

Accounting compliance and the implementation of accrual accounting policies: analysis of Brazilian municipalities in the state of Rio de Janeiro

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Abstract

Objective: To identify the relationship between accounting compliance and the implementation of accrual accounting policies from the IPSAS adoption.

Method: The independent variable (accounting compliance) was constructed through improprieties from accrual, budgeting, and fiscal accounting obtained from the courts of accounts' reports; while the dependent variables (mandatory or voluntary implementation of accrual accounting policies) were measured by counting the number of accrual accounting policies fulfilled by 88 of the 92 Brazilian municipalities in the state of Rio de Janeiro. Poisson and negative binomial regression models were used to identify the relationship.

Results: The results do not indicate the statistical significance of the accounting compliance with the accrual accounting policies implemented. Instead, they point out the positive relationship of implementation with the opinion issued by the courts of accounts, the population range, and the information technology governance index. The expenses in the administration role presented a negative relationship with the accrual accounting policies implemented.

Contributions: In addition to contributing to the measurement of public sector accountants' qualification, the findings of this study contribute to the understanding of the role of the public sector accountant in reform processes. Accounting information aims to support decision-making and promote accountability. Public sector accountants are essential for generating this information and this study innovates by addressing the relationship between public sector accountants and the implementation of accrual accounting policies from the IPSAS adoption through the population of municipalities in a Brazilian state.

Keywords: Accountant; Civil Service; Compliance; IPSAS; Contingency Model.

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Introduction

Several reform processes have taken place in the public sector in recent decades searching to increase efficiency. This search has been carried out not only by changing processes, but also by changing people's mindsets and improving accounting information (Caperchione et al., 2019). This improvement is one of the objectives of the reform process that includes the adoption of accrual accounting by public sector entities.

The International Public Sector Accounting Standards Board (IPSASB) is one of the international entities whose work plan has the strategic objective of strengthening the management of public finances through the implementation of accounting standards based on the accrual basis, so-called International Public Sector Accounting Standards (IPSAS).

The premise behind the defense of the use of IPSAS is that high quality financial reporting depends on high quality accounting standards. This premise, in turn, has been used by several countries that decided to adopt this process of innovation in public sector accounting. Research on the outcome of this process shows that IPSAS are associated with improved information quality and internal decision-making (Schmidthuber et al., 2022).

Although the quality of the reporting and, consequently, of the accounting information, is dependent on the normative set used, there are other relevant factors to explain the result of an innovation process. Irvine (2011), for example, identified that the lack of technical competence and training directed to the public sector accountants caused the incomplete implementation of accrual accounting and conflicts between hierarchical levels of an Australian non-profit entity in the mid-1990s.

The performance of public sector accountants can be influenced or impacted by other variables. The turnover of public sector accountants in Brazilian municipalities, for example, "is associated with the change of mayors" and this fact "negatively impacts the execution and adoption of complex practices" carried out by them (Azevedo et al., 2019, p. 1). There is evidence (Marques et al., 2020) of the need for organizational changes, which go beyond the decision-making power of the public sector accountants, to meet the IPSAS implementation.

The IPSAS implementation adds roles to the public sector accountants. These roles refer to the implementation of accrual accounting policies (Procedimentos Contábeis

Patrimoniais in Portuguese and PCP by its Portuguese acronym). It does not, however, extinguish or reduce the existing demands that are the responsibility of the public sector accountant, including the accounting compliance of budgetary and fiscal aspects. It is expected that the level of accounting compliance based on already institutionalized practices (i.e., referring to budgetary and fiscal accounting) facilitates adherence to practices in the process of being institutionalized (i.e., referring to accrual accounting).

Previous studies indicate how the public sector accountants respond to or consider the accounting change processes (e.g., Aquino & Neves, 2019; Becker et al., 2014; Frisancho, 2022; Lima & Lima, 2019; Sediyaama et al., 2018) and analyze the interference of variables in these processes (e.g., Azevedo, Aquino, et al., 2020; Azevedo, Lino, et al., 2020; Frisancho, 2022). However, the identification of the relationship between the public sector accountants and accrual accounting policies implementation was not carried out by these studies from the quantitative perspective in which the variable "public sector accountants" of the population of municipalities in a state is measured.

The public sector accountant is one of the contextual variables described in the Contingency Model (Lüder, 1992) and in its amendments, such as in the Financial Management Reform Process Model (FMR Model) (Lüder, 2002). Both models propose to explain, through a set of variables, the introduction of accounting innovations in the public sector. The implementation of accrual accounting and the IPSAS adoption are innovations and accounting compliance is one of the proxies to measure the civil service variable, more specifically the public sector accountants. In this context, the present study uses the Contingency Model (Lüder, 1992) and the FMR Model (Lüder, 2002) to identify the relationship between accounting compliance and the implementation of accrual accounting policies from the IPSAS adoption.

Research that analyzes variables that interfere with or influence the outcome of an innovation implementation process to improve the quality of accounting information can contribute to the design of policies related to this end (Dewi et al., 2019). Useful and reliable information is important for an organization's performance and sustainability (Mustapha et al., 2020).

Furthermore, given the current scenario, in which

municipalities need to resolve the effects of the COVID-19 pandemic on their financial condition due to changes in expenses, revenues, and debts (Ministry of Economy, 2020), it is essential that the implementation of accounting procedures that seek to increase the quality of information is carried out to promote the monitoring of the trajectory of public resources.

The public sector accountant (civil service) is among the variables that influence the quality of accounting information. There are indications of the contributions of public sector accountants, for example, to achieving robust public finances (International Federation of Accountants – IFAC, 2019) and to rebuilding entities in adverse times (Kaplan, 2021). Thus, this article adds to previous empirical research by studying accounting compliance, which is one of the attributions of public sector accountants, as a proxy for one of the facilitating variables for the implementation of accrual accounting policies based on IPSAS.

In addition to this introduction, this research presents five sections. The next section deals with the process of adopting standards converged to IPSAS in Brazil, followed by section three, which addresses the conceptual model and the development of the research hypothesis. Section four addresses the methodological procedures used, followed by the fifth section, which refers to the results and discussions. Finally, the sixth section points out the conclusions and limitations of the study.

2. Adoption of Standards Converged to IPSAS in Brazil

The process of convergence to the IPSAS in Brazil had more concrete actions since the publication of Ordinance of the Ministry of Finance (MF) No. 184, of August 25, 2008, which deals with guidelines regarding procedures, practices, preparation, and dissemination of accounting statements to make them converge to international standards (Feijó & Bugarim, 2008).

There are two entities that act in the national public sector accounting standardization process: (i) the Institute of Chartered Accountants (CFC by its Portuguese acronym and henceforth the Institute) and (ii) the National Treasury Secretariat (STN by its Portuguese acronym and henceforth the Treasury). The former entity is responsible for publishing the Brazilian Public Sector Accounting Standards (NBC TSP by its Portuguese acronym) converged, indirectly, to the IPSAS. This responsibility is carried out by its Public Sector Accounting Standards Committee (CP CASP by its Portuguese acronym), the successor of the Brazilian Public

Sector Accounting Standards Advisory Group (GA / NBC TSP by its Portuguese acronym) (CFC Resolution No. 1,638, of October 7, 2021).

The latter entity (i.e., the Treasury) is the central accounting entity of the Brazilian public sector (Law No. 10,180, of February 6, 2001) and is responsible for publishing the Accounting Public Sector Manual (MCASP by its Portuguese acronym) and the Accounting Procedures Instructions (IPC by its Portuguese acronym), based on NBC TSP (MF Ordinance No. 184, of August 25, 2008). The Treasury and the Institute make joint and aligned efforts, however, this alignment was obtained over time, given that these entities had different objectives at the beginning of the convergence process that caused conflicts in standardization (Lima & Lima, 2019).

The Treasury published STN Ordinance No. 548, on September 24, 2015, which establishes the Accrual Accounting Policies Implementation Plan (PIPAP by its Portuguese acronym). This plan (Annex to STN Ordinance No. 548, of September 24, 2015) establishes gradual deadlines for the accrual accounting policies implementation for the three levels of government. In general, municipalities with less than 50,000 inhabitants have the longest deadlines, followed by those with a population greater than this amount, by the states and the Federal District, and, finally, by the Union, with the shortest deadlines. It is important to highlight that the early, or voluntary, implementation of accrual accounting policies is allowed.

This gradual strategy was established after identifying that entities were not implementing accounting changes within the established deadlines due to difficulties encountered, such as adaptations in information technology (IT) systems (Azevedo, Aquino, et al., 2020). The change in strategy, however, was not immune to unintended consequences. According to Azevedo, Aquino, et al. (2020), “a change in Treasury deadlines created uncertainties in the process and affected the willingness of local governments to operationalize and then retain new accounting policies” (p. 8).

Brazil's territorial extension and its social and economic diversity, as well as the administrative and political autonomy of its federative entities (federal government, 26 states and the Federal District, and 5,570 municipalities), are important characteristics for understanding the convergence process (Lima & Lima, 2019). There is evidence that institutional and actors with power's support (Lino et al., 2019, p. 388) are relevant factors for the

change process. Thus, considering the autonomy of federal entities and social and economic differences, it is not possible to state that all entities are at the same stage in the accounting change process. The accounting policy referring to the actuarial provision, for example, whose accounting records became mandatory from 09/24/2015 for all municipal entities that have their own social security funds, was implemented in only 21% of these entities in the period from 2013 to 2016 (Azevedo, Aquino, et al., 2020).

Aquino and Neves (2019) concluded that the reform message “reached the city halls very weakly” (p. 137). The authors carried out an analysis of 10 city halls located in geographically isolated regions in the state of Bahia regarding the message about the implementation of the Public Sector Chart of Account (PCASP by its Portuguese acronym). The PCASP was one of the first changes required in the Brazilian convergence process. However, the way the network was configured affected the wide circulation of message regarding the convergence process in some places in the country (Aquino & Neves, 2019).

Another characteristic that needs to be considered to understand the process of national convergence is the possible absence of accountants occupying public servant positions and the outsourcing of the accounting function to private software companies. Of the 10 city halls analyzed by Aquino and Neves (2019), none had an accountant occupying such positions, one municipality had a partial level of outsourcing and nine city halls had full outsourcing of the accounting function. Sediya et al. (2018) used eight city halls in the Zona da Mata of the state of Minas Gerais in their analyses. Of these municipalities, according to the authors, five had effective accountants with assistance provided by software companies; one had a commissioned accountant, also with assistance provided by a software company; and two had their accounting completely outsourced.

The notes of both studies are in line with the conclusion of Azevedo, Aquino, et al. (2020) that “the IPSAS agenda at the local level is being driven by a commercial software provider” (p. 8). These providers occupy spaces not filled by other actors and this occupation is strengthened when public entities hire providers whose services do not meet accounting needs and/or do not have the necessary technical characteristics, because of the absence of accountants in the accounting hiring process (Azevedo, Lino, et al., 2020). These authors also found that this systemic inadequacy compromises not only the implementation of new accrual accounting policies but

also the retention of policies already implemented.

It is also important to consider the performance of external control entities operating in Brazil. There are 33 audit courts that are responsible for monitoring the budgetary and financial cycle of federal entities. Despite the common origin of this set of courts, there are differences in their configurations, in the level of coercion, and in the quality of the audit performed (Lino & Aquino, 2018). There is even evidence of bad practices carried out by one of the audit courts (Lino & Aquino, 2020). However, these entities are external sources of legitimation and their work with municipal representatives would be important for the effective implementation and continuity of accrual accounting changes (Lino et al, 2019).

Azevedo, Lino, et al. (2020) present evidence obtained through interviews that indicate that the demands of the courts of accounts are prioritized in the work of accountants, to the detriment of those of the convergence process. This may be a result of the fact that the financial audit of financial statements based on accrual accounting is still an incipient practice in control entities (Rodrigues, 2021).

Despite the prioritization given to the demands of the audit courts (Azevedo, Lino, et al., 2020), studies (Frisancho, 2022; Lima & Lima, 2019) indicate that accountants from Brazilian public sector entities recognize the relevance of the convergence process to the IPSAS. According to Lima and Lima (2019), the challenge is to achieve this recognition and obtain support from managers, as well as the need for professional qualifications. Frisancho (2022), in turn, concluded that implementation does not depend exclusively on the existence of resources (systems, financial and human) and institutional support from managers, but also on the recognition and perception of normative legitimacy, both by the accountant and by the managers.

It is noted, then, that some variables have been indicated by the literature as relevant to the process of convergence to IPSAS in Brazil and it is still necessary, for example, to identify the existing relationship between variables in larger sets of government entities to understand the behavior of such variables in broader contexts.

3. Conceptual Model and Hypothesis Development

Lüder (1992) proposes a comprehensive Contingency Model to explain the introduction of governmental

accounting reforms. It is comprehensive because it was proposed at a time when previous efforts to explain such introductions focused on the selection of isolated variables to the detriment of an integrated view that would explain the introduction of a governmental accounting innovation.

The author created the model from comparative studies between developed countries (United States, Canada, and some European countries) and proposed that some conditions were favorable for the introduction while others were unfavorable. These conditions, according to Lüder (1992), are grouped into four clusters: (i) stimuli, (ii) social structural variables (users of information), (iii) structural variables of the politico-administrative system (producers of information), and (iv) implementation barriers.

In this version of the model, Lüder (1992) presents evidence that accountants are present both in the cluster of structural variables that describe the political-administrative system and in the cluster referring to implementation barriers. In the first cluster, training, and recruitment, especially of public sector accountants, are considered factors that influence the willingness to introduce innovations, as well as identifying how the introduction could be carried out. In the second cluster, the non-qualification of accountants can create barriers to the implementation of innovations that, if not overcome, can make the process unfeasible.

This version of the model emphasizes contextual variables to explain the introduction of governmental accounting innovations. After advances in research using the model by Lüder (1992) (Godfrey et al, 1996, 2001; Jaruga & Nowak, 1996; Yamamoto, 2000; Pallot, 1996), it was revised, giving rise to the FMR Model (Lüder, 2002).

The review changed the emphasis given to contextual variables and incorporated clusters of behavioral and instrumental variables. The first cluster (i.e., behavioral variables) comprises reform drivers, political reform promoters, and stakeholders. The second (i.e., instrumental variables) encompasses the reform concept and the implementation strategy.

The cluster of contextual variables, specifically, is subdivided into stimuli and institutional arrangements. The first (i.e., stimuli), according to Lüder (2002), directly impacts only the political reform promoters and remains unchanged for long periods. The second (i.e., institutional arrangements), in turn, directly impacts the reform concept, the implementation strategy and the outcome of the reform or the reform stage and is influenced directly by the political reform promoters and stakeholders and

indirectly by the reform drivers and stakeholders.

Institutional arrangements are formed by five variables – legal system, State structure, administrative structure, civil service, and culture – which, according to Lüder (2002), “are quite broad and of course need further specification for adequately describing the institutional arrangements of a country” (p. 9).

According to Lüder (2002), “the qualification of Civil Service in general and of accounting staff in particular are crucial factors for the mode, duration and cost of implementation of governmental accounting reform” (p. 9). The author also states that “a lack of certain general skills in the accounting field which cannot be eliminated in the short term may not only delay the implementation of the reform but it may also bring along an increased level of resistance that can even endanger reform success” (p. 9).

Despite the relevance of public sector accountants to the implementation of governmental innovations, both versions of the models (Lüder, 1992, 2002) suggest that the outcome of a reform process is due to a set of variables and not exclusively to the public sector accountants.

A wide range of reforms has taken place in the public sector in recent decades (Caperchione et al., 2019; Becker et al., 2014), one of which is the implementation of accrual accounting and convergence to international accounting standards, including the IPSAS. However, the interaction between these reforms and the public sector accountants has been little explored (Becker et al., 2014).

Lüder (1992, 2002), when referring to civil service, mentions training, recruitment, and qualification. Qualification, according to the Framework for International Education Standards for Professional Accountants and Aspiring Professional Accountants (International Accounting Education Standards Board – IAESB, 2019),

is the formal recognition of an individual having attained a professional designation, or having been admitted to membership in an IFAC member body. Internationally, there are significant legal and regulatory differences that determine the point of qualification of professional accountants and it may occur from very early to very late in a career. (p. 9)

Qualification can be a means of demonstrating that the individual has professional competence (IAESB, 2019). This competence “is the ability to perform a role to a

defined standard. Professional competence goes beyond knowledge of principles, standards, concepts, facts, and procedures; it is the integration and application of (a) technical competence, (b) professional skills, and (c) professional values, ethics, and attitudes" (p. 10).

Note that the definition of competence refers to action when mentioning the term perform a role. Therefore, Lüder (1992, 2002) indicates that public sector accountants need qualification, however, when exploring the definition of the word, it is perceived that qualification requires the performance of the role.

It is thought, however, that the perform a role, or exercise of the function, by a professional may not be equivalent to their qualification. This would occur as a result, for example, of environmental factors that could restrict or boost the professional's performance. The lack of essential material resources to perform the role and the availability of an accounting consulting team could be examples of restriction and stimulus, respectively.

Even considering the existence of factors that may interfere or impact the accountants' performance in the exercise of their profession, the preparation, and disclosure of accounting information are their responsibility and, therefore, accounting compliance is a product of their work. Thus, in the study, it was decided to use accounting compliance as a proxy to approach the public sector accountants (civil servants) in the Contingency Model and in the FMR Model. The construction of this variable is explained in the fourth section of this paper.

Considering the above, as well as the use of gradualism for the accrual accounting policies implementation in Brazil (see section two), the following research hypothesis (H) was formulated:

H1: Accounting compliance has a positive relationship with the implementation of accrual accounting policies, resulting from the adoption of standards converged to the IPSAS.

H1_a: Accounting compliance has a positive relationship with the mandatory implementation of accrual accounting policies, resulting from the adoption of standards converged to the IPSAS.

H1_b: Accounting compliance has a positive relationship with the voluntary implementation of accrual accounting policies, resulting from the adoption of standards converged to the IPSAS.

H1_c: Accounting compliance has a positive

relationship with the mandatory and voluntary implementation of accrual accounting policies, resulting from the adoption of standards converged with the IPSAS.

4. Methodological Procedures

To achieve the proposed objective, data were collected from the municipalities that make up the state of Rio de Janeiro. The choice of that state was made for reasons of economic relevance of the state, the second largest Brazilian Gross Domestic Product (GDP), and for the performance of the Audit Courts of the State and Municipality of Rio de Janeiro (TCE-RJ and TCM-RJ, respectively, by its Portuguese acronym) regarding the verification of the implementation of the PIPCP (STN Ordinance No. 548, of September 24, 2015) in the municipalities, according to the report of the Audit Coordination with the inclusion of determination in the audit reports referring to the accounts of municipal governments.

The state of Rio de Janeiro has 92 municipalities. However, the municipalities of Aperibé, Carapebus, Porciúncula, and Rio Bonito did not send the schedule referring to the implementation of accrual accounting implementation to the TCE-RJ and, consequently, they were excluded from the analyzes due to the lack of data for the construction of the dependent variables. Thus, the sum of municipalities included in the present study is equivalent to 88.

Data from the 88 municipalities were collected through documentary analysis of audit reports, referring to the 2019 financial year, issued by the TCE-RJ and TCM-RJ. The choice for this year was due to the availability of documents from all municipalities in May 2021, the month in which the document search was carried out, and these were the most current ones, and due to the decision to limit the analysis to just one financial year.

For the dependent variables, data were collected regarding the status of the implementation of accrual accounting policies up to 12/31/2019. On that date, according to the PIPCP (STN Ordinance No. 548, of September 24, 2015), five accrual accounting policies were mandatory by the 88 entities analyzed and 11 accrual accounting policies were voluntary since their deadlines had not been reached. The total number of accrual accounting policies that could have been implemented by 12/31/2019 was 16.

The accrual accounting policy related to heritage assets had its deadline suspended through STN Ordinance

No. 10,300, of December 1, 2022. Considering that the analysis carried out in this study collected data regarding the situation of the implementation of accrual accounting policies until 12/31/2019, this paper used the deadline for the policy established in STN Ordinance No. 548, of September 24, 2015, as this was the current deadline in 2019.

The PIPCP establishes the deadlines applicable to municipalities with up to 50,000 inhabitants and with a population greater than this amount. Table 1 presents such deadlines with a summarized indication of which accrual accounting policies they refer to. It is important to consider that accrual accounting policies comprise the recognition, measurement, presentation, and derecognition of elements in financial statements (STN Ordinance No. 634, of November 19, 2013).

Table 1: Compulsory deadlines for accrual accounting recognition by municipalities (from)

Synthesized accrual accounting policies	Municipalities with up to 50,000 inhabitants	Municipalities with more than 50,000 inhabitants
"Credits Restatement" ¹ and "Actuarial Provision"	09/24/2015	09/24/2015
"Liabilities with Suppliers"	01/01/2016	01/01/2016
"Employee Benefits" and "Other Credits Receivable"	01/01/2019	01/01/2018
"Contingent Assets and Contingent Liabilities", "Property, Plant, and Equipment", "Loans and Financing Liabilities", "Permanent Investments" and "Provisions"	01/01/2021	01/01/2020
"Intangible Assets", "Pension Assets" and "Tax on Accrual Basis"	01/01/2022	01/01/2021
"Inventories"	01/01/2023	01/01/2022
"Infrastructure Assets" and "Heritage Assets"	01/01/2024	01/01/2023

Source: STN Ordinance No. 548, of September 24, 2015.

To verify the possible difference between the mandatory and voluntary implementation of accrual accounting policies, the collected data disaggregated into (i) mandatory implementation (variable code: MAND): when the deadline of the policy was up to 12/31/2019; (ii) voluntary implementation (variable code: VOL): when the deadline of the policy was after 12/31/2019. A third dependent variable was created in which the voluntary and mandatory implementation were grouped (variable code: MAND&VOL). According to the data collected in the audit reports, 1 was attributed to accrual accounting policies implemented and 0 to accrual accounting policies non-implemented. Table 2 (Panel A) presents the possible variation of each of these three dependent variables, as well as summarizes other information about them.

For the construction of the accounting compliance variable (variable code: COMP), the accounting improprieties indicated by the audit courts (TCM-RJ and TCE-RJ) in their reports were used. It is the independent variable. Accounting compliance was used as a proxy for the qualification of the public sector accountants mentioned by Lüder (1992, 2002) when addressing the civil service variable.

Professional skills could be used as a proxy for the qualification of the public sector accountants, however, the survey of information on professional skills through a questionnaire, for example, may include noise in relation to "socially desirable", that is, the data collected could reflect the skills that the accountants understand that others expect them to possess.

Accounting compliance can be influenced by environmental factors, but it is understood that its measurement does not have the same disadvantage as the measurement of professional skills and has the advantage of being closer to the role of the accountants in their activity in the public sector. Thus, we use the accounting compliance variable (COMP), and the environmental factors that may impact it are addressed through control variables.

For the construction of the COMP variable, the improprieties were collected and tabulated by municipalities and resulted in 25 different ones. These are strictly originated from accounting improprieties, whose content refers to the inaccuracy or lack of: (i) accounting records of events referring to accrual accounting and, mainly, to the budgetary and fiscal accounting; (ii) recognition, measurement, and disclosure of elements in the financial statements, including the explanatory notes; and (iii) classification of income and expenditure according to the budgetary rules, which somehow were not in accordance with Brazilian accounting legislation.

The most frequent accounting improprieties were those related to budgetary and fiscal accounting. This finding is plausible with Rodrigues' (2021) note that financial auditing is still an incipient practice in the audit courts. Budgetary and fiscal accounting has also been the focus of the work of the public sector accountant, because of the emphasis given to the budget system. Therefore, the improprieties raised mostly refer to the usual practices of public sector accountants.

When a high number of accounting improprieties occurs, it is expected that the implementation of accrual accounting

¹ Credits Restatement (divida ativa in Portuguese) are assets and encompass tax and non-tax credits in favor of the Public Treasury, not received within the period for payment defined by law or in a decision issued in a regular process.

policies is lower. This is the expected relationship because if an entity has difficulties in complying with already institutionalized practices (i.e., budgetary and fiscal accounting), it is expected that this entity will also have difficulties in complying with practices in the process of being institutionalized (i.e., accrual accounting).

The total number of accounting improprieties per municipality was calculated and the COMP variable was constructed from a percentage value of compliance attributed to each municipality. Despite having raised 25 different improprieties among the 88 municipalities, the largest number of accounting improprieties for a municipality was eight. Therefore, the total number of improprieties in each municipality was divided by eight, to obtain the percentage value. The value obtained, however, indicates the accounting non-compliance (for example: if

a municipality has seven non-compliances, when divided by eight, you get 0.875 or 87.50%). To convert the variable into accounting compliance, one was subtracted from the beginning of the formula used, as shown below. Table 2 (Panel B) summarizes the information on the COMP variable.

$$COMP_i = 1 - (\text{number of accounting improprieties in the municipality indicated in its audit report} / 8)$$

Control variables were inserted in the final model, namely: (i) expenditure in the Administration function (ADM), (ii) audit recommendation regarding approval or disapproval of the municipal government accounts (AUDIT), (iii) IT governance (GOVTI) and (iv) population range of entities (POP). Table 2 (Panel C) presents information regarding these variables.

Table 2: Dependent, independent, and control variables used

Variables	Description	Measurement	Data source
Panel A: Dependent variables			
Accrual accounting policies implemented until 12/31/2019 and whose accounting recognition was mandatory until that date (MAND)	Indicates the amount of accrual accounting policies implemented until 12/31/2019 by a municipality considering only the policies whose accounting recognition was mandatory until that date.	Quantitative discrete count variable: 0 to 5 accrual accounting policies implemented	The audit report of each municipality regarding the 2019 financial year issued and published by the TCE-RJ and TCM-RJ.
Accrual accounting policies implemented until 12/31/2019 and whose accounting recognition was voluntary until that date (VOL)	Indicates the amount of accrual accounting policies implemented until 12/31/2019 by a municipality considering only the policies whose accounting recognition was voluntary until that date.	Quantitative discrete count variable: 0 to 11 accrual accounting policies implemented	
Accrual accounting policies implemented until 12/31/2019 and whose accounting recognition was mandatory or voluntary until that date (MAND&VOL)	Indicates the amount of accrual accounting policies implemented until 12/31/2019 by a municipality considering the policies whose accounting recognition was mandatory or voluntary until that date.	Quantitative discrete count variable: 0 to 16 accrual accounting policies implemented	
Panel B: Independent variable			
Accounting compliance (COMP)	Indicates the accounting compliance (accrual, budgetary and fiscal) of a municipality in percentage, calculated from the number of accounting improprieties.	Quantitative continuous variable: percentage. 100% indicates that the entity did not present improprieties and, therefore, the information presents a maximum level of accounting compliance. 0% indicates that the entity presented the maximum number of improprieties among the analyzed entities, which is eight, and, therefore, has the higher level of non-compliance.	The audit report of each municipality regarding the 2019 financial year issued and published by the TCE-RJ and TCM-RJ.
Panel C: Control variables			
Percentage of expenditure in the Administration function (ADM)	Total budget expenditures in the Administration function in relation to total budget expenditures (excluding intra-budget expenditures).	Quantitative continuous variable: percentage	Brazilian Public Sector Accounting and Fiscal Information System (SICONFI by its Portuguese acronym) of Treasury.
IT Governance (GOVTI)	Indicator included in the calculation of the Municipal Management Effectiveness Index (IEGM by its Portuguese acronym). Represents the IT governance metric.	Quantitative continuous variable: in points	Rui Barbosa Institute (IRB by its Portuguese acronym).
Audit recommendation to the approval of the municipal government accounts (AUDIT)	Indicates whether the audit recommendation is favorable or not to the approval of the municipal government accounts.	Binary variable: 1 = favorable audit recommendation to the approval of the municipal government accounts and 0 = unfavorable audit recommendation to the approval of the municipal government accounts	The audit report of each municipality regarding the 2019 financial year issued and published by the TCE-RJ and TCM-RJ.
Population range (POP)	Indicates whether the municipality has a population greater than or up to 50,000 inhabitants. The distinction was made due to the difference in the deadline for the implementation of accrual accounting policies in the PIPCP for these two clusters.	Binary variable: 1 = municipality with more than 50,000 inhabitants and 0 = municipality with up to 50,000 inhabitants	Brazilian Institute of Geography and Statistics (IBGE by its Portuguese acronym).

Source: Research data.

For data analysis, Poisson and negative binomial regression models were used. These models are applied when the dependent variable “is presented in quantitative form, but with discrete and non-negative values (count data)” (Fávero & Belfiore, 2017, p. 695), which is the case of the variables MAND, VOL and MAND&VOL.

Model 1 represents the Poisson regression used with MAND (referring to H1a) while Models 2 and 3 represent the negative binomial regression used with VOL (referring to H1b) and MAND&VOL (referring to H1c), respectively. The three models are presented below.

$$\ln(\lambda_i) = \alpha + \beta_1 \cdot COMP_i + \beta_2 \cdot AUDIT_i + \beta_3 \cdot ADM_i + \beta_4 \cdot GOVT_i + \beta_5 \cdot POP_i \quad (\text{Model 1})$$

$$\ln(\lambda_i) = \alpha + \beta_1 \cdot COMP_i + \beta_2 \cdot AUDIT_i + \beta_3 \cdot ADM_i + \beta_4 \cdot GOVT_i + \beta_5 \cdot POP_i + \varepsilon_i \quad (\text{Model 2})$$

$$\ln(\lambda_i) = \alpha + \beta_1 \cdot COMP_i + \beta_2 \cdot AUDIT_i + \beta_3 \cdot ADM_i + \beta_4 \cdot GOVT_i + \beta_5 \cdot POP_i + \varepsilon_i \quad (\text{Model 3})$$

The difference is due to the dispersion in the data of the three dependent variables and, specifically, to the difference between the mean and the variance of these variables. The data for the variable MAND follow a Poisson distribution in which there is equidispersion in the data. The equidispersion in the data of this dependent variable was verified through a test in which the predicted values of mandatory accrual accounting policies implemented present a p-value equivalent to 0.906. Equidispersion is verified when the p-value is greater than 0.050 (Fávero & Belfiore, 2017, p. 728).

The data for the variables VOL and MAND&VOL show variances considerably greater than their mean, thus showing overdispersion in the data. The p-values for these variables were 0.042 and 0.000, respectively (Fávero & Belfiore, 2017, p. 728).

Other control variables were inserted in the model (individually, grouped, and through the application of the Stepwise procedure) to control characteristics of municipalities that could interfere or impact the accounting compliance, namely:

- (i) Internal control: binary variable, where 1 = “has an organizational structure for the area responsible for internal control”, “has performance and activities of internal control in the fulfillment of goals and fiscal and accounting limits” or “has a governmental audit function of the internal control”; and 0 = any of these requirements not satisfied.
- (ii) Bond of the person responsible for internal control: binary variable, where 1 = “effective municipal position”, “with

effective municipal position, appointed by competitive examination for the area of internal control” or “effective in another public sphere”; and 0 = “without permanent employment/commissioned position”.

(iii) Planning index: continuous variable that represents the municipal planning metric that integrates the IEGM.

The different models estimated with these variables resulted in controls without statistical significance, even with a 90% confidence level (10% significance level).

5. Results and Discussions

According to the data collected, it was observed that most municipalities (51.14% or 45 entities) implemented up to two of the five accrual accounting policies that were mandatory until 12/31/2019, measured through the MAND variable. Specifically, 17.05% of the municipalities (15 entities) did not implement any of the mandatory accrual accounting policies, 12.50% (11 entities) implemented an accrual accounting policy and 21.59% (19 entities) implemented two. A total of 19.32% of the municipalities (17 entities) implemented all five mandatory accrual accounting policies, namely: Barra do Pirai, Belford Roxo, Bom Jardim, Cardoso Moreira, Carmo, Duas Barras, Duque de Caxias, Laje do Muriaé, Nilópolis, Pinheiral, Queimados, Resende, Rio de Janeiro, São Fidélis, São Sebastião do Alto, Seropédica and Sumidouro.

The accrual accounting policies named “Actuarial Provision” (mandatory recognition from 09/24/2015) and “Liabilities with Suppliers” (mandatory recognition from 01/01/2016) were implemented by most municipalities in the state of Rio de Janeiro, since 63.64% (56 entities) and 62.50% (55 entities) of the municipalities, respectively, carried out the implementations. The percentage identified for “Actuarial Provision” through the sample of this study is higher than the percentage of 21% reported by Azevedo, Aquino, et al. (2020) when analyzing all Brazilian municipalities that have their own social security funds.

Another accrual accounting policy whose recognition is mandatory since 09/24/2015 is “Credits Restatement”. The implementation of this policy by 12/31/2019 had been carried out by a little more than half of the 88 municipalities analyzed (55.68% or 49 entities) and resulted as the third most implemented mandatory policy.

It is also observed that "Employee Benefits", whose recognition is demanded from 01/01/2019 for municipalities with up to 50,000 inhabitants and from 01/01/2018 for municipalities with more than 50,000 inhabitants, is the mandatory accrual accounting policy that had the lowest adherence, since 31.82% of the municipalities (28 entities) implemented it. The low implementation of this policy was also observed by Azevedo, Aquino, et al. (2020) when identifying that 20% of Brazilian municipalities adopted this accrual accounting policy at least once between 2013 and 2016.

In relation to the 11 accrual accounting policies whose recognition was voluntary until 12/31/2019, measured through the variable VOL, it was observed that the percentage of entities that did not implement any policy was higher than that observed in the variable MAND. While 17.05% (15 entities) have not implemented any mandatory accrual accounting policy, 63.64% of municipalities (56 entities) have not implemented any voluntary accrual accounting policy. It is also observed that the maximum number of implemented voluntary accrual accounting policies is equivalent to nine, by a single municipality, that of Queimados. The municipality of Rio de Janeiro (capital of the state of Rio de Janeiro) was the only one that implemented eight voluntary accrual accounting policies. These two entities (i.e., the municipalities of Queimados and Rio de Janeiro) also carried out the implementation of the five mandatory accrual accounting policies and, consequently, had 14 and 13 accrual accounting policies implemented, respectively (see Table 3). These two values were the highest observed in the MAND&VOL variable.

Among the 11 voluntary implementation accrual accounting policies, "Loans and Financing Liabilities" obtained the highest percentage of implementation (27.27% or 24 entities), followed by "Inventories" (20.45% or 18 entities), "Permanent Investments" (15.91% or 14 entities) and "Property, Plant, and Equipment" (14.77% or 13 entities).

The two voluntary accrual accounting policies with the longest implementation deadlines, "Infrastructure Assets" and "Heritage Assets", were the ones with the lowest percentages, given that 2.27% of the municipalities (2 entities) carried out the implementation of each one of these policies. According to the data, however, it is not possible to state that the percentage of accrual accounting policies implemented whose recognition was voluntary decreases with the increase in the deadlines, since "Provisions", for example, was the third accrual accounting policy with the

lowest percentage of implementation (6.82% or 6 entities) and its mandatory accounting recognition started on 01/01/2020 for municipalities with more than 50,000 inhabitants and on 01/01/2021 for municipalities with up to 50,000 inhabitants.

Table 3 presents the frequency distribution of the MAND&VOL variable. It is observed that a little more than half of the 88 municipalities analyzed (51.14% or 45 entities) implemented up to three accrual accounting policies out of 16 analyzed policies, whether mandatory or voluntary. In this MAND&VOL, however, there is 15.91% (14 entities) that did not implement any accrual accounting policy, whether mandatory or voluntary.

Table 3: Frequencies of accrual accounting policies implemented, mandatory or voluntary (variable code: MAND&VOL), in 2019

Variable MAND&VOL	Absolute frequency	Relative frequency (%)	Cumulative frequency (%)
0	14	15.91	15.91
1	6	6.82	22.73
2	16	18.18	40.91
3	9	10.23	51.14
4	12	13.64	64.77
5	14	15.91	80.68
6	1	1.14	81.82
7	2	2.27	84.09
8	3	3.41	87.50
9	4	4.55	92.05
10	3	3.41	95.45
11	2	2.27	97.73
12	0	0.00	97.73
13	1	1.14	98.86
14	1	1.14	100.00
15	0	0.00	100.00
16	0	0.00	100.00
Sum	88	100.00	

Source: Research data

Regarding the COMP variable, with a possible variation from 0% to 100%, it is desirable that the municipalities obtain 100%, as it would indicate that they did not have accounting improprieties. It was observed, however, that only 4.55% of the 88 municipalities analyzed (4 entities) obtained this percentage value, namely: Cardoso Moreira, Paty do Alferes, Quissama and São José do Vale do Rio Preto. 55.68% of them (49 entities) presented 62.50% of compliance, which means that more than half of the municipalities obtained at least three accounting improprieties. One municipal entity presented 0% of accounting compliance, being the municipality of Volta Redonda, which is equivalent, in this study, to eight improprieties. The mean and median of the COMP variable are equivalent to 61.93% and 62.50%, respectively (see Table 6). Table 4 presents the frequency distribution of the COMP variable.

Table 4: Frequencies of accounting compliance (variable code: COMP), 2019

Variable COMP	Absolute frequency	Relative frequency (%)	Cumulative frequency (%)
0%	1	1.14	1.14
12.50%	4	4.55	5.68
25%	3	3.41	9.09
37.50%	11	12.50	21.59
50%	14	15.91	37.50
62.50%	16	18.18	55.68
75%	20	22.73	78.41
87.50%	15	17.05	95.45
100%	4	4.55	100.00
Sum	88	100.00	

Source: Research data

Among the 25 accounting improprieties verified, it is observed that the one referring to the lack or incorrect accounting of resources from the Fund for the Maintenance and Development of Basic Education and the Valorization of Education Professionals (Fundeb by its Portuguese acronym) had the highest incidence, since it was observed in the audit reports of more than half of the municipalities (59.09% or 52 entities). These are high-visibility resources, subject to inspection, including external controls at the federal and state levels.

The second most observed impropriety refers to incorrect records of the financial surplus/deficit calculated in the Balance Sheet. This impropriety was observed in 47.73% of the municipalities analyzed (42 entities). This finding lights an alert for the lack of compliance in the parameterization of the records of availability by allocation of resources, an important point for decision-making regarding the opening of additional budgeting credits. Table 5 presents the five accounting improprieties with the highest incidence.

Table 5: List of the five accounting improprieties with the highest incidence in audit reports referring to the 2019 financial year (N = 88)

Accounting impropriety	Number of municipalities, n (%)
Lack or incorrect recognition of Fundeb resources	52 (59.09)
Incorrect recognition of financial surplus/deficit calculated in the Balance Sheet	42 (47.73)
Incorrect accrual recognition	39 (44.32)
Recognition of actuarial provisions in disagreement with the rules	34 (38.64)
Incorrect recognition and negative account balances in the Consolidated Balance Sheet	27 (30.68)

Source: Research data

The results of the three models show that, for the analyzed sample, H_1 (accounting compliance has a positive relationship with the implementation of accrual accounting policies, resulting from the adoption of standards converged to the IPSAS) (H_{1a} : mandatory implementation; H_{1b} : voluntary implementation, and H_{1c} :

mandatory and voluntary implementation) is rejected. It is noted, therefore, that the findings differ from what was expected, as the level of accounting compliance based on already institutionalized practices (i.e., budgetary and fiscal accounting) does not seem to be a facilitator of adherence to practices in the process of institutionalization (i.e., accrual accounting). In other words, the qualification of public sector accountants for compliance with the basic aspects of accounting techniques (budgetary and fiscal) does not influence advances in the implementation of accrual accounting policies.

According to the theoretical support used (Lüder, 1992, 2002), there are contextual, behavioral, and instrumental variables that interfere or impact the introduction of governmental accounting innovations, and civil service is just one of the contextual variables. The civil service, which comprises the public sector accountants, is part of the institutional arrangements. These, according to Lüder (2002), are influenced directly by the political reform promoters (such as members of governments and parliament) and indirectly by the reform drivers (such as government commissions, professional associations, audit institutions, standard-setting bodies, consulting firms, and scholar networks, which form epistemic communities). Stakeholders (such as the general public, parliament, government agencies or departments, and statistical offices) influence institutional arrangements both directly and indirectly. In addition, the institutional arrangement comprises other variables, namely, the legal system, State structure, administrative structure, and culture.

Previous studies (Frisancho, 2022; Lima & Lima, 2019) suggest that Brazilian public sector accountants recognize the importance of the implementation process of the standards converged to the IPSAS. However, Marques et al. (2020) indicate the need for organizational changes, which go beyond the decision-making power of the public sector accountants, aiming to meet the IPSAS convergence. Although the findings of these studies are based on methodological bases different from those of this paper, it is possible to think that the implementation of accrual accounting policies is impacted by several other contextual variables that favor or not public sector accountants to exercise their functions.

According to the results of Model 1 (dependent variable: MAND), it appears that the control variables AUDIT and ADM showed statistical significance at the level of 10% and 5%, respectively. The positive sign of the AUDIT variable suggests a positive relationship between the favorable audit recommendation of the court of accounts

Table 6: Descriptive statistics of the variables (dependent, independent, and control) of the model

Panel A: quantitative variables							
Variable	N	Mean	Median	Standard deviation	Variance	Minimum	Maximum
MAND	88	2.55	2.00	1.73	2.99	0.00	5.00
VOL	88	1.34	0.00	2.29	5.26	0.00	9.00
MAND&VOL	88	3.89	3.00	3.25	10.58	0.00	14.00
COMP	88	61.93%	62.50%	22.81%	0.05	0.00%	100.00%
ADM	88	17.59%	16.74%	6.89%	0.00	3.52%	41.66%
GOVTI	88	59.47	60.50	12.06	145.40	32.00	84.00
Panel B: binary variables							
Variable	Categories		N	%			
AUDIT	1 = favorable audit recommendation to the approval of the municipal government accounts		62	70,45			
	0 = unfavorable audit recommendation to the approval of the municipal government accounts		26	29,55			
POP	1 = municipality with more than 50,000 inhabitants		37	42,05			
	0 = municipality with up to 50,000 inhabitants		51	57,95			

Source: Research data

Table 7 presents the results of the final estimated Poisson and negative binomial regression models.

Table 7: Results of estimated Poisson and negative binomial regression models

	Model 1 (PCP_OBG)	Model 2 (PCP_VOL)	Model 3 (PCP_TOTAL)
COMP	0.2866	0.8509	0.4979
AUDIT	0.2768*	0.0582	0.1713
ADM	-3.0316**	-1.1864	-2.5968**
GOVTI	0.0090	0.0370**	0.0184***
POP	-0.0772	1.2671***	0.3280*
Constant	0.5607	-3.1329**	0.0857
N	88	88	88
Prob > chi2	0.0148	0.0090	0.0054
Pseudo R2	0.0410	0.0592	0.0387
Deviance goodness-of-fit	0.0048		
Pearson goodness-of-fit	0,2099		

Note. *, ** and ***: statistical significance at the level of 10%, 5% and 1%, respectively.

Source: Research data.

for approving the governmental accounts and the implementation of mandatory accrual accounting policies. This finding is consistent with those of Azevedo, Lino, et al. (2020) who indicate that the demands of the courts of accounts are prioritized in the work of public sector accountants. In Models 2 and 3 (dependent variables: VOL and MAND&VOL, respectively), the AUDIT variable did not result with statistical significance, reinforcing the prioritization of what is required by the audit courts.

Lino and Aquino (2018) indicate the existence of differences between the audit courts and Rodrigues (2021) found that carrying out financial audits is still an incipient practice in external control entities, but that they are preparing themselves to do so. The data in this study are from municipalities in the same state, namely, Rio de Janeiro. The state capital, the municipality of Rio de Janeiro, has its accounts inspected by the TCM-RJ and the accounts of the other municipal entities in that state are inspected by the TCE-RJ. Thus, future studies can verify whether the financial auditing stage of these courts has boosted the adherence to the accrual accounting policies by the entities analyzed.

In relation to the ADM variable (significance level of 5% in Model 1), the negative sign obtained indicates that, on average, the higher the percentage of expenditures settled in the Administration function, in relation to the total expenditure, the lower the probability of implementing a mandatory accrual accounting policy. Result with the same sign and significance level was obtained in Model 3, referring to the implementation of mandatory and voluntary accrual accounting policies (MAND&VOL). These findings indicate possible inefficiency in the allocation of public resources in the Administration function.

Evidence of this inefficiency was obtained by previous studies in other contexts, such as education (Faria et al., 2008; Wilbert & D'Abreu, 2013), health (Faria et al., 2008; Mazon et al., 2021) and culture and sanitation (Faria et al., 2008). Thus, future research is needed to identify whether there is inefficiency in the allocation of resources in the Administration function or whether the results of actions related to the function are perceptible in other contexts that differ from the implementation of accrual accounting policies.

In Model 2 (dependent variable: VOL), in turn, the control variables with statistical significance at the 1% and 5% level, respectively, were POP and GOVTI. These two variables also showed statistical significance in Model 3 (dependent variable: MAND&VOL). In this last model, the statistical significance level was also 1% for POP, however, 10% for GOVTI.

Regarding the POP variable, it is important to highlight that the PIPCP discriminates different deadlines for municipalities with more than 50,000 inhabitants and for municipal entities with a population below that amount (see Table 1). Until 12/31/2019, both groups of entities had the obligation to implement the same set of accrual accounting policies. As of 01/01/2020, however, municipalities with more than 50,000 inhabitants should implement the policies named "Contingent Assets and Contingent Liabilities", "Property, Plant, and Equipment", "Loans and Financing Liabilities", "Permanent Investments", and "Provisions".

For municipalities with less than 50,000 inhabitants, in turn, these accrual accounting policies would only become mandatory on 01/01/2021. Thus, the positive signs obtained for POP, in Models 2 and 3, indicate the tendency of municipalities to comply with implementation when it becomes mandatory, given that binary variable 1 refers to municipalities with more than 50,000 inhabitants. Another possible explanation is that the size of the municipalities is a characteristic that interferes with the conditions for the implementation of accrual accounting policies, considering that larger municipalities are better structured and can more clearly perceive the cost-benefit of the accounting information generated.

In relation to the GOVTI variable, the results indicate that the higher the score of a municipality for this variable, the greater its probability of voluntarily implementing accrual accounting policies (VOL) and of having a greater number of accrual accounting policies implemented (MAND&VOL), which may be related to with the ability to implement improvements in accounting software in the municipalities that develop them internally or better define contracting out parameters for third-party software.

Azevedo, Aquino, et al. (2020) and Azevedo, Lino, et al. (2020) indicate that contracted software providers define the implementation of accrual accounting policies in municipalities and the retention of already implemented policies is related to these contracts. It is because these providers follow the market logic for updating their systems, to the detriment of the deadlines established in

the PIPCP, and that many of the software systems sold are ready-made solutions, sold on a large scale.

This paper, however, did not identify municipal entities that have their own software systems and those that hire these services. Thus, it is not possible to indicate whether there is a relationship between the GOVTI indicators and the hiring or not of software providers. In addition, future studies are needed to better understand the relationship between GOVTI and VOL and between GOVTI and MAND&VOL, as previous research (Cappellesso et al., 2016; Cuadrado-Ballesteros & Bisogno, 2021; Tawiah, 2022) demonstrates the influence of IPSAS in governance, not the other way around.

These results indicate that, in line with Lüder (1992, 2002), the qualification of public sector accountants should be analyzed in a broader context, including the variables that favor the exercise of their functions in terms of accrual accounting.

6 Final Considerations

The objective of this study was to identify the relationship between accounting compliance and the implementation of accrual accounting policies from the IPSAS adoption. To do so, the Contingency Model (Lüder, 1992) and the FMR Model (Lüder, 2002) were used as theoretical support.

According to the data collected on the 88 municipalities in the state of Rio de Janeiro (the municipalities of Aperibe, Carapebus, Porciúncula and Rio Bonito were excluded from the analyzes due to lack of data for the construction of dependent variables), evidence was obtained through from the Poisson and negative binomial regression models, that it is not possible to conclude that accounting compliance is related, whether positive or negative, with the implementation of accrual accounting policies resulting from the adoption of standards converged to the IPSAS.

Although the findings regarding accounting compliance do not correspond to expectations, there are control variables whose results may be relevant for research in the area. First, in Model 1 whose dependent variable represents the mandatory implementation of accrual accounting policies (MAND), it was observed that having a favorable audit recommendation for the approval of government accounts may be related to the implementation of these accrual accounting policies. This finding may indicate, quantitatively, the relevance of the performance of the external control entities for the implementation processes

of standards converged to the IPSAS.

Second, in Model 2 whose dependent variable represented voluntary implementation of accrual accounting policies (VOL), it was observed that the higher the IT governance index, the greater the probability of the entity implementing accrual accounting policies voluntarily. Third, in this same model, it was noted that the probability of a municipal entity with more than 50,000 inhabitants implementing the accrual accounting policies voluntarily is higher than the probability of such implementation occurring by an entity with up to 50,000 inhabitants.

Finally, the percentage of expenditures settled in the Administration function was significant in two of the three estimated models, however, the relationship was negative. The finding indicates that the higher the percentage of expenditure allocated to the Administration function, in relation to total expenditure, the lower the probability of implementing a mandatory accrual accounting policy (Model 1) or of implementing mandatory and voluntary accrual accounting policies (Model 3). This finding draws attention to the possible inefficiency in the allocation of public resources or lack of prioritization of resources to promote the implementation of the IPSAS-based accrual accounting.

When the variable of interest (i.e., accounting compliance) is analyzed together with the control variables, it is possible to conclude that the greater fulfillment of the demands by public sector accountants regarding the basic aspects of the accounting technique (such as the non-existence of negative balances) is not a facilitator of accrual accounting policies implementation. Instead, other variables in the institutional arrangement, such as administrative structure (IT governance and expenditures allocated to the Administration function) or reform drivers (courts of accounts) can facilitate the implementation.

For the adoption of accrual accounting policies, information systems are essential elements and IT governance plays a facilitating role. Without adequate systems, it is difficult for public sector accountants to implement and retain accrual accounting policies. Auditors, in turn, influence other relevant actors, such as public managers. Without the support of public managers, it is difficult for public sector accountants to achieve the necessary conditions to perform their duties, including prioritizing the allocation of resources for the implementation of standards converged to the IPSAS.

Therefore, at first, there seems to be a greater relevance

of the reform drivers and other institutional arrangements that, at the same time, directly impact the adoption of the accrual accounting policies based on the IPSAS and the performance of public sector accountants regarding the performance of their duties. Additional studies are needed to verify in which situations these findings are valid and, consequently, improve understanding of how much municipal characteristics account for the status of accrual accounting policy implementation.

The study has limitations regarding the measurement of the variable qualification of public sector accountants and future studies can advance in the elaboration of constructs with a view to measuring this qualification for the adoption of IPSAS. In addition, the results refer to municipalities in a Brazilian state, and expansion to entities in other states is suggested. However, the use of data from different states and, mainly, from different regions, demands the addition of control variables extracted from the Contingency Model (Lüder, 1992) and the FMR Model (Lüder, 2002), such as, for example, the culture, which also makes up the institutional arrangement.

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