IPSAS AWARENESS BY BRAZILIAN MUNICIPALITIES

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ABSTRACT
It is an exploratory analysis on how Brazilian municipalities are aware about the implementation of the International Public Sector Accounting Standards (IPSAS). We assessed IPSAS awareness on two perspectives: directly asking the accountants responsible for each municipality about their involvement and efforts dedicated to understand IPSAS's principles and requirements; and indirectly, assessing the accounting policies adopted by individual municipalities associated to Accrual Financial Reporting (Guthrie, 1998). Data were collected through a survey applied to every 5,564 Brazilian municipality. The questionnaire was structured as a maturity matrix based on Guttman scale – inspired by Elwyn et al. (2004), Rhydderch et al. (2006), National Audit Office (2009a; 2009b). We find that Brazilian municipalities are poorly aware about the convergence process, and financial accounting policies are (still) highly biased by compliance with budgetary and fiscal rules. The academic audience may benefit from this study on adjusting governmental accounting curricula and developing further research on Accrual Financial Reporting. For instance, further research can investigate why there is such a low degree of awareness and maybe explore if there is something to say about the differences in awareness among municipalities.

Keywords: Public Sector; Financial Accounting; Local Government; Municipality.

Área temática: Contabilidade para Usuários Externos

1. INTRODUCTION

Since 1964 Public Accounting and Public Finance legislation in Brazil require the preparation of financial reports in accordance with double-entry bookkeeping, accrual basis of accounting and cost accounting reports. However, even half century after such legal initiative, cost accounting and accrual basis accounting are not pervasive practices among Brazilian public sector entities (Federal Government, States and Municipalities).

Following decisions made in 2006 and 2007 that required the adoption of International Financial Reporting Standards (IFRSs) by Brazilian financial institutions and listed companies; in 2008, Brazilian Federal Government decided to start the process of adoption of

International Public Sector Accounting Standards (IPSASs) in 2013. It means that public sector financial accounting policies has to start the convergence process to IPSAS no later than 2013. Actually, the burocratic process started in 2010 as described in the following section; but there is no evidence of the effective implementation of IPSAS in Brazil. Therefore, this paper aims to answer the following research question: how aware on IPSAS implementation are Brazilian municipalities?

This research question is relevant for the following reasons: (i) Brazilian Treasury Secretariat (*Secretaria do Tesouro Nacional* – STN) started the convergence process of national public sector financial standards to IPSASs in 2010; (ii) there is a lack of evidence about financial accounting policies adopted by Brazilian municipalities; (iii) the majority of the Brazilian municipalities are dependent on the transference of financial resources from their states and from the federal government, and noncompliance with some quantitative thresholds measured in accordance with financial accounting metrics are punished with the prohibition to receive such financial transferences.

For an international audience, this research question is also relevant, because many other jurisdictions are working in the convergence process to IPSAS, and may face the same challenges Brazilian municipalities are facing. The knowledge of such challenges in advance may mitigate problems and reduce costs of convergence.

To answer this question we structured a survey to identify the financial accounting policies applied by each municipality, their involvement in the convergence process, if they outsource the accounting function and formalize financial accounting routines. Alternative answers to questions were structured on Guttman scale (alternatives are orderly presented in accordance with an increasing level of compliance with IPSAS; hence, municipality that adopts the accounting policy presented in level three complies with the requirement of accounting policies presented in levels one and two, but does not comply with accounting policy presented in level four). As a nationwide institutional innovation, Brazil's public sector accounting standards is exogenous to all municipalities; therefore, there is no self-selection bias in our sampling process.

The remaining sections of this paper present: a brief description about Brazilian political- and economic-environment, including a presentation about the convergence process of Brazilian public sector financial accounting standards to IPSASs; the literature background on the theme; the methodology applied; data construction and its descriptive statistics; a discussion of results found and our final remarks.

2. BRAZILIAN POLITICAL- AND ECONOMIC-ENVIRONMENT

Brazilian Public Accounting Policies are regulated by a set of laws. The first rule in this respect was passed in 28 June 1808, when the Royal Family moved from Lisbon (Portugal) to Rio de Janeiro (Brazil), requiring the adoption of double-entry bookkeeping in public sector accounting.

The most relevant rules in regard to Public Accounting Policies effective nowadays are: Public Finance Law (law 4320/1964), the Brazilian Federal Constitution from 1988, and Fiscal Responsibility Law (law 101/2000). Following, a brief description of the scope and requirements of these laws:

- The Public Finance Law, passed in 17 March 1964 (notice that it happened, 14 days before the beginning of the Military dictatorship regime, while Brazil was still a democratic republic), establishes requirements for both budget accounting and financial accounting. It requires the cash-basis accounting for revenue recognition and obligation-based system for expenses, requires a standardized structure for budget reports (Executive Budget) and financial statements prepared on a yearly-basis, requires the preparation of a 3-year investment plan, reinforces the mandatory adoption of the double-entry system established in

1808, and requires the implementation of cost accounting system. A review of the Public Finance Law undergone in 1976 amended law 4320 in order to constrain maximum budget expenses to the amount of budget income, and prohibited municipalities' to constitute financial liabilities that mature after the end of the mayor's political term.

- The Federal Constitution from 1988 is the Brazilian *Magna Carta* from the redemocratization period (1985-Present). Among many other things it regulates the budgetary process, requires the preparation of a Pluriannual Plan (4-years base) and an annual budget directive law, and establishes some constrains to public finance management, such as: local governments might expend at least 15% of its tax revenue with the health function (according to the Amendment 29/2000) and at least 25% of its tax revenue with the education function (according to the Amendment 53/2006).
- The Fiscal Responsibility Law passed in 4 May 2000, when the Brazilian economy was not considered a hyperinflationary economy anymore, but public deficit and interest rate were very high. It establishes many constrains to public finance management, such as: local governments might not expend more than 60% of its own revenue with the payment of salary and wages (no more than 6% for the Legislative Power and no more than 54% for the Executive Power), and requires the implementation of cost accounting system.

May be, as a consequence of different agendas' priorities (Democratic Government pre-1964 versus Military dictatorship) and/or as a consequence of collateral effects from the hyperinflationary economy, financial accounting requirements and the implementation of a cost accounting system imposed to the Brazilian public sector since 1964 are not pervasively adopted until today.

Since 2008, Brazilian public sector financial accounting has undergone an incipient reform process. Aiming to implement the International Public Sector Accounting Standards (IPSAS) issued by the International Federation of Accountants (IFAC), the STN together with the Association of Accountants (*Conselho Federal de Contabilidade* – CFC) translated (but did not endorse) the IPSAS 2010 Handbook into Portuguese-language, and issued 10 public sector financial accounting standards broadly aligned with IPSAS in order to start to build capacity needed to full adopt IPSAS in the near future. CFC also issued one standard on public sector cost accounting information. These standards are known by the acronym NBC T 16, which content is summarized as follows:

- NBC T 16.1: presents the concepts, objective and scope of the Brazilian public sector accounting standards.
- NBC T 16.2: defines assets, liabilities and equity; classifies assets and liabilities among current and non-current, and presents taxonomy for public sector accounting systems (i.e., budgetary, financial, cost and compensation).
- NBC T 16.3: presents the relevance of the integration among the information systems adopted in the public sector.
- NBC T 16.4: defines public sector transactions and its taxonomy (i.e., financial and administrative transactions), and classifies equity variations (i.e., quantitative and qualitative).
- NBC T 16.5: presents bookkeeping criteria and qualitative characteristics of public sector accounting information (e.g., comparability, understandability, reliability, faithful representation, neutrality and others).
- NBC T 16.6: presents the complete set of financial statements from the public sector (i.e., statement of financial position, statement of financial performance, statement of changes in net assets/equity, cash flow statement, and notes). These five statements are similar to those required by IPSAS 1, but NBC T 16.6 also requires two other statements dedicated to budgetary information (i.e., budgetary balance – that presents the comparison of budget and realization of revenues and expenditures, and financial balance – that presents realization of budgetary revenue and expenditures).

- NBC T 16.7: presents techniques for the consolidation of financial statements.
- NBC T 16.8: defines and establishes criteria for internal control.
- NBC T 16.9: presents techniques for measuring depreciation, amortization and depletion of assets (similarly to the requirements on IPSAS 18 and IPSAS 31).
- NBC T 16.10: presents measurement criteria for assets and liabilities (generally aligned with IPSASs measurement requirements).
- NBC T 16.11: presents the concepts, objective, scope and qualitative characteristics of public sector cost accounting information.

Only NBC Ts 16.2, 16.5, 16.6, 16.7, 16.9 and 16.10 are somehow aligned with IPSASs. Therefore we consider NBC T 16 a *soft version* of IPSASs. NBC T 16 was issued on the purpose to build capacity in the public sector so that IPSASs are implemented in the 'near' future. Notice that NBC T 16 is a nationwide institutional innovation, Brazil's public sector accounting standards is exogenous to all municipalities; therefore, there is no self-selection bias in this implementation.

Considering that the term "municipality" has different meanings in different jurisdictions (i.e., ambiguity), following are some characteristics of Brazilian municipalities. Brazil is politically structured on three layers: one Federal Union (National Government) directly divided into 26 States and one national capital (Brasilia, Federal District). Each State is directly divided into municipalities. In total, there are 5,564 Municipalities. Therefore, municipalities are the lowest political and administrative layer. Every municipality is subjected to one State, except Brasilia, that is equivalent to a State with one single municipality. States are divided on a different number of municipalities; Minas Gerais is the state that has more municipalities (853 units), and is Roraima the one that has less (15 municipalities). Municipalities have different area; Altamira (in the State of Pará) is the largest (159,695.9 km^2 – larger than many sovereign countries), and Santa Cruz de Minas (in the State of Minas Gerais) is the smallest (2.9 km^2). Another significant difference among municipalities is the number of inhabitants, the State of São Paulo has both, the municipality with the biggest population, São Paulo city (11,244,369 inhabitants, measured in year 2010) and the municipality with the smallest population, Bora (805 inhabitants, measured in year 2010).[1]

Despite those differences, every Brazilian municipality has an executive power (where the mayor is directly elected by the citizens that reside in the municipality, for a 4-year mandate, with the possibility to be reelected for one 4-year mandate)[2] and a legislative power (where the members of the unique house – House of Representatives, called *vereadores*, are also directly elected by the citizens for a 4-years mandate, with the possibility to be reelected for many 4-year mandates). The Brazilian Federal Constitution establishes that the number of local representatives vary in accordance with the number of inhabitants, on a range of 9 representatives (municipalities with less than 15,000 inhabitants) and 55 representatives (municipalities with more than 8 million inhabitants). The legislative authority of municipalities is constrained by the municipality's constitution, its State's constitution and laws, and by the Federal Constitution and laws. Brazilian municipalities have the right to charge property tax from individuals and corporations, and taxes calculated over service revenue rendered by corporations, but also receive substantial funding from its State and from

[1] Notice that this research was conducted during year 2012, therefore, before the creation and establishment in 1st January 2013, of five new municipalities: Pescaria Brava and Balneário Rincão (SC); Mojuí dos Campos (PA); Pinto Bandeira (RS); and Paraíso das Águas (MS).

[2] Reelection for the Executive power was not allowed until 1997 – when the Constitution Amendment 16 was enacted. The first time mayors could be reelected was in the election of October 2000. The following elections for municipalities' Executive power were on October 2004, 2008 and 2012.

the Federal government.

Generally said, municipalities are responsible for legislating and managing their budget, providing public services (e.g., street cleaning, street lighting, public transport), planning land use (e.g., master plan, urban roads, location of parking lots), defining the usage of and maintaining public space (e.g., parks, gardens, advertising space and advertising), supervising food supply (e.g., slaughterhouses, fairs, markets), promoting cultural and recreational activities (e.g., sports, parties, events), and promoting local development (i.e., supporting the generation of employment and income).

Aiming to perform its duties related to regulating urban relationships, municipalities have the authority to establish its guard, a police that cannot use fire weapons and which main authority is to issue traffic fines and constrain irregular commerce (*camelô*).

The use of public funds by municipalities is regulated by the municipality's budgetary law, and constrained by the Federal Constitution, Federal law 4320/1964, Federal Responsibility Act and other rules, and is subjected to the scrutiny of its State's Audit Institution (*Tribunal de Contas do Estado* – TCE), except by the cities of Rio de Janeiro and São Paulo that have their own municipal audit institutions (*Tribunal de Contas do Município* – TCM-RJ and TCM-SP, respectively).

3. LITERATURE BACKGROUND

The accounting governmental adoption and diffusion research is still being a fruitful research field. Departing from traditional approaches, and looking for answers to questions such as 'why governments have been reforming public accounting systems?', either in local or central governments (e.g., Mussari, 1995; Schedler, 1996; Yamamoto, 1999; Caccia & Steccolini, 2006). Such researches include a growing agenda focused on patterns of voluntary reporting (Marcuccio & Steccolini, 2009) and comparative studies aiming to understand patterns for this adoption trend (e.g. Mellemvik & Monsen, 1995; Vela Bargues, 1996).

Despite the Contingency Model (Lüder, 1994, 2001) proved to have been a useful framework to analyze the governmental accounting diffusion, authors that follow Lüder's model suggest adaptations to the model in order to represent local reality of those studied countries. Some examples are Godfrey et al. (2001) for developing countries (Kenya, Uganda and Tanzania), Pallot (1995) for New Zealand, Jaruga et al. (1996) for Poland, and Budäus & Buchholtz (1996a, 1996b) to compare UK, Netherlands, Finland, Germany, USA and New Zealand.

Following an institutional literature, dissemination of accounting practices is affected by both: coercion for adoption once it is required by law and the presence of a monitoring and punishment scheme, and expected relevance of accounting information by users (effective and potential users) (Pallot, 1998; Lapsley & Wright, 2004; Moynihan, 2005; Bhimani, 1996).

The U.S. Government Accountability Office (GAO) predicts the pillar of flexibility to governmental units, and a change from process-based management to performance and outcome-based management (Pollitt & Summa, 1997). Even though legal requirement and enforcement propitiates compliance, it does not necessarily propitiate effective use; implementation and effective use of determined technologies are different concepts (Shields, 1998; Covaleski et al., 1985; Lapsley, 1994; Geiger & Ittner, 1996; Dimaggio & Powell, 1983). Factors that discriminate used technologies from others are: potential aggregated benefits, link between proposed technologies and shared principles and values, complexity, experimental implementation, clear measurement of benefits (Lapsley & Wright, 2004). GAO identified that 53.2% of governmental bodies adopted performance measurement models, however, only 26.2% effectively used it for measuring and monitoring programs; 27.7% used for allocating resources; and 24.7% used for planning purposes (Ittner & Larcker, 1998).

Nevertheless, public sector has received advisors and academics *ready* to sell the solution for organization's success (Yakhou & Dorweiler, 1995; Gaiser, 1997; Lebas, 1996). By the way, the New Public Management (NPM) is often associated with an increase in the number of experts in governmental accounting and public finance. In a circular manner, concepts from NPM drive those professionals to disseminate performance management techniques, and are shaped by those experts (Gendron et al., 2007).

The budgetary slack literature applied to public sector (e.g. Geiger & Ittner, 1996) predicts that an agency will protect itself creating slack to lead with environmental uncertainty. In Brazil, small municipalities have great dependence on federal transferences, calculated based on the respective population size. In some cases, a budgetary slack appears for those municipalities which the Oil & Gas Royalties are a significant amount of the annual total revenue, mitigating the incentive for an accurate accounting process.

In Brazil nowadays there is no regulation that obligates the accountant who prepares the financial statements for a local government to be a public servant. However, it is required to be a bachelor in accounting and registered at the CFC in order to be allowed to prepare and sign financial reports. Some municipalities prefer to contract-out the accounting service with local firms instead of internalizing the accounting function. Such arrangement put on risk the minimal conditions to comply with the requirements imposed by the fiscal law. Otherwise, we would expect that a big-sized municipality would internalize the accounting function driven by the cooperation and specialization benefits.

Additionally, the complexity of contracting arrangements (e.g., public-private partnership), pervasive among big-sized municipalities, is expect to push forward the financial accounting maturity. Finally, the presence of Audit Institutions, intensively monitoring the quality and public availability of financial reports would push municipalities forward a higher financial accounting maturity.

In regard to public sector financial accounting, Guthrie (1998) discusses how the accrual basis of accounting was implemented in the Australian Public Sector, in four categories: (i) Accrual Financial Reporting, refers to the preparation of annual financial statements and reports based on accrual information; (ii) Accrual Management Systems, involves the internal information systems needed to manage the entity; (iii) Whole of Government Reporting, prepared via the consolidation of the financial statements and transactions of all entities controlled by the jurisdiction's government; and (iv) Accrual Budgeting, which would result in an emphasis on resource allocation on the basis of an accrual number and not based on appropriations of cash by parliaments.

Brazil's initiative focuses on *Accrual Financial Reporting* in regard to the preparation of general purpose financial statements. To measure the cost of programs and activities, it focuses on *Accrual Management Systems*. The consolidation of financial statements in Brazil is based on the *Whole of Government Reporting*. Unlike to Australia's initiative, the *Accrual Budgeting* has not been seriously discussed in Brazil.

4. METHODOLOGY

We developed a questionnaire and applied a survey, with the operational support of the Brazilian National Treasury Secretariat (*Secretaria do Tesouro Nacional*, STN). STN's support consisted on: (i) criticizing the questionnaire and serving as a pilot sample for its final version; and (ii) providing link to the questionnaire (web-based) to the accountant responsible for each Brazilian municipality. For 'accountant responsible for the municipality' we mean the natural person (public servant, independent consultant or the partner of an accounting firm) that has the logon and password to access STN's system and upload the entity's annual financial reports.

Uploading the answers to the questionnaire was mandatory in order to upload the entity's financial reports for the year ended 31 December 2011. Even though, 1,310 municipalities did not upload the questionnaire until 30 April 2012 (response rate of 76.5%), and some municipalities uploaded the questionnaire but did not answer some questions (missing values are explained in the notes to the tables presented below). We noticed that missing values are concentrated among very small-sized municipalities (e.g., 93% of the municipalities that did not answer more than one question have less than 50,000 inhabitants); auditors from STN suspect that these municipalities use to outsource their accounting activities to independent consultants or accounting firms, hence they were not committed with the purpose of the questionnaire or did not know the answers. Such average response rate can be considered very high on an academic perspective, and quite low considering the enforcement exercised by STN.

All questions and respective extreme alternative answers (lowest and highest Guttman scale points) are presented in section *Data construction and descriptive statistics*.

5. DATA CONSTRUCTION AND DESCRIPTIVE STATISTICS

Questionnaire is comprised by 19 questions which alternative answers were presented as a Guttman scale, and structured as a maturity matrix, inspired on Elwyn et al. (2004), Rhydderch et al. (2006), and National Audit Office (2009a; 2009b).

Descriptive statistics of data collected from the questionnaire in regard to Accrual Financial Reporting are presented in Table 1, and respective histograms in Figure 1.

Table 1: Summary Statistics: IPSAS awareness and Accrual Financial Reporting

	N *	Median	Std Dev	min	Max	
IPSASs Awareness	3,280	3	1.17	1	6	
Tax credit	3,236	3	0.70	1	4	
Uncollected tax credit	3,192	2	0.85	1	4	
Inventory	3,188	3	0.97	1	4	
Property, Plant & Equipment	3,169	3	0.91	1	5	*Cronbach Alpha* 0.7303
Intangible Assets	3,104	2	1.07	1	4	
Liability	3,140	2	0.66	1	3	
Presentation and Disclosure	3,126	3	1.46	1	6	
Consolidation	2,972	5	1.33	1	5	

* Brazilian territory is politically divided among 5,564 municipalities. Missing values are explained as follows: 1,310 municipalities did not reply the survey questionnaire; the difference between N for each variable and 4,254 is due to unanswered variable specific questions from the questionnaire.
Source: Data collected from the questionnaire developed by the authors and applied by STN. For data availability, check with STN <www.stn.gov.br>.

Following we present comments about each variable measured based on the answers to the questionnaire. Many comments presented below derive from Figure 1, which presents histograms for each variable, for the entire sample (all municipalities) and three groups of municipalities (based on municipalities' number of inhabitants).

Figure 1: Histograms: IPSAS awareness and Accrual Financial Reporting

Municipalities groups	**All municipalities**						**P < 100,000 inh.**						**100,000 < P < 500,000 inh.**						**P > 500,000 inh.**					
Variables / Guttman scale points	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
IPSAS awareness (1 - 6)	4%	10%	41%	13%	29%	2%	5%	11%	42%	14%	28%	1%	2%	10%	34%	7%	45%	3%		3%	26%	3%	63%	6%
Tax credit (1 - 4)	5%	8%	65%	22%			5%	7%	65%	22%			2%	11%	66%	21%				17%	69%	14%		
Uncollected tax credit (1 - 4)	7%	53%	22%	18%			7%	53%	22%	18%			1%	56%	25%	17%				52%	39%	9%		
Inventory (1 - 4)	21%	19%	46%	14%			22%	20%	44%	14%			5%	10%	66%	18%			9%		88%	3%		
Property, Plant & Equipment (1 - 5)	3%	24%	50%	16%	8%		3%	24%	49%	16%	9%		1%	19%	64%	12%	4%			21%	53%	26%		
Intangible Assets (1 - 4)	38%	26%	21%	14%			39%	26%	21%	15%			33%	26%	31%	10%			26%	32%	41%			
Liability (1 - 3)	40%	47%	12%				40%	47%	13%				42%	51%	7%				47%	47%	6%			
Disclosure (1 - 6)	1%	39%	13%	13%	24%	9%	1%	39%	13%	13%	24%	9%	1%	40%	11%	13%	27%	7%		38%	18%	24%	18%	3%
Consolidation (1 - 5)	8%	7%	14%	8%	62%		9%	7%	14%	8%	62%		3%	5%	13%	13%	66%		3%	9%	6%	18%	65%	

5.1. IPSAS awareness

Question: In regard to the familiarity with the convergence process to IPSASs…

Answers: ranging from "Accounting team never heard about the IPSASs convergence process" to "The accounting team actively acted (or acts) in the IPSASs convergence process, cooperating with public sector accounting authorities (STN, CFC, IFAC)", on a 6-point Guttman scale.

IPSAS awareness histogram from small-sized municipalities looks quite different from the histograms from big-sized municipalities. Notice that standard-deviation is 1.17 and only few municipalities are in point-6. Technical and intellectual capability of accounting team in addition with 'cultural' features might explain such behavior. Considering that Brazil has continental dimensions and presents relevant differences on social development and cultural influences, geographic location, as suggested by Anessi-Pessina, Nasi & Steccolini (2008) for Italy, might also help explaining such dispersion (1.17 standard-deviation). Figure 2 discloses IPSASs awareness geo-referenced on Brazilian territory, per municipality.

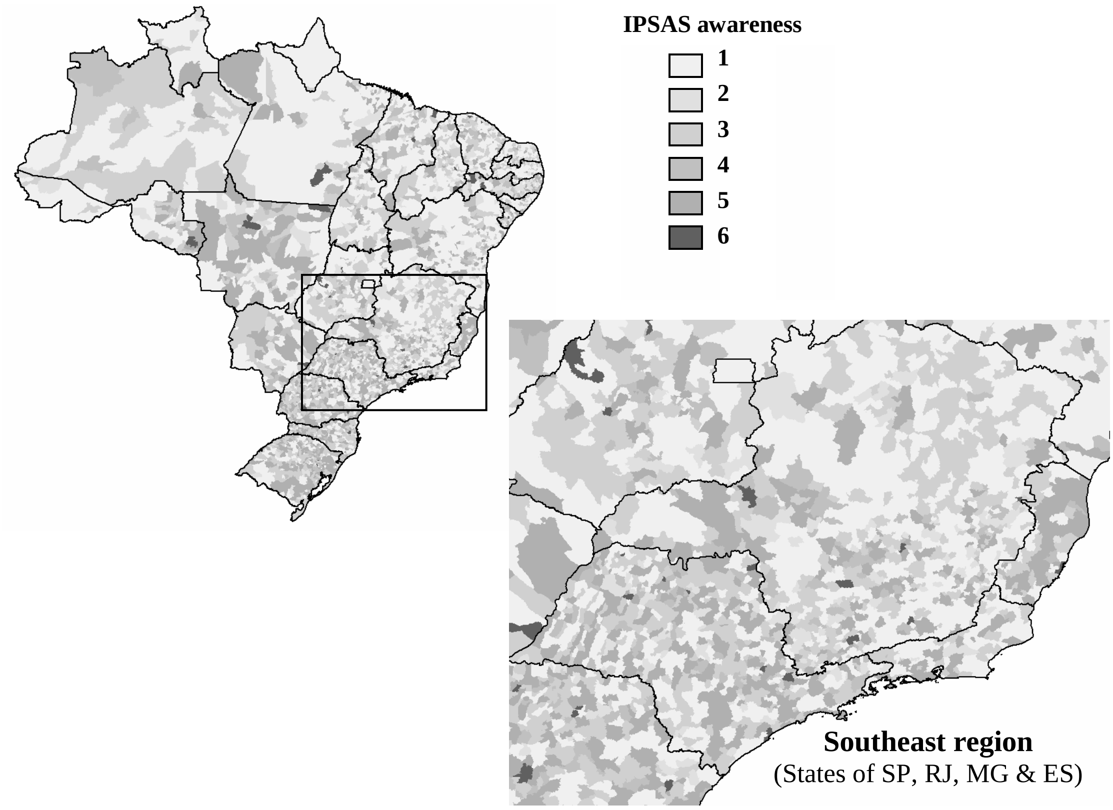
5.2. Tax Credit

Question: In regard to tax credits...

Answers: ranging from "Tax credits are not controlled by the tax division" to "Tax credits are controlled by the tax division and recognized in the accounting system. Additionally, the entity accounts for tax credit impairment", on a 4-point Guttman scale.

Tax Credit histograms are not different among groups of municipalities. There is a concentration in the third point (in the range 1–4) of Guttman scale (i.e., Tax credits are controlled by the tax division and recognized in the accounting system, but entity does not account for tax credit impairment). This scenario might change in the near future, as soon as municipalities comply with the accounting standards jointly issued by STN and CFC (a soft version of IPSASs), they might move to the 4th point (i.e., Tax credits are controlled by the tax division and recognized in the accounting system. Additionally, the entity accounts for tax credit impairment).

Figure 2: Geo-reference of IPSAS Awareness in Brazil



5.3. Uncollected tax credit

Question: In regard to uncollected tax credits...

Answers: ranging from “Entity does not keep accounting records for uncollected tax credits” to “Entity keeps accounting records for uncollected tax credits and adjusts it for impairment loss in accordance with the IPSASs-based accounting standards”, on a 4-point Guttman scale.

There is a concentration on point 2 (accounts for uncollected tax credit, but does not account for impairment), but big-sized municipalities are quite biased to the 3rd point (accounts for uncollected tax credit, but impairment criteria is based only on write-off of credits that are ‘definitely’ uncollectable, bad debit).

5.4. Inventory

Question: In regard to inventories...

Answers: ranging from “Entity does not keep physical control of inventories and does not account for them” to “Entity keeps physical control of inventories and account for them, and both systems are integrated”, on a 4-point Guttman scale.

The median is in the 3rd point (i.e., Entity keeps physical control of inventories and account for them, but systems are not integrated). The standard-deviation (0.97) is explained by small-sized municipalities, 42% of them do not even account for inventories (points 1 and 2 of Guttman scale).

5.5. Property, Plant & Equipment

Question: In regard to property, plant and equipment (PPE)...

Answers: ranging from “Entity does not keep physical control of PPE and does not account for them” to “Entity accounts for PPE and keeps individual physical control of PPE, and accounts for depreciation and other subsequent measurement adjustment for all depreciable items”, on a 5-point Guttman scale.

The concentration in the 3rd point (i.e., Entity accounts for PPE and keeps individual physical control of PPE, but does not account for depreciation or other subsequent measurement adjustment) is pervasive among all groups. This scenario might also change in the near future, as soon as municipalities comply with the accounting standards jointly issued by STN and CFC (soft version of IPSASs), they might move to the 4th (i.e., Entity accounts for PPE and keeps individual physical control of PPE, and accounts for depreciation and other subsequent measurement adjustment for only some depreciable items) or 5th (Entity accounts for PPE and keeps individual physical control of PPE, and accounts for depreciation and other subsequent measurement adjustment for all depreciable items) points. Notice that, different from accounting for inventory, small-sized municipalities account for PPE – only 3% of them are below the 2nd point (i.e., Entity accounts for PPE, but does not keep individual physical control of PPE. Does not account for depreciation). The fact that PPE turn-over, by definition, is slower that the turn-over of inventory, and the fact that in accordance with Brazilian budgetary accounting standards PPE acquisition is classified as a capital expenditure and inventory acquisition as a current expenditure might explain such difference in accounting for inventory and PPE.

5.6. Intangible Assets

Question: In regard to intangible assets...

Answers: ranging from “Entity does not identify whether it has intangible assets” to “Entity accounts for intangible assets and keeps individual control of them, and accounts for amortization and other subsequent measurement adjustment for all intangible items”, on a 4-point Guttman scale.

The majority of Brazilian municipalities does not identify their intangible assets, hence do not account for them (points 1 and 2) of Guttman scale. Municipalities that account for intangible assets do not have items and accounting systems integrated, and do not recognize intangibles amortization (i.e., measurement after recognition is cost, not cost less amortization and impairment loss). The standard-deviation of intangible assets is the highest among the answers to questions related to recognition and measurement policies for assets and liabilities. Notice that none of the big-sized municipalities is in the 4th point, while 15% of small-sized municipalities are in the 4th point. This unexpected finding suggests additional investigation on future research.

5.7. Liability

Question: In regard to accounting for liabilities, provisions and contingences...

Answers: ranging from “Liabilities are recognized only at the moment of their budget liquidation, provisions and contingences are not recognized” to “All liabilities, provisions and contingences are accounted for in accordance with the accrual basis of accounting”, on a 4-point Guttman scale.

There is a concentration on points 1 and 2 of Guttman scale (i.e., Liabilities are recognized only at the moment of their budget liquidation, provisions and contingences are not recognized; and Some liabilities, provisions or contingences are accounted for in accordance with the accrual basis of accounting) and it does not discriminate groups. It probably is a consequence of the widespread adoption of cash basis of accounting by

Brazilian municipalities, i.e., accounting biased by compliance with budget and fiscal rules.

5.8. Presentation and Disclosure

Question: In regard to the presentation of financial statements...

Answers: ranging from “Entity does not prepare any financial statement” to “Entity prepares financial statement and notes in compliance with IPSASs-based accounting standards, and performs its financial statement analysis”, on a 6-point Guttman scale.

There is no concentration on any point of Guttman scale and size does not discriminate municipalities. Among all municipalities, 39% of them do not prepare notes to financial statements and do not comply with any IPSAS’s requirement related to financial statement presentation (point 2) and 24% prepare notes in accordance with budgetary law and comply with some IPSAS requirements on financial statement presentation (point 5). Notice that answers to this question present the highest standard-deviation among Accrual Financial Reporting construct. Probably a consequence of weak enforcement about disclosure issues, i.e., regulators (including STN) are more focused on monitoring compliance with quantitative thresholds of budget and fiscal rules, than on monitoring the level of accountability or transparency provided by Brazilian municipalities.

5.9. Consolidation

Question: In regard to the consolidation of financial statements...

Answers: ranging from “Independent agencies are not consolidated” to “All information about independent agencies is consolidated, related parties' transactions are automatically excluded, and consolidated entities necessarily adopt uniform accounting principles”, on a 5-point Guttman scale.

Concentration on the highest point of Guttman scale might be explained by the enforcement exercised by STN, since municipalities’ consolidated financial statements is critical for the preparation on National accounts.

In addition to questions about Accrual Financial Reporting, the questionnaire also comprises two other questions. Additionally, we collected data about municipalities’ population, and two indexes: compliance with the Fiscal Responsibility Law and Social Development, all shown in Table 2.

Table 2: Summary Statistics: Other discrete and continuing variables

Panel A: Discrete variables	**N ***	**Median**	**Std Dev**	**min**	**max**
Accounting outsourcing	3,379	1	0.99	1	5
Accounting handbook	3,213	1	1.92	1	6
Panel B: Continuing variables	**N ***	**Mean**	**Std Dev**	**min**	**max**
Population (inhabitants), 2010	4,254	37.125	226.283	805	1.12e+07
Population (ln of the number of inhabitants), 2010	4,254	9.45	1.17	6.69	16.23
Fiscal Management Index (FIRJAN, 2010)	4,254	0.54	0.14	0.08	0.97
Municipalities Development Index (FIRJAN, 2009)	4,254	0.64	0.09	0.34	0.92

* Brazilian territory is politically divided among 5,564 municipalities. Missing values for variable presented in Panel A are explained as follows: 1,310 municipalities did not reply the survey questionnaire; the difference between N for each variable and 4,254 is due to unanswered variable specific questions from the questionnaire. Source: Data presented in Panel A were collected from the questionnaire developed by the authors and applied by STN, data not publicly available “yet”. Data presented in Panel B were collected from publicly available databases retrieved on 12 April 2012 from the following webpages: http://www.brasilemcidades.gov.br/src/php/frmConsultaDefVariaveis.php (except by Fiscal Management Index and Municipalities Development Index), and http://www.firjan.org.br/ifgf/ifgf_downloads.html and http://www.firjan.org.br/IFDM/ifdm_downloads.html (only variables Fiscal Management Index and Municipalities Development Index, respectively).

5.10. Accounting outsourcing

Question: How accounting activities are conducted?

Answers for Accounting outsourcing was inverted, hence, ranging from “No routine is outsourced. Only uses public servants that were specifically hired for his task. Additionally, they perform their activities in the entity's facilities” to “Outsources all accounting routines that are performed outside the entity’s facilities”, on a 5-point inverted Guttman scale.

The median is in the 1st point of Guttman scale, and there is a concentration on the two lowest levels, suggesting that insourcing the accounting function is a pervasive strategy among Brazilian municipalities. Table 3 shows that only 12% of 3,379 municipalities that answered this question outsource accounting function, and that municipalities that outsource are smaller than those that insource (both in terms of population and revenue). However, the age of the municipality (measured in years, since its foundation until 2012) is not associated with insourcing/outsourcing strategy.

Table 3: Comparison between insourcing vs. outsourcing accounting area

	Insourced area	Outsourced area
N	2,977	402
Average population (inhabitants)	38,550.16	23,466.98
Average total Revenue (R$ millions)	68.00	31.00
Average municipality age (years)	67.1	67.5
Max/Min municipality age (years)*	475/15	422/15

* Notice that Brazil was “discovered” in 1500, and the legislation that established political division of territory among municipalities dates back only 475 year ago (the maximum age of Brazilian municipalities).

Source: Insource / outsource data is the *Accounting outsourcing* variable presented in Table 2. Data concerning revenue and age of municipalities were collected from publicly available databases retrieved on 12 April 2012 from the following webpage: http://www.brasilemcidades.gov.br/src/php/frmConsultaDefVariaveis.php.

5.11. Accounting handbook

Question: How are accounting routines formalized (handbook)?

Answers: ranging from “Does not have any accounting handbook” to “Accounting handbook comprises relevant routines for: compliance with legal requirements, standardization of accounting policies, presentation of individual and consolidated financial statements, and financial statement analysis”, on a 6-point Guttman scale.

There is a concentration of more than 62% of all municipalities in the lowest level of formalization of accounting routines. However, it is the variable that presents the highest standard-deviation (1.97). Based on the experience in the private sector, we expect that as soon as municipalities implement IPSASs (not only its soft version), they will increase the formalization of their accounting routines, because, professional judgments required in applying principle-oriented accounting standards (IPSASs) are much more intense than in applying rules-based accounting standards (old Brazilian Public Sector Financial GAAP).

6. DISCUSSION

Result for the Cronbach-Alpha (0.7303) presented in Table 1 supports that the questions about municipalities’ relevant policies in accounting for tax credits, uncollected tax credits, inventories, property, plant and equipment, intangible assets, liability; and for consolidation, presentation and disclosure of financial statements, are associated to each other, and properly comprise the construct of Accrual Financial Reporting (Guthrie, 1998).

The correlation matrix presented in Table 4 shows that every Accrual Financial Reporting variable is significantly (at .05) and positively correlated to each other, and significantly (at .05), positively and reasonably (13%-20%) correlated to IPSAS awareness.

IPSAS awareness is also significantly and positively (although poorly) correlated with accounting handbook, population, fiscal responsibility and development indexes measured by FIRJAN. Notice that IPSAS awareness is significantly and negatively correlated with accounting outsourcing, because to municipality's accounting team actively act in the IPSASs convergence process, cooperating with public sector accounting authorities, it needs to use public servants (insource).

There are three evidences that Brazilian municipalities are poorly aware about the convergence process.

First, IPSAS awareness median is 3 (i.e., the 3rd point on Guttman scale that ranges from 1 to 6; where 3 means: "Accounting team knows the IPSASs convergence process, but not in details").

Second, IPSAS awareness is not correlated with consolidation, the most "sophisticated" and pervasive accounting practice adopted by municipalities. Notice that, STN requires consolidated financial statements from municipalities in order to prepare the National Accounts, for more than one decade.

Third, IPSAS awareness is correlated with all other Accrual Financial Reporting metrics (i.e., tax credit, uncollected tax credit, inventory, PPE, intangible assets and liabilities), that do not comply with IPSASs (yet). Actually, some municipalities recognize these items, but do not subsequently measure them properly (in accordance to IPSASs' requirements). However, other municipalities do not recognize inventory items and intangible assets (22% and 39% of small-sized municipalities, respectively).

Disclosure of accounting policies in the notes to financial statements is the poorest practice adopted by Brazilian municipalities (median 3 in a scale that ranges from 1 to 6, and standard-deviation 1.46). Notice that notes are not required by Fiscal Responsibility Law, supreme audit courts (TCEs and TCMs) or STN. Therefore, we identify that municipalities' financial accounting practices are generally driven by compliance with law, primarily with budgetary and fiscal requirements.

Table 4: Correlation matrix

	Variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1	IPSASs Awareness	1													
2	Tax credit	0.18*	1												
3	Uncollected tax credit	0.19*	0.50*	1											
4	Inventory	0.14*	0.24*	0.28*	1										
5	PPE	0.22*	0.34*	0.43*	0.34*	1									
6	Intangible Assets	0.21*	0.26*	0.29*	0.29*	0.39*	1								
7	Liability	0.14*	0.27*	0.35*	0.28*	0.39*	0.38*	1							
8	Present. & Disclosure	0.11*	0.24*	0.29*	0.27*	0.33*	0.32*	0.38*	1						
9	Consolidation	0.13*	0.15*	0.15*	0.15*	0.15*	0.16*	0.17*	0.20*	1					
10	Acc. outsourcing	-0.13*	-0.14*	-0.173*	-0.05*	-0.10*	-0.05*	0.02	0.03	-0.08*	1				
11	Acc. handbook	0.19*	0.20*	0.24*	0.15*	0.26*	0.31*	0.28*	0.29*	0.08*	0.01	1			
12	Population (inh.)	0.13*	0.06*	0.04*	0.14*	-0.01	0.04*	-0.02	0.02	0.06*	-0.03	-0.01	1		
13	Fiscal Mgm. Ind	0.13*	0.05*	0.10*	0.15*	0.07*	0.04*	-0.06*	-0.04*	0.06*	-0.32*	-0.03	0.04*	1	
14	Develop. Index	0.14*	0.13*	0.16*	0.17*	0.12*	0.04	-0.01	-0.06*	0.08*	-0.41*	-0.01	0.18*	0.47*	1

* significant at 5%.

7. FINAL REMARKS

Aiming to assess Brazilian municipalities' awareness of the IPSAS convergence process, we developed a questionnaire that was applied to the accountant responsible for the preparation of the financial statements from each Brazilian municipality. Questions were presented with alternative answers structured in Guttman scale. Data were collected in April 2012.

Notice that we do not present any judgment about IPSAS's content neither about the Brazilian process of IPSAS's adoption; and we do not discuss if the adoption of IPSAS is (or should be) in the interest of municipalities. Such independence is crucial to avoid any (intellectual) bias. However, we aimed to assess Brazilian municipalities' awareness of the IPSAS convergence process because the adoption of NBC T 16 (a set of public sector accounting standards issued by CFC, inspired by IPSAS) is mandatory for the year ended 31 December 2013.

Such exploratory investigation is a first step in the journey to investigate many relevant research questions, for example:

(i) Why Brazilian municipalities are not aware?
(ii) Do they have good reasons not to be aware?
(iii) What drives differences in awareness among municipalities?
(iv) Do IPSAS bring real added values to municipalities, or does the introduction of IPSAS serves the construction of a new market for accounting firms?

In addition to the suggestions above for further research, the academic audience may benefit from this study on adjusting governmental accounting curricula of graduate courses.

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