,0109	-0,25	0,801
DE	-0,0621	0,0258	-2,41	0,016**
L1.	0,0283	0,0449	0,63	0,529
DS	-0,1321	0,0487	-2,71	0,007***
L1.	0,0942	0,0530	1,78	0,076*
DP	0,0548	0,0255	2,15	0,032**
L1.	0,1213	0,0883	1,37	0,169
PIB	-0,0533	0,0400	-1,33	0,183
L1.	0,0530	0,0289	1,84	0,066*
TFPM	-0,0001	0,0001	-1,43	0,153
L1.	-0,0002	0,0002	-1,13	0,261
TICMS	0,0852	0,0507	1,68	0,093*
L1.	-0,0488	0,0388	-1,26	0,208
IFGF	0,0562	0,0335	1,68	0,093*
GGN	-0,0118	0,0061	-1,94	0,052*
IGP	0,0002	0,0002	1,29	0,198
EG	0,2017	0,1864	1,08	0,279
Constante	-0,2017	0,1864	1,08	0,279

Source: Research data. Variable acronyms: AE – Electoral Year; APE – Pre-Electoral Year; PM – First Term; ID – Right-Wing Ideology; IE – Left-Wing Ideology; DE – Education Expenditures; DS – Health Expenditures; DP – Personnel Expenditures; GDP – Gross Domestic Product; FPMT – Municipal Participation Fund Transfer; ICMST – ICMS Transfer; IFGF – Firjan Fiscal Management Index; GGN – Gender; IGP – Public Manager's Age; EG – Manager's Education Level. The acronyms L1 and L2 represent lags: L1 is 1 year lagged, and L2 is 2 years lagged. Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Source: Research data. Variable acronyms: AE – Electoral Year; APE – Pre-Electoral Year; PM – First Term; ID – Right-Wing Ideology; IE – Left-Wing Ideology; DE – Education Expenditures; DS – Health Expenditures; DP – Personnel Expenditures; GDP – Gross Domestic Product; FPMT – Municipal Participation Fund Transfer; ICMST – ICMS Transfer; IFGF – Firjan Fiscal Management Index; GGN – Gender; IGP – Public Manager's Age; EG – Manager's Education Level. The acronyms L1 and L2 represent lags: L1 is 1 year lagged, and L2 is 2 years lagged. Note: *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Initially, the relationship between electoral cycle variables and EM was analyzed. The results indicated that both the electoral and pre-electoral years were negatively associated with discretionary accruals, providing marginal support for H1. Given the significance level situated at the conventional 10% threshold, the results were interpreted as indicative of a trend.

Hypothesis H1a was rejected due to the negative relationship between the pre-electoral year and EM, contradicting the study by Araújo et al. (2023). In this case, managers may accrue negative amounts to reverse them during more opportune periods.

The explanations for the rejection of H1a may lie in the following arguments. The public entity's financial performance can influence voters when they cast their ballots. One way to project favorable performance is to increase the budgetary limit (Vicente; Do Nascimento, 2012), which is crucial during a pre-electoral year.

The increase in the budgetary limit is granted through additional credits, one of which is the surplus calculated in the previous fiscal year (the pre-electoral year). Consequently, the manager can manage negative accruals, causing expenditures to accumulate (negatively) and, as a result, generate a surplus.

A practical illustration of the mechanism involved can be seen in the management of Restos a Pagar (Prior-year Payables), where a manager may issue an expenditure commitment even without a formally structured project to support it. Such a procedure generates Restos a Pagar (Prior-year Payables) that, upon advancing to the liquidation stage, culminate in the recognition of a budgetary expenditure. The dynamic results from Brazilian legislation, which restricts managers from contracting obligations that cannot be fully executed within the same fiscal year during the final two quadrimesters of an election year (Brasil, 2000). The legal constraint underscores the relevance of the pre-electoral period and provides a consistent explanation for the reduction in budgetary discretionary accruals typically observed during that period.

The pre-electoral year plays a critical role, particularly for managers seeking reelection, as it provides an opportunity to engage in strategic earnings management to project an image of fiscal improvement. Public Choice Theory supports such behavior, given that voters tend to favor governments perceived as fiscally responsible and to penalize those associated with deficits (Buchanan and Tullock, 1962; Downs, 1957). Empirical evidence indicates that, during this period, managers adjust fiscal indicators to convey stability, a pattern documented in Portuguese municipalities (Ferreira et al., 2013). The resulting outcome is a reduction in discretionary accruals, reflecting an effort to signal austerity in the period immediately preceding elections.

For H1b (positing a negative relationship), the results did not lead to rejection. In this case, earnings management is aligned with the Political Business Cycle Theory (Downs, 1957). Politicians (policymakers) utilize strategies to maximize their chances of victory. Since it is an election year, movements to reduce accumulations and deliver more robust, smoother, or "not-so-bad" results affect voters, given that voters' memories are short and they tend to reward more competent politicians (Araújo et al., 2023).

Public Choice Theory also supports the result found here. Election years can reveal how managers, motivated by self-interest, allocate the budget to increase their chances of reelection. This movement (the result of the relationship) aligns with the concept of rationally ignorant voters, introduced by Downs (1957), in which the electorate, in addition to deciding their vote based on the current moment, considers factors such as sociodemographic data and economic performance.

This study found that, beyond political factors, other aspects influence earnings management in the public sector, particularly expenditures on education and health. In the case of education, only the current period presented a significant relationship, indicating that discretionary accruals tend to be negative in the short term, which aligns with the literature (Silva and Bruni, 2019). Municipalities with quality education tend to present fewer budgetary distortions.

Although education has constitutional obligations, there is some discretion in spending. Accruals can be manipulated by adjusting the recognition of expenditures, such as subsidies or investments. Studies indicate that discretionary acts can impact educational spending (Caldas et al., 2016), with managers using Restos a Pagar (Prior-year Payables) to reallocate resources and inflate more visible expenditures. The reversal of Restos a Pagar (Prior-year Payables) to meet educational spending requirements reinforces this negative relationship. According to Crozatti et al. (2022), earnings management compromises teaching quality, especially when it occurs through discretionary reductions in expenditures. Thus, accruals can affect the transparency and efficiency of the public budget, thereby directly impacting educational development.

The negative relationship between discretionary accruals and health expenditures, as confirmed by H3b, follows the trend observed in education. Both are essential areas for local development and expanding access to information, influencing managers' discretionary practices. Governments that invest more in health strengthen assistance to the population, boosting development. Thus, there is a reversal of Restos a Pagar (Prior-year Payables) to comply with constitutional minimums and promises in the field (Vieira; Santos, 2018). The structure of health expenditures (personnel payroll, procurement of supplies, and maintenance of units) reduces the margin for discretionary adjustments, since the lack of these investments is highly visible.

A more detailed examination of the results for education and health expenditures reveals that constitutional fiscal constraints also shape the underlying mechanisms. Brazilian municipalities are legally required to allocate at least 25% of their earmarked revenues to education (Article 212 of the 1988 Constitution) and 15% to health (Constitutional Amendment 29/2000). Such mandates impose structural constraints on managerial discretion over these expenditure categories, irrespective of individual policy preferences or strategic considerations. The legally binding nature of these minimum spending requirements, therefore, limits the scope for earnings management within these functions.

Furthermore, as pointed out by Becker (1964) and Caldas et al. (2016), the essential and visible nature of these expenditures to the population reinforces the political incentives for their fulfillment. Thus, the observed negative relationship reflects both a normative constraint and a political-electoral calculation, with the latter being amplified in years of greater public scrutiny over management.

The analysis of H4 revealed a positive association between personnel expenditures and budgetary accruals. The relationship arises because the Constitution grants City Councils authority to set managerial compensation, including mayors', thereby conferring legislative discretion over this category of spending. Managers may defer other expenditures through Restos a Pagar (Prior-year Payables), generating a positive budgetary adjustment that can be used to justify salary increases. Such behavior, consistent with the premises of Public Choice Theory (PCT), enables managers to strengthen their public image and secure personal benefits by approving compensation increases at strategically advantageous moments. Empirical evidence aligns with this interpretation, as Liu and Mikesell (2014) report that expenditures on total compensation and benefits tend to be higher in governments operating under broader discretionary authority.

Regarding hypothesis H5, GDP was considered as a variable. Non-rejection was achieved when GDP was analyzed with a one-period lag (L1), indicating a significant positive relationship. However, the marginal significance of this relationship suggests interpreting it as indicative of a trend, and thus replication in alternative specifications is advisable.

The trend suggests a potential increase in resource inflows or revenue collection in municipalities with higher GDP levels, making managers more inclined to expand budgetary allocations, ultimately resulting in a higher volume of Restos a Pagar (Prior-year Payables). Such behavior is consistent with normal fiscal dynamics, as it may signal financial robustness or enable managers to leverage favorable economic conditions to allocate resources toward more durable, politically visible investments (Rakhman; Wijayana, 2019). In subsequent periods, the expected pattern is for discretionary accruals to become negative or be reversed. Prior empirical studies have documented this cyclical movement (Costa; Leão, 2021; Lima et al., 2024).

Regarding hypothesis H6, there was marginal evidence of a positive relationship between ICMS transfers and EM, suggesting that greater budgetary flexibility may be associated with discretionary practices. Since the ICMS is the tax revenue source with the highest collection volume, an increase in its transfers suggests greater flexibility in the public budget, which can lead to certain discretionary practices aimed at an opportune period. Additionally, it is important to note that reliance on this transfer (Massardi; Abrantes, 2015; Suzart et al., 2018) can directly influence how the local entity handles accounting information, leading to reactive rather than proactive fiscal management (Hines; Thaler, 1995).

Fiscal management was analyzed as an explanatory factor for budgetary discretionary accruals, revealing a positive relationship between the variables but in the opposite direction expected, leading to the rejection of H7. Over time, the literature has shown that fiscal management can influence discretionary behavior (Jones, 1991; Ferreira, 2023). In Brazil, the Fiscal Responsibility Law imposed constraints but did not eliminate discretionary practices (Piccoli and Arpini, 2018).

The subjectivity in expenditure classification allows for strategic adjustments. Spending categories such as personnel and investments can be managed to create budgetary space and convey confidence to society, even without real improvements in management. Heald and Hodges (2015) highlight that this accounting flexibility can generate artificial results, compromising long-term fiscal sustainability.

Hypothesis H8a was not rejected, indicating that the presence of female managers is negatively associated with budgetary discretionary accruals. However, because it falls just short of statistical significance, the result will be interpreted as exploratory (Wasserstein, Schirm, & Lazar, 2019).

This result reinforces the importance of the debate surrounding female inclusion in politics, especially given the growing participation of women in public office (OECD, 2019; UN, 2015). In Brazil, this topic has gained relevance in both the political and academic arenas.

Part of the literature has associated the presence of women with a lower propensity for discretion (Anessi-Pessina; Sicilia, 2020), which aligns with the Upper Echelons Theory (Hambrick; Mason, 1984). Dollar et al. (2001) also observed that female leadership in the public sector is less prone to EM. In the Brazilian context, Brollo and Troiano (2016) used a regression discontinuity design and found that female mayors approve fewer discretionary transfers.

Conversely, Adams and Funk (2012) and Kirsch (2018) showed that once endogeneity is controlled for, part of the "gender effect" disappears, revealing itself to be mediated by omitted variables and institutional selection. The other variables related to the manager's characteristics—age and education level—were not significant, showing no influence on EM.

5 Conclusion

The evolution of research on earnings management has enabled its application in the public sector, where personal interests can influence administration. This study analyzed the relationship between managers' political, social, fiscal, economic, and personal factors and budgetary discretionary accruals, drawing on Public Choice Theory, the Political Business Cycle Theory, and Upper Echelons Theory. The results indicated that EM does not occur solely for political or financial reasons.

Specifically, the findings suggest a two-stage budgetary adjustment mechanism: negative discretionary accruals in the pre-electoral year, followed by a reversal in the electoral year. Meanwhile, the negative relationship between EM and health and education expenditures is primarily explained by mandatory constitutional earmarks, refining previous interpretations that attributed this result exclusively to the political visibility of spending. In contrast, personnel expenditures were more prone to discretionary adjustments, enabling strategic salary increases.

From an economic standpoint, GDP and transfers are positively related to EM. Higher collections in the previous year increase the propensity to budget. In the fiscal field, the subjectivity of legislation invites manipulation, leading to the creation of accounting reserves that distort financial reality. Finally, the exploratory marginal association between female gender and lower EM opens a research agenda on the role of gender composition in the quality of governmental accounting information, with specific attention to institutional selection effects.

In addition to broadening understanding of EM in the public sector, the study highlights the need for future research into its impact across regions and at different points in crises.

Lastly, it was observed that managers use Restos a Pagar (Prior-year Payables) for budgetary control, postponing expenditures to shape the administration's perception. Despite its contributions, the research faced limitations, including a lack of standardized data and reliance on outdated variables. Nevertheless, it paves the way for new investigations, such as the influence of EM across different regions and crisis periods. This study on local governments lays the foundation for future research in public accounting.

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