


DISCLOSURE INDEX OF ASSET ACCOUNTING PROCEDURES IN THE PUBLIC SECTOR: AN ANALYSIS OF THE MUNICIPALITIES OF THE STATE OF ESPIRITO SANTO

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ABSTRACT

The objective of this study was to determine the level of disclosure of asset accounting procedures in the public sector of municipalities in the State of Espírito Santo from the perspective of analysis of the variables internal control, municipal development, population and budget revenues. Quantitative analysis methods are used in this research, such as descriptive statistics and multiple linear regression. It was found that the mean of the Disclosure of Assets Accounting Procedures Index achieved by the analyzed municipalities was 55.19%. This index suggests that the efforts made by the municipalities to meet the requirements of the regulatory agencies is still limited. The results showed that: i) the variables internal control and population were not statistically significant for the model; ii) the variables education and budget revenues showed a positive relationship with the disclosure index, indicating that municipalities with better educational levels and higher revenues tend to have higher disclosure levels. Finally, the evidence of this research contributes to the analysis of the disclosure index and its determinants, as well as to the understanding of the process of harmonization of public sector accounting to international standards in municipalities of the State of Espírito Santo.

Keywords: Disclosure Index. IPSAS. Assets Accounting Proceedings. Explanatory Variables.

1 INTRODUCTION

Since 2008, Brazil has undergone a process of accounting transformation of the public sector. However, this process, hereinafter referred to as convergence with international accounting standards (Botelho & Lima, 2015), is challenging. In this sense, the research shows that the changes proposed by convergence to the new standard have suffered resistance (Cruz, 2015), behavior revealed by the lack of interest and distrust of managers in relation to accounting information (Xavier & Silva, 2011). Other studies highlight problems generated by the culture of bureaucratic management, responsible for giving priority to budgetary issues to the detriment of equity accounting (Cruz, 2015; Xavier & Silva, 2011). Still, some studies have demonstrated barriers related to the use of inadequate systems (Marques, 2017; Rosa, Fraga, Rosa & Lepsch, 2018), as well as the lack of specialized/qualified teams (Lima & Lima, 2019; Marques, 2017).

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Although the implementation of accounting principles based on the International Public Sector Accounting Standards (IPSAS) is a positive observation, it is still ongoing in Brazil, given the deadlines granted (STN Ordinance number 548/2015) and the barriers to compliance with practices. Consequently, the change in deadlines proposed by the National Treasury (STN) generated uncertainties in the process, affecting the willingness of local governments to operationalize and maintain new accounting policies (Azevedo, Aquino, Neves & Silva, 2020).. In the aforementioned study, the authors concluded that the convergence of accounting from the Brazilian public sector to the IPSAS slowed down and currently presents low levels of adoption of various accounting policies.

Considering that the adoption of IPSAS is an important step in the improvement of government financial management, but is currently at a slow pace (Azevedo *et al.*, 2020), presenting several implementation barriers, mainly in local governments (Lima & Lima, 2019), this research aims to contribute to the literature by proposing the determination of *the disclosure level of asset accounting procedures (PCPs) in the public sector of the municipalities of the State of Espírito Santo, Brazil, as well as suggest possible factors that may be related to a higher level of disclosure of such accounting policies.* Therefore, this research is based on the following question: **What's the level of disclosure of PCPs in the public sector of municipalities in the State of Espírito Santo and its relationship with the variables internal control, municipal development, population and budget revenues?**

Considering that for the municipalities analyzed in this study *disclosure* is mandatory, because it is determined by legal norms, this research is guided through the perspective adopted by Castro *et al.* (2018), being therefore categorized in the disclosure surveys based on judgment, which aim to evaluate whether the socioeconomic characteristics, as well as the disclosure index achieved, can bring the government agencies together based on their similarities.

The novelty of this study is highlighted by the scope of analysis (municipalities of the State of Espírito Santo), which, unlike other states, are subject to specific regulation on the Plan of Implementation of Assets Accounting Procedures (PIPAP), prepared by the Local Court of Auditors (TCE-ES), whose terms do not distinguish among the municipalities with less and more than 50,000 inhabitants, besides this standard anticipate some of the terms defined in Ordinance number 548/2015 of the STN. Thus, the particularity of the State of Espírito Santo makes the purpose of this analysis relevant.

For the proposed research gap, differentiating from the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), the present study adopts the implementation deadlines of the PCPs defined in Normative Instruction number 36/2016, of the TCE-ES, and adds new variables to the econometric model used by these authors, to analyze the factors related to the *disclosure* level of PCPs, namely internal control and municipal development.

As main conclusion, this research brings evidence that the accounting reform, undertaken through the PIPAP, within the analyzed municipalities, may not be receiving the support of “power actors” (mayors, public financial controllers and State Accounts Court)(Lino, Carvalho, Aquino & Azevedo, 2019), a fact demonstrated by the lack of statistical significance of the internal control variable in the proposed econometric model. On the other hand, the population tends not to be interested in accounting information, indicating the existence of low level of education and complexity of financial reports based on the new standard. With this, the PIPAP moves slowly, undermining transparency and, in a broader sense, *accountability*.

The following section describes the literature review that supports the analysis of the proposed study. Part 3 focuses on the methodological aspects of the research, presenting an econometric model to analyze the factors associated with *the disclosure* index of the PCPs, whose results were presented and discussed in section 4. Finally, section 5 presents conclusions, limitations and recommendations for future research.

2 LITERATURE REVIEW

2.1 Convergence to IPSAS and Assets Accounting Procedures in the Public Sector

Among the many changes in public sector accounting in recent years, one of the most important developments was the emergence of IPSAS (Chan, 2003). The IPSAS issued by the *International Public Sector Accounting Standards Board (IPSASB)* are accounting standards based on accrual accounting for public sector financial reports and serve as a reference for the quality of the report and harmonization of public sector accounting in several countries (Calado & Teixeira, 2016).

In this context, the New Public Management Paradigm (NGP) had a profound effect on accounting practices. Lapsley, Mussari and Paulsson (2009) point out that NGP is a reform model that favors quantification and results and where accounting plays a central role. In this regard, Christiaens *et al.* (2015) report that IPSASB has developed the IPSAS to expedite and support these reforms.

According to Botelho and Lima (2015, p. 77), “the transition of the Brazilian government to the accrual basis accounting falls within a broad context called the process of convergence to international accounting standards”. As for the change to the accrual basis accounting, the authors see that the great difficulty has been to overcome accounting practices adopted more than fifty years since the validity of Law number 4.320/1964, which states in Article 35 that public revenue in Brazil should be recorded only at the time of collection and public expenditure at the time of commitment.

Thus, the convergence to the new standard gave prominence to the property aspects, which were materialized through the implementation of equity accounting procedures (PCPs) in the public sector. However, in opposition to the initial proposal for universal adoption of PCPs for the whole Federation (Federal Government, States, Federal District and municipalities) until 2013, what was observed were followed extensions and a delay in the announcement of the deadlines of each policy, since they were announced only two years later: in September 2015 (STN Ordinance number 548/2015), generating uncertainties (Azevedo *et al.*, 2020).

As a result, for two years, the entities of the Federation did not know for certain the deadlines they should follow (Azevedo *et al.*, 2020). After this period, STN issued Ordinance number 548/2015, a document that brought in its annex the Plan for Implementation of the Financial Accounting Procedures (PIPCP). In this respect, the PIPCP was fundamental to guide the convergence process, since this document seeks to describe the PCPs, informing the main normative references, as well as providing examples of the actions necessary for the implementation of each accounting policy and the deadlines to be observed by the states (STN, 2015).

Unlike other states, the PIPCP in the State of Espírito Santo is regulated by Normative Instruction number 36/2016 of TCE-ES. Taking this into account, IN number 36/2016 established that internal control, in each Power or Agency, should monitor the implementation of the measures necessary to comply with the deadlines for adoption of the PCPs. Consequently, failure to comply with the aforementioned Instruction may be identified in the examination of accountability by the Court (Auditor Court of the State of Espírito Santo [TCE-ES], 2016).

2.2 Similar Studies and Research Hypothesis

With the progress of the convergence process to IPSAS, the interest in studies on the dissemination of new accounting rules in national government agencies increases. Although the PIPCP was published in 2015, some of its procedures were already foreseen in the first Brazilian

Public Sector Accounting Standards (NBC T 16), first published in 2008, a fact that motivated the initial studies on *disclosure*.

In this follow-up, Braga and Bezerra Filho (2014) analyzed the level of convergence to NBC T 16 and the MCASP of the municipalities of Pernambuco, based on the financial statements for the financial year 2014, as well as sought to identify external factors that influence the level of convergence reached by the municipalities (NCA). In this study, the results showed that the NCA is still very embryonic and that the size of the municipality exerts a positive influence on the NCA and the HDI influences negatively; the other variables, collection and per *capita* GDP do not exert a significant influence on the index.

Castro's study (2016) was also based on NBC T 16 and sought to analyze the characteristics of the Brazilian states and the Federal District that may explain the level of *disclosure* (ID). As Braga and Bezerra Filho (2014) did, the author tested the relationship of variables with ID, notably: budget revenues, transfers of resources from the Federal Government to the states, GDP per capita, Municipal Development Index (IFDM), Human Development Index (HDI), literacy rate and population. The results of this study show an average disclosure of 76% and it was observed that the variables budget revenues, transfer of Federal Government resources to states and population can be considered explanatory factors of ID.

On the other hand, Marques (2017) investigated the perception of accountants and managers working in accounting and finance departments of federal universities in relation to NBC T 16, seeking to identify compliance with new standards through the Compliance Level Index (INA). The results of the study confirmed that NBC T 16 are being implemented in universities and that the realization of some items is not possible due to inadequate systems or lack of defined methodology.

It can be said that the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022) were the first, at national level, to refer to the construction of an level index of disclosure of property procedures (IEA-PIPSP). These authors examined the disclosure levels of Brazilian municipalities in 2015, 2016 and 2017 and suggested factors that could be related to the indicators obtained. The results in the first years of implementation of the PIPSP showed little progress in the IEA-PIPSP of the analyzed municipalities, also all the proposed variables related to the IEA-PIPSP were statistically explanatory, with the Budget variable presenting a negative relation with the index; HDI, Internal Control and Population, positive relationship.

Still in a perspective of analysis of NBC T 16, the study of Marega (2019) verified external and internal factors that impact the disclosure of financial information of the Brazilian Judiciary. The results indicated that, on average, the disclosure index of the financial statements was 52%, and that the variables net current revenue and budget revenue have a positive relationship with the index.

The study of Santos and Peixe (2020) entered the property aspects concerning the deadlines for implementation of the PIPSP in entities of the Brazilian Federal Government. The analysis of the authors was based on 145 statements of accountants, obtained from the management reports of the year 2018. The research identified 109 units with restrictions, representing 75.17% of the sample, where the most cited ones referred to the processes of stocks, immobilized and intangible assets, having been presented as more recurrent justifications of system problems, counting of stocks and movable assets, complexity of the process and lack of personnel. The result showed that the implementation process of NBC TSP presents difficulties, requiring efforts of the main actors involved, as well as changes and improvements in systems, internal procedures and training.

Other studies, such as that of Martha, Bianchi, Venturini and Machado (2021) that analyzed the adherence degree of the municipalities of Rio Grande do Sul to PCPs, identified important advances in some procedures. The results of this study indicate that the analyzed entities are anticipating the adoption of accounting procedures, especially the accounting of accounts

receivable and liabilities, which, according to the authors, represents an advance in relation to the adoption of the accrual basis of the public accounting.

Thus, the studies presented in this section show that the process of convergence to IPSAS is something that is still in progress and presents important challenges. In this sense, the present study seeks to advance the analysis of *the disclosure* level of PCPs and the identification of factors that may impact their growth. Adopting as an environment of analysis the 78 (seventy-eight) municipalities of the State of Espírito Santo, this work brings important contributions, practical and academic, by presenting an econometric model that allows analyzing factors that may be related to a higher level of *disclosure* of PCPs. Following this orientation, it was aimed to test the following hypotheses:

H1: The *disclosure* index has a positive relationship with internal control.

The internal control is a determinant of *the disclosure* index, as evidenced by Piccini, (2018) and Piccini, Bezerra Filho and Marques (2022) It is expected that the better the evaluation of internal control, the higher *the disclosure* index will be. It is emphasized that for the explanatory variable internal control, different from the procedure adopted in the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), which measured it based on budgeted resources, in this study the evaluation indicator of the municipal internal control system, elaborated by the TCE-ES was used.

The TCE-ES, through an inspection, in the survey modality, in 2020, evaluated the implementation and execution of regulations, including physical structure and training of internal control servants of the legally appointed agencies. The evaluation, based on the application of questionnaires to the responsible/holders of each Internal Control Unit in the municipalities and subsequent “*in loco*” visit of some bodies, included four areas: i) Control Environment (comprising the whole Legally Appointed Unit [UJ]); ii) Internal Control Unit (comprising the structure of the Internal Control Center Unit of the UJ); iii) Risk Assessment (assessment and measurement of the possible risks of the UJ); and iv) Control Procedures (control activities adopted) (TCE-ES, 2020).

Therefore, it was chosen to choose the evaluation index of the TCE-ES because it understands that it represents better, when compared to budgeted resources, the performance of the Internal Control Agency. Corroborating with the positioning adopted in this research, Lino *et al.* (2019) emphasize the role played by institutional capital, when supported by “power actors” (mayors, public financial controllers and Court of Auditors) favorable to the new practices of a reform, in the case of the installation and development of internal control, is a primordial condition for the constitution of active systems. Therefore, it is not enough to have resources in abundance if they are not managed by “power actors” favorable to internal control practices.

H2: The *disclosure* index has a positive relationship with the municipal development.

The municipal development, measured according to the terms of this study based on the three dimensions of the Firjan Municipal Development Index (IFDM - Education, IFDM - Health, IFDM - Employment and Income), is a determinant of *the disclosure* index, evidence demonstrated in the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022) through the Human Development Index (HDI). It is expected that the higher the level of social development, the higher the *disclosure* index.

H3: The *disclosure* index has a positive relationship with the population.

The population, measured based on the number of inhabitants of the municipality, is a determinant of *the disclosure* index, as demonstrated in the studies of Braga and Bezerra Filho (2014), Castro (2016), Piccini (2018) and Piccini, Bezerra Filho and Marques (2022). It is expected that the higher the population, the higher the *disclosure* index.

H4: The *disclosure* index has a positive relationship with the budget revenue.

Finally, the budget revenue is a determining factor in *the disclosure* index, evidence corroborated in the studies of Castro (2016) and Marega (2019). Therefore, it is expected that the higher the budget revenue, the higher the *disclosure* index.

3 METHODOLOGICAL PROCEDURES

To meet the objective of the study, quantitative research was adopted. The study population covers the seventy-eight (78) municipalities of the State of Espírito Santo. In the development of the research, the financial statements disclosed by the 78 municipalities belonging to the sample were collected, referring to the annual accounts rendering (PCAs) of the financial year 2020, where the database of the TCE-ES was used for this purpose, called the Control Panel (<https://paineldecontrole.tcees.tc.br/>, retrieved on January 3rd, 2022).

Consolidated financial statements were analyzed, especially the Balance Sheet (BS) and the Explanatory Notes (EN). The period of analysis selected was 2020, because it is the most recent with accounting statements published by the sample municipalities, according to the standards of the STN and the TCE-ES.

The calculation of the Disclosure Index of Asset Accounting Procedures (*ID-PCP*) was carried out from the methodology used in the research of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022). In these studies, the authors used for data collection a mechanism of identification (*proxy*) of the financial accountings listed with balances other than zero. For the data collection of the present study, financial accountings with balances different from zero in the accounting statements were verified, but data collection and tabulation were performed with the support of *Office Excel*[®]. Table 1 represents the *checklist* used at this stage of the study.

Table 1

PIPCP procedures and procedures analyzed by the Research

PIPCP procedures	Deadline for the municipalities membership	Procedures analyzed by the research
1. Recognition, measurement and disclosure of credits from tax revenues and contributions.	01/01/2017	1. Receivable tax credits
2. Recognition, measurement and disclosure of social security credits.	Immediate	2. Receivable social security credits
3. Recognition, measurement and disclosure of other credits to be received (except tax, social security and contributions credits to be received).	Immediate	3. Other receivable credits
4. Recognition, measurement and disclosure of Active, tax and non-tax debt, and respective adjustment for losses.	Immediate	4. Tax active debt 5. Non-tax active debt 6. Adjustment for losses
5. Recognition, measurement and disclosure of accrual basis provisions.	Immediate	7. Provisions
7. Recognition, measurement and disclosure of movable and immovable property; respective depreciation or exhaustion; revaluation and reduction of recoverable value (except cultural heritage and infrastructure assets).	01/01/2020	8. Movable assets 9. Immovable assets 10. Depreciation, amortization or depletion of fixed assets 11. Revaluation and

		reduction of the recoverable value of fixed assets
10. Recognition, measurement and disclosure of accrual basis liabilities arising from loans, financing and contractual and securities debts.	Immediate	12. Loans made 13. Funding taken
12. Recognition, measurement and disclosure of the actuarial provision of the own pension system of civil and military public servants.	Immediate	14. Actuarial provision
15. Recognition, measurement and disclosure of <i>software</i> , trademarks, patents, licenses and similar, classified as intangible and eventual amortization, revaluation and reduction to recoverable value.	01/01/2017	15. <i>Software</i> , patents, trademarks, licenses and similar 16. Amortization of intangible 17. Revaluation and reduction to the recoverable value of intangible
17. Recognition, measurement and disclosure of permanent investments, and respective adjustments for losses and reduction of recoverable value.	01/01/2017	18. Permanent participations 19. Reduction of the recoverable amount of permanent holdings
18. Recognition, measurement and disclosure of stocks.	01/01/2017	20. Stocks

Source: Adapted from Piccini (2018) and Piccini, Bezerra Filho and Marques (2022).

As for the deadlines prescribed in Normative Instruction number 36/2016, the verification of their compliance is summarized to the investigation of the realization and/or execution of two specific actions by the public entities: 1) "System preparation and other operational measures", and; 2) "Obligatory accounting records". In this analysis, the PCP will be considered implemented when the corresponding accounting record is identified.

The *checklist* uses eleven (11) of the nineteen (19) PIPCP procedures as a reference. According to Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), the items not covered in their studies are specific elements whose accounting applies to a small number of states in which this type of action is carried out. The authors emphasize that the missing procedures did not impair the establishment of a methodology for assessing the level of *disclosure* of the PCPs considered.

Confirmation of *disclosure* of checklist elements (PCP evidenced in the financial statements) was made by *means of dummies*: 0 = Procedure not evidenced; 1 = Procedure evidenced.

The final degree of *disclosure* obtained by this methodology was calculated according to the equation (1). This result is known as "Disclosure index of Asset Accounting Procedures" (*ID-PCP*).

$$ID - PCP = \frac{S}{T} \times 100 \quad (1)$$

Where:

ID-PCP: Disclosure index of Asset Accounting Procedures

S: sum of the number of procedures evidenced by the entity

T: Total *checklist* items (20 items in total).

In addition, the research also verified the validity of the variables associated with *the disclosure* index, namely: internal control, municipal development, population and budget revenues, whose identification of this association was made by the multiple linear regression

method. Table 2 shows the description of the variables, with their respective sources and their classification.

Table 2
Variables analyzed

Variable	Description	Source	Year	Type	Measurement scale	Signal expected
<i>ID-PCP</i>	Index used to identify the level of <i>disclosure</i> of the accounting procedures of the municipalities.	<i>Checklist</i>	2020	Quantitative (dependent)	Ranking of the score from 0 to 100. Where 0 is the lowest and 100 the highest.	Not applied
<i>CI</i>	Evaluation note of the Internal Control System of the municipalities of the State of Espírito Santo.	Court of Auditors of the State of Espírito Santo (TCE-ES)	2020	Quantitative (independent)	Ranking of the score from 0 to 84. Where 0 is the lowest and 100 the highest.	+
<i>ER</i>	FIRJAN Municipal Development Index – Employment and Income – it considers in its calculation the variables: formal employment generation; formal employment stock; average formal employment wages.	Federation of Industries of the State of Rio de Janeiro (FIRJAN)	2016	Quantitative (independent)	Index ranges from 0 (minimum) to 1 (maximum)	+
<i>EDUC</i>	FIRJAN Index of Municipal Development - Education - it considers in its calculation the variables: enrollment rate in early childhood education; drop-out rate; age-grade distortion rate; percentage of teachers with higher education; average daily class hours and IDEB.	Federation of Industries of the State of Rio de Janeiro (FIRJAN)	2016	Quantitative (independent)	Index ranges from 0 (minimum) to 1 (maximum)	+
<i>SAÚDE</i>	Municipal Development Index – Health – it considers in its calculation the variables: number of prenatal consultations, deaths from ill-defined causes and infant deaths from preventable causes.	Federation of Industries of the State of Rio de Janeiro (FIRJAN)	2016	Quantitative (independent)	Index ranges from 0 (minimum) to 1 (maximum)	+
<i>lnPOP</i>	Logarithm of the estimated population of the municipality.	Brazilian Institute of Geography and Statistics (IBGE)	2020	Quantitative (independent)	Number of inhabitants	+
<i>lnRECEIT</i>	Logarithm of the total	Court of	2020	Quantitative	R\$	+

AS	revenues collected.	Auditors of the State of Espírito Santo (TCE-ES)	(independent)	collected in the year
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Source: Research data.

It is noted that the variable municipal development is evaluated by three indicators of development that measure employment and income, education and health, which make up the Firjan Index of Consolidated Municipal Development (IFDM). The reason to divide the IFDM in its three dimensions is to examine the individual effects of each dimension in relation to the *ID-PCP*.

The least squares method was used to estimate the regression coefficients, in which the econometric model was proposed to test the relationship of the independent variables described in Table 2 with the *ID-PCP* according to Equation (2).

$$ID - PCP_i = \beta_0 + \beta_1(CI)_i + \beta_2(ER)_i + \beta_3(EDUC)_i + \beta_4(SAÚDE)_i + \beta_5 \ln (POP)_i + \beta_6 \ln (RECEITAS)_i + \varepsilon_i \quad (2)$$

For treatment, tabulation and analysis of the results, *R*[®], version 4.2.1 and *Office Excel*[®] software were used as auxiliary tools. The explanatory power of the model was analyzed using the adjusted *R*², a parameter that indicates how much the variation of the dependent variable is explained by the explanatory variables (Fávero, Belfiore, Silva & Chan, 2009).

The F test was applied to evaluate the significance of the model in whole, verifying that the joint variables are statistically different from zero (Fávero *et al.*, 2009). With the *t*-test it was verified whether there is the same relationship between the explanatory variables and the dependent variables, proving that the coefficients β_i are not statistically equal to zero (Corrar & Theóphilo, 2013).

The validity of the regression was analyzed by the *Breusch-Pagan/Cook-Weisberg* tests (heteroscedasticity), *Shapiro-Wilk* test (standardized residues) and VIF test (absence of multicollinearity). Because they are not time series, it was not necessary to prove the absence of autocorrelation among the residues.

4 DESCRIPTION AND RESULTS ANALYSIS

In this section, the description of the results is presented from descriptive statistics and regression by the Least Squares Method (MMQ). To calculate the regression, the data concerning the variables population (*POP*) and Budget Revenues (*RECEITAS*) were linearized to enable smoothing, which were arranged in the form of natural logarithm (*lnPOP* and *lnRECEITAS*).

Table 3 shows the descriptive statistics of the variables referring to the seventy-eight (78) municipalities in the sample. It is noteworthy that the municipalities of Conceição da Barra, Ibitirama, Itapemirim, Pinheiros, São Domingos do Norte and Vila Valério presented absence of data, referring to the variable Internal Control (*CI*).

Table 3
Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
<i>ID-PCP</i>	55.19	11.58	30	80
<i>CI</i>	45.61	19.79	9	84
<i>ER</i>	0.44	0.11	0.25	0.74
<i>EDUC</i>	0.84	0.04	0.72	0.93
<i>SAÚDE</i>	0.83	0.08	0.61	0.97
<i>lnPOP</i>	10.1	1.03	8.34	13.17
<i>lnRECEITAS</i>	16.35	1.5	14.1	20.75

Source: Research data.

It is observed that, on average, the *ID-PCP* is 55.19, indicating that the municipalities comply with 55.19% of the accounting procedures of the *checklist* presented in Table 1. This index suggests that the efforts made by the municipalities of the State of Espírito Santo in compliance with Normative Instruction number 36/2016 are still limited, corroborating findings of other authors (Braga & Bezerra Filho, 2014; Castro, 2016; Marega, 2019; Piccini, 2018; Piccini, Bezerra Filho & Marques, 2022; Santos & Peixe, 2020). As highlighted in the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), this is a value that will have to evolve over the years to achieve the goal of the PIPCP at the end of its implementation process.

However, the fact that the Espírito Santo state municipalities present a relatively low *ID-PCP* demands a look at the financial condition of the entity. Thus, it is important to consider in this analysis that the State of Espírito Santo is formed mostly by small municipalities, where many of these have limited capacity to collect their own resources, being important in the manager's decision to change or not the accounting routines.

In addition, there is a very large difference in the minimum and maximum values of the variables, probably due to the differences among the analyzed municipalities. No municipality reached the maximum *level of disclosure* during the period covered by this study, and the municipalities of Colatina and Linhares presented the highest *ID-PCP*, both with 80%, and the municipality of Atílio Vivácqua, the lowest *ID-PCP*, 30%.

Based on the above comparison, Table 4 details the procedures analyzed by this study and the percentage of municipalities that presented them.

Table 4
Percentage of Municipalities that evidenced the Procedures

Procedure	Percentage of Municipalities
1. Receivable tax credits	33.33%
2. Receivable social security credits	2.78%
3. Other receivable credits	100%
4. Tax active debt	95.83%
5. Non-tax active debt	87.5%
6. Adjustment for losses	38.89%
7. Provisions	61.11%
8. Movable assets	100%
9. Immovable assets	100%
10. Depreciation, amortization or depletion of fixed assets	100%
11. Revaluation and reduction of the recoverable value of fixed assets	30.56%
12. Loans made	37.5%
13. Funding taken	37.5%
14. Actuarial provision	58.33%
15. Software, patents, trademarks, licenses and similar	33.33%
16. Amortization of intangible	11.11%
17. Revaluation and reduction to the recoverable value of intangible	0%
18. Permanent participations	90.28%
19. Reduction of the recoverable amount of permanent holdings	0%
20. Stocks	98.61%

Source: Research data.

It was observed that the indexes reached for “3. Other receivable credits”, “8. Movable assets”, “9. Immovable assets”, “10. Depreciation, Amortization or Depletion of Fixed Assets” reflect the full adherence of municipalities to these procedures. In addition, the indexes referring to “4. Tax Active Debt”, “5. Non-tax Active Debt”, “18. Permanent Participations” and “20. Stocks” depict the high adherence of municipalities to such PCPs.

Regarding it, these data show a significant advance in the transition of the Espírito Santo municipalities to the accrual basis accounting in particular, regarding the registration of credits to receive, corroborating the findings of Martha *et al.* (2021). In addition, this evidence allows us to infer that municipal managers have paid greater attention to the disclosure of movable and immovable property and its variations that, until recently, were practically neglected by public sector accounting.

On the other hand, it is considered critical the adherence of municipalities in relation to procedures “2. Receivable Social Security Credits” (evidenced by 2.78% of the municipalities) and “16. Amortization of intangible” (evidenced by 11.11% of the municipalities). Moreover, the research did not identify any municipality that had recognized the procedures “17. Revaluation and Reduction to the Recoverable Value of Intangible” and “19. Reduction to the Recoverable Amount of Permanent Holdings”.

Again, to analyze these data, it is important to observe the financial condition of local entities dealt with in this study. In addition, many of these procedures may not have meaning for the reality of a small municipality. Thus, it becomes relevant here to look at why these PCPs are not met and not just their failure to comply, something that the statistical data alone cannot capture.

It is also stressed out that most municipalities that register active debts in their balance sheets do not follow the procedure “6. Adjustment for Losses of Receivable Credits”, since only 38.89% of the municipalities disclosed this procedure. This is evidence corroborating the findings of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), where the authors recommend a special analysis of the STN and control agencies for possible consequences that could reverse this situation.

In addition, there is a low adherence to the procedure “1. Receivable Tax Credits”, evidenced by no more than 33.33% of the municipalities, making it possible to infer that the practice of recognizing taxes by accrual basis presents its peculiarities and has generated difficulties in the process of information providing. As far as it concerns, this was the same index reached in the procedure “15. Software, Patents, Brands, Licenses and the Similar”, revealing that the practice of recognizing intangible assets in the Balance Sheet is presented as a challenge for the analyzed municipalities. It is also added the need for greater application of the procedure “11. Revaluation and Reduction to the Recoverable value of Fixed Assets”, for which it was found an index of only 30.56% of municipalities that adopted the procedure.

To verify the relationship between the *ID-PCP* and the variables surveyed, the results of Multiple Linear Regression (MLM) are presented in Table 5. Seventy-eight (78) observations were analyzed and the regression was statistically significant by the F Test. In addition, the adjusted R^2 of the model indicates that 50.54% of the variations in the *ID-PCP* are explained by the variations in the explanatory variables.

Table 5
MLM Results

Analysis of the explanatory variables				
Variable	Coefficient	Standard Error	t Test	P-Value
<i>CI</i>	-0.03	0.06	-0.569	0.57
<i>ER</i>	-13.26	12.09	-1.097	0.28
<i>SAÚDE</i>	-21.38	14.35	-1.489	0.14
<i>EDUC</i>	67.13	28.41	2.363	0.02*
<i>lnPOP</i>	0.38	2.35	0.163	0.87
<i>lnRECEITAS</i>	6.23	1.67	3.725	0.00***
Assumptions Analysis				
Prob > F	R ² adjusted	BP/CW Test	Note Number	
1.192e-09	0.5054	0.881	78	

*** Significance at a level of up to 0.1%; * Significance at a level of up to 5%

Legend: Prob > F: Significance of the model; R² adjusted: explanatory power of the model; BP/CW test: Breusch-Pagan/Cook-Weisberg – heteroscedasticity test of residuals.

Source: Research data.

The analysis of the joint effect of the explanatory variables shows that *the EDUC* variable presented a high and positive coefficient, indicating a significant effect on the *ID-PCP*. This result is partially consistent with the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022), regarding the positive effect of a municipal development indicator on the *ID-PCP*. The authors of these studies analyzed the effect of the Human Development Index (HDI) on the *ID-PCP*, finding a strong and positive relationship of this indicator with the level of *disclosure*. In the present research, the effect of the FIRJAN Index of Municipal Development (IFDM) on the *ID-PCP* was analyzed in its three dimensions, Employment and Income (*ER*), Education (*EDUC*) and Health (*SAÚDE*), in which, only the *EDUC* variable was significant in the model, which makes it possible to infer that municipalities with better educational levels tend to have higher *ID-PCP*.

In this perspective, such evidence indicates that municipalities with better educational indicators tend to present more educated citizens who, consequently, have a higher level of demand before public managers. As a result, the more pressure falls on public managers, in general, the more transparent and responsible they seek to be, even impacting the disclosure level of the entity's accounting information.

Regarding the variable *lnRECEITAS*, also significant in the model, presented a positive relationship with the *ID-PCP*, allowing to assume that municipalities with higher levels of collection tend to have higher *ID-PCP*. This result corroborates the studies of Castro (2016) and Marega (2019), however, presented an effect contrary to what was achieved by Piccini (2018) and Piccini, Bezerra Filho and Marques (2022).

In fact, the literature indicates that the process of convergence to IPSAS presents high implementation costs (Brusca, Gómez-Villegas & Montesinos, 2016; Brusca & Martínez, 2016), thus, it can be better performed by entities that have a higher volume of resources available, that is, greater collection. Therefore, this is a process that requires the implementation of new accounting routines in the organization, which allow to link departments related to different data requirements; to consider new account entries; to change measurement techniques (for example, for assets and liabilities); or even to introduce transactions not previously recognized (Azevedo *et al.*, 2020).

On the other hand, the *CI* and *lnPOP* variables were not significant in the model. These variables were expected to positively influence the *ID-PCP*, as evidenced in the studies of Piccini (2018) and Piccini, Bezerra Filho and Marques (2022). However, in the present study, the variables Internal Control and Population, when analyzed in the set with the other explanatory variables, did not influence the disclosure level of the Asset Accounting procedures.

Regarding the *CI* variable not to have been meant in the model, it is an indication that the Internal Control System of the Espírito Santo municipalities, in general, is not aligned with the requirements of IN number 36/2016, of the TCE-ES. Regarding it, this mismatch can be related to the structural conditions of the body (such as budget availability, skilled personnel, use of systems, etc.), important for a better performance of internal control activities.

In addition, the lack of statistical significance of the *CI* variable may indicate that the accounting reform in the public sector, undertaken through the PIPCP, within the analyzed municipalities, may not be receiving the support of “actors of power” (mayors, public financial controllers and State Court of Auditors) (Lino *et al.*, 2019). Thus, the lack of institutional capital can compromise the advance of the reform of the PIPCP, thereby undermining transparency and, in a broader sense, *accountability*.

As for the lack of statistical significance of the variable *lnPOP*, one possible explanation is that the citizen, in many cases, has no interest in accessing the accounting reports of the entity, given that the accounting statements have a certain degree of complexity and are not attractive. Thus, on average, this study demonstrates that the population does not influence the disclosure level of accounting information produced by the entity, requiring, therefore, the adoption of policies that stimulate the performance of social control.

Finally, this result confirms *H2*, partially, regarding the education dimension, and *H4*, allowing to infer that municipalities with better educational rates (one of the aspects of municipal development) and with higher collection tend to present *higher ID-PCP*. On the other hand, the *CI* and *lnPOP* variables were not significant for the model depicted by the equation (2), and thus, *H1* and *H3* were not confirmed.

5 CONCLUSIONS

The objective of this study was to determine the level of disclosure of asset accounting procedures in the public sector of municipalities in the State of Espírito Santo from the perspective of analysis of the variables internal control, municipal development, population and budget revenues.

As seen, it was found that, on average, *the ID-PCP* of the analyzed municipalities was 55.19%. This index leads us to reflect on the guidelines established by the regulatory bodies for the implementation process of the PCPs, depending on the IPSAS and the NBC TSP, which impose the same rules on all the states. However, this is a discussion that the previous literature has not explored more deeply.

In the case in question, the TCE-ES, through the IN number 36/2016, equaled the deadlines for the adoption of the accounting policies contained in the PIPCP for all the municipalities of Espírito Santo state, not considering, in this decision, the financial conditions and the size of the jurisdictional entities. In addition, this standard attributed full responsibility to the internal control department of each entity to monitor the implementation of the PIPCP, with the control of the TCE-ES happening *a posteriori*, only in the analysis of the annual accountability.

In this respect, the results obtained in the present research indicate the existence of *gaps*, involving compliance with IN number 36/2016 and the roles of Internal Control of the legally appointed agencies and the State Court of Auditors, suggesting that the actors involved approach to establish strategies that contribute to reverse the low *ID-PCP* and strengthen the institutional capital.

Given this finding, it is noticed that most studies show that the implementation of PCPs in the public sector presents difficulties, requiring efforts of the main actors involved, as well as changes and improvements in systems, internal procedures and training. However, despite not being the main objective of this study, it is emphasized that the literature, which discusses the problems of implementing accounting policies in the public sector, has not yet critically analyzed

the requirements of the normative bodies responsible for conducting the convergence process to IPSAS in Brazil.

Although this study recognizes that the process of convergence to IPSAS is an important step in improving government financial management, it is argued here that the logic of this process should be reviewed, in particular, in order not to harm small municipalities. Therefore, it would be appropriate to present a more simplified model of IPSAS for small governments, aiming, with this, to reflect the reality of these entities.

Finally, the research presented as limitation the very process of adopting the model and its variables, because the relation of the explanatory variables with *the ID-PCP* did not consider the size of the municipalities and, in this sense, it is suggested for future studies the separation between municipalities of small, medium, and large sizes. In addition, it is advisable to apply this study in municipalities of other states of the Federation, to include new explanatory variables in the model, as well as to investigate the contribution of control bodies (internal and external) in the implementation of Asset Accounting procedures in public entities.

REFERENCES

- Azevedo, R. R. de, Aquino, A. C. B. de, Neves, F. R., & Silva, C. M. da. (2020). Deadlines and software: disentangling local government accounting reforms in Brazil. *Public Money and Management*, 40(7), 509-518. <https://doi.org/10.1080/09540962.2020.1766203>
- Botelho, B. C., & Lima, D. V. de. (2015). Experiências internacionais e desafios dos governos dos países na transição da contabilidade pública para o regime de competência. *Revista Evidenciação Contábil & Finanças*, 3(3), 68-83. <https://doi.org/10.18405/recfin20150305>
- Braga, I. A., & Bezerra Filho, J. E. (2016). Convergência às NBCASP e ao MCASP: um estudo sobre os municípios pernambucanos em 2014. *Anais do Congresso ANPCONT*, 10. Recuperado em <https://www.anpcont.org.br/pdf/2016/CPT73.pdf>
- Brusca, I., Gómez-Villegas, M., & Montesinos, V. (2016). Public financial management reforms: the role of IPSAS in Latin-America. *Public Administration and Development*, 36(1), 51-64. <https://doi.org/10.1002/pad.1747>
- Brusca, I., & Martínez, J. C. (2016). Adopting International Public Sector Accounting Standards: a challenge for modernizing and harmonizing public sector accounting. *International Review of Administrative Sciences*, 82(4), 724-744. <https://doi.org/10.1177/0020852315600232>
- Calado, J. E. de S., & Teixeira, A. M. C. (2016). Demonstrações contábeis no setor público brasileiro: a percepção dos profissionais que elaboram as informações. *Contabilidade, Gestão e Governança*, 19(3), 485-503. https://doi.org/10.21714/1984-3925_2016v19n3a8
- Castro, M. C. C. S. (2016). *Convergência das normas brasileiras de contabilidade aplicadas ao setor público aos padrões internacionais: análise da evidenciação pelos estados brasileiros e pelo Distrito Federal* (Dissertação de Mestrado). Centro de Pós-Graduação e Pesquisa em Contabilidade e Controladoria da Universidade Federal de Minas Gerais – UFMG, Belo Horizonte, MG, Brasil.
- Castro, M. C. C. S., Cunha, J. V. A. da, Scarpin, J. E., & Francisco, J. R. de S. (2018). Índice de disclosure dos estados brasileiros e do Distrito Federal com base nas Normas Brasileiras de Contabilidade Aplicadas ao Setor Público: uma análise da similaridade dos entes públicos. *Revista Contabilidade e Controladoria*, 10(2), 41-57. <https://doi.org/10.5380/rcc.v10i2.58271>

- Chan, J. L. (2003). Government accounting: an assessment of theory, purposes and standards. *Public Money and Management*, 23(1), 13-20. <https://doi.org/10.1111/1467-9302.00336>
- Christiaens, J., Vanhee, C., Manes-Rossi, F., Aversano, N., & Van Cauwenberge, P. (2015). The effect of IPSAS on reforming governmental financial reporting: an international comparison. *International Review of Administrative Sciences*, 81(1), 158-177. <https://doi.org/10.1177/0020852314546580>
- Corrar, L. J., Theóphilo, C. R. (2013). *Pesquisa operacional para decisão em contabilidade e administração: contabilometria*. São Paulo: Atlas.
- Cruz, J. M. M. (2015). *Barreiras no processo de implantação das normas brasileiras de contabilidade aplicada ao setor público – NBCASP: uma análise do processo nas Universidades Federais Brasileiras* (Dissertação de Mestrado). Escola Paulista de Política, Economia e Negócios, Universidade Federal de São Paulo, São Paulo, SP, Brasil.
- Fávero, L. P. L., Belfiore, P. P., Silva, F. L. da, & Chan, B. L. (2009). *Análise de dados: modelagem multivariada para tomada de decisões*. Rio de Janeiro: Elsevier.
- Field, A. (2009). *Descobrendo a estatística usando o SPSS* (2a Ed.). Porto Alegre: Artmed.
- Lapsley, I., Mussari, R., & Paulsson, G. (2009). On the adoption of accrual accounting in the public sector: A self-evident and problematic reform. *European Accounting Review*, 18(4), 719-723. <https://doi.org/10.1080/09638180903334960>
- Lima, R. L. de, & Lima, D. V. de. (2019). Experiência do Brasil na implementação das IPSAS. *Revista Contemporânea de Contabilidade*, 16(38), 166-184. <https://doi.org/http://dx.doi.org/10.5007/2175-8069.2019v16n38p166>
- Lino, A. F., Carvalho, L. B. de, Aquino, A. C. B. de, & Azevedo, R. R. de. (2019). A falta de trabalho institucional e mudanças organizacionais incompletas em municípios brasileiros. *Revista de Administração Pública*, 53(2), 375-391. <https://doi.org/10.1590/0034-761220170404>
- Marega, N. M. D. (2019). *Determinantes da divulgação das informações contábeis no Poder Judiciário brasileiro* (Dissertação de Mestrado). Programa de Pós-Graduação em Ciências Contábeis da Fundação Instituto Capixaba de Pesquisa em Contabilidade, Economia e Finanças - FUCAPE, Vitória, ES, Brasil.
- Marques, L. T. (2017). *Normas brasileiras de contabilidade aplicada ao setor público: um estudo sobre a implementação em universidades federais brasileiras* (Dissertação de Mestrado). Centro de Pós-Graduação e Pesquisa em Contabilidade e Controladoria da Universidade Federal de Minas Gerais – UFMG, Belo Horizonte, MG, Brasil.
- Martha, F. N., Bianchi, M., Venturini, L. D. B., & Machado, V. N. (2021). A aderência dos municípios do Rio Grande do Sul ao Plano de Implantação dos Procedimentos Contábeis Patrimoniais (PIPCP). *Anais do Congresso USP International Conference in Accounting*, 21.

Recuperado em
<https://congressosp.fipecafi.org/anais/21UspInternational/ArtigosDownload/3456.pdf>.

- Piccini, A. J. (2018). *Disclosure dos procedimentos contábeis patrimoniais no setor público: uma contribuição na identificação do estágio de adesão dos municípios brasileiros* (Dissertação de Mestrado). Programa de Pós-Graduação em Ciências Contábeis da Fundação Instituto Capixaba de Pesquisa em Contabilidade, Economia e Finanças - FUCAPE, Vitória, ES, Brasil.
- Piccini, A. J., Bezerra Filho, J. E., & Marques, L. R. (2022). Disclosure dos procedimentos contábeis patrimoniais: estágio de adesão dos municípios brasileiros. *Sinergia*, 26(1), 49-62.
- Rosa, W. de C. L., Fraga, J. de J., Rosa, M. P. da, & Lepsch, M. A. de S. (2018). Convergência da contabilidade pública às normas internacionais de contabilidade: um estudo de caso na Universidade Federal Fluminense. *Pensar Contábil*, 21(74), 41-51.
- Santos, M. R. dos, & Peixe, B. C. S. (2020). Implementação da nova contabilidade pública na administração federal brasileira – sob a ótica da avaliação dos relatórios de gestão de 2018. *Anais do Congresso UFSC de Controladoria e Finanças*, 10. Recuperado em http://ccn-ufsc-cdn.s3-website-us-west-2.amazonaws.com/10CCF/20200630113601_id.pdf
- Secretaria do Tesouro Nacional (2015). *Plano de Implantação dos Procedimentos Contábeis Patrimoniais*. Brasília: Autor. Recuperado de https://siconfi.tesouro.gov.br/siconfi/pages/public/arquivo/conteudo/PORTARIA_N_548_DE_24_DE_SETEMBRO_DE_2015_Anexo_PICCP_DOU.pdf
- Tribunal de Contas do Estado do Espírito Santo [TCE-ES] (2016). *Instrução Normativa TC n.º 036, de 23 de fevereiro de 2016*. Recuperado em 3 dezembro, 2021, de <https://www.tcees.tc.br/wp-content/uploads/formidable/108/036-2016-Dispoe-sobre-os-novos-prazos-para-adocao-de-proced-contabeis-port-STN-548-15.pdf>
- Tribunal de Contas do Estado do Espírito Santo [TCE-ES] (2020). *Relatório de Levantamento n.º 008/2020-2*. Recuperado em 3 dezembro, 2021, de <https://paineldecontrole.tcees.tc.br/control-interno/2020/executivo>
- Xavier, A. E., & Silva, J. D. (2012). Percepção de operadores da contabilidade quanto à relevância das mudanças introduzidas pela adoção das normas brasileiras de contabilidade aplicadas ao setor público: um estudo em instituições vinculadas ao ministério da educação. *Anais do Congresso Brasileiro de Custos - ABC*, 19. Recuperado em <https://anaiscbc.emnuvens.com.br/anais/article/view/316/316>